HABITAT TECHNOLOGIES

WETLAND DELINEATION REPORT

EAST TOWN CROSSING

PARCELS 0420351026, 0420351029, 0420351030, 0420264021, 0420264053, 0420264054, and 0420351066

CITY OF PUYALLUP #P-21-0034
2902 East Pioneer
City of Puyallup, Pierce County, Washington

prepared for

Mr. Greg Hellie
@ East Town Crossing
1001 Shaw Road
Puyallup, Washington 98371

prepared by

HABITAT TECHNOLOGIES
P.O. Box 1088
Puyallup, Washington 98371-1088
253-845-5119

OCTOBER 14, 2021

wetlands, streams, fisheries, wildlife – mitigation and permitting solutions
P.O. Box 1088, Puyallup, Washington 98371
253-845-5119 contact@habitattechnologies.net

A VETERAN OWNED SMALL BUSINESS COOPERATIVE

Table of Contents

INTRODUCTION

This document details the culmination of activities and onsite evaluations undertaken to complete an assessment and characterization of potential onsite wetland areas as an element of the planning for future proposed development actions and the required repair of existing stormwater detention facilities located within the southeastern corner associated with the proposed **East Town Crossing Multi-Family Residential Community** (City of Puyallup #P-21-0034). The project site consisted of seven (7) existing parcels of record (Parcels 0420351026, 0420351029, 0420351030, 0420264021, 0420264053, 0420264054, and 0420351066) located at the southeastern corner of the intersection of Pioneer Way East and Shaw Road East within the City of Puyallup, Pierce County, Washington (Figure 1). The goal of this assessment and characterization approach is to ensure that planned site development does not result in adverse environmental impacts to potential wetlands areas or their associated protective buffers.

This document is designed to accompany an associated assessment and characterization of specific critical areas (drainage corridors/ natural waters, critical fish and wildlife habitat areas) within and immediately adjacent to the project site presented within *CRITICAL AREAS ASSESSMENT - Surface Water Drainages and Fish and Wildlife Habitat Conservation Areas* – dated July 13, 2021.

The onsite assessment and evaluation of wetland areas within and immediately adjacent to the project site was completed following 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: 2014 Update* Publication #14-06-029 (Hruby, 2014), the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030), and the City of Puyallup Chapter 21.06 - *Critical Areas*. Please note that this assessment did not include an analysis of steep slopes, septic suitability, erosion hazard areas, or stormwater considerations.

PROJECT SITE DESCRIPTION

The project site was approximately 11-acres in size and irregular in shape. The project site had undergone prior permitted land use actions generally associated with future proposed site development actions. These prior permitted land use actions included the development of stormwater detention facilities, the removal of existing old homesites and outbuildings, clearing and grading, and the placement of imported fill materials to facilitate future proposed site development actions.

The project site was located within a quickly, more intensely developing area along the Shaw Road and Pioneer Way Corridors generally changing from prior single-family

homesites on moderately sized parcels into commercial developments to meet the growing needs of the City of Puyallup and other local communities.

Directions to Project Site: From the City of Puyallup City Hall turn north onto 2nd Street SE and continue to East Pioneer. Turn east onto East Pioneer and continue generally easterly to Shaw Road East. The project site is located at the southeastern corner of the intersection of Pioneer Way East and Shaw Road East.

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 did not identify any wetlands or surface water drainages within or immediately adjacent to 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 did not identify any priority habitats or species within the project site. This mapping resource did identify a wetland and a biodiversity area/corridor offsite to the southeast of the project site. This biodiversity area/corridor was generally associated with an offsite forested hillside.

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 wetlands or surface water drainages within or immediately adjacent to 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 did not identify any surface water drainages or wetlands within or immediately adjacent to the project site. This mapping resource did identify a surface water drainage and a wetland area well offsite to the southwest of the project site. downslope to the north of the eastern boundary of the project site.

CITY OF PUYALLUP MAPPING

The City of Puyallup *Mapping Inventory* was reviewed as a part of this assessment (Figure 6). This mapping resource identified two (2) verified and one (1) unverified wetlands within the project site. This mapping resource also identified a stream entering a stormwater pond facility at the very southeastern corner of the project site.

SOILS MAPPING

The *Soil Mapping Inventory* completed by the Natural Resource Conservation Service was reviewed as a part of this assessment (Figure 7). This mapping resource identified the soils throughout the northern portion of the project site as Briscot loam (6A). This soil series is defined as poorly drained, as formed in alluvium, and as "hydric" in character.

This mapping resource identified the soil within the southern portion of the project site as Puyallup fine sandy loam (31A). This soil series is defined as well drained, as formed in sandy mixed alluvium, and as not "hydric" in character.

PRIOR ASSESSMENTS

A series of prior wetland assessments have been completed and documented by John Comis Associates, Inc. for this project site. These assessments identified that the entire project site exhibited upland characteristics and did not contain areas that met all three of the established wetland criteria (John Comis Associates 2020 and 2021). A similar assessment completed in 2008 also identified that the project site did not contain areas that met all three of the established wetland criteria (John Comis Associates 2008). The 2008 assessment did identify a wetland offsite to the south of the project site.

