HABITAT TECHNOLOGIES

CRITICAL AREAS ASSESSMENT

Parcel 0419095003 433 - 43rd Avenue SW City of Puyallup, Washington

This document incorporates comments provided by City of Puyallup review

prepared for

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INTRODUCTION

This document details the culmination of activities and onsite evaluations undertaken to complete a critical areas assessment (i.e. wetlands, streams, fish and wildlife habitats) of **Parcel 0419095003** and a septic easement area within parcel 0419091068 (**Project site**). The project site was located at 433 - 43rd Avenue SW within the City of Puyallup, Pierce County, Washington (Figure 1). The evaluation and characterization of onsite and adjacent critical areas is a vital element in land use planning. The goal of this approach is to ensure that the proposed development of a single duplex and associated primary and reserve septic drainfield areas does not result in adverse environmental impacts to an identified City of Puyallup Category III Wetland and the associated 60-foot standard City of Puyallup buffer identified within the project site. As presently proposed all development activities would be accomplished without an encroachment into the identified wetland or associated 60-foot buffer.

The assessment and delineation of specific critical areas within and immediately adjacent to the project site followed the methods and procedures defined in the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010); the Washington State *Wetland Rating System for Western Washington* (Hruby, 2014), the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030), and the City of Puyallup Chapter 21. This document was designed to accommodate site planning and potential regulatory actions and is suitable for submittal to federal, state, and local authorities for potential critical areas verification and permitting actions.

PROJECT SITE DESCRIPTION

The project site was composed of an existing vacant parcel of record totaling approximately 1.25-acres in size. As outlined below the majority of the project site was encumbered by wetland and wetland buffers. The project site was located within an area of increasing urbanization focusing on more intense commercial retail and higher intensity residential development. The southern boundary of the project site was formed by 43rd Avenue SW. A single-family homesite on a large parcel was noted to the west and vacant lands were present to the north and east.

Directions to Project Site: From Meridian Avenue East (southbound) turn west onto 43rd Avenue SW. Continue on 43rd Avenue SW to the project site at 433 - 43rd Avenue SW.

BACKGROUND INFORMATION

NATIONAL WETLAND INVENTORY

The National Wetland Inventory (NWI) Mapping completed by the U.S. Fish and Wildlife Service was reviewed as a part of this assessment (Figure 2). This mapping resource identified a wetland complex throughout the majority of the project site. This wetland was identified as palustrine, forested, seasonally flooded (PFOC); and palustrine, scrubshrub, seasonally flooded (PSSC) within the project site.

STATE OF WASHINGTON PRIORITY HABITATS AND SPECIES

The State of Washington *Priority Habitats and Species (PHS) Mapping* was reviewed as a part of this assessment (Figure 3). This mapping resource identified the same wetland areas within and adjacent to the project site as the *NWI Mapping* above.

STATE OF WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

The State of Washington Department of Fish and Wildlife (WDFW) *SalmonScape Mapping* was reviewed as a part of this assessment (Figure 4). This mapping resource did not identify any drainage corridors within or adjacent to the project site. This mapping resource did identify a pond generally adjacent to the eastern boundary in the central portion of the project site.

STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES

The State of Washington Department of Natural Resources (WDNR) *Water Type Mapping* was reviewed as a part of this assessment (Figure 5). This mapping resource generally identified the same wetland noted in the NWI Mapping Resource above within the project site. This mapping resource further noted a pond adjacent to the eastern boundary as noted in the WDFW Mapping above. This mapping noted this pond as a Type F Water (fish-bearing).

CITY OF PUYALLUP MAPPING

The *City of Puyallup Inventory Mapping* was reviewed as a part of this assessment (Figure 6). This mapping resource generally identified the wetland noted in the other mapping

resources above within the project site and adjacent properties. This wetland was further identified as "field verified" by the City of Puyallup.

SOILS MAPPING

The Soil Mapping Inventory completed by the Natural Resources Conservation Service was reviewed as a part of this assessment (Figure 7). This mapping resource identified the soil throughout the majority of project site as Norma fine sandy loam (26A). The Norma soil series is defined as poorly drained; as formed in alluvium under sedges; and as listed as a "hydric" soil.

This mapping resource further noted the southern portion of the project site to contain Everett gravelly sandy loam (13B). The Everett soils series is defined as somewhat excessively drained, as formed in glacial outwash, and as not listed as "hydric" soil.

PRIOR ASSESSMENTS

Habitat Technologies had completed prior assessments for parcels within the surrounding area of the project site. These prior assessments had identified a wetland complex within the area. This wetland complex was ditched along the western boundary then entered a culvert within the Willow Springs Apartment complex. This drainage continued through a series of ditch lines, pipes, and culverts to eventually enter a Pierce County Storm Pond adjacent to 89th Avenue Court East (Figure 8). This storm pond did not appear to exhibit an outflow.

ONSITE ANALYSIS

CRITERIA FOR CRITICAL AREAS IDENTIFICATION

The City of Puyallup defines "critical areas" to include wetlands, fish and wildlife habitat areas, critical aquifer recharge areas, geologically hazardous areas, and frequently flooded areas. The critical areas assessment reported in this document has been limited to address wetlands and fish and wildlife habitat areas.

Wetlands: Wetlands are transitional areas between aquatic and upland habitats. In general terms, wetlands are lands where the extent and duration of saturation with water is the primary factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin, et al., 1979). Wetlands are generally defined within land use regulations as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support,

and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (US Army Corps of Engineers 1987).

Wetlands exhibit three essential characteristics, all of which must be present for an area to meet the established criteria (United States Army Corps of Engineers, 1987 and United States Army Corps of Engineers, 2010). These essential characteristics are:

- 1. Hydrophytic Vegetation: The assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence. Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season.
- 2. Hydric Soil: A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper parts. Most hydric soils exhibit characteristic morphologies that result from recent periods of saturation or inundation. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods.
- 3. Wetland Hydrology: Permanent or periodic inundation, or surface soil saturation, at least seasonally. Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation to define the area. Wetland hydrology indications provide evidence that the site has a continuing wetland hydrology regime. Where hydrology has not been altered vegetation and soils provide strong evidence that wetland hydrology is present.

Fish and Wildlife Habitat Areas: The City of Puyallup has defined "fish and wildlife habitat areas" to include those areas necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created as designated by WAC 365-190-080. These areas include:

- (a) Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association;
- (b) Habitats of local importance, including but not limited to areas designated as priority habitat by the Department of Fish and Wildlife;
- (c) Streams and surface waters within the jurisdiction of the state of Washington; and
- (d) Land essential for preserving connections between habitats and open spaces.

STUDY METHODS

Habitat Technologies completed a series of onsite assessments from May through early-September 2018 and again in the late spring and summer of both 2019 and 2020. In addition, Habitat Technologies has completed similar critical areas assessments for the parcels associated with the project site as well as parcels located within the general area of the project site. The objective of this evaluation was to define and delineate potential critical areas (wetlands; drainage corridors; and fish and wildlife habitats) that may be present within or immediately adjacent to the project area. Onsite activities were completed in accordance with criteria and procedures established in the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010); the Washington State *Wetland Rating System for Western Washington* (Hruby, 2014), the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030), and the City of Puyallup Chapter 21.

FIELD OBSERVATION

The project site was accessed via 43rd Avenue SW that formed the southern boundary of the project site. The southern portion of the project site appeared to contain a historic fill pad that was overgrown with blackberries and contained a small "tent city" during the onsite assessments period. The southern project site was also heavily littered with garbage and debris from the onsite campers. The majority of the central and northern portion of the project sits was encumbered by a portion of a wetland complex within area parcels. Representative field data are provided in Appendix A.

Plant Communities

As noted above the southern project site had been modified by the placement of historic fill and had become overrun with primarily Himalayan blackberry (*Rubus armeniacus*).

The plant community located directly to the north of the historic fill placement was dominated by species typically associated with seasonal saturation or seasonal shallow ponding. Observed species included black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), Western red cedar (*Thuja plicata*), Oregon ash (*Fraxinus latifolia*), Pacific willow (*Salix lasiandra*), Sitka willow (*Salix sitchensis*), crabapple (*Pyrus fusca*), Douglas spiraea (*Spiraea douglasii*), salmonberry (*Rubus spectabilis*), Himalayan blackberry (*Rubus armeniacus*), Pacific ninebark (*Physocarpus capitatus*), black twinberry (*Lonicera involucrata*), red osier dogwood (*Cornus stolonifera*), Nootka rose (*Rosa nutkana*), common lady fern (*Athyrium filix-femina*), deer fern (*Blechnum spicant*), maiden hair fern (*Adiantum pedatum*), cattail (*Typha latifolia*), skunk cabbage (*Lysichitum americanum*), small fruited bulrush (*Scirpus microcarpus*), slough sedge (*Carex obnupta*), water parsley (*Oenanthe sarmentosa*), speedwell (*Veronica scutellata*), buttercup (*Ranunculus repens*), curled dock (*Rumex crispus*), big leaf avens (*Geum macrophyllum*), reed canarygrass (*Phalaris arundinacea*), and reed mannagrass (*Glyceria grandis*). This plant community was identified as hydrophytic in character (i.e. typical of wetlands).

Along the western boundary the project site and adjacent parcel to the west a remnant upland forest community was noted. Observed species included Douglas fir (Pseudotsuga menziesii), Western red cedar (Thuja plicata), Western hemlock (Tsuga heterophylla), red alder (Alnus rubra), big leaf maple (Acer macrophyllum), cherry (Prunus spp.), Himalayan blackberry, evergreen blackberry (Rubus laciniatus), salal (Gaultheria shallon), Oregon grape (Berberis nervosa), holly (Ilex aquifolium), rose (Rosa spp.), Indian plum (Oemleria cerasiformis), Pacific red elderberry (Sambucus racemosa), salmonberry (Rubus spectabilis), Oceanspray (Holodiscus discolor), foam flower (Tiarella trifoliata), sword fern (Polystichum munitum), bracken fern (Pteridium aquilium), nettle (Urtica dioica), bluegrass (Poa spp.), daisy (Bellis perennis), clover (Trifolium spp.), bleeding heart (Dicentra Formosa), and buttercup. This plant community was identified as non-hydrophytic in character (i.e. typical of uplands).

Hydrology

Onsite hydrology appeared to be the result of seasonal stormwater runoff from onsite, seasonal stormwater runoff from adjacent parcels and adjacent public roadways, and onsite soil characteristics. The southern portion (prior fill area) of the project site appeared to drain moderately well and did not exhibit field indicators typically associated with wetland hydrology.

The majority of the project site appeared to drain somewhat poorly to poorly. A portion of a wetland complex within the area dominated the area to the north of the southern prior fill area. As noted during prior assessments this wetland was ditched along the western boundary of the wetland offsite to the northwest. Seasonal hydrology from the wetland then entered a culvert within the Willow Springs apartment complex. This hydrology continued through a series of ditch lines, pipes, and culverts then eventually entered a Pierce County Storm Pond adjacent to 89th Avenue Court East.

Soils

As noted above the project site had been modified by the historic prior placement of fill material in the southern portion of the project site. Within remnant upland areas the soil exhibited a gravelly sandy loam to gravelly loam texture and coloration typical of an Everett soil series. The surface soil typically exhibited a very dark grayish brown (10YR 3/2) coloration and a gravelly sandy loam to gravelly loam texture. The subsoil to a depth of approximately 20 inches also exhibited a dark brown (10YR 3/3) to brown (10YR 4/3) coloration, and gravelly sandy loam to gravelly loam texture. This soil was identified as non-hydric in character.

The soil identified throughout the majority of the project site exhibited a surface soil coloration of very dark grayish brown (10YR 3/2) to black (10YR 2/1). The subsoil varied

from black (10YR 2/1) to dark grayish brown (10YR 4/2) and exhibited prominent redoximorphic features (i.e. depleted matrix and redox concentrations). Oxidized root channels were also very evident. The soil ranged from gravelly loam, silt loam, to muck in texture. The soils within the majority of the project site exhibited field characteristics typical of hydric soil.

Fish and Wildlife

Wildlife species observed or that would be reasonably expected to utilize the habitats provided within or adjacent to the project site would include red tailed hawk (Buteo jamaicensis), American crow (Corvus brachynchos), American robin (Turdus migratorius), black capped chickadee (Parus atricapillus), dark eyed junco (Junco hyemalis), rufous hummingbird (Selasphorus rufus), merlin (Falco columbarius), golden crowned sparrow (Zonotrichia atricapilla), mourning dove (Zenaida macroura), song sparrow (Melospiza melodia), white crowned sparrow (Zonotrichia leucophrys), house sparrow, house finch (Carpodacus mexicanus), starling (Sturnus vulgaris), American goldfinch (Carduelis tristis), purple finch (Carpodacus purpureus), violet green swallow (Tachycineta thallassina), tree swallow (Tachycineta bicolor), red winged blackbird (Agelaius phoenisues), brewer blackbird (Euphagus cyanocephalus), marsh wren (Cistothorus palustirs), great blue heron (Ardea herodias), common mallard (Anas platyrhynchos), Canada goose (Branta canadensis), northern flicker (Colaptes auratus), hairy woodpecker (Picoides villosus), black tailed deer (Odocoileus hemionus), raccoon (Procyon lotor), coyote (Canis latrans), striped skunk (Mephitis mephitis), opossum (Didelphis virginianus), deer mouse (Peromyscus maniculatus), shrew (Sorex spp.), Townsend mole (Scapanus townsendii), voles (Microtus spp.), Norway rat (Rattus norvegicus), bats (Myotis spp.), eastern gray squirrel (Sciurus carolinensis), common garter snake (Thamnophis sirtalis), Pacific treefrog (Hyla regilla), and red legged frog (Rana aurora). The project site was not evaluated for the presence or absences of fish species since all seasonal drainage enters an offsite storm pond that appears to fully infiltrate.

Wildlife Movement Corridors: The project site was within a well urbanized area. As identified by onsite wildlife trials, small and medium sized mammals appeared to be moving throughout vacant parcels generally to the east and southeast of the project site. The project site is also within the general area of the migratory movement of waterfowl and passerine birds.

State Priority Species: Several species identified by the State of Washington as "Priority Species" were observed onsite or potentially may utilize the project site. Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance.

Game Species: "Game species" are regulated by the State of Washington through recreational hunting bag limits, harvest seasons, and harvest area

restrictions. Observed, documented, or reasonably expected "game species" within and adjacent to the project site included black tailed deer, mourning dove, common mallard, and Canada goose.

State Monitored: State Monitored species are native to Washington but require habitat that has limited availability, are indicators of environmental quality, require further assessment, have unresolved taxonomy, may be competing with other species of concern, or have significant popular appeal. Observed, documented, or reasonably expected "State Monitored" species within and adjacent to the project site included great blue heron.

State Candidate: State Candidate species are presently under review by the State of Washington Department of Fish and Wildlife (WDFW) for possible listing as endangered, threatened, or sensitive. No State Candidate species were observed or have been documented to use the habitats associated with the project site.

State Sensitive: State Sensitive species are native to Washington and is vulnerable to declining and is likely to become endangered or threatened throughout a significant portion of its range without cooperative management or removal of threats. No State Sensitive species were observed or have been documented to use the habitats associated with the project site.

State Threatened: State Threatened species means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats. The project site did not appear and has not been documented to provide direct critical habitats for State Listed Threatened species.

State Endangered: State endangered species means any species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state. The project site did not appear and has not been documented to provide direct critical habitats for State Listed Endangered species.

Federally Listed Species: No federally listed endangered or threatened species were observed or have been documented to utilize the habitats provided by the project site. A single, federally listed "species of concern" – bald eagle – has been documented to utilize the habitats generally associated with the area lakes, ponds and the Puyallup River Corridor. However, the project site did not provide critical habitats for this species. This species may occasionally overfly the project site.

CRITICAL AREAS DETERMINATION

WETLANDS

Wetland determination was based on observations of hydrophytic vegetation, hydric soils, and wetland hydrology in accordance with the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010). Based on these methods one (1) wetland area was identified to be associated with a topographic swale that dominated the project site.

WETLAN	D CLASSIFICATION (USFWS)	CITY OF PUYALLUP CATEGORY	WDOE RATING SCORE	WDOE HABITAT SCORE
Α	PFOCd, PEMCd	III	18	5

Wetland A: Wetland A was identified throughout the majority of the project and to extend into adjacent parcels. Wetland A exhibited a mixed forest plant community within the project site. Offsite to the northwest this wetland exhibited an emergent plant community. Seasonal hydrology from the wetland entered a culvert within the Willow Springs apartment complex offsite to the northwest. This hydrology continued through a series of ditch lines, pipes, and culverts then eventually entered a Pierce County Stormwater Infiltration Pond adjacent to 89th Avenue Court East (Figure 8).

Wetland A met the U.S. Fish and Wildlife Service (USFWS) criteria for classification of palustrine, forested, seasonally flooded, ditched (PFOCd); and palustrine, emergent, seasonally flooded, ditched (PEMCd). Wetland A appeared to meet the criteria for designation as a City of Puyallup Category III Wetland and have an associated buffer of 60 feet for a moderate intensity land use. Wetland A achieved a total functions score of 18 points utilizing the Washington State Department of Ecology (WDOE) Wetland Rating Form for Western Washington (Hruby 2014) (Appendix B).

FISH AND WILDLIFE HABITAT AREAS

No areas were identified, or have been documented, with which state or federally designated endangered, threatened, and sensitive species have a primary association. In addition, no lands essential for preserving connections between habitats and open species were identified or previously documented.

The City of Puyallup Category III Wetland identified within the project site appears to meet the designation as a WDFW "priority habitat" and would be subject to the jurisdiction of the State of Washington.

SELECTED DEVELOPMENT ACTION

The Selected Development Action for the project site focuses on the future development of one duplex homesite within the project site (**Parcel 0419095003**). The development of this duplex would be completed without direct adverse impacts to the identified onsite City of Puyallup Category III Wetland or an encroachment into the associated standard wetland buffer (see Site Plan). A 10-foot building setback would also be established between the outer wetland buffer boundary and the proposed duplex.

STANDARD OF CARE

This document has been completed by Habitat Technologies for use by **Mr. David Artz**. Prior to extensive site planning the findings documented in this document should be reviewed and verified by the City of Puyallup. Habitat Technologies has provided professional services that are in accordance with the degree of care and skill generally accepted in the nature of the work accomplished. No other warranties are expressed or implied. Habitat Technologies is not responsible for design costs incurred before this document is approved by the appropriate resource and permitting agencies.

Bryan W. Peck Wetland Biologist

Bryan W. Peck

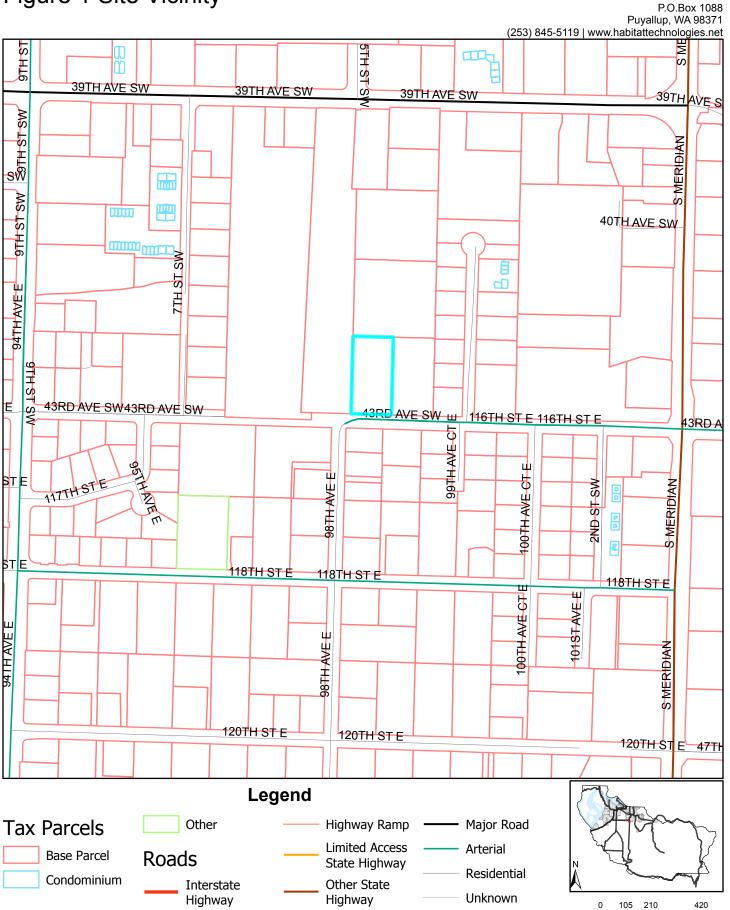
Thomas D. Deming, SPWS Habitat Technologies