A previous assessment of wetland characteristics was completed throughout the project site in 2000 by Herrera Environmental Consultants (Herrera Environmental Consultants 2001). This wetland assessment did not identify any areas meeting the wetland criteria within the project site. This wetland assessment did identify a City of Puyallup Category III Wetland directly to the south of the project site.

AERIAL PHOTOS

A series of historical aerial photos was reviewed as a part of this assessment. These photos showed that through 2002 the majority of the central and northern portions of the project site were managed for the production annual agricultural crops and that single-family homesites were located at the northeastern corner of the project site, near the northwestern corner of the project site, and within the southern portion of the project site (Figure 8). During the 2002-2005 period the majority of the northern, central, and southeastern portions of the project site were filled. During these filling actions

stormwater detention facilities associated with development offsite to the south were created within the southeastern portion of the project site (Figure 8a).

As depicted in Figure 8b the project site had continued to be managed for future development. With the exception of one of the original homesites all of the previously present homesites had been removed. This last original homesite was subsequently removed in the late spring of 2021.

ONSITE ANALYSIS

CRITERIA FOR WETLAND IDENTIFICATION

This assessment focuses on the assessment and characterization of potential specific wetland areas which may be located within the project site. This document is designed to accompany an associated assessment and characterization of specific critical areas (drainage corridors/ natural waters, critical fish and wildlife habitat areas) within and immediately adjacent to the project site presented within *CRITICAL AREAS ASSESSMENT - Surface Water Drainages and Fish and Wildlife Habitat Conservation Areas* – dated July 13, 2021.

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" (United States 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.

WETLAND: A "wetland" is defined by the City of Puyallup as those areas that are inundated or saturated by surface water or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands include those artificial wetlands intentionally created to mitigate wetland impacts.

STUDY METHODS

Habitat Technologies completed a series of onsite assessments from March through mid-October 2021. In addition, Habitat Technologies has completed similar assessments for adjacent parcels over the past few decades. The project site was generally flat and had been modified since 2005 by clearing, grading, and the placement of clean gravelly fill. This site modification actions had been undertaken as a part of site preparation for future development consistent with City of Puyallup permitting.

Onsite activities were completed in accordance with criteria and procedures established in the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) with the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (2010 Supplement); the *Washington State Wetlands Rating System* (WDOE 2014 version); the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030); and the City of Puyallup *Critical Areas Ordinance*.

FIELD OBSERVATION

The project site was accessed via an existing driveway connection to Shaw Road East along the western boundary of the project site and by an existing driveway connection to Pioneer Way East along the northern boundary of the project site. The entire project site has been previously graded and leveled for proposed future site development planning. As a part of prior City of Puyallup permitted actions a stormwater detention pond had been created in the southeastern corner of the project site. This stormwater detention

pond presently services the developed areas to the south-southwest and the outlet for this stormwater detention pond is confined within a buried pipe to outlet into a previously created ditch system associated with Pioneer Way East. Representative sample plots are shown on Figure 9 and field data worksheets are provided within Appendix A.

- **Soils**

The soil characteristics throughout the project site had been altered by prior permitted land use actions. These permitted actions were completed consistent with City of Puyallup permitting approvals and generally focused on the removal of existing homesites and the placement of imported clean gravelly loam fill materials obtained from an approved surface mine area. The location and amount imported clean gravelly loam fill materials utilized onsite was designed to facilitate future site planning and development actions. As a result of these actions the surface soil throughout the project site often to a depth greater than 48-inches was dominated by clean gravelly loam, was often well compacted, appeared to drain moderately well, and did not exhibit "hydric" soil characteristics.

One area was identified onsite to exhibit characteristics more typical of native soil that had not been impacted by fill placement. This area was best defined as a remanent property line swale between prior parcels with the area to the north having been filled between 2002-2005 with several feet of imported clean gravelly loam and a once managed prior homesite within the west central portion of the project site. The soil within this remanent property line swale exhibited characteristics typically associated with the Puyallup fine sandy loam soil series. As defined by **SP4** located within this swale the soil did not exhibit prominent redoximorphic features typically associated with "hydric" soil characteristics.

Created stormwater detention facilities were present within the southeastern portion of the project site. The surface soil layer within the bottom of these facilities was dominated by fine alluvium and organic materials (leaves, roots, grasses/herbs) typical of these types of facilities. The surface soil layer was underlain with imported gravelly loam fill materials.

- **Hydrology**

As noted above, the project site had been somewhat recently modified by the placement of clean imported gravelly loam fill materials consistent with City of Puyallup permitting approvals as a part of future site development planning and completion. No portion of the project site was identified to exhibit characteristics typically associated with wetland hydrology or the concentrated movement of seasonal surface water runoff.

Created stormwater detention facilities were present within the southeastern portion of the project site. These facilities were created in association with the development of the parcel directly to the south and surface water from these facilities is conveyed via a buried system to the ditch associated with Pioneer Way East along the northern boundary of the project site.