Thomas D. Deming

FIGURES

Figure 1 Site Vicinity

Habitat Technologies



1:4,800

Figure 2 NWI Mapping

Habitat Technologies

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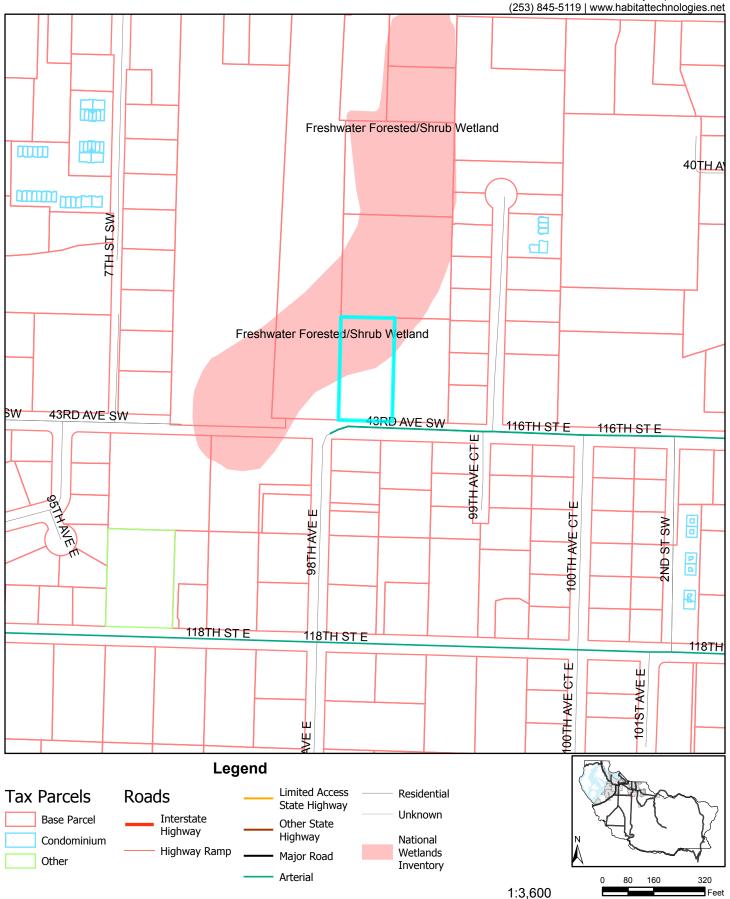


Figure 3 PHS Mapping

Habitat Technologies

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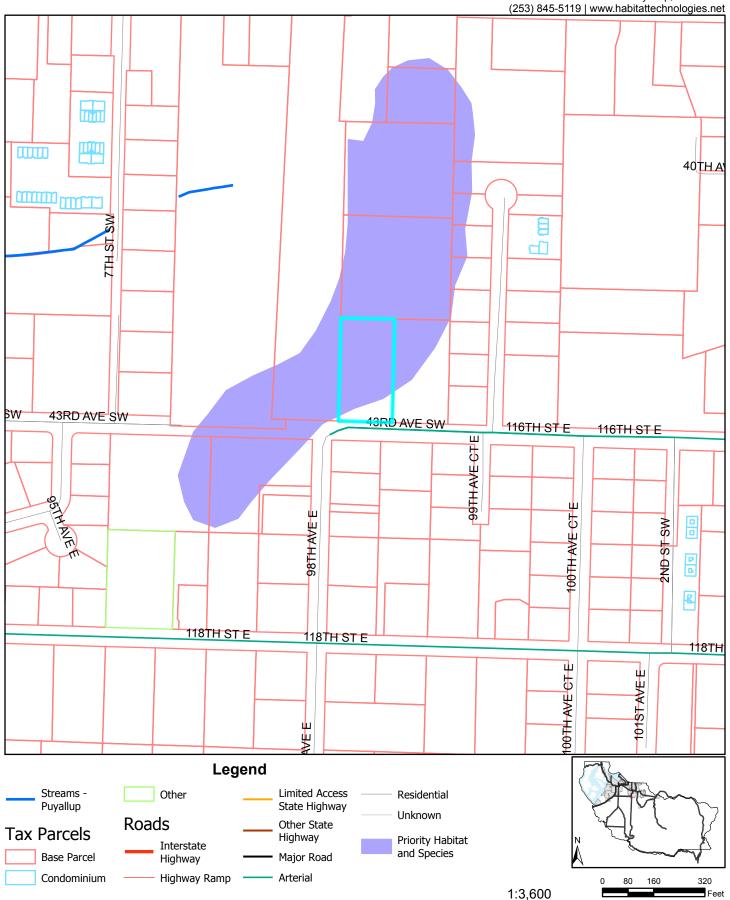
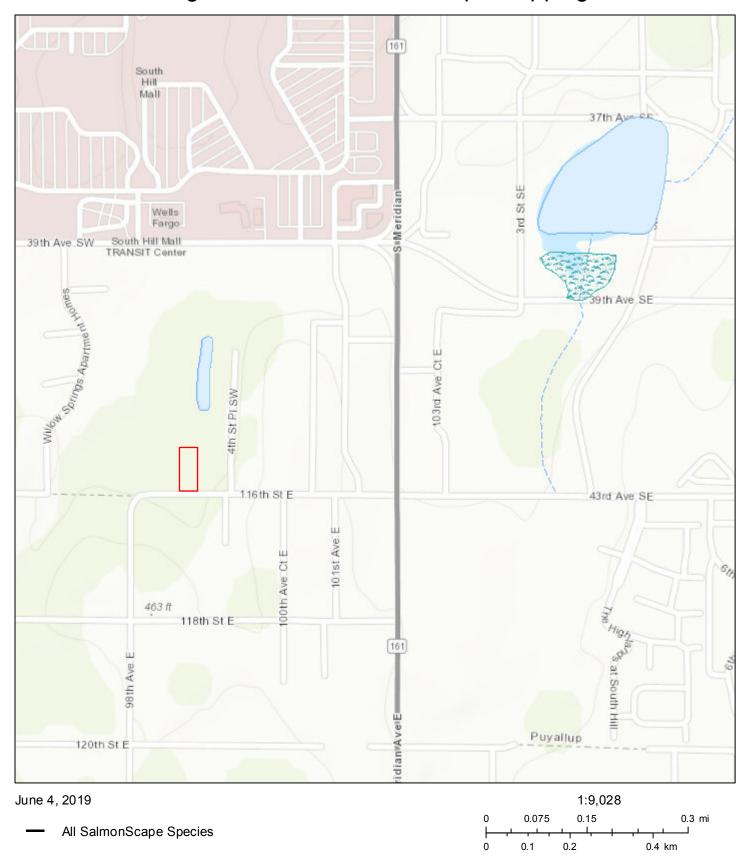


Figure 4 WDFW Salmonscape Mapping

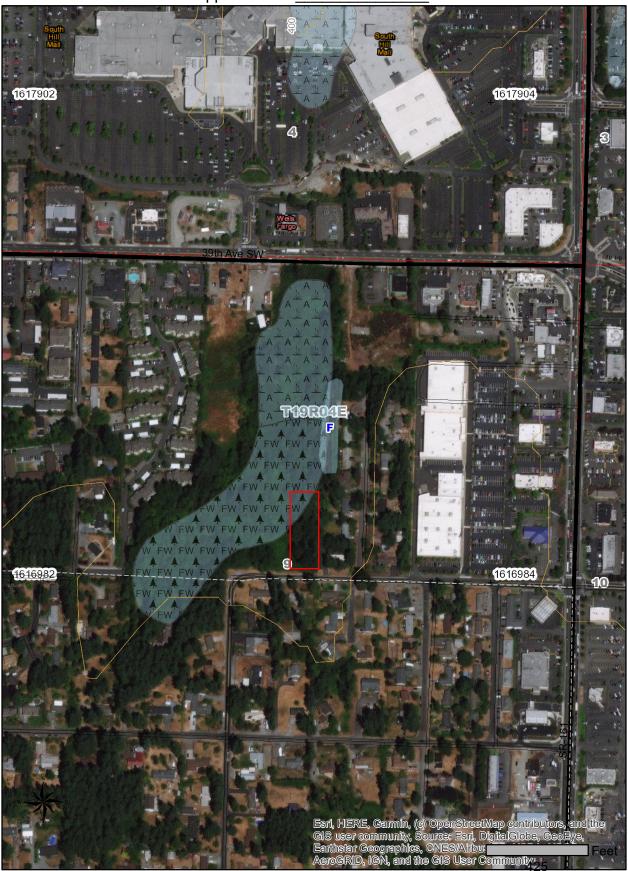


USGS/NHD Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Figure 5 Forest Practice Water Type Map

\$10 T19.0N R04.0E, \$03 T19.0N R04.0E, \$04 T19.0N R04.0E \$09 T19.0N R04.0E

Application #:



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Contour Interval: 40 Feet

Figure 6 City of Puyallup Mapping

Habitat Technologies

Puyallup, WA 98371

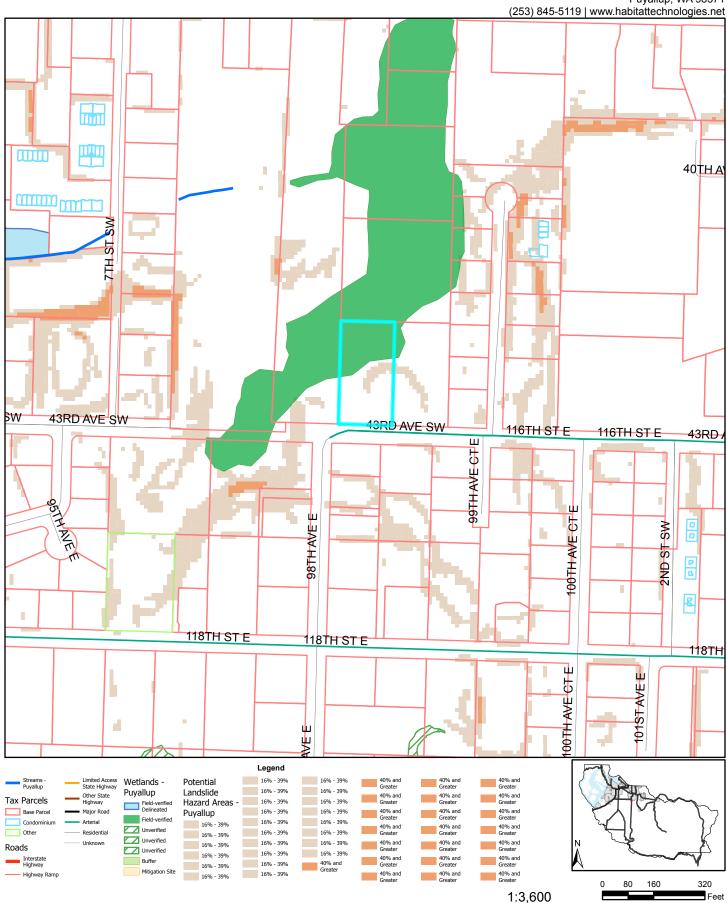


Figure 7 Soils Mapping

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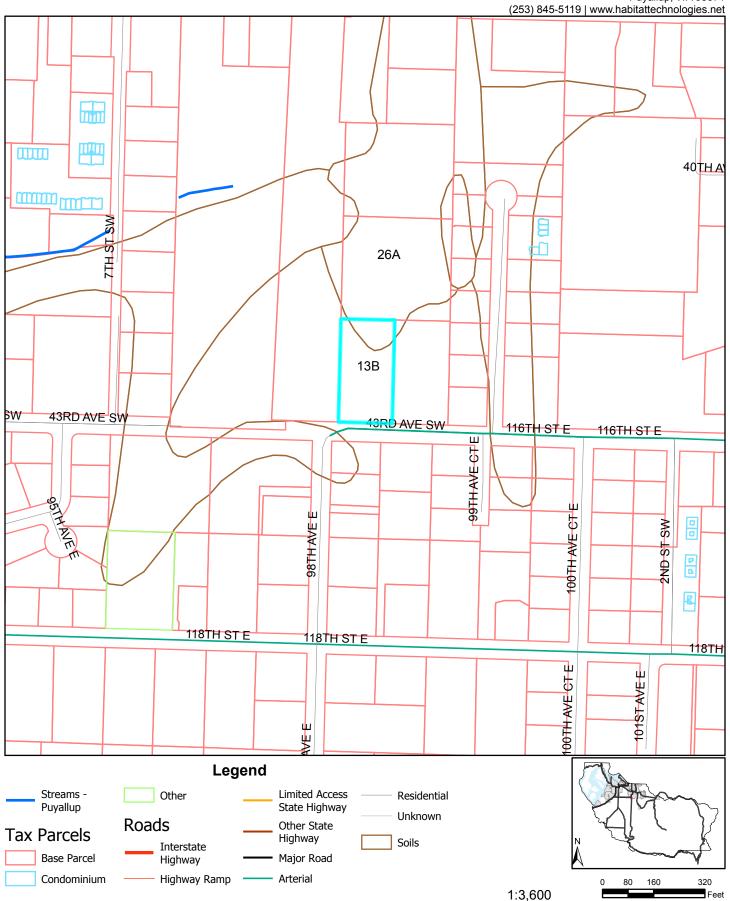
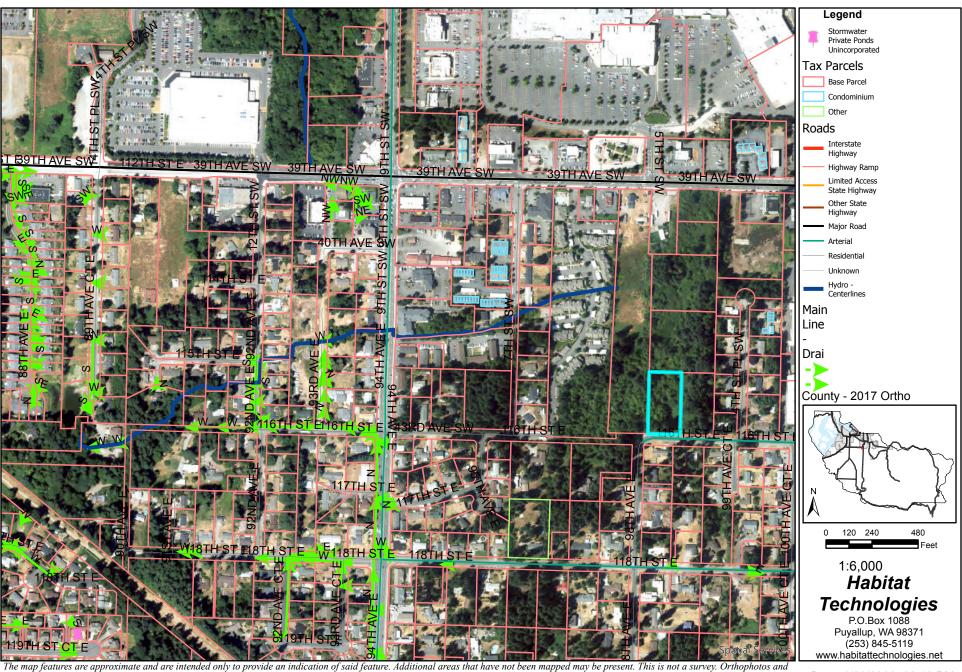


Figure 8 Wetland Outlet



The map features are approximate and are intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. Orthophotos and other data may not align. The County assumes no liability for variations ascertained by actual survey. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. The County makes no warranty of fitness for a particular purpose.

Date: 1/28/2020 03:12 PM

REFERENCE AND BACKGROUND LIST

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Washington State Department of Fish and Wildlife Priority Habitats and Species Maps 2016 http://wdfw.wa.gov/mapping/phs/

Washington State Department of Fish and Wildlife SalmonScape Mapping System, 2016 (for fish presence): http://apps.wdfw.wa.gov/salmonscape/map.html

Washington State Department of Natural Resources FPARS Mapping System, 2016 (for stream typing): http://fortess.wa.gov/dnr/app1/fpars/viewer.htm

APPENDIX A – Representative Field Data

Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-1
Investigator(s): Habitat Technologies					
Landform (hillslope, terrace, etc.):		Local reli	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	•			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
		<u> </u>	<u> </u>		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			ne Sampled		
Wetland Hydrology Present? Yes ⊠ No □		with	in a Wetlar	nd? Yes ⊠ No)
Remarks: Wetland					
VEGETATION – Use scientific names of plant	· c				
VEGETATION - Use scientific flames of plant		Dominant	Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 15ft radius)	% Cover			Number of Dominant Sp	
1. Populus trichocarpai	30			That Are OBL, FACW, o	r FAC: <u>6</u> (A)
2. Alnus rubra		YES		Total Number of Domina	nt
3				Species Across All Strata	a: <u>6</u> (B)
4				Percent of Dominant Spe	ecies
Sapling/Shrub Stratum (Plot size: 15ft radius)	70	= Total C	over	That Are OBL, FACW, o	r FAC: <u>100</u> (A/B)
Lonicera involucrata	30	YES	FAC	Prevalence Index work	sheet:
2. Rubus spectabilis	<u>25</u>	YES	FAC	Total % Cover of:	Multiply by:
3. Spiraea douglasii	15	YES	FACW	OBL species	x 1 =
4					x 2 =
5					x 3 =
Herb Stratum (Plot size: 15ft radius)	<u>70 </u>	= Total C	cover		x 4 =
1. Carex obnupta	90	YES	OBL	· ·	x 5 = (A) (B)
2				Column Totals.	(A) (D)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				Rapid Test for Hydro	· ·
6				☐ Dominance Test is >	
7				Prevalence Index is:	
8					ations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	ar Plants ¹
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explain)
11		= Total C	:over		and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	<u>50</u>	- rotar c	,000	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes	⊠ No □
Remarks:					

Depth	Matrix			Red	dox Features	4	•	_	
(inches)	Color (moist)	%_	<u>Colc</u>	or (moist)	<u>%</u> <u>Ty</u>	ype ¹ L	_OC ²	Texture	<u>Remarks</u>
0-18	10YR 3/1	100						<u>L</u>	
	-							-	
	-							-	
	-								
	-							-	
									
	Concentration, D=D						Sand Gr		² Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to			-)			licators for Problematic Hydric Soils ³ :
Histosol	• •			Sandy Redox					2 cm Muck (A10)
	pipedon (A2) istic (A3)			Stripped Matri	x (S6) Mineral (F1) (e :		D A 4\	_	Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed	, , ,	except ivii	LKA I)		
	d Below Dark Surfa	ace (Δ11)		Depleted Matr				Ш	Other (Explain in Remarks)
	ark Surface (A12)	acc (ATT)		Redox Dark S	` '			3In	dicators of hydrophytic vegetation and
	Mucky Mineral (S1)				Surface (F7)				wetland hydrology must be present,
	Gleyed Matrix (S4)			Redox Depres					unless disturbed or problematic.
	Layer (if present)	:							·
Type:				_					
Depth (in	nches):							Hydrid	Soil Present? Yes ⊠ No □
HYDROLC	OGY								
	OGY vdrology Indicator	rs:							
Wetland Hy			uired; ch	eck all that ap	ply)				Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicator		uired; ch	•	ply) ained Leaves (E	B9) (exce	ept MLR		Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicator		uired; ch			B9) (exce	ept MLR		
Wetland Hy Primary Indi Surface	rdrology Indicator icators (minimum o Water (A1) ater Table (A2)		uired; ch		ained Leaves (E	B9) (exce	ept MLR		Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; che	Water-St 1, 2, 4 □ Salt Crus	ained Leaves (E		ept MLR		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi ☐ Surface ☐ High Wa ☐ Saturation ☐ Water M	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; ch	Water-St 1, 2, 4 □ Salt Crus □ Aquatic I	rained Leaves (E 4A, and 4B) st (B11)	13)	ept MLR	RA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hy Primary Indi ☐ Surface ☐ High Wa ☐ Saturation ☐ Water M ☐ Sedimen	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger	cained Leaves (E 4A, and 4B) st (B11) nvertebrates (B	(C1)		RA I	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep	vdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3) vdrks (B1) nt Deposits (B2)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized	cained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (13) (C1) along Livi		ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)		uired; cho	Water-St 1, 2, 4 Salt Crus Aquatic I Hydrogel Oxidized Presence	rained Leaves (B 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a	13) (C1) along Livi on (C4)	ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma	rdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4)		uired; che	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro	i13) (C1) along Livi on (C4) n Tilled Si	ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	vdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one requ		Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in	113) (C1) along Livi on (C4) n Tilled Sonts (D1) (ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Vidraks (B1) ant Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	if one requ	· (B7)	Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir	rained Leaves (B 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction ir or Stressed Plar	113) (C1) along Livi on (C4) n Tilled Sonts (D1) (ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca	if one requ	· (B7)	Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir	rained Leaves (B 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction ir or Stressed Plar	113) (C1) along Livi on (C4) n Tilled Sonts (D1) (ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca	if one requ	· (B7)	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted of	rained Leaves (B 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction ir or Stressed Plar	o13) (C1) along Livi on (C4) n Tilled Sonts (D1) (ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	rdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concarvations:	Il Imagery	r (B7) ce (B8)	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark	(C1) along Livi on (C4) n Tilled Sonts (D1) (ing Roo	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concarvations: ter Present?	Il Imagery	e (B7) ce (B8) No 🖂	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan explain in Remark es):	(C1) along Livi on (C4) n Tilled Sonts (D1) (ing Root	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indi Surface High Wa Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca ivations: ter Present? Present? ipillary fringe)	Il Imagery ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) ce (B8) No ⊠ No □	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark es):	i13) (C1) along Livi on (C4) n Tilled Si nts (D1) (ks)	ing Rooi oils (C6) LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Algal Ma Iron Dep Surface Inundati Sparsely Field Obset Surface Water Table Saturation F (includes ca	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concarvations: ter Present?	Il Imagery ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) ce (B8) No ⊠ No □	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark es):	i13) (C1) along Livi on (C4) n Tilled Si nts (D1) (ks)	ing Rooi oils (C6) LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Algal Ma Iron Dep Surface Inundati Sparsely Field Obset Surface Water Table Saturation F (includes ca	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca ivations: ter Present? Present? ipillary fringe)	Il Imagery ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) ce (B8) No ⊠ No □	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark es):	i13) (C1) along Livi on (C4) n Tilled Si nts (D1) (ks)	ing Rooi oils (C6) LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturati Sedimer Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca ivations: ter Present? Present? ipillary fringe)	Il Imagery ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) ce (B8) No ⊠ No □	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark es):	i13) (C1) along Livi on (C4) n Tilled Si nts (D1) (ks)	ing Rooi oils (C6) LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca ivations: ter Present? Present? ipillary fringe)	Il Imagery ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) ce (B8) No ⊠ No □	Water-St 1, 2, 4 Salt Crus Aquatic I Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	rained Leaves (E 4A, and 4B) st (B11) nvertebrates (B n Sulfide Odor (Rhizospheres a e of Reduced Iro ron Reduction in or Stressed Plan xplain in Remark es):	i13) (C1) along Livi on (C4) n Tilled Si nts (D1) (ks)	ing Rooi oils (C6) LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-2
Investigator(s): Habitat Technologies					
Landform (hillslope, terrace, etc.):		Local relie	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
	Silowing		g point it		mportant reatures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒		Is th	e Sampled	Area	
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ No	o 🛛
Remarks: Upland					
VEGETATION - Use scientific names of plant	ts.				
Tree Stratum (Plot size: 15ft radius)	Absolute % Cover			Dominance Test works	
1. Pseudotsuga menziesii	40			Number of Dominant Sp That Are OBL, FACW, o	
2. Alnus rubra		YES		Total Number of Domina	
3				Species Across All Strate	
4				Percent of Dominant Spe	ecies
Sapling/Shrub Stratum (Plot size: 15ft radius)	60	= Total C	over		r FAC: <u>33</u> (A/B)
1. Alnus rubra	40	YES	FACU	Prevalence Index work	sheet:
Gaultheria shallon				Total % Cover of:	Multiply by:
3. Rubus spectabilis					x 1 =
4				FACW species	x 2 =
5					x 3 =
Horb Stratum (Diet size, 15ft radius)	80	= Total C	over		x 4 =
Herb Stratum (Plot size: 15ft radius) 1. Polystichum munitum	30	VES	FΔCII		x 5 =
2				Column Totals:	(A) (B)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				☐ Rapid Test for Hydro	
6				Dominance Test is >	
7				Prevalence Index is	
8					tations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	, ,
10				☐ Problematic Hydroph	nytic Vegetation1 (Explain)
11		= Total C	over		and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	30	= Total C	ovei	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	- -
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes	□ No 🗵
Remarks:				I .	