The assessment and characterization of hydrology patterns immediately adjacent to the project site are provided within *CRITICAL AREAS ASSESSMENT - Surface Water Drainages and Fish and Wildlife Habitat Conservation Areas* – dated July 13, 2021.

- **Vegetation**

The plant community throughout the project stie has been altered by prior permitted clearing, grading, homesite removals, and the placement of clean imported gravelly loam fill materials. Observed species onsite included sapling red alder (*Alnus rubra*), sapling black cottonwood (*Populus trichocarpa*), evergreen blackberry (*Rubus laciniatus*), Himalayan blackberry (*Rubus armeniacus*), trailing blackberry (*Rubus ursinus*), Scots broom (Cytisus scoparius), rose (Rosa spp.), snowberry (Symphoricarpus albus), rye (*Lolium* spp.), bluegrass (*Poa* spp.), bentgrass (*Agrostis tenuis*), orchardgrass (*Dactylis glomerata*), quackgrass (*Agropyron repens*), fescue (*Festuca* spp.), sweet vernal grass (*Anthoxanthum odoratum*), velvet grass (*Holcus lanatus*), reed canarygrass (*Phalaris arundinacea*), bracken fern (*Pteridium aquilium*), buttercup (*Ranunculus repens*), cats-ear (*Hypochaeris radicata* and *Hypochaeris lanatum*), clover (*Trifolium* spp.), daisy (*Bellis* spp.), mustard (*Brassica campestris*), plantain (*Plantago major*), Queen Annes lace (*Daucus carota*), dandelion (*Taraxacum officinale*), geranium (*Geranium* spp.), curled dock (*Rumex crispus*), sheep sorrel (*Rumex acetosella*), ivy (*Hedera* spp.), tansy (Tanacetum vulgare), morning glory (*Impomaea purpurea*), bull thistle (*Cirsium vulgare*), and Canadian thistle (*Cirsium arvensis*). A number of ornamental plants were also present within the areas of the prior homesites particularly within the southwestern portion of the project site.

The plant community associated with the created stormwater detention facilities within the southeastern corner of the project site was dominated by young deciduous trees and shrubs. Observed species included black cottonwood, red alder, Pacific willow (*Salix lasiandra*), Sitka willow (*Salix sitchensis*), Douglas spiraea (*Spiraea douglasii*), blackberries, and reed canarygrass.

- **Fish and Wildlife**

The assessment and characterization of fish and wildlife habitats within and immediately adjacent to the project site are provided within *CRITICAL AREAS ASSESSMENT - Surface Water Drainages and Fish and Wildlife Habitat Conservation Areas* – dated July 13, 2021.

CRITICAL AREAS DETERMINATION

As documented above, **no areas** within the project site were identified to exhibit all three established criteria for designation as "wetland." The created stormwater detention facilities present within the southeastern portion of the project site are best defined as intentionally created features from a nonwetland sites. These facilities were also created consistent with City of Puyallup permitting approvals.

SELECTED DEVELOPMENT ACTION

The *Selected Development Action* for the project site (Parcels 0420351026, 0420351029, 0420351030, 0420264021, 0420264053, 0420264054, and 0420351066) focuses on the development of a new multi-family residential community within the western portion of the project site. The development of this new multi-family residential community would be consistent with the City of Puyallup Comprehensive Plan, local zoning, the character of the neighborhood, and the provisions of the City of Puyallup Chapter 21.06. As documented above, the development of this new multi-family residential community would **not** require and adverse impact to identified "wetlands."

STANDARD OF CARE

This report has been completed by Habitat Technologies for the use by **Mr. Greg Hellie.** Prior to extensive site planning the findings documented in this report should be reviewed, verified, and approved by City of Puyallup and potentially other resource and permitting agency(s) staff. 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

Bryan W. Peck
Senior Wetland Biologist

Thomas D. Deming

Thomas D. Deming, SPWS
Habitat Technologies
(Appendix B)

FIGURES

Figure 1 Site Vicinity

Habitat Technologies
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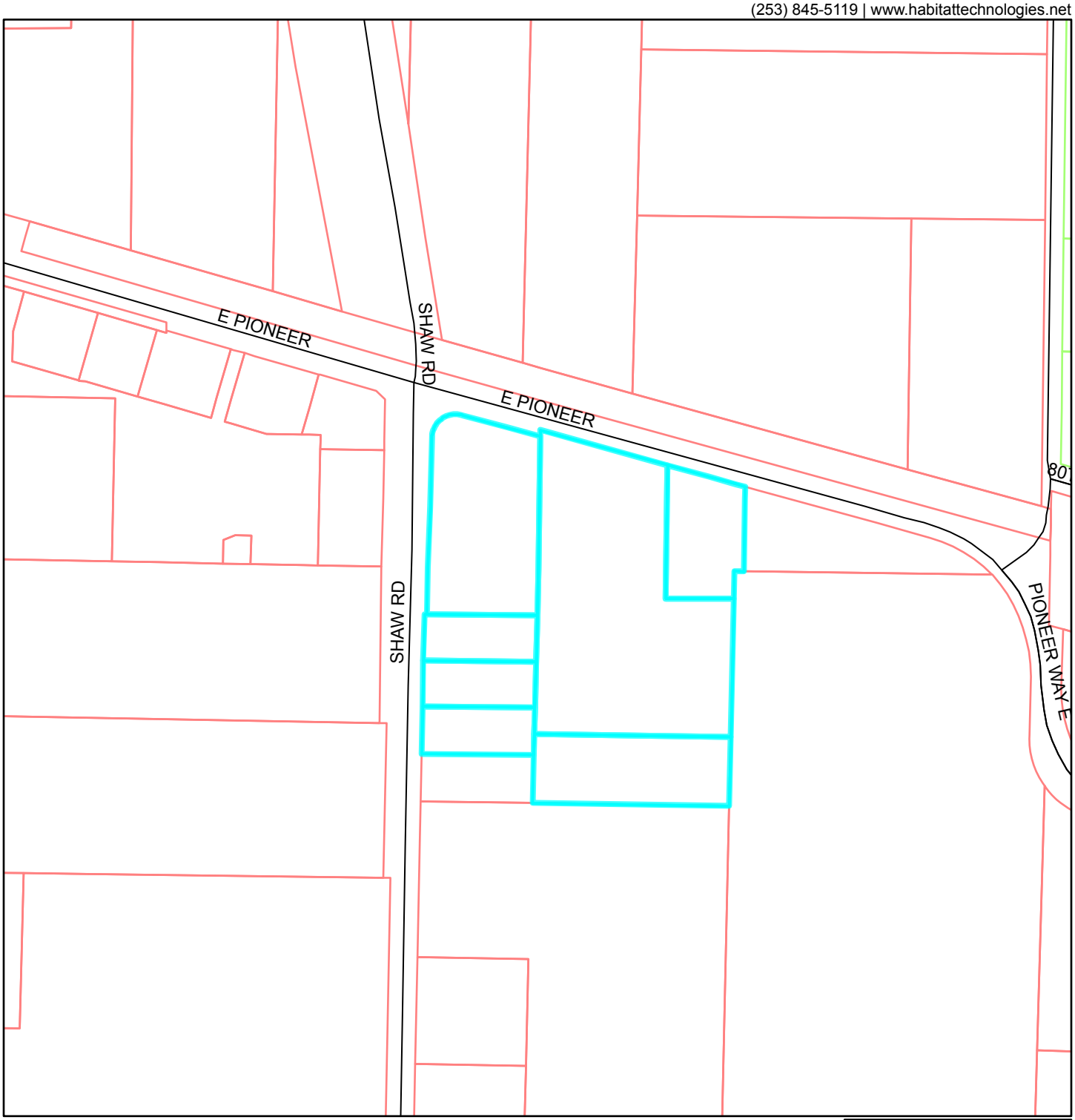


Legend

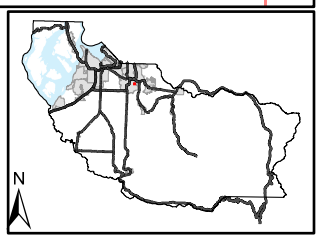
Roads

Condominium

Other

Tax Parcels

Base Parcel



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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: 6/7/2021 01:25 PM