Donth	Motrix			Daday Faatura	_			sence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Colo	Redox Feature or (moist) %		Loc ²	Textur	re Remarks
0-10	10YR 3/2	100					GSL	
10-18	10YR-4/3	<u>100</u>					GSL	
	-			<u> </u>				
								•
				uced Matrix, CS=Covered s, unless otherwise not		ed Sand G		² Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils ³ :
☐ Histosol		icabic to		Sandy Redox (S5)	.,			2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix (S6)				Red Parent Material (TF2)
☐ Black Hi				Loamy Mucky Mineral (F1) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed Matrix (F2)		,		_
☐ Depleted	d Below Dark Surfa	ice (A11)		Depleted Matrix (F3)				
☐ Thick Da	ark Surface (A12)			Redox Dark Surface (F6)			³ lı	ndicators of hydrophytic vegetation and
-	lucky Mineral (S1)			Depleted Dark Surface (F	7)			wetland hydrology must be present,
	Bleyed Matrix (S4)			Redox Depressions (F8)			1	unless disturbed or problematic.
	Layer (if present)							
	 nches):						1	
Deptii (iii				· 			Hydri	ic Soil Present? Yes ☐ No ☒
	ACV							
		s:						
Wetland Hy	drology Indicator		uired: ch	eck all that apply)				Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicator		uired; ch	111	es (B9) (e	xcept MLF	 RΔ	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MI RA 1.2)
Wetland Hy Primary Indi Surface	rdrology Indicator cators (minimum o Water (A1)		uired; ch	☐ Water-Stained Leave		xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2, □
Wetland Hy Primary Indi Surface High Wa	rdrology Indicator cators (minimum o Water (A1) ater Table (A2)		uired; ch	☐ Water-Stained Leave 1, 2, 4A, and 4B		xcept MLF	RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturatio	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Stained Leave 1, 2, 4A, and 4B ☐ Salt Crust (B11))	xcept MLF	RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)☐ Drainage Patterns (B10)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates	s (B13)	xcept MLF	RA	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		uired; ch	☐ Water-Stained Leave 1, 2, 4A, and 4B ☐ Salt Crust (B11)	s (B13) lor (C1)			✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)☐ Drainage Patterns (B10)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct	s (B13) lor (C1) res along	Living Roo		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher	s (B13) lor (C1) es along d Iron (C4	Living Roo 1)	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	s (B13) lor (C1) es along d Iron (C4 on in Tille	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	f one requ		Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) lor (C1) res along d Iron (C ² on in Tiller Plants (D	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stressed	s (B13) lor (C1) res along d Iron (C ² on in Tiller Plants (D	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stressed	s (B13) lor (C1) res along d Iron (C ² on in Tiller Plants (D	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dep Surface Inundatio Sparsely	rdrology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) ater Bello (B2) on (B3) at or Crust (B4) on Visible on Aeria of Vegetated Concarvations:	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stressed	s (B13) lor (C1) res along d Iron (C ² on in Tiller Plants (D marks)	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) ater Table (B2) on (B3) at or Crust (B4) on Visible on Aeria of Vegetated Concarvations:	f one requ I Imagery ve Surfac	(B7) se (B8)	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stressed Other (Explain in Re	s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roo 1) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) darks (B1) on Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concarvations: ter Present?	I Imagery ve Surfac	(B7) te (B8) No 🖂	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reduction Reduction Reduction Reduction Reduction Standard Reduction Redu	s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A)	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Iron Dep Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reserved) Depth (inches): Depth (inches):	s (B13) lor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Iron Dep Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizosphel Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reduction of the Company of	s (B13) lor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3) S))	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)
Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reserved) Depth (inches): Depth (inches):	s (B13) lor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Water Mater Table Saturation Pater Mater Mater Table Saturation Pater Mater	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reserved) Depth (inches): Depth (inches):	s (B13) lor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Water Mater Table Saturation Pater Mater Mater Table Saturation Pater Mater	rdrology Indicator cators (minimum of Water (A1)) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stressed Other (Explain in Reserved) Depth (inches): Depth (inches):	s (B13) lor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3) S))	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)

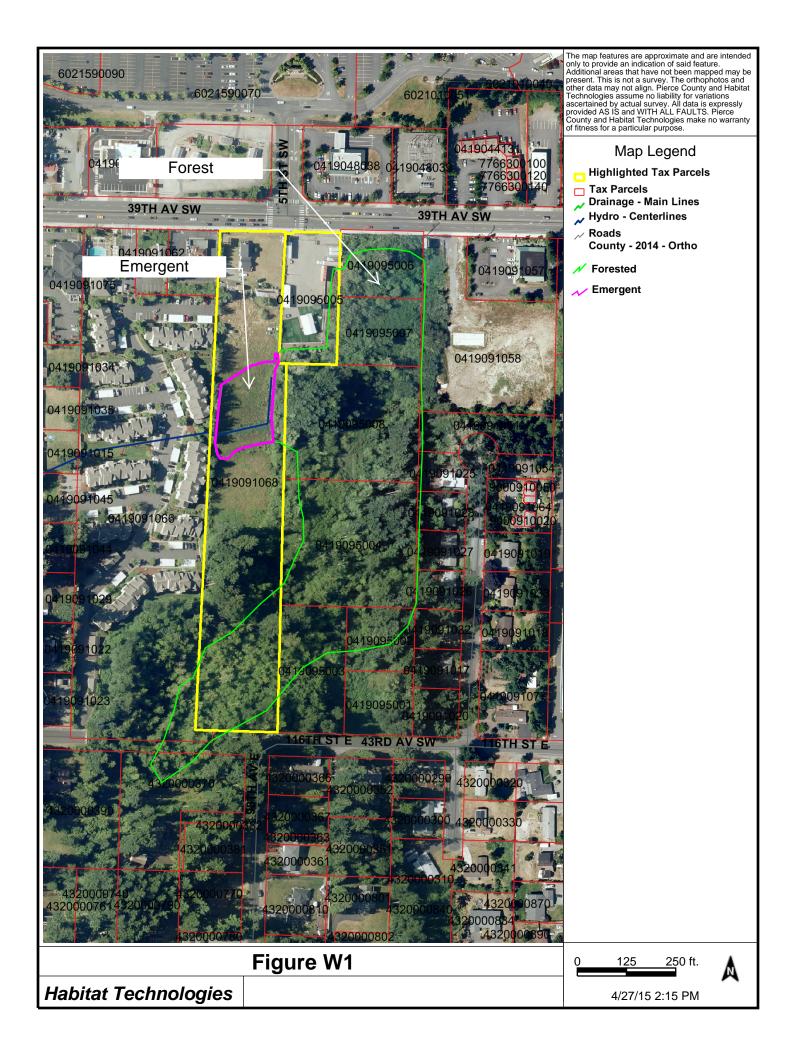
Project/Site: Artz Parcels		City/County	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-3
Investigator(s): Habitat Technologies			Section, To	ownship, Range: <u>S09, T19</u> ,	R04E
Landform (hillslope, terrace, etc.):		Local relie	ef (concave,	, convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pres	ent? Ves⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present?					
Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒			e Sampled		_
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ N	⊃ ⊠
Remarks: Upland		II.			
VEGETATION – Use scientific names of plan	ts.				
Troe Stratum (Diet cize: 15ft radius)	Absolute			Dominance Test works	heet:
Tree Stratum (Plot size: 15ft radius) 1. Pseudotsuga menziesii		Species? YES		Number of Dominant Sp That Are OBL, FACW, o	
2					
3				Total Number of Domina Species Across All Strat	
4					
		= Total C	over	Percent of Dominant Spart Are OBL, FACW, o	ecies r FAC: <u>17</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15ft radius)					
1. Acer circinatum	30	YES	FAC	Prevalence Index work	
2. Coryus etalosifora		YES YES	FACU FACU		Multiply by: x 1 =
Cornus stolonifera Kalmia latifolia		YES	FACU FACU		x 2 =
5	10	ILO	IACO		x 3 =
	100	= Total C	over		x 4 =
Herb Stratum (Plot size: 15ft radius)					x 5 =
1. Hedera Helix		YES		Column Totals:	(A) (B)
2				Dravalance Index	D/A
3				Hydrophytic Vegetation	= B/A =
4				Rapid Test for Hydro	
5				Dominance Test is >	
6 7				☐ Prevalence Index is	
8.				☐ Morphological Adapt	tations ¹ (Provide supporting
9					or on a separate sheet)
10				☐ Wetland Non-Vascu	
11.				_ , ,	nytic Vegetation ¹ (Explain)
		= Total C		be present, unless distu	and wetland hydrology must rbed or problematic.
Woody Vine Stratum (Plot size: 15ft radius)					
1 2		· ——		Hydrophytic	
		= Total C	over	Vegetation Present? Yes	□ No ⊠
% Bare Ground in Herb Stratum <u>0</u>					_ _
Remarks:					

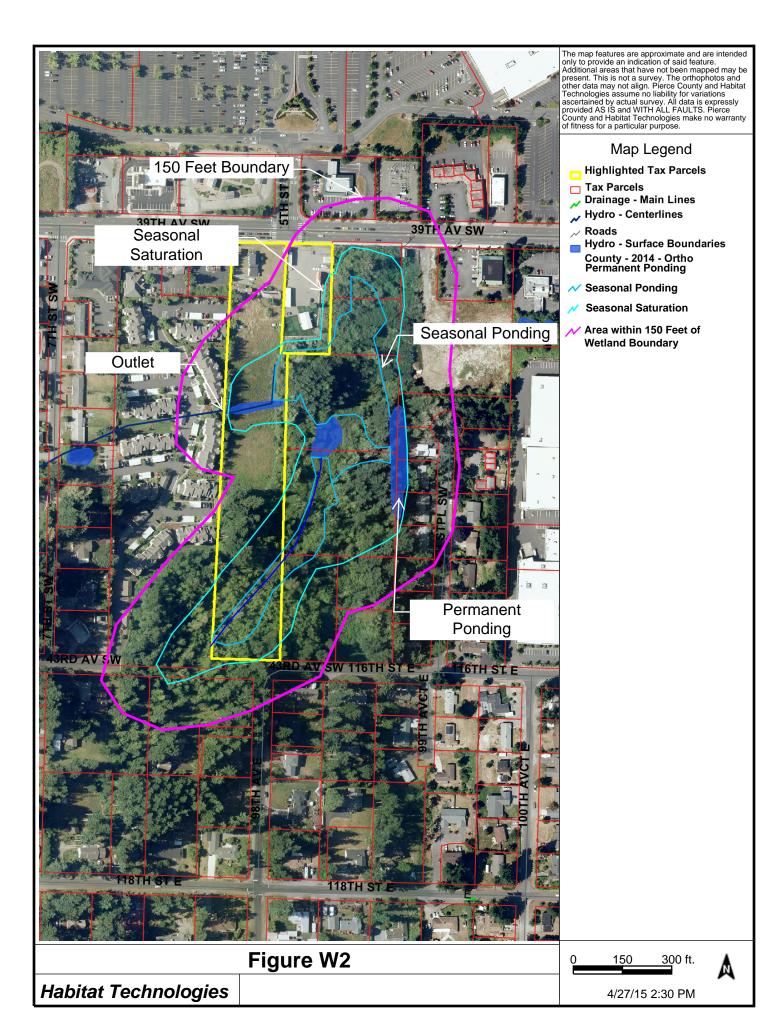
Profile Desc	cription: (Describ	e to the o	depth ne	eeded to docui	ment the indicat	or or confir	m the al	sence	e of indicators.)
Depth	Matrix			Redo	x Features	1 . 2			
(inches)	Color (moist)	%	Colo	or (moist)	<u>%</u> Type	Loc ²	Textu	re	<u>Remarks</u>
0-18	10YR 4/3	100					GSL		
			_						
-			_				-		·
·			_				-		
-			_				-		·
									· ———
	oncentration, D=De					ated Sand G			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appli	cable to	all LRR	s, unless othe	rwise noted.)		I.	ndicate	ors for Problematic Hydric Soils ³ :
☐ Histosol				Sandy Redox (S					m Muck (A10)
	ipedon (A2)			Stripped Matrix	` '				Parent Material (TF2)
☐ Black His	` '				/lineral (F1) (exc	ept MLRA 1)	_		y Shallow Dark Surface (TF12)
	n Sulfide (A4)	(0.4.4)		Loamy Gleyed I			L	_ Oth	er (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix			3		
	rk Surface (A12) lucky Mineral (S1)			Redox Dark Sur Depleted Dark S	, ,		· ·		ors of hydrophytic vegetation and and and bydrology must be present,
	leyed Matrix (S4)			Redox Depress	, ,				ss disturbed or problematic.
	Layer (if present):			течох Бергезз	10113 (1 0)			urne	as disturbed of problematic.
Type:									
, ,	ches):						المعادلا	da Cal	I Present? Yes □ No ⊠
. ,				•			пуц	10 301	Triesent? Tes No
Remarks:									
HYDROLO	GY								
	drology Indicators								
_	cators (minimum of		irod: ob	ook all that appl	, A)			8000	andary Indicators (2 or more required)
		one requ	iiieu, crii			/ NAI			<u> </u>
	Water (A1)				ned Leaves (B9)	(except IVIL	.KA	□ v	Vater-Stained Leaves (B9) (MLRA 1, 2,
_	ter Table (A2)				A, and 4B)				4A, and 4B)
☐ Saturation	, ,			☐ Salt Crust	` ,				Orainage Patterns (B10)
☐ Water M	` ,				vertebrates (B13)				Ory-Season Water Table (C2)
	t Deposits (B2)				Sulfide Odor (C1		. (00)	_	saturation Visible on Aerial Imagery (C9)
· ·	osits (B3)				Rhizospheres alo		ots (C3)		Geomorphic Position (D2)
	t or Crust (B4)				of Reduced Iron		-		Shallow Aquitard (D3)
-	osits (B5)				n Reduction in Ti				AC-Neutral Test (D5)
	Soil Cracks (B6)		(D.T)		Stressed Plants		A)		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial			☐ Other (Exp	lain in Remarks)			L ⊦	rost-Heave Hummocks (D7)
	Vegetated Concav	e Surfac	e (B8)						
Field Obser		_	_						
Surface Wat	er Present?	Yes 🗌	No 🛚	Depth (inches	s):				
Water Table	Present?	Yes 🗌	No 🖾	Depth (inches	s):	_			
Saturation P		Yes 🗌	No 🛛	Depth (inches	s):	_ Wet	tland Hy	drolog	yy Present? Yes □ No ⊠
(includes cap	oillary fringe) corded Data (strea	m danac	monitor	ing well porial	nhotos provious	inenections	if avail	ahla.	
Pescine Ne	corded Data (Stied	yauye,	monitol	my wen, aenal	priotos, previous	opecii0118)	, 11 availe	ADIG.	
D									
Remarks:									

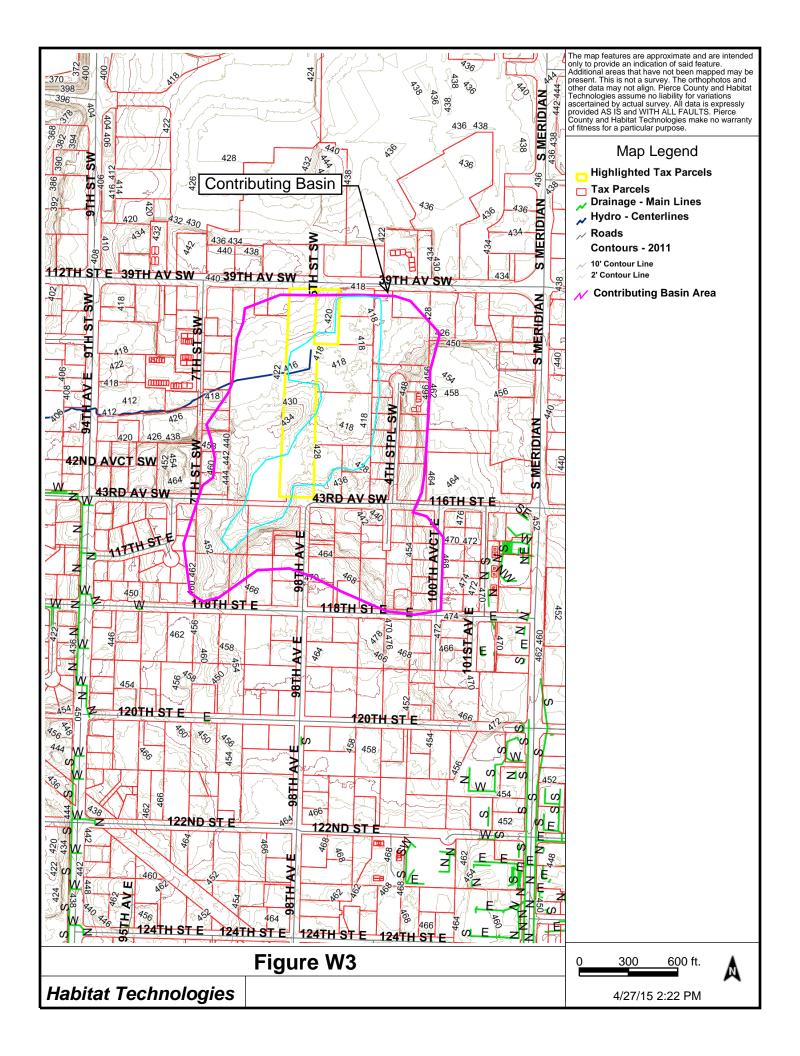
Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-6
Investigator(s): Habitat Technologies			Section, To	ownship, Range: <u>S09, T19,</u>	R04E
Landform (hillslope, terrace, etc.):		Local reli	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A	Lat:			Long:	Datum:
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	•			ormal Circumstances" pres	ent? Yes⊠ No □
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS - Attach site map					
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ⊠ No □			ne Sampled		
Wetland Hydrology Present? Yes ⊠ No □		with	nin a Wetlar	nd? Yes ⊠ No) [
Remarks: Wetland		•			
VEGETATION – Use scientific names of plant	ts.				
	Absolute		t Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 15ft radius) 1. i	% Cover			Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	int
3				Species Across All Strata	a: <u>4</u> (B)
4				Percent of Dominant Spe	
Sapling/Shrub Stratum (Plot size: 15ft radius)	0	= Total C	Cover	That Are OBL, FACW, o	r FAC: <u>75</u> (A/B)
1. Cornus stolonifera	100	YES	FACW	Prevalence Index work	sheet:
2. Rubus spectabilis	10	YES	FAC+	Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4					x 2 =
5					x 3 =
Herb Stratum (Plot size: 15ft radius)	110	= Total C	Cover		x 4 =
1. Athyrium filix-femina	5	YES	FAC		x 5 = (A) (B)
Lysichitum americanum				Column rotals.	(A) (D)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				Rapid Test for Hydro	· ·
6				☐ Dominance Test is >	
7				Prevalence Index is:	
8					ations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	, ,
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explain)
11	<u>25</u>				and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	25	= Total C	ovei	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	M Na 🗆
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes	⊠ No □
Remarks:				1	