Figure 2 NWI Mapping

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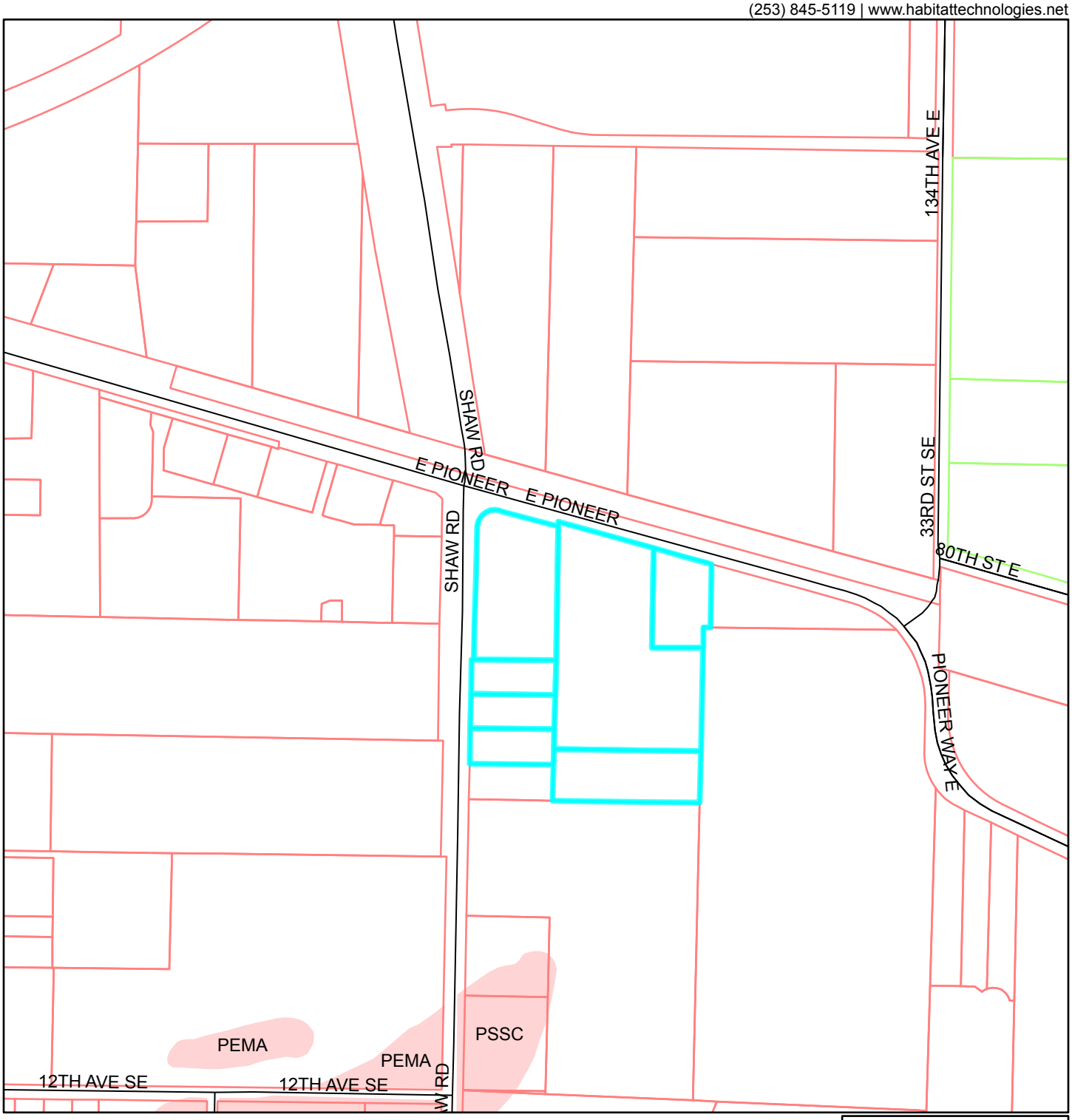

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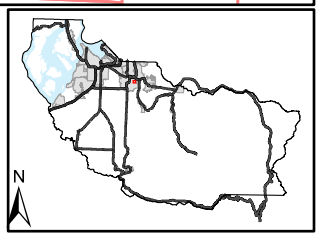
- Roads
- Condominium
- Other
- National Wetlands Inventory

Tax Parcels

- Base Parcel



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Date: 6/7/2021 01:26 PM

Figure 3 PHS Mapping

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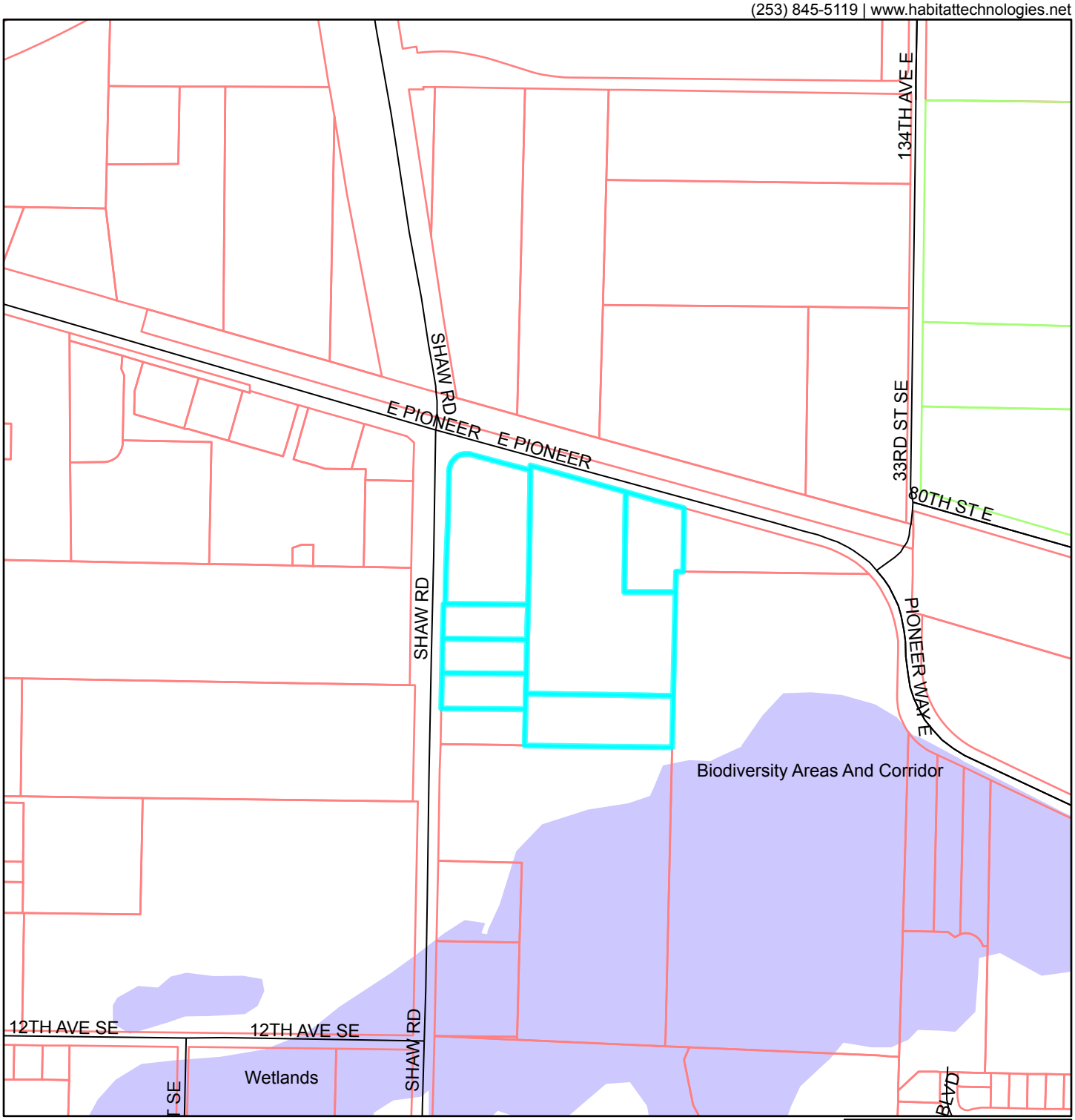

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Roads

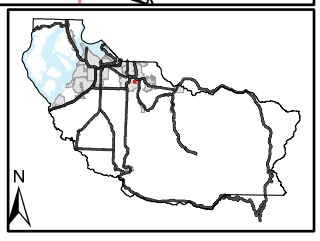
Tax Parcels

Base Parcel

Condominium

Other

Priority Habitat and Species



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Date: 6/7/2021 01:27 PM

Figure 4 WDFW Salmonscape Mapping

June 7, 2021

1:9,028

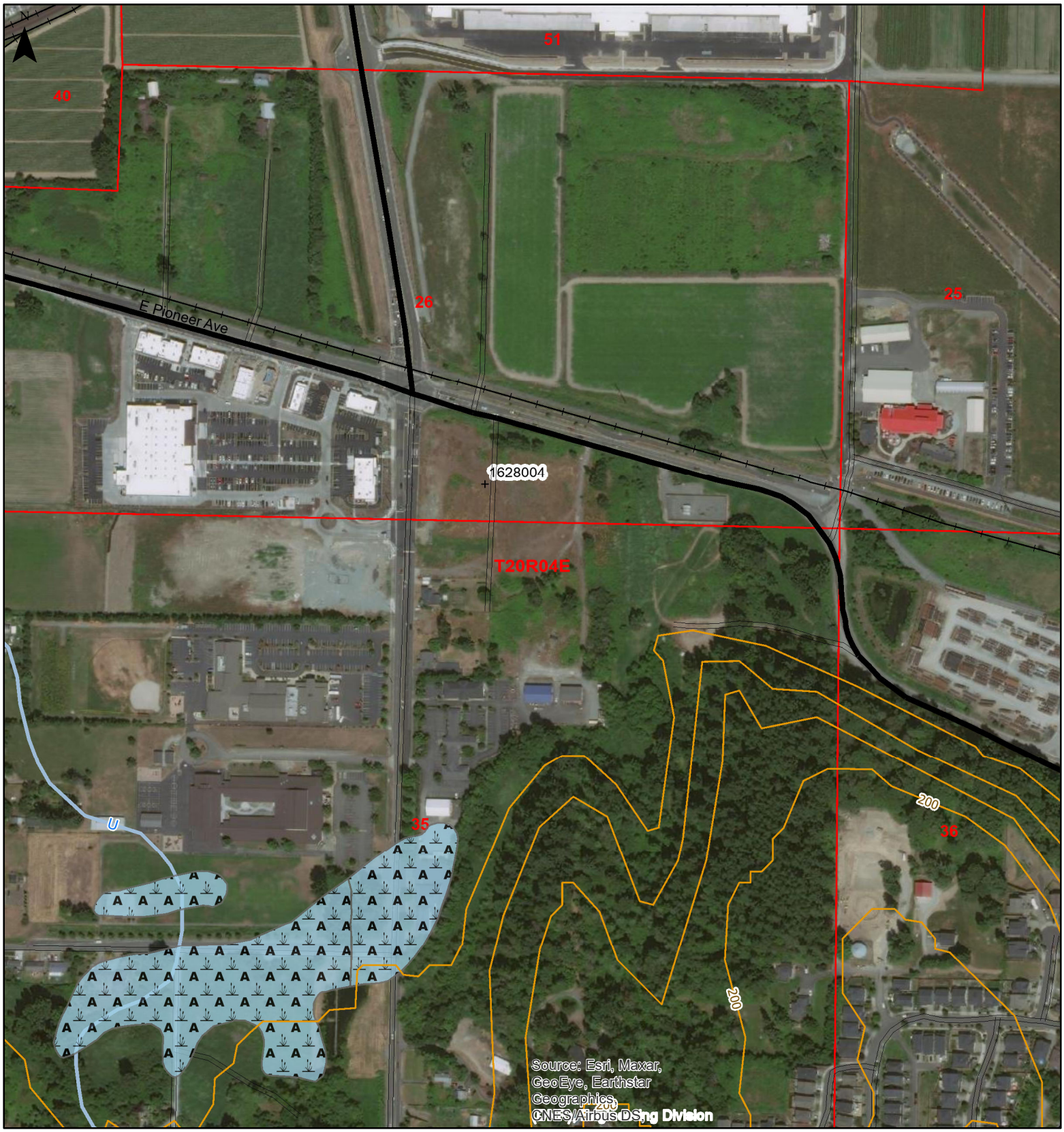
All SalmonScape Species

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, USGS/NHD, Dale Gombert (WDFW), WDFW

Forest Practices Water Type Map



Map Symbols

- New Stream
- Proposed Water Type