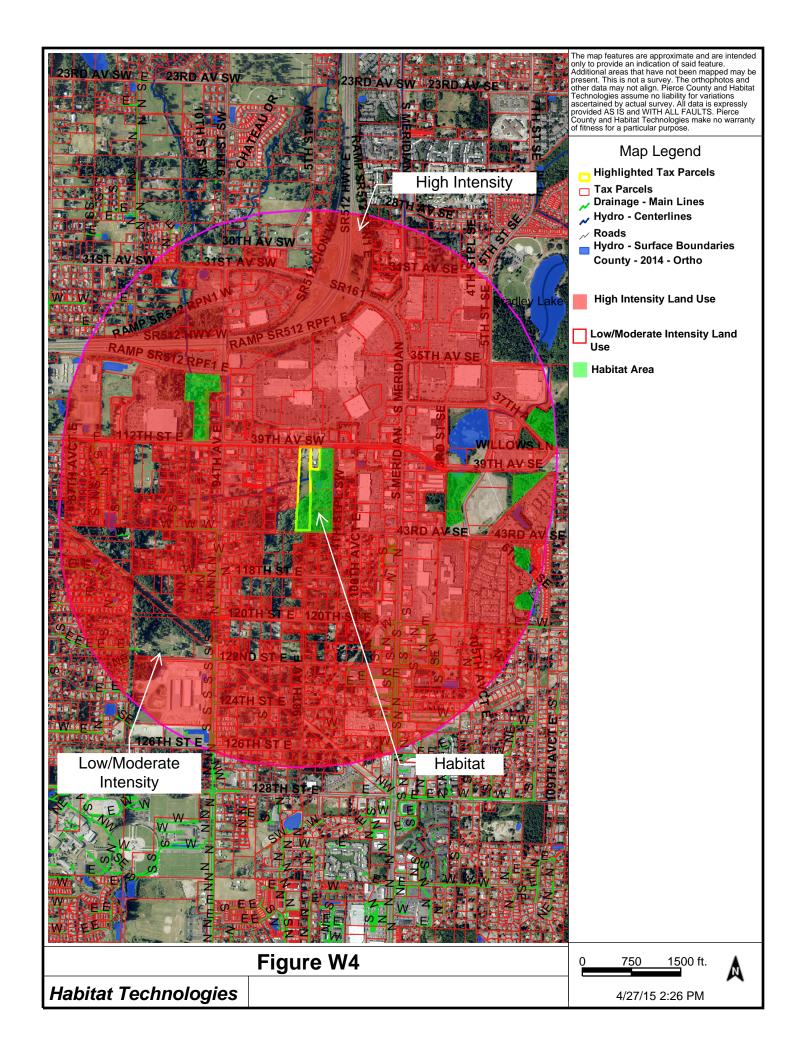
Depth (inches)	Matrix Color (moist)	%	Colo	r (moist)	lox Features % Tvp	e ¹ Loc ²	Textu	reRemarks
0-20	10YR 2/1							
0-20	1011(2/1	100					OIL	
			_					
								
					<u> </u>			
					<u> </u>			
	oncentration, D=D					oated Sand G		² Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to						ndicators for Problematic Hydric Soils ³ :
☐ Histosol	, ,			Sandy Redox				2 cm Muck (A10)
☐ Histic Ep☐ Black Hi	oipedon (A2)			Stripped Matri	x (S6) Mineral (F1) (exc	ent MI RA 1)		Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed		ept wickA i/		Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matr	, ,		_	Care (=::prain in resinance)
	ark Surface (A12)	, ,		Redox Dark S			3	ndicators of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	. ,			wetland hydrology must be present,
	Sleyed Matrix (S4)			Redox Depres	sions (F8)		1	unless disturbed or problematic.
	Layer (if present)							
	ches):							
				•			Hydr	ic Soil Present? Yes 🗵 No 🗌
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicator	'S:						
•	cators (minimum o		iired: ch	eck all that an	oly)			Secondary Indicators (2 or more required)
☐ Surface		1 0110 1041	<u> </u>		ained Leaves (B9) (except MI I	RΔ	
_	ater Table (A2)			_	4A, and 4B)	(cxcept with	117	
☐ Saturation								Water-Stained Leaves (B9) (MLRA 1, 2,
_					-			4A, and 4B)
	` '			☐ Salt Crus	t (B11)	3)		4A, and 4B) ☐ Drainage Patterns (B10)
	larks (B1)			Salt Crus	t (B11) nvertebrates (B13			4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2)
☐ Sedimer	larks (B1) nt Deposits (B2)			☐ Salt Crus ☐ Aquatic II ☐ Hydroger	t (B11) nvertebrates (B13 n Sulfide Odor (C	1)	ots (C3)	4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9)
☐ Sedimer☐ Drift Dep	larks (B1) nt Deposits (B2) posits (B3)			☐ Salt Crus ☐ Aquatic II ☐ Hydroger ☐ Oxidized	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald	1) ong Living Roc	ots (C3)	4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2)
☐ Sedimer☐ Drift Dep☐ Algal Ma	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)			Salt Crus Aquatic Ii Hydroger Oxidized Presence	t (B11) nvertebrates (B13 n Sulfide Odor (C	1) ong Living Roo (C4)		4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3)
☐ Sedimer☐ Drift Dep☐ Algal Ma☐ Iron Dep	larks (B1) nt Deposits (B2) posits (B3)			Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron	1) ong Living Roo (C4) Filled Soils (C6	6)	4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ıl Imagery	(B7)	Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald of Reduced Iron on Reduction in T	1) ong Living Roo (C4) Filled Soils (C6 s (D1) (LRR A	6)	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundation	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	0,	` '	Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor	1) ong Living Roo (C4) Filled Soils (C6 s (D1) (LRR A	6)	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundation	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B5) Int or Crust (B6) Int or Crust (B6) Int or Crust (B6) Int or Crust (B6) Int or Crust (B1) Int or Crust (B1) Int or Crust (B2) Int or Crust (B4) I	0,	` '	Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor	1) ong Living Roo (C4) Filled Soils (C6 s (D1) (LRR A	6)	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)
Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca	0,	` '	Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor	ong Living Roo (C4) Filled Soils (C6 s (D1) (LRR A	6)	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)
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Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wat	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B4) Int or Crust (B4) Int or Crust (B6) I	Yes	e (B8)	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald t of Reduced Iron on Reduction in Tor Stressed Plants (plain in Remarks (pes):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	5) .)	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundatio ☐ Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	larks (B1) Int Deposits (B2) Dosits (B3) Int or Crust (B4) Dosits (B5) Soil Cracks (B6) Int or Visible on Aeria Int or Vegetated Concar Intervations: Iter Present?	Yes Yes Yes Yes Yes Yes	No 🖂 No 🗆	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor Stressed Plants explain in Remarks ess): ess):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	land Hy	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundatio ☐ Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	larks (B1) Int Deposits (B2) Dosits (B3) Int or Crust (B4) Dosits (B5) Soil Cracks (B6) Int or Visible on Aeria Int or Vegetated Concar Intervations: Iter Present? Iter Present?	Yes Yes Yes Yes Yes Yes	No 🖂 No 🗆	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor Stressed Plants explain in Remarks ess): ess):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	land Hy	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundatic ☐ Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	larks (B1) Int Deposits (B2) Dosits (B3) Int or Crust (B4) Dosits (B5) Soil Cracks (B6) Int or Visible on Aeria Int or Vegetated Concar Intervations: Iter Present?	Yes Yes Yes Yes Yes Yes	No 🖂 No 🗆	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor Stressed Plants explain in Remarks ess): ess):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	land Hy	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)
☐ Sedimer ☐ Drift Dep ☐ Algal Ma ☐ Iron Dep ☐ Surface ☐ Inundatio ☐ Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	larks (B1) Int Deposits (B2) Dosits (B3) Int or Crust (B4) Dosits (B5) Soil Cracks (B6) Int or Visible on Aeria Int or Vegetated Concar Intervations: Iter Present?	Yes Yes Yes Yes Yes Yes	No 🖂 No 🗆	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor Stressed Plants explain in Remarks ess): ess):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	land Hy	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)
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☐ Sedimer☐ Drift Dep☐ Algal Ma☐ Iron Dep☐ Surface☐ Inundatic☐ Sparsely Field Obser Surface Water Table Saturation P☐ (includes ca Describe Ref	larks (B1) Int Deposits (B2) Dosits (B3) Int or Crust (B4) Dosits (B5) Soil Cracks (B6) Int or Visible on Aeria Int or Vegetated Concar Intervations: Iter Present?	Yes Yes Yes Yes Yes Yes	No 🖂 No 🗆	Salt Crus Aquatic II Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	t (B11) nvertebrates (B13 n Sulfide Odor (C Rhizospheres ald e of Reduced Iron on Reduction in Tor Stressed Plants explain in Remarks ess): ess):	ong Living Roc (C4) Filled Soils (C6 is (D1) (LRR Ais)	land Hy	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)

APPENDIX B – Wetland Rating Worksheet



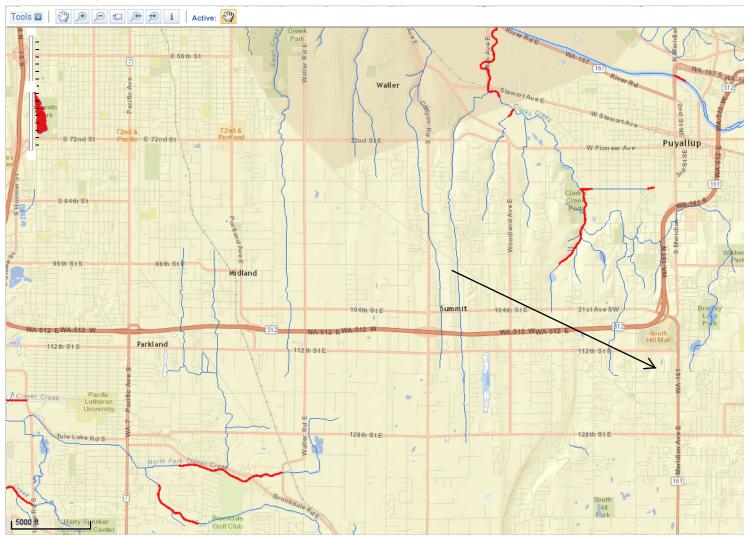








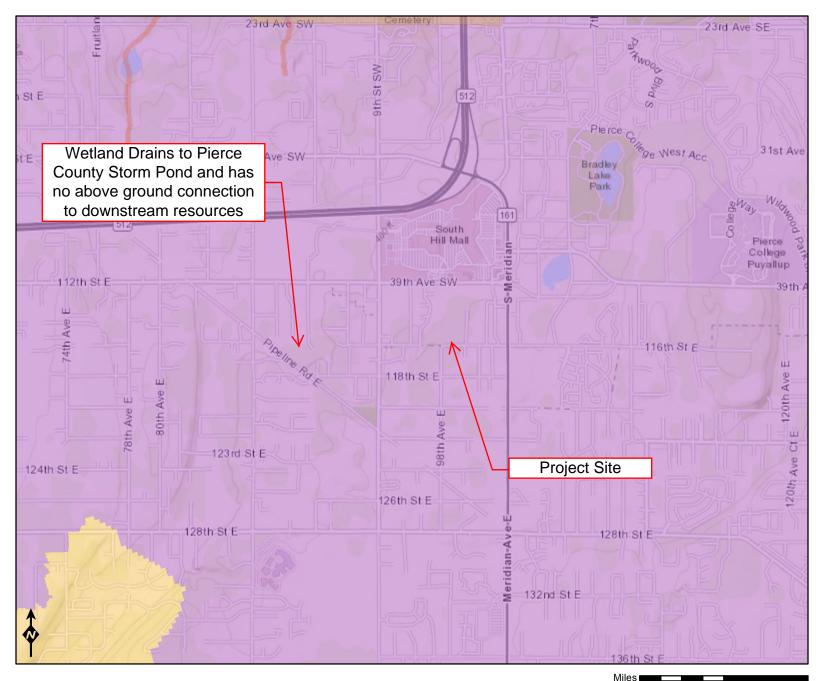
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Figure W5

Figure W6



Assessed Waters/Sediment

Water

- Category 5 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 303d
- ZZZ Category 4C
- **ZZZ** Category 4B
- **Category 4A**
- Category 2
- ZZZ Category 1

WQ Improvement Projects

Approved

0.25

0.5

In Development



RATING SUMMARY – Western Washington

Name of wetland (or ID #):W	etland A	Date of site visit: 27 APR 201			
Rated by Habitat Technolog	gies Trained by Ecology	?x YesNo Date of training 2014			
HGM Class used for rating De	epressional Wetland has	multiple HGM classes?Y _xN			
NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map Pierce County GIS					
OVERALL WETLAND CATE	GORY 3 (based on functi	ions_ x _ or special characteristics)			

1. Category of wetland based on FUNCTIONS

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

FUNCTION		nprov ter Q	ing uality	Ну	/drolo	gic		Habitat	
				(Circle t	he ap	propr	iate ratings	
Site Potential	Н	М	L	Н	M	L	Н	M L]
Landscape Potential	Н	М	L	H	М	L	Н	M L	
Value	Н	М	L	Н	М	L	Н	M L	TOTAL
Score Based on Ratings		6			7			5	18

Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L 7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L 5 = M,M,L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

<u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	W1
Hydroperiods	D 1.4, H 1.2	W2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	W2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	W2
Map of the contributing basin	D 4.3, D 5.3	W3
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	W4
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	W5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	W6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	Λ
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	N/A
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	\forall

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	\wedge
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	N/A
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	Λ
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	N/A
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	V

HGM Classification of Wetlands in Western Washington

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

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

 Are the water levels in the entire unit usually controlled by tide 	s excent during flo	ากสร?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES - The wetland class is Flats

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - __The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 - __At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - ___The wetland is on a slope (*slope can be very gradual*),
 - ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 - ___The water leaves the wetland **without being impounded**.

NO – go to 5

YES - The wetland class is **Slope**

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - ___The overbank flooding occurs at least once every 2 years.

Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7

YES - The wetland class is Depressional

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	2
points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland points = 2 points = 0	2
Total for D 1 Add the points in the boxes above	7
Rating of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first po	ige
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 or 4 = H1 or 2 = M0 = L Record the rating on the file	rst page
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	0
Rating of Value If score is:2-4 = H1 = Mx_0 = L Record the rating on the first page	-

<u>DEPRESSIONAL AND FLATS WETLANDS</u> Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradati	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands	
with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin</i>	
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 Entire wetland is in the Flats class points = 5	5
Total for D 4 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H X 6-11 = M0-5 = L Record the rating on the	first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. • Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0 There are no problems with flooding downstream of the wetland.	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	
Yes = 2 No = 0	0
Total for D.6. Add the points in the hoxes above	1

Rating of Value If score is: ___2-4 = H \times ___0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat H 1.0. Does the site have the potential to provide habitat? H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 3 structures: points = 2 **X** Emergent 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 X Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: X The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). x Permanently flooded or inundated 4 or more types present: points = 3 x Seasonally flooded or inundated 3 types present: points = 2 3 Occasionally flooded or inundated 2 types present: points = 1 X Saturated only 1 type present: points = 0 __Permanently flowing stream or river in, or adjacent to, the wetland X Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name 2 the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 2 5 - 19 species points = 1 points = 0 < 5 species H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Moderate = 2 points Low = 1 point All three diagrams in this row are **HIGH** = 3points

Wetland name or number A	
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). X Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	3
Total for H 1 Add the points in the boxes above	11
Rating of Site Potential If score is:15-18 = H \times 0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat $\underline{0}$ + [(% moderate and low intensity land uses)/2] $\underline{2}$ = $\underline{2}$ % If total accessible habitat is: > $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon c 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. **Calculate:** % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 10 = 10 % 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	0
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity points = 0	(-2)
Total for H 2 Add the points in the boxes above	(-2)
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L	ne jirst page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated. Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m	1

Site does not meet any of the criteria above Rating of Value If score is: 2 = H X 1 = M 0 = L

Record the rating on the first page

points = 0

WDFW Priority Habitats

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

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: *NOTE:* This question is independent of the land use between the wetland unit and the priority habitat.

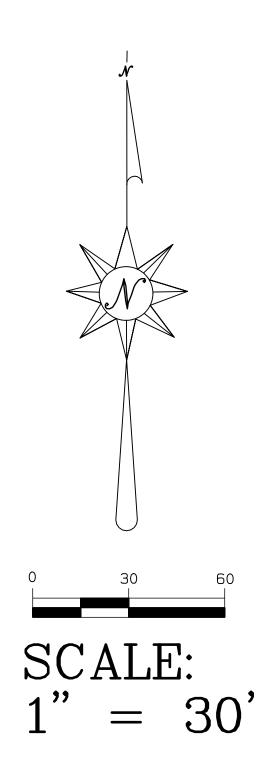
- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of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

APPENDIX C - Site Plan

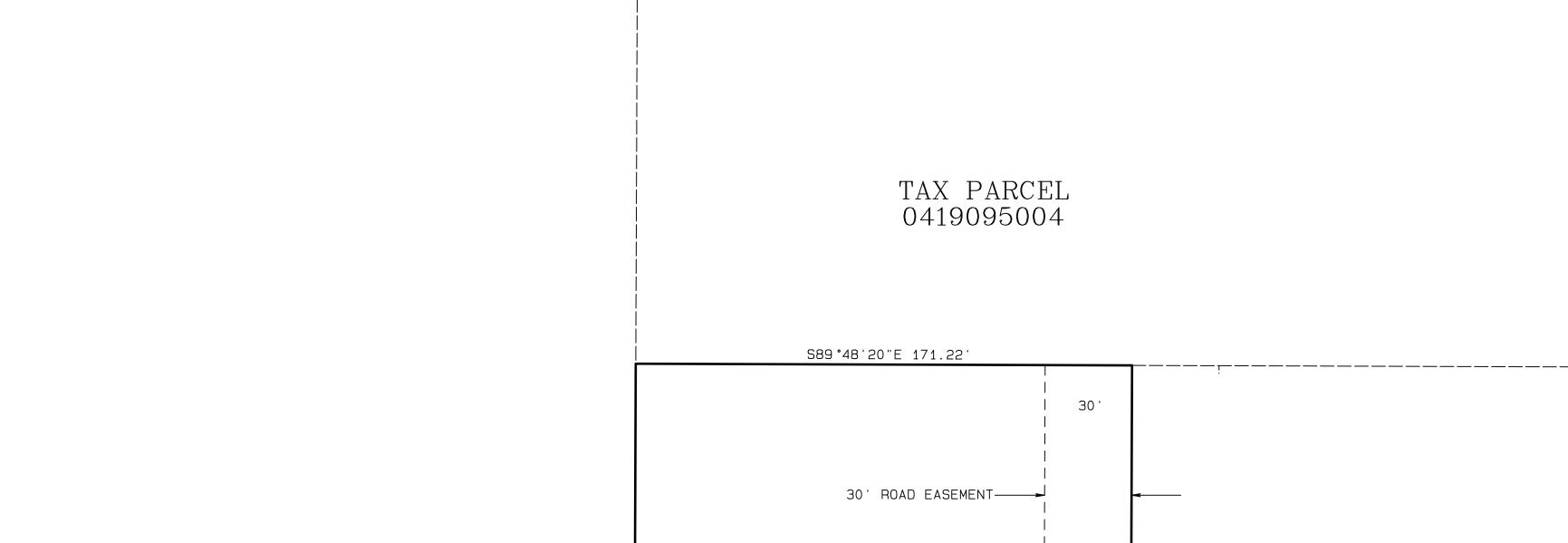
SITE EXHIBIT

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 9, TOWNSHIP 19 N., RANGE 4 E., W.M. PIERCE COUNTY, WASHINGTON



SURVEYOR'S NOTES:

- 1) THE MONUMENT CONTROL SHOWN FOR THIS SITE WAS ACCOMPLISHED BY FIELD TRAVERSE UTILIZING A ONE (1) SECOND THEODOLITE WITH INTEGRAL ELECTRONIC DISTANCE MEASURING METER (GEODIMETER 600) AND REAL TIME KINEMATIC (RTK) / STATIC GLOBAL POSITIONING SYSTEM (GPS). LINEAR AND ANGULAR CLOSURE OF THE TRAVERSES MEET THE STANDARDS OF WAC 332-130-090.
- 2) LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON FIELD MEASUREMENT.
- 3) THIS SURVEY REPRESENTS PHYSICAL IMPROVEMENT CONDITIONS AS THEY EXISTED JULY 29, 2020, THE DATE OF THIS FIELD SURVEY. SURVEY. DURING THE COURSE OF THE SURVEY EARTHWORK WAS BEING CONDUCTED ON-SITE AND THE TOPOGRAPHY WAS CHANGING.
- 4) THIS IS SURVEY WAS MADE WITHOUT THE BENEFIT OF A TITLE REPORT. NO ADDITIONAL RESEARCH HAS BEEN ATTEMPTED.
- 5) IT IS NOT THE INTENT OF THIS SURVEY TO SHOW EASEMENTS OR RESERVATIONS WHICH MAY EFFECT THIS SITE.
- 6) THE PURPOSE OF THIS SURVEY IS TO PROVIDE EXISTING CONDITIONS FOR ENGINEERING DESIGN.
- 7) CONTOURS SHOWN WERE DERIVED FROM THE DIRECT FIELD MEASUREMENTS SHOWN HEREON.
- 8) CONTOURS SHOWN HEREON ARE TO NATIONAL MAPPING STANDARDS, ONE HALF CONTOUR INTERVAL.
- 9) THERE ARE NO DIRECT LIMITATIONS OF USE PER WAC 332-130-145 2G.
- 10) BOUNDARY INFORMATION SHOWN HEREON IS FROM A PRIOR BOUNDARY SURVEY OF THE PARCEL.
- 11) UTILITIES THAT WERE VISIBLE DURING THE COURSE OF THIS SURVEY ARE SHOWN AND REFLECT THEIR FIELD MEASUREMENT.
- 12) THE INTENT OF THIS SURVEY WAS TO LOCATE VISIBLE UTILITIES, STRUCTURES, CONTOURS, SPOT ELEVATIONS AND DESIGN FEATURES IN THE AREA OF THE REQUESTED SURVEY.
 BEYOND WHAT WAS VISIBLE ON-SITE, NO ATTEMPT WAS MADE TO LOCATE UNDERGROUND UTILITIES.



TAX PARCEL

0419095003

WF A26

30 '

√WF A23

--BUILDING SETBACK

PROPOSED DUPLEX
433 43RD AVENUE SOUTHWEST

110'

N89°44'36"W 171.18'

VERTICAL DATUM:

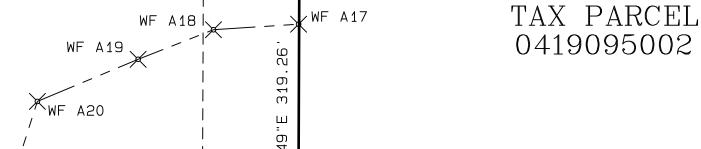
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

BENCHMARKS:

BASE:
PIERCE COUNTY BENCHMARK NO.21 037 (SPSN-0137) (NGS DL2772)
FOUND NGS, THE MARK IS AN N.G.S. CLASS A MARK (STAINLESS
STEEL ROD IN AN ALUMINUM CASE WITH LID.
ELEVATION: 448.08 FEET.