- Stream Removal
- Break between water types
- Start and End Point of Surveyed Reach
- Natural Fish Barrier
- Manmade Barrier
- End of Fish or Last Fish

Additional Information

Legal Description

S35 T20.0N R04.0E, S51 T20.0N R04.0E
S26 T20.0N R04.0E, S36 T20.0N R04.0E
S40 T20.0N R04.0E, S25 T20.0N R04.0E

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

0 0.1 Miles

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Figure 6 Puyallup Mapping

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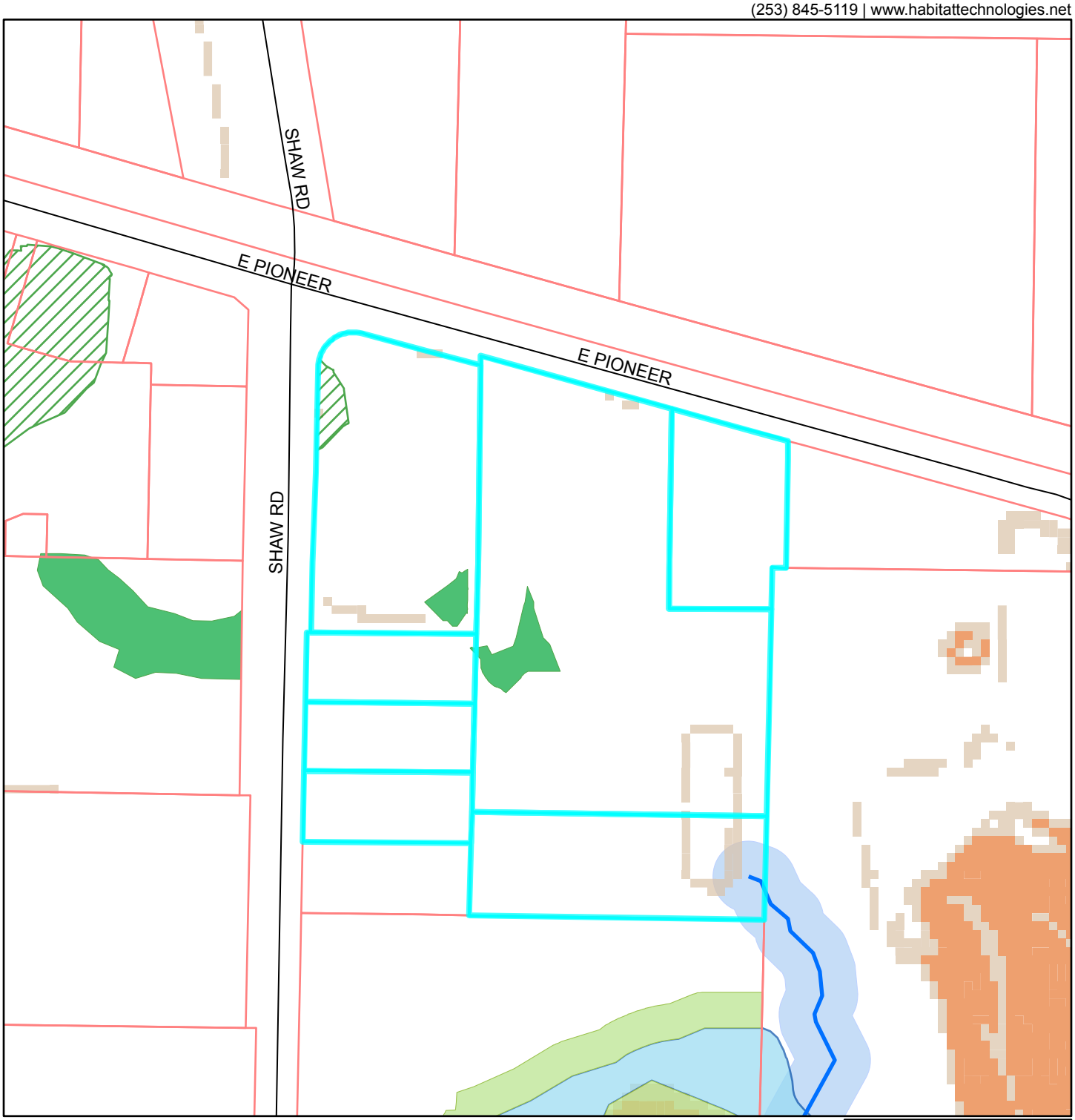