BASIS OF BEARING:

GEODETIC NORTH. BASED UPON GLOBAL POSITIONING SYSTEM (GPS) LAMBERT GRID WASHINGTON STATE NORTH ZONE COORDINATES. A CONVERGENCE ANGLE OF 01°18'08.74" COUNTERCLOCKWISE WAS APPLIED AT A BRASS PIN IN CONCRETE, INCASED, LOCATED AT THE INTERSECTION OF MERIDIAN AVENUE EAST AND 47TH AVENUE SE. THE MONUMENT IS THE EAST QUARTER CORNER OF SECTION 9, TOWNSHIP 19 NORTH, RANGE 4 EAST OF THE W.M. THE NORTH AMERICAN DATUM OF 1983/1991 (NAD 83/91) GRID COORDINATES WERE FOUND TO BE 666644.065 / 1194302.130 AT THAT POINT. THE INVERSE OF BOTH THE SEA LEVEL CORRECTION FACTOR OF 0.999981618 AND THE GRID SCALE FACTOR OF 0.999962785 WAS APPLIED TO THE GRID COORDINATES FOR SHOWN GROUND DISTANCES.



116TH STREET EAST

LEGEND:
WF = WETLAND FLAG

WF AA1

130 '

DRAINFIELD EASEMENT

RESERVE DRAINFIELD

PRIMARY DRAINFIELD

₩F AA3

WF AA5 V/

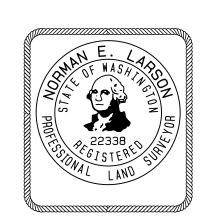
WF AA6

个 WF AA7

KWF AA8

NF AA9

△ WF AA10



CENTRE POINTE Consultants, Inc., P.S. 14209 29th Street East, #105 - Sumner, WA 98390

14209 29th Street East, #105 - Sumner, WA 98390 253-987-5924 main 253-987-7859 fax					
DRAWN BY: D WOODS	CHECKED BY: N LARSON				
DATE: AUG. 21, 2020	JOB NAME: EXHIBIT				
SCALE: 1 " = 30 '	^{JOB} NO.: 3999				

NE-NE 9, T19N., R4E., W.M.

SURVEY FOR:

DAVID ARTZ

7917 110th STREET NORTHWEST

GIG HARBOR, WA 98330

PIERCE COUNTY, WASHINGTON

SHEET 1 OF 1

HABITAT TECHNOLOGIES

CRITICAL AREAS ASSESSMENT

Parcel 0419095022 409 - 43rd Avenue SW City of Puyallup, Washington

This document incorporates comments provided by City of Puyallup review

prepared for

Mr. David Artz 7917 - 110th Street NW Gig Harbor, Washington 98332

prepared by

HABITAT TECHNOLOGIES
P.O. Box 1088
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June 4, 2019
Revised
October 7, 2020

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INTRODUCTION

This document details the culmination of activities and onsite evaluations undertaken to complete a critical areas assessment (i.e. wetlands, streams, fish and wildlife habitats) of **Parcel 0419095022 (project site).** The project site was located generally to the north of 43rd Avenue SW within the City of Puyallup, Pierce County, Washington (Figure 1). The evaluation and characterization of onsite and adjacent critical areas is a vital element in land use planning. The goal of this approach is to ensure that the proposed development of a single duplex and associated primary and reserve septic drainfield areas does not result in adverse environmental impacts to an identified City of Puyallup Category III Wetland and the associated 60-foot standard City of Puyallup buffer identified within the project site. **As presently proposed, all development activities shall be accomplished without intrusion into the wetland or standard buffer areas**.

The assessment and delineation of specific critical areas within and immediately adjacent to the project site followed the methods and procedures defined in the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010); the Washington State *Wetland Rating System for Western Washington* (Hruby, 2014), the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030), and the City of Puyallup Chapter 21. This document was designed to accommodate site planning and potential regulatory actions and is suitable for submittal to federal, state, and local authorities for potential critical areas verification and permitting actions.

PROJECT SITE DESCRIPTION

The project site was composed of an existing vacant parcel of record totaling approximately 1.26-acres in size. As outlined below the majority of the project site was encumbered by wetland and wetland buffers. The project site was located within an area of increasing urbanization focusing on more intense commercial retail and higher intensity residential development. The southern boundary of the project site was formed by 43rd Avenue SW. Existing multi-family residential development was identified to the east of the eastern boundary. Vacant land was present to the north and west.

Directions to Project Site: From Meridian Avenue East (southbound) turn west onto 43rd Avenue SW. Continue on 43rd Avenue SW to 409 - 43rd Avenue SW.

BACKGROUND INFORMATION

NATIONAL WETLAND INVENTORY

The National Wetland Inventory (NWI) Mapping completed by the U.S. Fish and Wildlife Service was reviewed as a part of this assessment (Figure 2). This mapping resource identified a wetland complex throughout the majority of the northwestern portion of the project site. This wetland site identified to continue offsite and was noted as palustrine, forested, seasonally flooded (PFOC); and palustrine, scrub-shrub, seasonally flooded (PSSC) within the project site.

STATE OF WASHINGTON PRIORITY HABITATS AND SPECIES

The State of Washington *Priority Habitats and Species (PHS) Mapping* was reviewed as a part of this assessment (Figure 3). This mapping resource identified the same wetland areas within and adjacent to the project site as the NWI Mapping above.

STATE OF WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

The State of Washington Department of Fish and Wildlife (WDFW) SalmonScape Mapping was reviewed as a part of this assessment (Figure 4). This mapping resource did not identify any drainage corridors within or adjacent to the project site. This mapping resource did identify a pond generally adjacent to the eastern boundary in the central portion of the project site. This pond was not identified to provide habitats for salmonid fish species (genus Oncorhynchus).

STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES

The State of Washington Department of Natural Resources (WDNR) *Water Type Mapping* was reviewed as a part of this assessment (Figure 5). This mapping resource generally identified the same wetland noted in the NWI Mapping Resource above within the project site. This mapping resource further noted a pond adjacent to the eastern boundary as noted in the WDFW Mapping above. This mapping noted this offsite pond as a Type F Water (fish-bearing).

CITY OF PUYALLUP MAPPING

The City of Puyallup Inventory Mapping was reviewed as a part of this assessment (Figure 6). This mapping resource generally identified the wetland noted in the other mapping

resources above within the project site and adjacent properties. This wetland was further identified as "field verified" by the City of Puyallup.

PIERCE COUNTY MAPPING

The *Pierce County Mapping* was reviewed as a part of this assessment. This mapping resource identified that the Base Flood Plain Elevation (BFE) noted at 419.5 feet elevation floodplain did not extend onto the project site. The northern portion of the project site was noted as 424 feet elevation and the southern portion at 434 feet elevation.

SOILS MAPPING

The *Soil Mapping Inventory* completed by the Natural Resources Conservation Service was reviewed as a part of this assessment (Figure 7). This mapping resource identified the soil throughout the majority of project site as Norma fine sandy loam (26A). The Norma soil series is defined as poorly drained; as formed in alluvium under sedges; and as listed as a "hydric" soil.

This mapping resource further noted the southern portion of the project site to contain Everett gravelly sandy loam (13B). The Everett soils series is defined as somewhat excessively drained, as formed in glacial outwash, and as not listed as "hydric" soil.

PRIOR ASSESSMENTS

Habitat Technologies had completed prior assessments for parcels within the surrounding area of the project site. These prior assessments had identified a wetland complex within the area. This wetland complex was ditched along the western boundary then entered a culvert within the Willow Springs Apartment complex. This drainage continued through a series of ditch lines, pipes, and culverts to eventually enter a Pierce County Storm Pond adjacent to 89th Avenue Court East. This storm pond did not appear to exhibit an outflow.

ONSITE ANALYSIS

CRITERIA FOR CRITICAL AREAS IDENTIFICATION

The City of Puyallup defines "critical areas" to include wetlands, fish and wildlife habitat areas, critical aquifer recharge areas, geologically hazardous areas, and frequently flooded areas. The critical areas assessment reported in this document has been limited to address wetlands, surface water drainages, and fish and wildlife habitat areas.

Wetlands: Wetlands are transitional areas between aquatic and upland habitats. In general terms, wetlands are lands where the extent and duration of saturation with water is the primary factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin, et al., 1979). Wetlands are generally defined within land use regulations as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (US Army Corps of Engineers 1987).

Wetlands exhibit three essential characteristics, all of which must be present for an area to meet the established criteria (United States Army Corps of Engineers, 1987 and United States Army Corps of Engineers, 2010). These essential characteristics are:

- 1. Hydrophytic Vegetation: The assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence. Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season.
- 2. Hydric Soil: A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper parts. Most hydric soils exhibit characteristic morphologies that result from recent periods of saturation or inundation. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods.
- 3. Wetland Hydrology: Permanent or periodic inundation, or surface soil saturation, at least seasonally. Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation to define the area. Wetland hydrology indications provide evidence that the site has a continuing wetland hydrology regime. Where hydrology has not been altered vegetation and soils provide strong evidence that wetland hydrology is present.

Fish and Wildlife Habitat Areas: The City of Puyallup has defined "fish and wildlife habitat areas" to include those areas necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created as designated by WAC 365-190-080. These areas include:

- (a) Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association;
- (b) Habitats of local importance, including but not limited to areas designated as priority habitat by the Department of Fish and Wildlife;
- (c) Streams and surface waters within the jurisdiction of the state of Washington; and
- (d) Land essential for preserving connections between habitats and open spaces.

STUDY METHODS

Habitat Technologies completed a series of onsite assessments from May 2018 through December 2019 and then again during the summer and early fall of 2020. In addition, Habitat Technologies has completed similar critical areas assessments for the parcels associated with the project site as well as parcels located within the general area of the project site. The objective of this evaluation was to define and delineate potential critical areas (wetlands; drainage corridors; and fish and wildlife habitats) that may be present within or immediately adjacent to the project area. Onsite activities were completed in accordance with criteria and procedures established in the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010); the Washington State *Wetland Rating System for Western Washington* (Hruby, 2014), the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030), and the City of Puyallup Chapter 21.

FIELD OBSERVATION

The project site was accessed via 43rd Avenue SW that formed the southern boundary of the project site. The southern portion of the project site appeared to contain a historic fill pad that was overgrown with blackberries and contained a small "tent city" during the onsite assessments period. The southern portion of the project site was also heavily littered with garbage and debris from the onsite campers. The majority of the central and northern portions of the project site were encumbered by a portion of a wetland complex that extended onto adjacent parcels. Representative field data are provided in Appendix A.

Plant Communities

As noted above the southern project site had been modified by the placement of historic fill and had become overrun with primarily Himalayan blackberry (*Rubus armeniacus*).

The plant community located directly to the north of the historic fill placement was dominated by species typically associated with seasonal saturation or seasonal shallow ponding. Observed species included black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), Western red cedar (*Thuja plicata*), Oregon ash (*Fraxinus latifolia*), Pacific willow (*Salix lasiandra*), Sitka willow (*Salix sitchensis*), crabapple (*Pyrus fusca*), Douglas spiraea (*Spiraea douglasii*), salmonberry (*Rubus spectabilis*), Himalayan blackberry (*Rubus armeniacus*), Pacific ninebark (*Physocarpus capitatus*), black twinberry (*Lonicera involucrata*), red osier dogwood (*Cornus stolonifera*), Nootka rose (*Rosa nutkana*),

common lady fern (*Athyrium filix-femina*), deer fern (*Blechnum spicant*), maiden hair fern (*Adiantum pedatum*), cattail (*Typha latifolia*), skunk cabbage (*Lysichitum americanum*), small fruited bulrush (*Scirpus microcarpus*), slough sedge (*Carex obnupta*), water parsley (*Oenanthe sarmentosa*), speedwell (*Veronica scutellata*), buttercup (*Ranunculus repens*), curled dock (*Rumex crispus*), big leaf avens (*Geum macrophyllum*), reed canarygrass (*Phalaris arundinacea*), and reed mannagrass (*Glyceria grandis*). This plant community was identified as hydrophytic in character (i.e. typical of wetlands).

The eastern boundary the project site exhibited scattered areas of remnant upland forest community. Observed species included Douglas fir (*Pseudotsuga menziesii*), Western red cedar (*Thuja plicata*), Western hemlock (*Tsuga heterophylla*), red alder (*Alnus rubra*), big leaf maple (*Acer macrophyllum*), cherry (*Prunus spp.*), Himalayan blackberry, evergreen blackberry (*Rubus laciniatus*), salal (*Gaultheria shallon*), Oregon grape (*Berberis nervosa*), holly (*Ilex aquifolium*), rose (*Rosa spp.*), Indian plum (*Oemleria cerasiformis*), Pacific red elderberry (*Sambucus racemosa*), salmonberry (*Rubus spectabilis*), Oceanspray (*Holodiscus discolor*), foam flower (*Tiarella trifoliata*), sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilium*), nettle (*Urtica dioica*), bluegrass (*Poa spp.*), daisy (*Bellis perennis*), clover (*Trifolium spp.*), bleeding heart (*Dicentra Formosa*), and buttercup. This plant community was identified as non-hydrophytic in character (i.e. typical of uplands).

Hydrology Patterns

Onsite hydrology appeared to be the result of seasonal stormwater runoff from onsite, seasonal stormwater runoff from adjacent parcels, public roadways, and onsite soils. The southern portion (prior fill area) of the project site appeared to drain moderately well and did not exhibit field indicators typically associated with wetland hydrology.

The majority of the project site appeared to drain somewhat poorly to poorly. A portion of a wetland complex within the area dominated the western portion of the project site to the north of the southern prior fill area. As noted during prior assessments this wetland was ditched along the western boundary of the wetland offsite to the northwest. Seasonal hydrology from the wetland then entered a culvert within the Willow Springs Apartment Complex. This hydrology continued through a series of ditch lines, pipes, and culverts to eventually enter a Pierce County Storm Pond adjacent to 89th Avenue Court East. This storm pond did not appear to exhibit an outflow.

Soils

As noted above the project site had been modified by the historic prior placement of fill material in the southern portion of the project site. Within remnant upland areas the soil exhibited a gravelly sandy loam to gravelly loam texture and coloration typical of an Everett soil series. The surface soil typically exhibited a very dark grayish brown (10YR)

3/2) coloration and a gravelly sandy loam to gravelly loam texture. The subsoil to a depth of approximately 20 inches also exhibited a dark brown (10YR 3/3) to brown (10YR 4/3) coloration, and gravelly sandy loam to gravelly loam texture. This soil was identified as non-hydric in character.

The soil identified within the northwestern portion of the project site exhibited a surface soil coloration of very dark grayish brown (10YR 3/2) to black (10YR 2/1). The subsoil varied from black (10YR 2/1) to dark grayish brown (10YR 4/2) and exhibited prominent redoximorphic features (i.e. depleted matrix and redox concentrations). Oxidized root channels were also very evident. The soil ranged from gravelly loam, silt loam, to muck in texture. The soils within the majority of the project site exhibited field characteristics typical of a hydric soil.

Fish and Wildlife

Wildlife species observed or that would be reasonably expected to utilize the habitats provided within or adjacent to the project site would include red tailed hawk (Buteo jamaicensis), American crow (Corvus brachynchos), American robin (Turdus migratorius), black capped chickadee (Parus atricapillus), dark eyed junco (Junco hyemalis), rufous hummingbird (Selasphorus rufus), merlin (Falco columbarius), golden crowned sparrow (Zonotrichia atricapilla), mourning dove (Zenaida macroura), song sparrow (Melospiza melodia), white crowned sparrow (Zonotrichia leucophrys), house sparrow, house finch (Carpodacus mexicanus), starling (Sturnus vulgaris), American goldfinch (Carduelis tristis), purple finch (Carpodacus purpureus), violet green swallow (Tachycineta thallassina), tree swallow (Tachycineta bicolor), red winged blackbird (Agelaius phoenisues), brewer blackbird (Euphagus cyanocephalus), marsh wren (Cistothorus palustirs), great blue heron (Ardea herodias), common mallard (Anas platyrhynchos), Canada goose (Branta canadensis), northern flicker (Colaptes auratus), hairy woodpecker (Picoides villosus), black tailed deer (Odocoileus hemionus), raccoon (Procyon lotor), coyote (Canis latrans), striped skunk (Mephitis mephitis), opossum (Didelphis virginianus), deer mouse (Peromyscus maniculatus), shrew (Sorex spp.), Townsend mole (Scapanus townsendii), voles (Microtus spp.), Norway rat (Rattus norvegicus), bats (Myotis spp.), eastern gray squirrel (Sciurus carolinensis), common garter snake (Thamnophis sirtalis), Pacific treefrog (Hyla regilla), and red legged frog (Rana aurora).

The project site did not appear to provide and has not been documented to provide habitats for fish species. Surface water from the project site was also identified to enter an offsite, isolated Pierce County stormwater system.

Wildlife Movement Corridors: The project site was within a well urbanized area. As identified by onsite wildlife trials, small and medium sized mammals appeared to be moving throughout vacant parcels generally to the east and southeast of the project site.

The project site is also within the general area of the migratory movement of waterfowl and passerine birds.

State Priority Species: Several species identified by the State of Washington as "Priority Species" were observed onsite or potentially may utilize the project site. Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance.

Game Species: "Game species" are regulated by the State of Washington through recreational hunting bag limits, harvest seasons, and harvest area restrictions. Observed, documented, or reasonably expected "game species" within and adjacent to the project site included black tailed deer, mourning dove, common mallard, and Canada goose.

State Monitored: State Monitored species are native to Washington but require habitat that has limited availability, are indicators of environmental quality, require further assessment, have unresolved taxonomy, may be competing with other species of concern, or have significant popular appeal. Observed, documented, or reasonably expected "State Monitored" species within and adjacent to the project site included great blue heron.

State Candidate: State Candidate species are presently under review by the State of Washington Department of Fish and Wildlife (WDFW) for possible listing as endangered, threatened, or sensitive. No State Candidate species were observed or have been documented to use the habitats associated with the project site.

State Sensitive: State Sensitive species are native to Washington and is vulnerable to declining and is likely to become endangered or threatened throughout a significant portion of its range without cooperative management or removal of threats. No State Sensitive species were observed or have been documented to use the habitats associated with the project site.

State Threatened: State Threatened species means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats. The project site did not appear and has not been documented to provide direct critical habitats for State Listed Threatened species.

State Endangered: State endangered species means any species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state. The project site did not appear and has not been documented to provide direct critical habitats for State Listed Endangered species.

Federally Listed Species: No federally listed endangered or threatened species were observed or have been documented to utilize the habitats provided by the project site. A single, federally listed "species of concern" – bald eagle – has been documented to utilize the habitats generally associated with the area lakes, ponds and the Puyallup River Corridor. However, the project site did not provide critical habitats for this species. This species may occasionally overfly the project site.

CRITICAL AREAS DETERMINATION

WETLANDS

Wetland determination was based on observations of hydrophytic vegetation, hydric soils, and wetland hydrology in accordance with the *Corps of Engineers Wetland Delineation Manual* (United States Army Corps of Engineers, 1987) with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers, 2010). Based on these methods one (1) wetland area was identified to be associated with a topographic swale that dominated the northwestern portion of the project site.

WETLAND	CLASSIFICATION	CITY OF PUYALLUP	WDOE RATING	WDOE HABITAT
	(USFWS)	CATEGORY	SCORE	SCORE
Α	PFOCd, PEMCd	III	18	5

Wetland A: Wetland A was identified throughout the majority of the northwestern portion of the project site and to extend into adjacent parcels. Onsite Wetland A exhibited a mixed forest plant community. Offsite to the northwest this wetland also exhibited an emergent plant community. Seasonal hydrology from the wetland entered a culvert within the Willow Springs apartment complex offsite to the northwest. This hydrology continued through a series of ditch lines, pipes, and culverts then eventually entered a Pierce County storm pond adjacent to 89th Avenue Court East (Figure 8). This storm pond did not appear to exhibit an outflow. As such, Wetland A was identified within an isolated basin and not hydrologically connected by an above ground pathway to any downstream aquatic resources.

Wetland A met the U.S. Fish and Wildlife Service (USFWS) criteria for classification of palustrine, forested, seasonally flooded, ditched (PFOCd); and palustrine, emergent, seasonally flooded, ditched (PEMCd). Wetland A appeared to meet the criteria for designation as a City of Puyallup Category III Wetland and have an associated buffer of 60 feet in width for a moderate intensity land use. Wetland A achieved a total functions score of 18 points utilizing the Washington State Department of Ecology (WDOE) Wetland Rating Form for Western Washington (Appendix B).

FISH AND WILDLIFE HABITAT AREAS

No areas were identified, or have been documented, with which state or federally designated endangered, threatened, and sensitive species have a primary association. In addition, no lands essential for preserving connections between habitats and open species were identified or previously documented. The City of Puyallup Category III Wetland identified within the project site appeared to meet the designation as a WDFW "priority habitat" and would be potentially subject to the jurisdiction of the State of Washington.

SELECTED DEVELOPMENT ACTION

The Selected Development Action for the project site focuses on the development of a single duplex within the southern portion of the project site and the associated septic drainfield (primary and reserve) along the central-eastern boundary of the project site (Parcel 0419095022). The development of this duplex would be completed without direct adverse impacts to the identified onsite City of Puyallup Category III Wetland or any encroachment into the associated standard wetland buffer (see Site Plan).

STANDARD OF CARE

This document has been completed by Habitat Technologies for use by Mr. David Artz. Prior to extensive site planning the findings documented in this document should be reviewed and verified by the City of Puyallup. Habitat Technologies has provided professional services that are in accordance with the degree of care and skill generally accepted in the nature of the work accomplished. No other warranties are expressed or implied. Habitat Technologies is not responsible for design costs incurred before this document is approved by the appropriate resource and permitting agencies.

Wetland Biologist

Bryan W. Peck Thomas D. Deming Thomas D. Deming, SPWS Habitat Technologies

FIGURES

Figure 1 Site Vicinity

Habitat Technologies

P.O.Box 1088 Puyallup, WA 98371

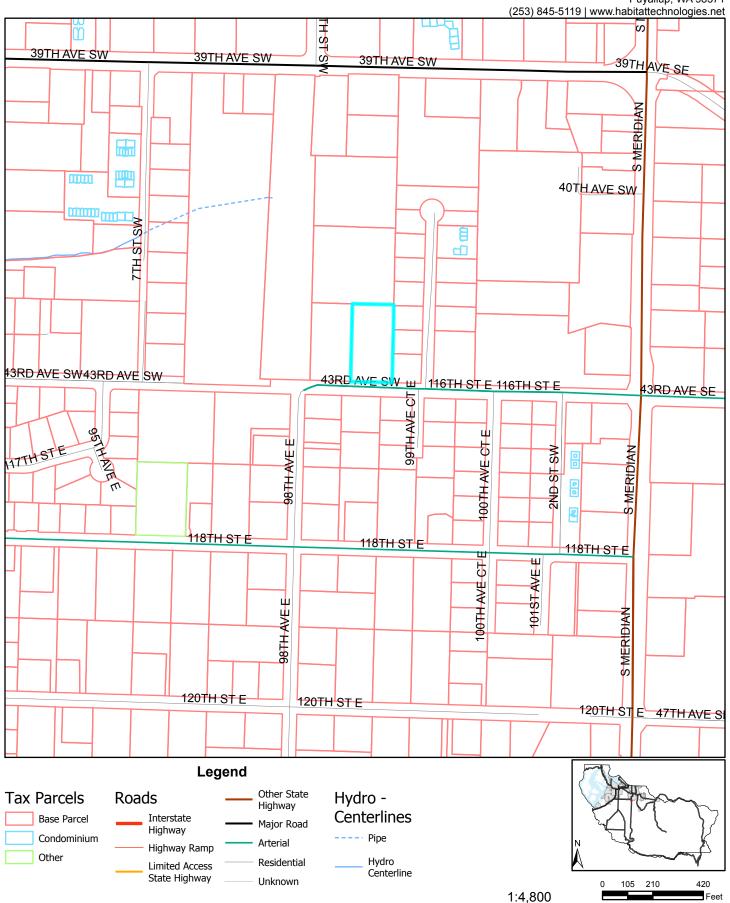


Figure 2 NWI Mapping

Habitat Technologies

P.O.Box 1088 Puyallup, WA 98371 (253) 845-5119 | www.habitattechnologies.net

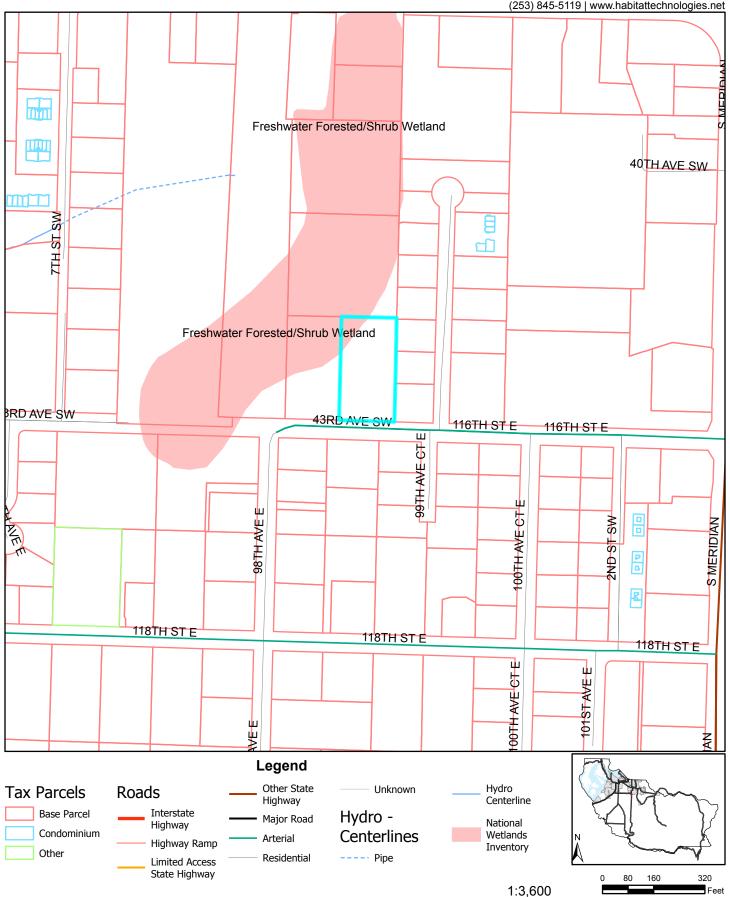


Figure 3 PHS Mapping

Habitat Technologies

P.O.Box 1088 Puyallup, WA 98371 (253) 845-5119 | www.habitattechnologies.net

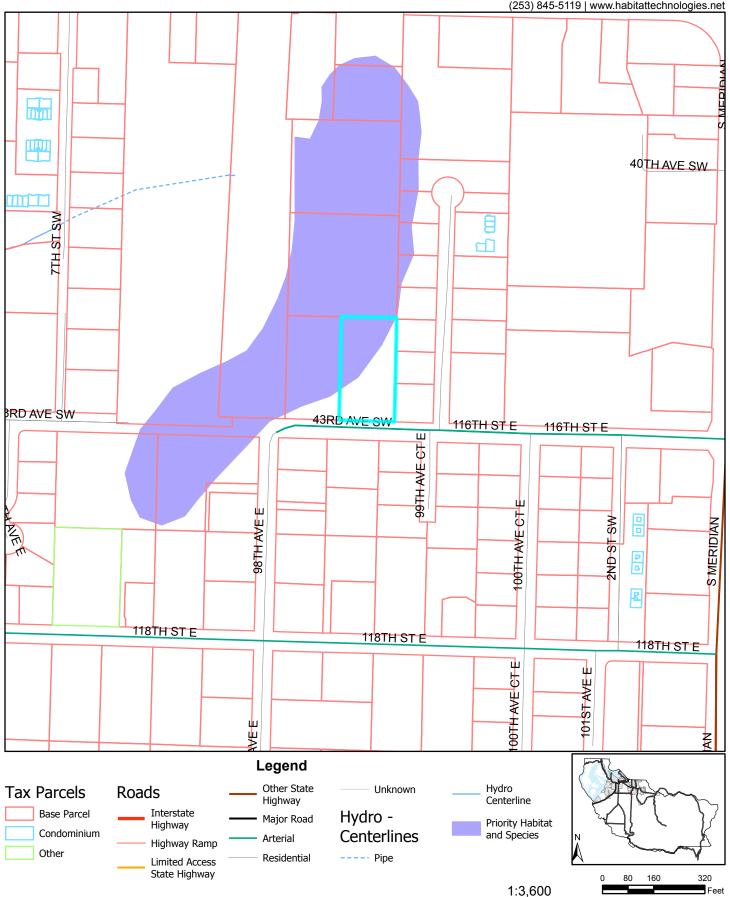
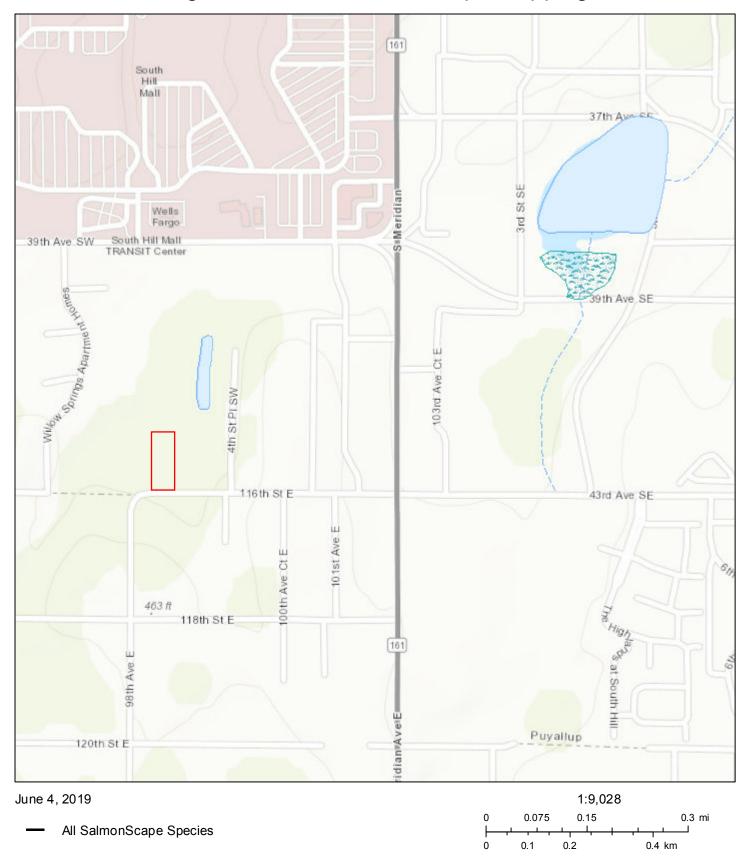


Figure 4 WDFW Salmonscape Mapping



USGS/NHD Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Figure 5 Forest Practice Water Type Map

\$10 T19.0N R04.0E, \$03 T19.0N R04.0E, \$04 T19.0N R04.0E \$09 T19.0N R04.0E

Application #:



Date: 6/4/2019 Time: 3:20:46 PM NAD 83 Scale: 1:4,800

Contour Interval: 40 Feet

Figure 6 City of Puyallup Mapping

Habitat Technologies

Puyallup, WA 98371 (253) 845-5119 | www.habitattechnologies.net

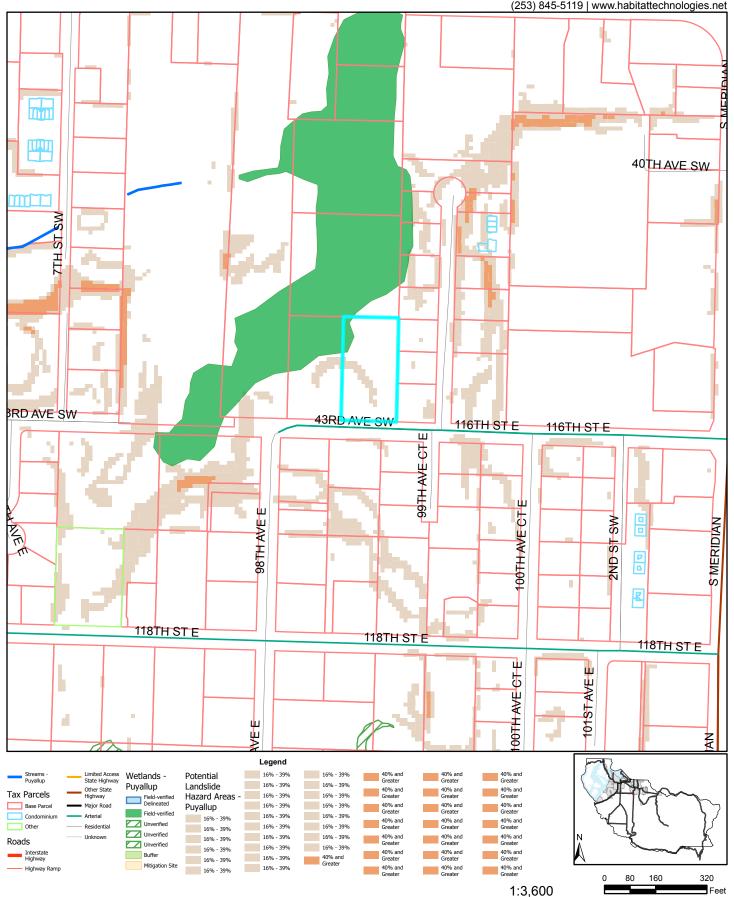


Figure 7 Soils Mapping

Habitat Technologies Puyallup, WA 98371 (253) 845-5119 | www.habitattechnologies.net 116TH ST E 116TH ST E OOTH AVE CT

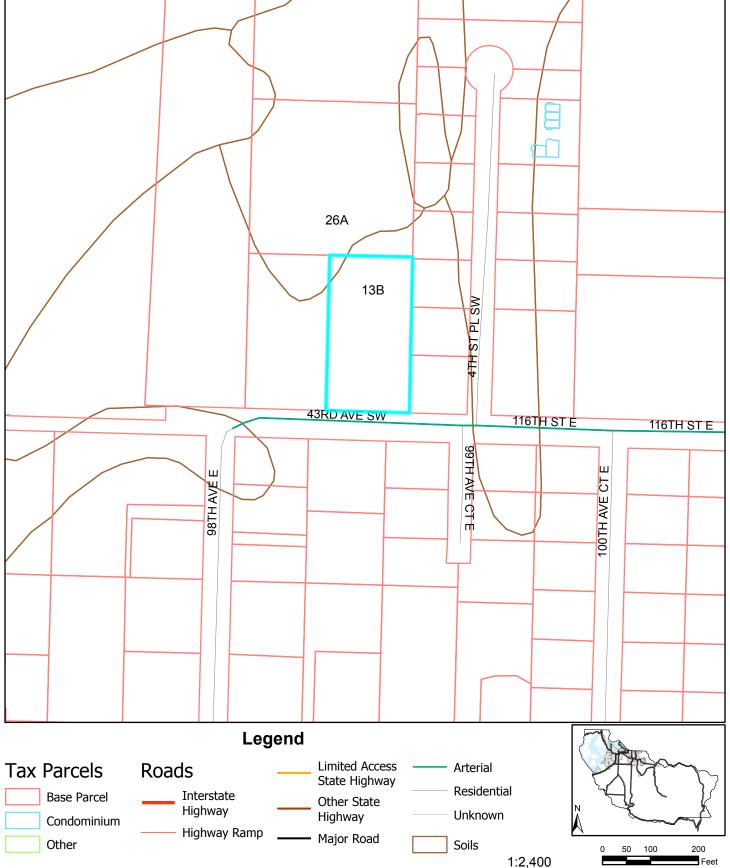
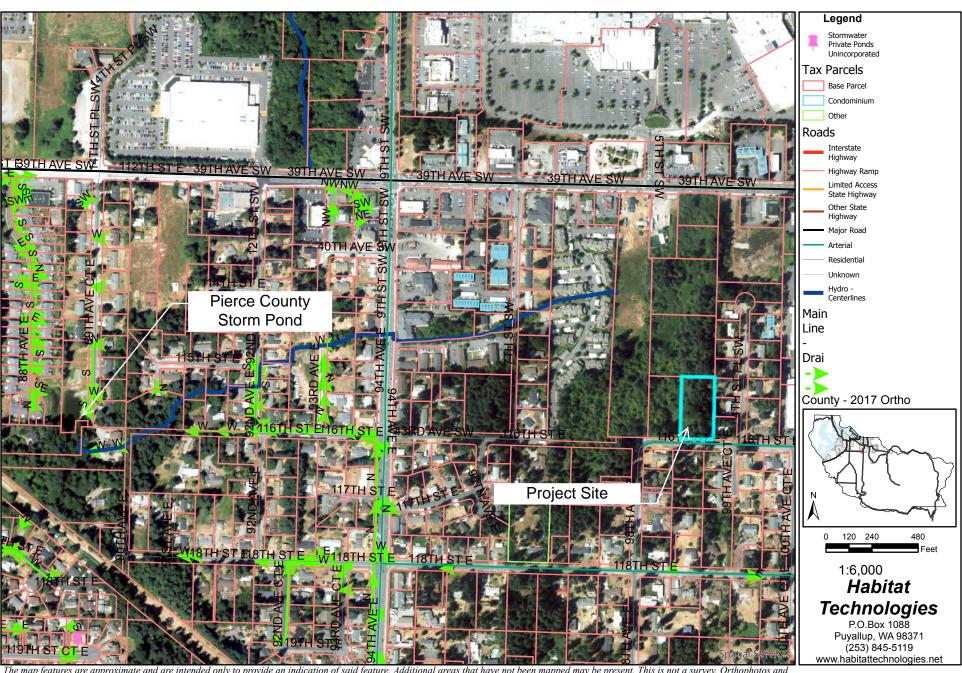


Figure 8 Wetland Outlet



The map features are approximate and are intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. Orthophotos and other data may not align. The County assumes no liability for variations ascertained by actual survey. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. The County makes no warranty of fitness for a particular purpose.

Date: 1/28/2020 03:08 PM

REFERENCE AND BACKGROUND LIST

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Washington State Department of Natural Resources FPARS Mapping System, 2016 (for stream typing): http://fortess.wa.gov/dnr/app1/fpars/viewer.htm

APPENDIX A – Representative Field Data

Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:			State: Washington	Sampling Point: SP-1	
Investigator(s): Habitat Technologies					
Landform (hillslope, terrace, etc.):		Local reli	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	•			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
		<u> </u>	<u> </u>		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			ne Sampled		
Wetland Hydrology Present? Yes ⊠ No □		with	in a Wetlar	nd? Yes⊠ No	
Remarks: Wetland					
VEGETATION – Use scientific names of plant				T	
Tree Stratum (Plot size: 15ft radius)	Absolute % Cover		Indicator Status	Dominance Test works	
1. Populus trichocarpai	30			Number of Dominant Spartage That Are OBL, FACW, o	
2. Alnus rubra	40	YES	FAC	Total Number of Domina	int
3				Species Across All Strate	
4				Percent of Dominant Spe	ecies
Sapling/Shrub Stratum (Plot size: 15ft radius)	70	= Total C	Cover	That Are OBL, FACW, o	r FAC: <u>100</u> (A/B)
Lonicera involucrata	30	YES	FAC	Prevalence Index work	sheet:
Rubus spectabilis				Total % Cover of:	Multiply by:
3. Spiraea douglasii				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
Harb Christian (Dick since 45ft and inc)	70	= Total C	Cover		x 4 =
Herb Stratum (Plot size: 15ft radius) 1. Carex obnupta	90	VEQ	OBI	· ·	x 5 =
2				Column Totals:	(A) (B)
3.				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				☐ Rapid Test for Hydro	phytic Vegetation
6				□ Dominance Test is >	50%
7				☐ Prevalence Index is:	
8					ations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	. ,
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explain)
11					and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	90	= Total C	over	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes	⊠ No □
Remarks:				l	

Depth (inches)	Matrix Color (moist)	<u>(</u>	Colc		dox Features % Type ¹	Loc2	Textu	reRemarks
0-18	10YR 3/1							
<u>U-10</u>	101K 3/1	100					<u>L</u>	
	-							
-	•				 .		-	
					CS=Covered or Coa	ated Sand G	Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless oth	erwise noted.)		Ir	ndicators for Problematic Hydric Soils ³ :
☐ Histosol	(A1)			Sandy Redox	(S5)			☐ 2 cm Muck (A10)
	oipedon (A2)			Stripped Matri	, ,			Red Parent Material (TF2)
☐ Black Hi	, ,				Mineral (F1) (exce	pt MLRA 1)) [Very Shallow Dark Surface (TF12)
	en Sulfide (A4)	(^44)		Loamy Gleyed	, ,		L	Other (Explain in Remarks)
•	d Below Dark Surfa ark Surface (A12)	ace (ATT)		Depleted Matr Redox Dark S			31	ndicators of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark	, ,			wetland hydrology must be present,
	Bleyed Matrix (S4)			Redox Depres	, ,			unless disturbed or problematic.
	Layer (if present)):			(* 5)			
				_				
	nches):						Hvdr	ric Soil Present? Yes ⊠ No □
Remarks:							1,	
. toato.								
HYDROLO	GY							
	OGY drology Indicator	rs:						
Wetland Hy			uired; ch	eck all that ap	ply)			Secondary Indicators (2 or more required)
Wetland Hy	rdrology Indicator cators (minimum o		uired; ch		ply) ained Leaves (B9)	(except ML	.RA	Secondary Indicators (2 or more required) ☑ Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary India	rdrology Indicator cators (minimum o		uired; ch			(except ML	.RA	
Wetland Hy Primary India	rdrology Indicator cators (minimum o Water (A1) ater Table (A2)		uired; ch		ained Leaves (B9) 4A, and 4B)	(except ML	.RA	
Wetland Hy Primary India Surface High Wa	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3)		uired; ch	Water-St 1, 2, 4 □ Salt Crus	ained Leaves (B9) 4A, and 4B)	(except ML	.RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2,4A, and 4B)
Wetland Hy Primary India □ Surface □ High Wa □ Saturatio □ Water M	rdrology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3)		uired; ch	✓ Water-St 1, 2, 4 ☐ Salt Crus ☐ Aquatic I	ained Leaves (B9) 4A, and 4B) tt (B11)	•	RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)✓ Drainage Patterns (B10)
Wetland Hy Primary India □ Surface □ High Wa ☑ Saturatio □ Water M □ Sedimer	rdrology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger	ained Leaves (B9) 4A, and 4B) at (B11) anvertebrates (B13)			 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	rdrology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized	ained Leaves (B9) 4A, and 4B) at (B11) an Sulfide Odor (C1)	g Living Ro		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) Rhizospheres alon	g Living Ro	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	cators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) at Deposits (B2) oosits (B3) at or Crust (B4)		uired; ch	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) Rhizospheres alon It of Reduced Iron (g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	of one requ		Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaves (B9) 4A, and 4B) at (B11) an Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (control on Reduction in Til	g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	cators (minimum of water (A1) ater Table (A2) on (A3) aters (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	of one requ	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaves (B9) 4A, and 4B) at (B11) an Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (con Reduction in Till or Stressed Plants (g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	cators (minimum of water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	of one requ	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaves (B9) 4A, and 4B) at (B11) an Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (con Reduction in Till or Stressed Plants (g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	radrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater East (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Concarrations:	of one requ	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of	ained Leaves (B9) 4A, and 4B) at (B11) an Sulfide Odor (C1) Rhizospheres alon of Reduced Iron (con Reduction in Till or Stressed Plants (g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B1) on the Deposits (B2) coosits (B3) at or Crust (B4) coosits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concarvations:	al Imagery	(B7) e (B8)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) at (B11) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres alone of Reduced Iron (con Reduction in Till or Stressed Plants (con Remarks) es):	g Living Ro C4) led Soils (C	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser	rdrology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) on Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerially Vegetated Concarvations: ter Present?	al Imagery ave Surface Yes Yes	(B7) te (B8) No 🖂	Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) Rhizospheres alon It of Reduced Iron (Invertebrates) It or Stressed Plants (Invertebrates) It or Stres	g Living Roo C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) In Rhizospheres alone It of Reduced Iron (In the control of Reduction in Tille (In the control of Reduction in Remarks) Explain in Remarks) Explain in Remarks)	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) Rhizospheres alon It of Reduced Iron (Invertebrates) It or Stressed Plants (Invertebrates) It or Stres	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) In Rhizospheres alone It of Reduced Iron (In the control of Reduction in Tille (In the control of Reduction in Remarks) Explain in Remarks) Explain in Remarks)	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) In Rhizospheres alone It of Reduced Iron (In the control of Reduction in Tille (In the control of Reduction in Remarks) Explain in Remarks) Explain in Remarks)	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) In Rhizospheres alone It of Reduced Iron (In the control of Reduction in Tille (In the control of Reduction in Remarks) Explain in Remarks) Explain in Remarks)	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicator cators (minimum of water (A1) ater Table (A2) on (A3) ater Table (B2) on (A3) at or Crust (B4) on Visible on Aeria v Vegetated Concarvations: ter Present? Present? pillary fringe)	al Imagery ave Surfac Yes □ Yes □ Yes ⊠	(B7) te (B8) No ⊠ No ⊡	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaves (B9) 4A, and 4B) It (B11) Invertebrates (B13) In Sulfide Odor (C1) In Rhizospheres alone It of Reduced Iron (In the control of Reduction in Tille (In the control of Reduction in Remarks) Explain in Remarks) Explain in Remarks)	g Living Roi C4) led Soils (Ci D1) (LRR A	ots (C3) 6) A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) drology Present? Yes ⊠ No □

Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:		State: Washington	Sampling Point: SP-2		
Investigator(s): Habitat Technologies					
Landform (hillslope, terrace, etc.):		Local relie	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
	Silowing		g point it		mportant reatures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒		Is th	e Sampled	Area	
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes ☐ No	o 🛛
Remarks: Upland					
VEGETATION - Use scientific names of plant	s.				
Tree Stratum (Plot size: 15ft radius)	Absolute % Cover		Indicator Status	Dominance Test works	
1. Pseudotsuga menziesii	40			Number of Dominant Sp That Are OBL, FACW, o	
2. Alnus rubra		YES		Total Number of Domina	
3				Species Across All Strate	
4				Percent of Dominant Spe	ecies
Sapling/Shrub Stratum (Plot size: 15ft radius)	60	= Total C	over		r FAC: <u>33</u> (A/B)
1. Alnus rubra	40	YES	FACU	Prevalence Index work	sheet:
Gaultheria shallon				Total % Cover of:	Multiply by:
3. Rubus spectabilis					x 1 =
4				FACW species	x 2 =
5					x 3 =
Horb Stratum (Diet size, 15ft radius)	80	= Total C	over		x 4 =
Herb Stratum (Plot size: 15ft radius) 1. Polystichum munitum	30	VES	FΔCII		x 5 =
2				Column Totals:	(A) (B)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				☐ Rapid Test for Hydro	
6				Dominance Test is >	
7				Prevalence Index is	
8					tations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	, ,
10				☐ Problematic Hydroph	nytic Vegetation1 (Explain)
11		= Total C	over		and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	30	= Total C	ovei	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	- -
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes	□ No ⊠
Remarks:				I .	

Donth				Daday Footure				sence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Colo	Redox Features or (moist) %		Loc ²	Textu	re Remarks
0-10	10YR 3/2	100					GSL	
10-18	10YR-4/3	<u>100</u>					<u>GSL</u>	
	-						-	
	-							
				luced Matrix, CS=Covered s, unless otherwise note		ed Sand G		² Location: PL=Pore Lining, M=Matrix. ndicators for Problematic Hydric Soils ³ :
☐ Histosol		icabic to		Sandy Redox (S5)	,			2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix (S6)				Red Parent Material (TF2)
☐ Black Hi				Loamy Mucky Mineral (F1) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed Matrix (F2)		,		_
☐ Depleted	d Below Dark Surfa	ice (A11)		Depleted Matrix (F3)				
☐ Thick Da	ark Surface (A12)			Redox Dark Surface (F6)			³ lı	ndicators of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark Surface (F	7)			wetland hydrology must be present,
	Bleyed Matrix (S4)			Redox Depressions (F8)				unless disturbed or problematic.
	Layer (if present):							
	 nches):							
Deptii (iii	icries)			•			Hydr	ic Soil Present? Yes ☐ No ☒
JADBUI U	ncv							
		s:						
Wetland Hy	drology Indicator		uired: ch	eck all that apply)				Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicator		uired; ch	111	es (B9) (e	xcept MI F	RA	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1 2
Wetland Hy Primary Indi Surface	rdrology Indicator cators (minimum o Water (A1)		uired; ch	☐ Water-Stained Leave		xcept MLF	RA	⊠ Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa	rdrology Indicator cators (minimum o Water (A1) ater Table (A2)		uired; che	☐ Water-Stained Leave		xcept MLF	RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturatio	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Stained Leave 1, 2, 4A, and 4B ☐ Salt Crust (B11))	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)□ Drainage Patterns (B10)
Wetland Hy Primary Indi Surface High Wa Saturation Water M	rdrology Indicator cators (minimum o Water (A1) ater Table (A2)		uired; ch	☐ Water-Stained Leave	s (B13)	xcept MLF	RA	✓ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B Salt Crust (B11) Aquatic Invertebrates	s (B13) or (C1)			 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B; Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od	s (B13) or (C1) es along	Living Roo		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher	s (B13) or (C1) es along d Iron (C4	Living Roo	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		uired; ch	Water-Stained Leave 1, 2, 4A, and 4B, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	s (B13) or (C1) es along d Iron (C4 on in Tilled	Living Roo I) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one requ		Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D	Living Roo I) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D	Living Roo I) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D	Living Roo I) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dep Surface Inundatio Sparsely	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria or Vegetated Conca	f one requ	(B7)	Water-Stained Leave 1, 2, 4A, and 4B, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one requ I Imagery ve Surfac	(B7) se (B8)	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction Stunted or Stressed Other (Explain in Ref	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Table Saturation P	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present?	I Imagery ve Surfac	(B7) te (B8) No 🖂	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction) Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo l) d Soils (C6 1) (LRR A)	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Iron Dep Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction Depth (inches): Depth (inches): Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Iron Dep Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A	ots (C3) S))	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)
Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction Depth (inches): Depth (inches): Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Water Mater Table Saturation Pater Mater	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction Depth (inches): Depth (inches): Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A	ots (C3) S))	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Water Mater Table Saturation Pater Mater Mater Table Saturation Pater Mater	rdrology Indicator cators (minimum or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes	(B7) te (B8) No 🛭 No 🖸 No 🖸	Water-Stained Leave 1, 2, 4A, and 4B] Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stressed Other (Explain in Reduction Depth (inches): Depth (inches): Depth (inches):	s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A	ots (C3) S))	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)

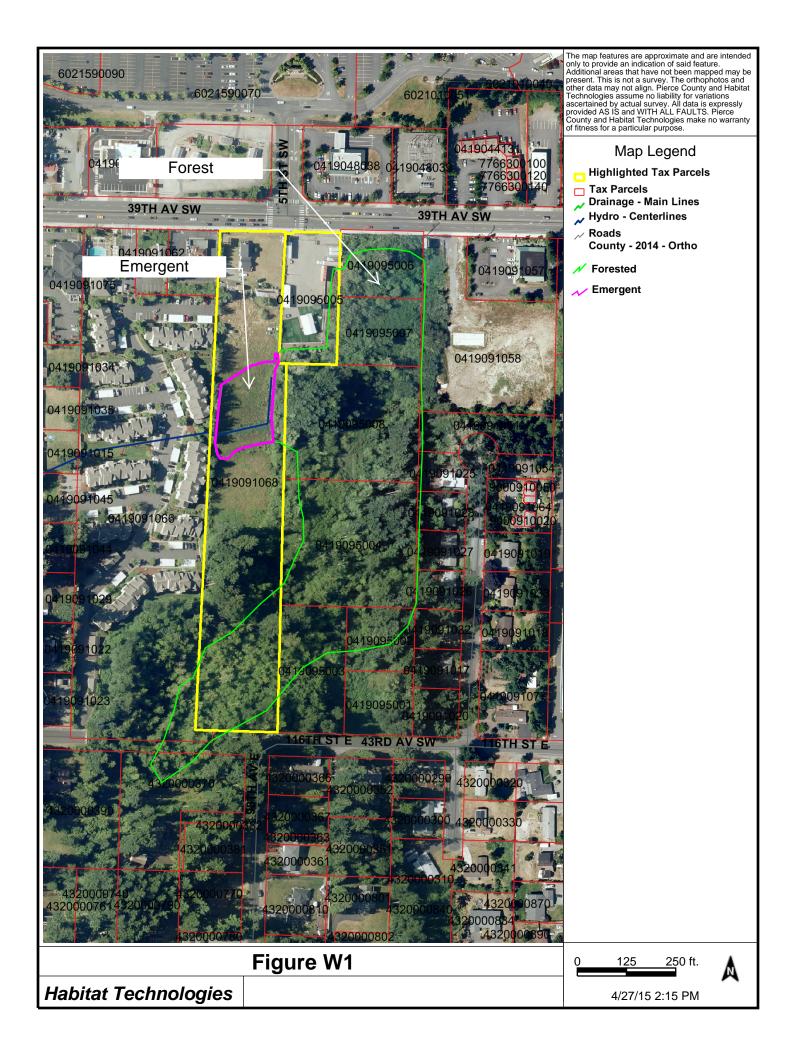
Project/Site: Artz Parcels		City/County	/: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-3
Investigator(s): Habitat Technologies					
Landform (hillslope, terrace, etc.):		Local relie	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	•			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
		<u> </u>		, ,	
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N			e Sampled		
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes ☐ No	⊃ ⊠
Remarks: Upland		l l			
VEGETATION – Use scientific names of plant	łe				
VEGETATION - Ose scientific flames of plant		Dominant	Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 15ft radius)	% Cover			Number of Dominant Sp	
Pseudotsuga menziesii	60			That Are OBL, FACW, o	r FAC: <u>1</u> (A)
2				Total Number of Domina	ınt
3				Species Across All Strate	a: <u>6</u> (B)
4				Percent of Dominant Spe	
Sapling/Shrub Stratum (Plot size: 15ft radius)	60	= Total C	over	That Are OBL, FACW, o	r FAC: <u>17</u> (A/B)
1. Acer circinatum	30	YES	FAC	Prevalence Index work	sheet:
2. Corylus cornuta	30	YES	<u>FACU</u>	Total % Cover of:	Multiply by:
3. Cornus stolonifera	30	YES	FACU		x 1 =
4. Kalmia latifolia	10	YES	<u>FACU</u>	*	x 2 =
5					x 3 =
Herb Stratum (Plot size: 15ft radius)	100	= Total C	over		x 4 =
1. Hedera Helix	75	YES	FACU		x 5 = (A) (B)
2.				Column rotals.	(A) (B)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				Rapid Test for Hydro	
6				Dominance Test is >	
7				Prevalence Index is	
8					tations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	, ,
10				☐ Problematic Hydroph	nytic Vegetation1 (Explain)
11		= Total C			and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	<u>73</u>	= Total C	ovei	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes	□ No ⊠
Remarks:					

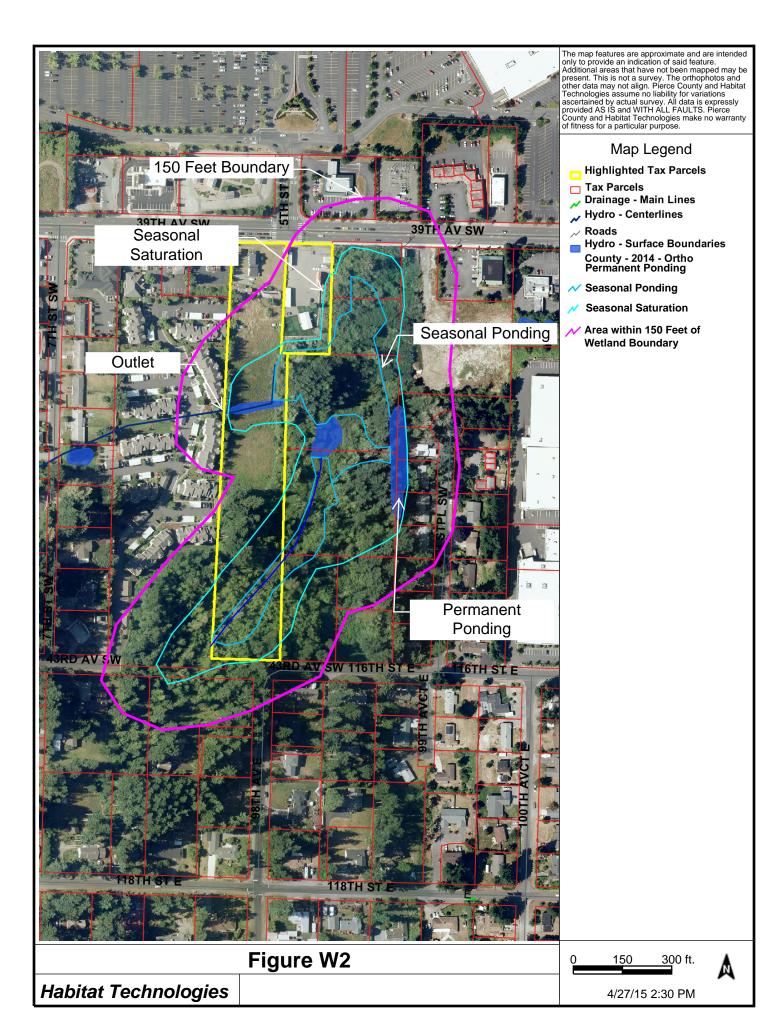
Profile Desc	ription: (Describe	to the c	lepth ne	eeded to docui	ment the indica	tor or conf	irm the	absence	e of indicators.)
Depth	Matrix			Redo	x Features	1 . 2	_	_	
(inches)	Color (moist)	%	Colo	or (moist)	<u>%</u> <u>Type</u>	e ¹ Loc ²	Tex	ture	<u>Remarks</u>
<u>0-18</u>	10YR 4/3	100					GSL	•	
							_		
			-						· ·
-							_		·
·									· · · · · · · · · · · · · · · · · · ·
-							_		·
			-				_		· ——
	oncentration, D=De					oated Sand	Grains.		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appli	cable to	all LRR	s, unless othe	rwise noted.)			Indicate	ors for Problematic Hydric Soils ³ :
☐ Histosol	• •			Sandy Redox (S					m Muck (A10)
	ipedon (A2)			Stripped Matrix	` '				Parent Material (TF2)
☐ Black His	` '				/lineral (F1) (exc	ept MLRA	1)		y Shallow Dark Surface (TF12)
	n Sulfide (A4)	(0.4.4)		Loamy Gleyed I				☐ Oth	er (Explain in Remarks)
	Below Dark Surfac	e (A11)		Depleted Matrix				31	
	rk Surface (A12) ucky Mineral (S1)			Redox Dark Sur Depleted Dark S	, ,				ors of hydrophytic vegetation and and hydrology must be present,
	leyed Matrix (S4)			Redox Depress	, ,				ss disturbed or problematic.
	Layer (if present):		<u> </u>	течох Бергезз	10113 (1 0)			unic	as disturbed of problematic.
Type:									
, ,	ches):						ш.,	dria Cai	I Present? Yes □ No ⊠
. ,				•			пу	uric Soi	Triesent: Tes No
Remarks:									
HYDROLO	GY								
	drology Indicators								
_	cators (minimum of		irad: ab	ook all that appl	, A)			Soco	andary Indicators (2 or more required)
		one requ	irea, cri			\			<u> </u>
	Water (A1)				ned Leaves (B9) (except iv	ILKA	□ v	Vater-Stained Leaves (B9) (MLRA 1, 2,
_	ter Table (A2)				A, and 4B)				4A, and 4B)
☐ Saturation	` '			☐ Salt Crust	` '				Orainage Patterns (B10)
☐ Water M	` ,				vertebrates (B13	,			Ory-Season Water Table (C2)
	t Deposits (B2)				Sulfide Odor (C1				saturation Visible on Aerial Imagery (C9)
· ·	osits (B3)				Rhizospheres ald		coots (C		Geomorphic Position (D2)
	t or Crust (B4)				of Reduced Iron		(0.0)		Shallow Aquitard (D3)
-	osits (B5)				n Reduction in T				AC-Neutral Test (D5)
	Soil Cracks (B6)		(D.T)		Stressed Plants		(A)		taised Ant Mounds (D6) (LRR A)
	on Visible on Aerial			☐ Other (Exp	lain in Remarks)		⊔⊦	rost-Heave Hummocks (D7)
	Vegetated Concav	e Surface	e (B8)						
Field Obser		_	_						
Surface Wat	er Present?		No 🛚	Depth (inches	s):	-			
Water Table	Present?	Yes 🗌	No 🛚	Depth (inches	s):	_			
Saturation P		Yes 🗌	No 🛛	Depth (inches	s):	_ w	etland F	lydrolog	yy Present? Yes □ No ⊠
(includes cap	oillary fringe) corded Data (strear	n dalige	monitor	ing well porial	nhotoe provious	inenaction	e) if ove	ilahla:	
Pescine Ne	ooraca Dala (Siledi	yauye,	monitol	my wen, aenal	priotos, previous	, mobernon	oj, ii ava	iiaDIC.	
D									
Remarks:									

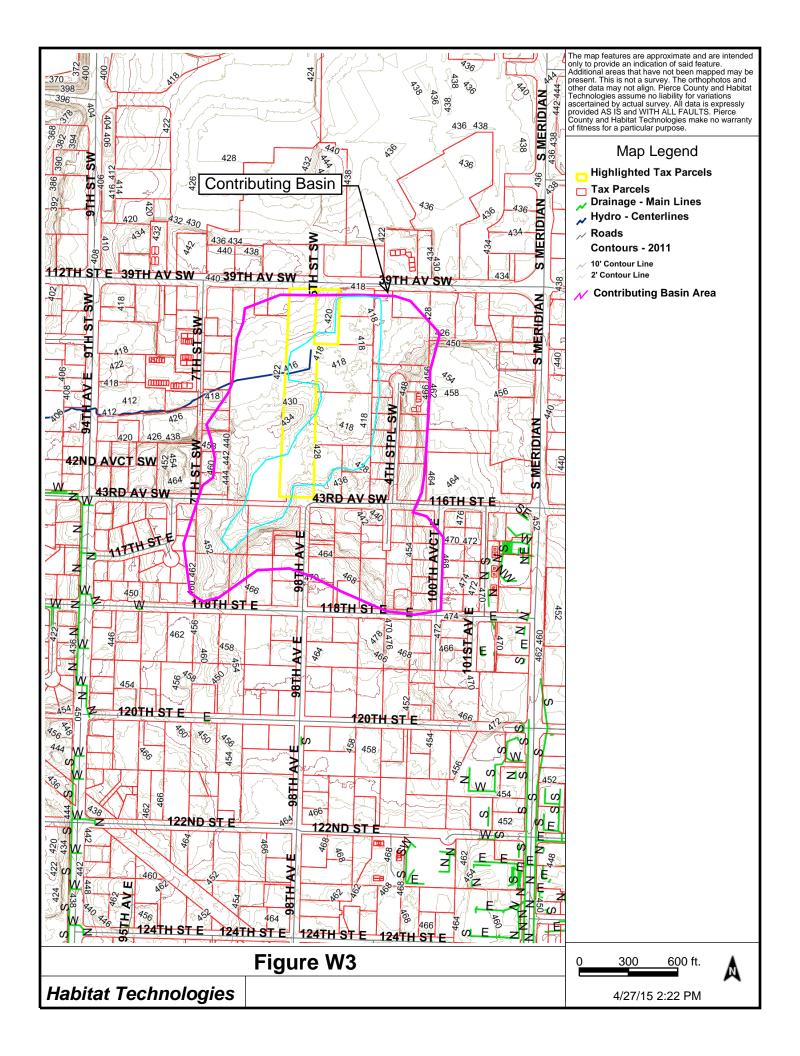
Project/Site: Artz Parcels		City/Count	y: Puyallup	/ Pierce	Sampling Date: 29 AUG 2018
Applicant/Owner:				State: Washington	Sampling Point: SP-6
Investigator(s): Habitat Technologies			Section, To	ownship, Range: <u>S09, T19,</u>	R04E
Landform (hillslope, terrace, etc.):		Local reli	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Everett very gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pres	ent? Yes⊠ No□
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS - Attach site map					
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ⊠ No □			ne Sampled		
Wetland Hydrology Present? Yes ⊠ No □		with	nin a Wetlar	nd? Yes ⊠ No) [
Remarks: Wetland		•			
VEGETATION – Use scientific names of plant	ts.				
	Absolute		t Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 15ft radius) 1. i	% Cover			Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	ınt
3				Species Across All Strata	a: <u>4</u> (B)
4				Percent of Dominant Spe	
Sapling/Shrub Stratum (Plot size: 15ft radius)	0	= Total C	Cover	That Are OBL, FACW, o	r FAC: <u>75</u> (A/B)
1. Cornus stolonifera	100	YES	FACW	Prevalence Index work	sheet:
2. Rubus spectabilis	10	YES	FAC+	Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4					x 2 =
5					x 3 =
Herb Stratum (Plot size: 15ft radius)	110	= Total C	Cover		x 4 =
1. Athyrium filix-femina	5	YES	FAC		x 5 = (A) (B)
Lysichitum americanum				Column rotals.	(A) (D)
3				Prevalence Index	= B/A =
4				Hydrophytic Vegetation	n Indicators:
5				Rapid Test for Hydro	
6				☐ Dominance Test is >	
7				Prevalence Index is:	
8					tations ¹ (Provide supporting or on a separate sheet)
9				☐ Wetland Non-Vascul	ar Plants ¹
10				☐ Problematic Hydroph	nytic Vegetation ¹ (Explain)
11	<u>25</u>				and wetland hydrology must
Woody Vine Stratum (Plot size: 15ft radius)	20	- rotar c	50VC1	be present, unless distur	bed or problematic.
1				Hydrophytic	
2				Vegetation	M Na 🗆
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes	No 🗌
Remarks:				1	

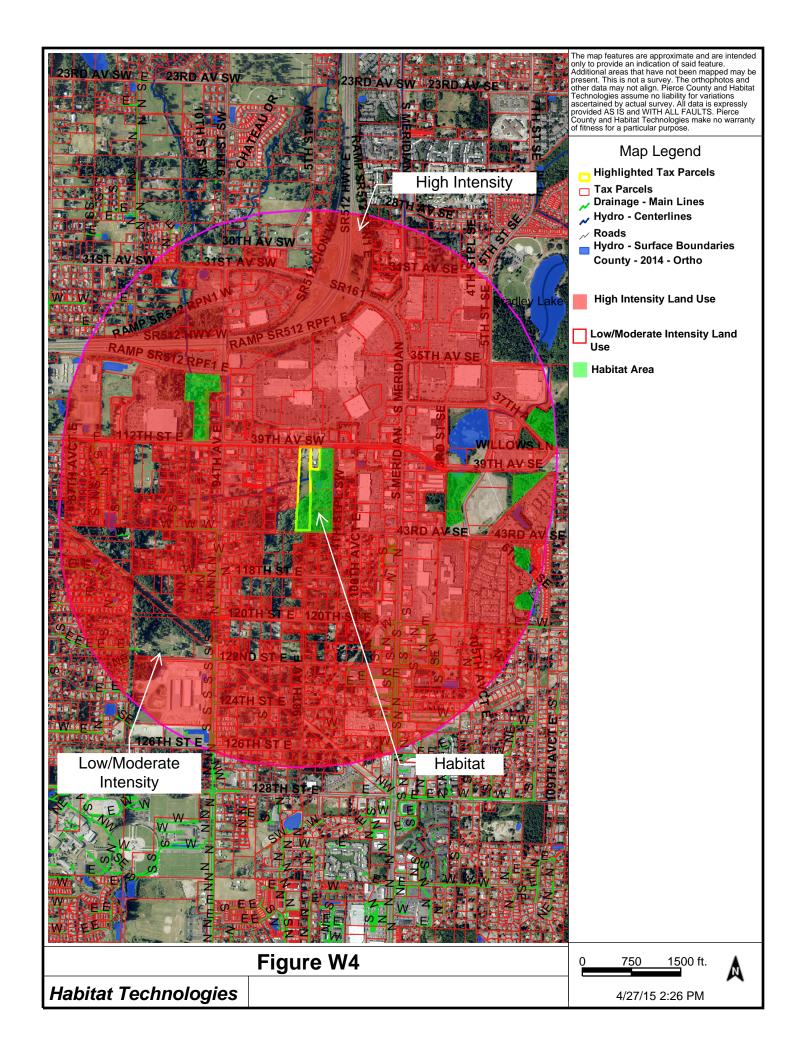
Depth (inches)	Matrix Color (moist)	%	Colo	or (moist)	dox Features % Tvt	pe¹ Loc	² Textu	ire <u>Remarks</u>
0-20	10YR 2/1							
0-20	1011(2/1						OIL	· ·
			_					
	-							
	Concentration, D=D					Coated San		² Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to			-			ndicators for Problematic Hydric Soils ³ :
☐ Histosol	, ,			Sandy Redox				2 cm Muck (A10)
☐ Histic Ep☐ Black Hi	oipedon (A2)			Stripped Matri Loamy Mucky	x (Sb) Mineral (F1) (ex	rcent MI R		Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed		Cept MLIV	~ ' <i>)</i> [☐ Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matr	, ,		_	
☐ Thick Da	ark Surface (A12)	, ,		Redox Dark S			3	Indicators of hydrophytic vegetation and
•	Mucky Mineral (S1)			Depleted Dark				wetland hydrology must be present,
	Bleyed Matrix (S4)			Redox Depres	sions (F8)		1	unless disturbed or problematic.
	Layer (if present)							
	-1							
Depth (in	nches):						Hydi	ric Soil Present? Yes ⊠ No □
Remarks:								
HYDROLO)GY							
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APPENDIX B – Wetland Rating Worksheet



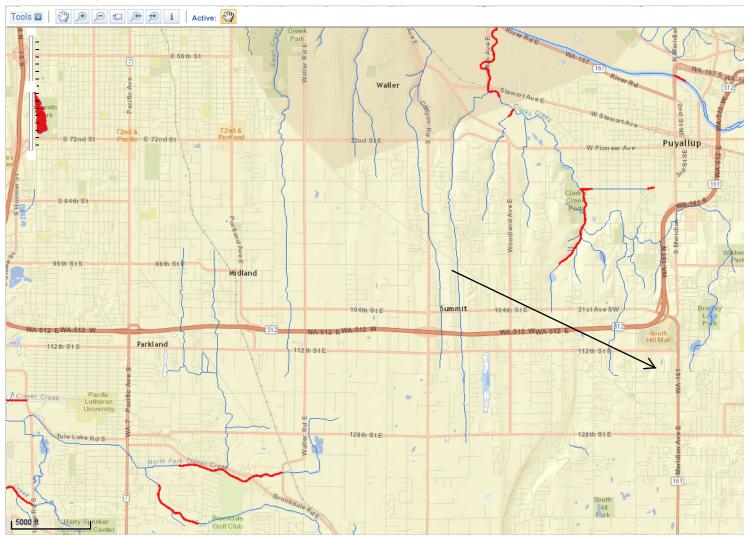








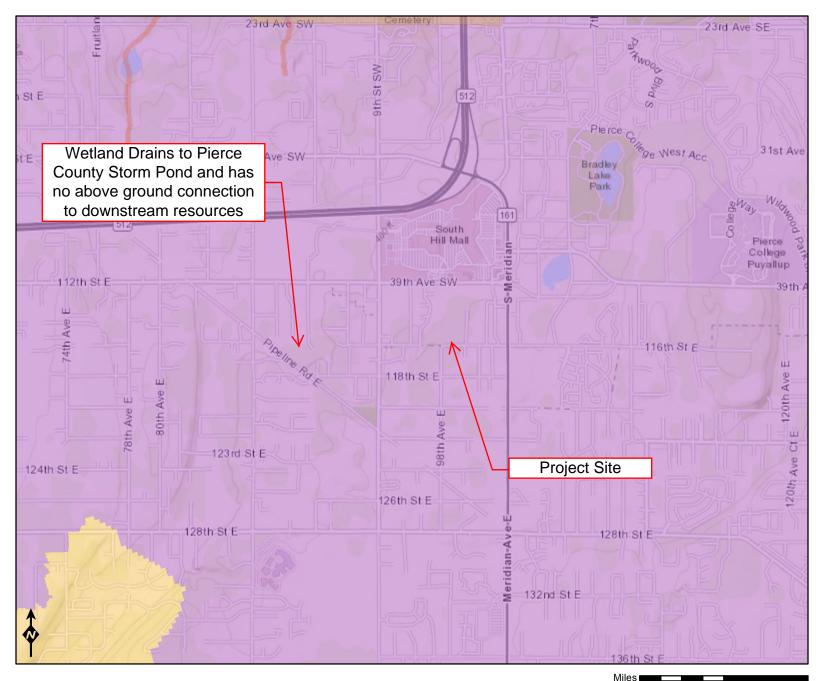
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Figure W5

Figure W6



Assessed Waters/Sediment

Water

- Category 5 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 303d
- ZZZ Category 4C
- **ZZZ** Category 4B
- **Category 4A**
- Category 2
- ZZZ Category 1

WQ Improvement Projects

Approved

0.25

0.5

In Development



RATING SUMMARY – Western Washington

Name of wetland (or ID #):W	etland A	Date of site visit: 27 APR 201
Rated by Habitat Technolog	gies Trained by Ecology	?x YesNo Date of training 2014
HGM Class used for rating De	epressional Wetland has	multiple HGM classes?Y _xN
	photo/map Pierce County G	sted (figures can be combined). IS
OVERALL WETLAND CATE	GORY 3 (based on functi	ions_ x _ or special characteristics)

1. Category of wetland based on FUNCTIONS

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

FUNCTION		nprov ter Q	ing uality	Ну	/drolo	gic		Habitat	
				(Circle t	he ap	propr	iate ratings	
Site Potential	Н	М	L	Н	M	L	Н	M L	1
Landscape Potential	Н	М	L	H	М	L	Н	M L	
Value	Н	М	L	Н	М	L	Н	M L	TOTAL
Score Based on Ratings		6			7			5	18

Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L 5 = M,M,L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

<u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	W1
Hydroperiods	D 1.4, H 1.2	W2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	W2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	W2
Map of the contributing basin	D 4.3, D 5.3	W3
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	W4
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	W5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	W6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	Λ
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	N/A
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	$\mid \forall$

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	\wedge
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	N/A
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	Λ
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	N/A
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	V

HGM Classification of Wetlands in Western Washington

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

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

4			
1. Are the water levels in the entire unit usually controlled by tides except during	tloods	tloods	ds'

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES - The wetland class is Flats

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - __The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 - __At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - ___The wetland is on a slope (*slope can be very gradual*),
 - ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 - ___The water leaves the wetland **without being impounded**.

NO – go to 5

YES - The wetland class is **Slope**

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - ___The overbank flooding occurs at least once every 2 years.

Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7

YES - The wetland class is Depressional

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	2	
points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0	
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	3	
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland points = 2 points = 0	2	
Total for D 1 Add the points in the boxes above	7	
Rating of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page		
D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1	
D 2.3. Are there septic systems within 250 ft of the wetland?	1	
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Yes = 1 No = 0	0	
Total for D 2 Add the points in the boxes above	3	
Rating of Landscape Potential If score is: X 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page		
D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0	
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	0	
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0	
Total for D 3 Add the points in the boxes above	0	
Rating of Value If score is:2-4 = H1 = Mx_0 = L	-	

DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradati	on	
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	5	
Total for D 4 Add the points in the boxes above	10	
Rating of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first		
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1	
Total for D 5 Add the points in the boxes above	3	
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. • Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin.	1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0 There are no problems with flooding downstream of the wetland. points = 0		
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0	
Total for D.6. Add the points in the hoxes above	1	

Rating of Value If score is: $_2-4 = H$ $_X_1 = M$ $_0 = L$

Record the rating on the first page

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat H 1.0. Does the site have the potential to provide habitat? H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 3 structures: points = 2 **X** Emergent 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 X Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: X The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). x Permanently flooded or inundated 4 or more types present: points = 3 x Seasonally flooded or inundated 3 types present: points = 2 3 Occasionally flooded or inundated 2 types present: points = 1 X Saturated only 1 type present: points = 0 __Permanently flowing stream or river in, or adjacent to, the wetland X Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name 2 the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 2 5 - 19 species points = 1 points = 0 < 5 species H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Moderate = 2 points Low = 1 point All three diagrams in this row are **HIGH** = 3points

Wetland name or number A	
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). X Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	3
Total for H 1 Add the points in the boxes above	11
Rating of Site Potential If score is:15-18 = H \times 0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat $\underline{0}$ + [(% moderate and low intensity land uses)/2] $\underline{2}$ = $\underline{2}$ % If total accessible habitat is: > $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon c 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. **Calculate:** % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 10 = 10 % 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	0
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity points = 0	(-2)
Total for H 2 Add the points in the boxes above	(-2)
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L	ne jirst page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated. Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m	1

Site does not meet any of the criteria above Rating of Value If score is: 2 = H X 1 = M 0 = L

Record the rating on the first page

points = 0

WDFW Priority Habitats

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

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: *NOTE:* This question is independent of the land use between the wetland unit and the priority habitat.

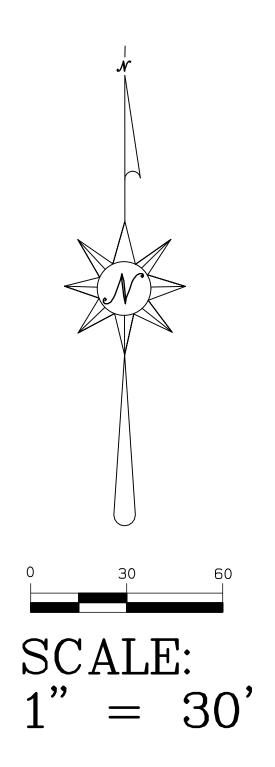
- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of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

SITE PLAN

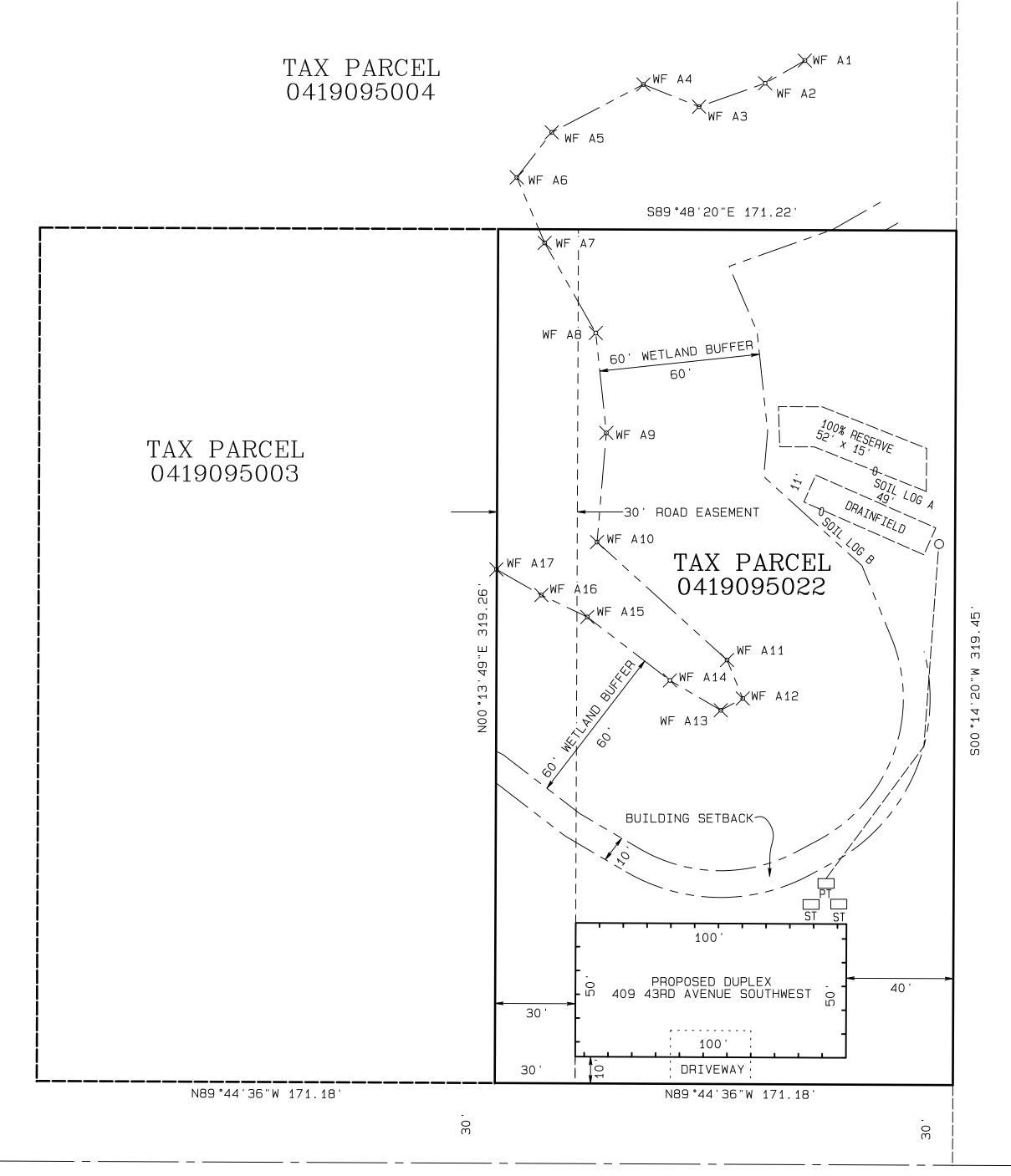
SITE EXHIBIT

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 9, TOWNSHIP 19 N., RANGE 4 E., W.M. PIERCE COUNTY, WASHINGTON



SURVEYOR'S NOTES:

- 1) THE MONUMENT CONTROL SHOWN FOR THIS SITE WAS ACCOMPLISHED BY FIELD TRAVERSE UTILIZING A ONE (1) SECOND THEODOLITE WITH INTEGRAL ELECTRONIC DISTANCE MEASURING METER (GEODIMETER 600) AND REAL TIME KINEMATIC (RTK) / STATIC GLOBAL POSITIONING SYSTEM (GPS). LINEAR AND ANGULAR CLOSURE OF THE TRAVERSES MEET THE STANDARDS OF WAC 332-130-090.
- 2) LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON FIELD MEASUREMENT.
- 3) THIS SURVEY REPRESENTS PHYSICAL IMPROVEMENT CONDITIONS AS THEY EXISTED JULY 29, 2020, THE DATE OF THIS FIELD SURVEY. SURVEY. DURING THE COURSE OF THE SURVEY EARTHWORK WAS BEING CONDUCTED ON-SITE AND THE TOPOGRAPHY WAS CHANGING.
- 4) THIS IS SURVEY WAS MADE WITHOUT THE BENEFIT OF A TITLE REPORT. NO ADDITIONAL RESEARCH HAS BEEN ATTEMPTED.
- 5) IT IS NOT THE INTENT OF THIS SURVEY TO SHOW EASEMENTS OR RESERVATIONS WHICH MAY EFFECT THIS SITE.
- 6) THE PURPOSE OF THIS SURVEY IS TO PROVIDE EXISTING CONDITIONS FOR ENGINEERING DESIGN.
- 7) CONTOURS SHOWN WERE DERIVED FROM THE DIRECT FIELD MEASUREMENTS SHOWN HEREON.
- 8) CONTOURS SHOWN HEREON ARE TO NATIONAL MAPPING STANDARDS, ONE HALF CONTOUR INTERVAL.
- 9) THERE ARE NO DIRECT LIMITATIONS OF USE PER WAC 332-130-145 2G.
- 10) BOUNDARY INFORMATION SHOWN HEREON IS FROM A PRIOR BOUNDARY SURVEY OF THE PARCEL.
- 11) UTILITIES THAT WERE VISIBLE DURING THE COURSE OF THIS SURVEY ARE SHOWN AND REFLECT THEIR FIELD MEASUREMENT.
- 12) THE INTENT OF THIS SURVEY WAS TO LOCATE VISIBLE UTILITIES, STRUCTURES, CONTOURS, SPOT ELEVATIONS AND DESIGN FEATURES IN THE AREA OF THE REQUESTED SURVEY.
 BEYOND WHAT WAS VISIBLE ON-SITE, NO ATTEMPT WAS MADE TO LOCATE UNDERGROUND UTILITIES.



VERTICAL DATUM:

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

BENCHMARKS:

BASE:
PIERCE COUNTY BENCHMARK NO.21 037 (SPSN-0137) (NGS DL2772)
FOUND NGS, THE MARK IS AN N.G.S. CLASS A MARK (STAINLESS
STEEL ROD IN AN ALUMINUM CASE WITH LID.
ELEVATION: 448.08 FEET.

BASIS OF BEARING:

GEODETIC NORTH. BASED UPON GLOBAL POSITIONING SYSTEM (GPS) LAMBERT GRID WASHINGTON STATE NORTH ZONE COORDINATES. A CONVERGENCE ANGLE OF 01°18'08.74" COUNTERCLOCKWISE WAS APPLIED AT A BRASS PIN IN CONCRETE, INCASED, LOCATED AT THE INTERSECTION OF MERIDIAN AVENUE EAST AND 47TH AVENUE SE. THE MONUMENT IS THE EAST QUARTER CORNER OF SECTION 9, TOWNSHIP 19 NORTH, RANGE 4 EAST OF THE W.M. THE NORTH AMERICAN DATUM OF 1983/1991 (NAD 83/91) GRID COORDINATES WERE FOUND TO BE 666644.065 / 1194302.130 AT THAT POINT. THE INVERSE OF BOTH THE SEA LEVEL CORRECTION FACTOR OF 0.999981618 AND THE GRID SCALE FACTOR OF 0.999962785 WAS APPLIED TO THE GRID COORDINATES FOR SHOWN GROUND DISTANCES.

43RD AVENUE SOUTHWEST

LEGEND:

WF = WETLAND FLAG



CENTRE POINTE Consultants, Inc., P.S. 14209 29th Street East, #105 - Sumner, WA 98390 253-987-5924 main 253-987-7859 fax

253–987–5924 main	253-987-7859 fax	
DRAWN BY: D WOODS	CHECKED BY: N LARSON	
OATE: AUG. 21, 2020	JOB NAME: EXHIBIT	
SCALE: 4" - 20'	JOB NO.: 2000	

NE-NE 9, T19N., R4E., W.M.

SURVEY FOR:

DAVID ARTZ

7917 110th STREET NORTHWEST

GIG HARBOR, WA 98330

PIERCE COUNTY, WASHINGTON

SHEET 1 OF 1