Legend

- Streams - Puyallup
- Roads

Tax Parcels
- Base Parcel
- Condominium
- Other

Wetlands - Puyallup
- Field-verified Delineated
- Field-verified
- Unverified
- Unverified
- Unverified
- Buffer
- Mitigation Site

Potential Landslide Hazard Areas - Puyallup
- 16% - 39%
- 40% and Greater

N

1:2,400

0 50 100 200 Feet

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Date: 6/7/2021 02:06 PM

Figure 7 Soils Mapping

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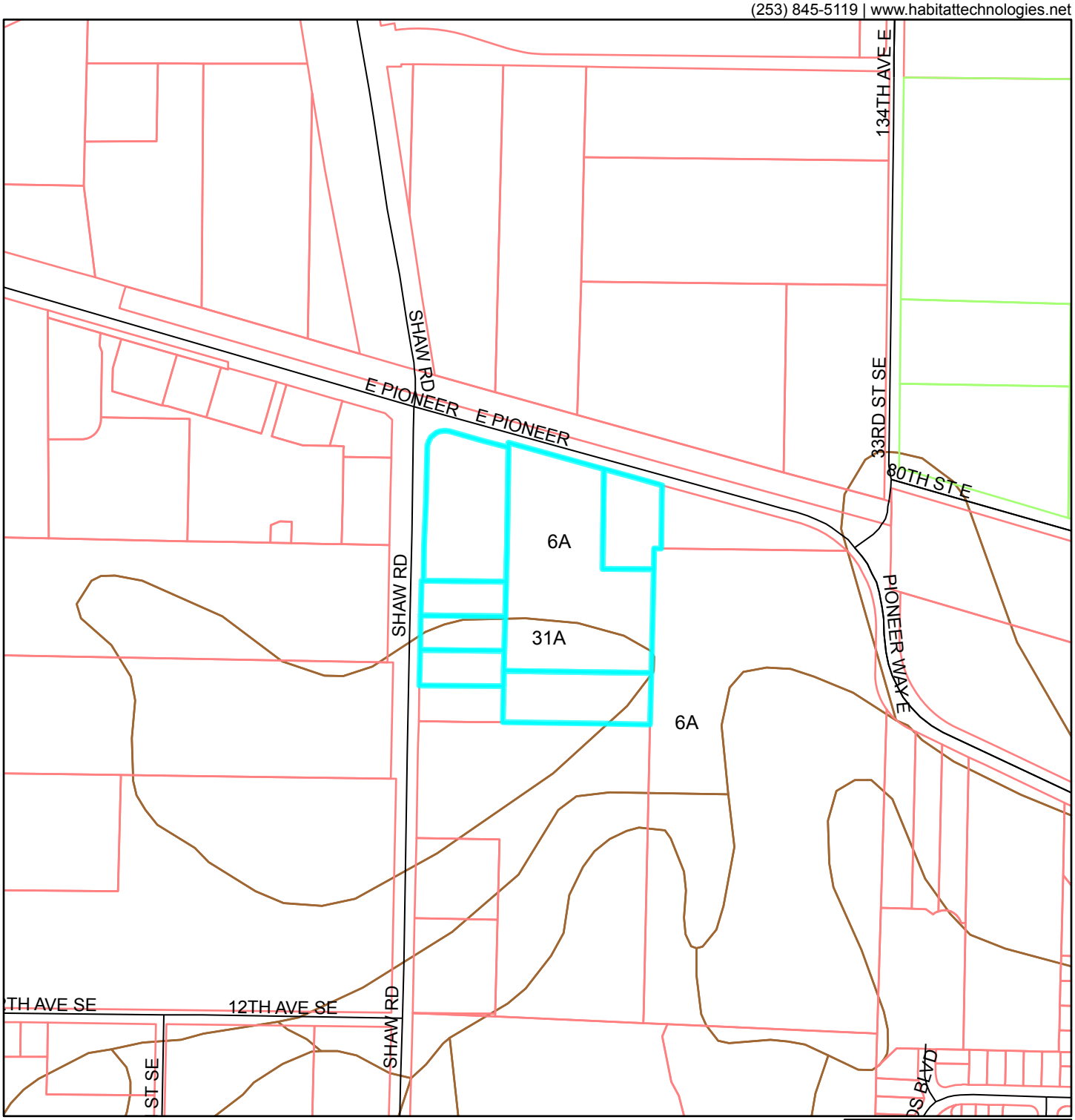


Legend

Roads

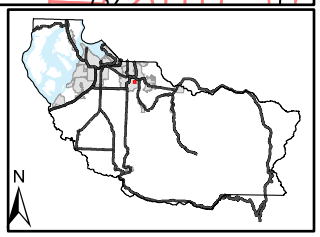
Tax Parcels

Base Parcel

Condominium

Other

Soils



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Date: 6/7/2021 02:04 PM

Figure 8 1998 Aerial Photo

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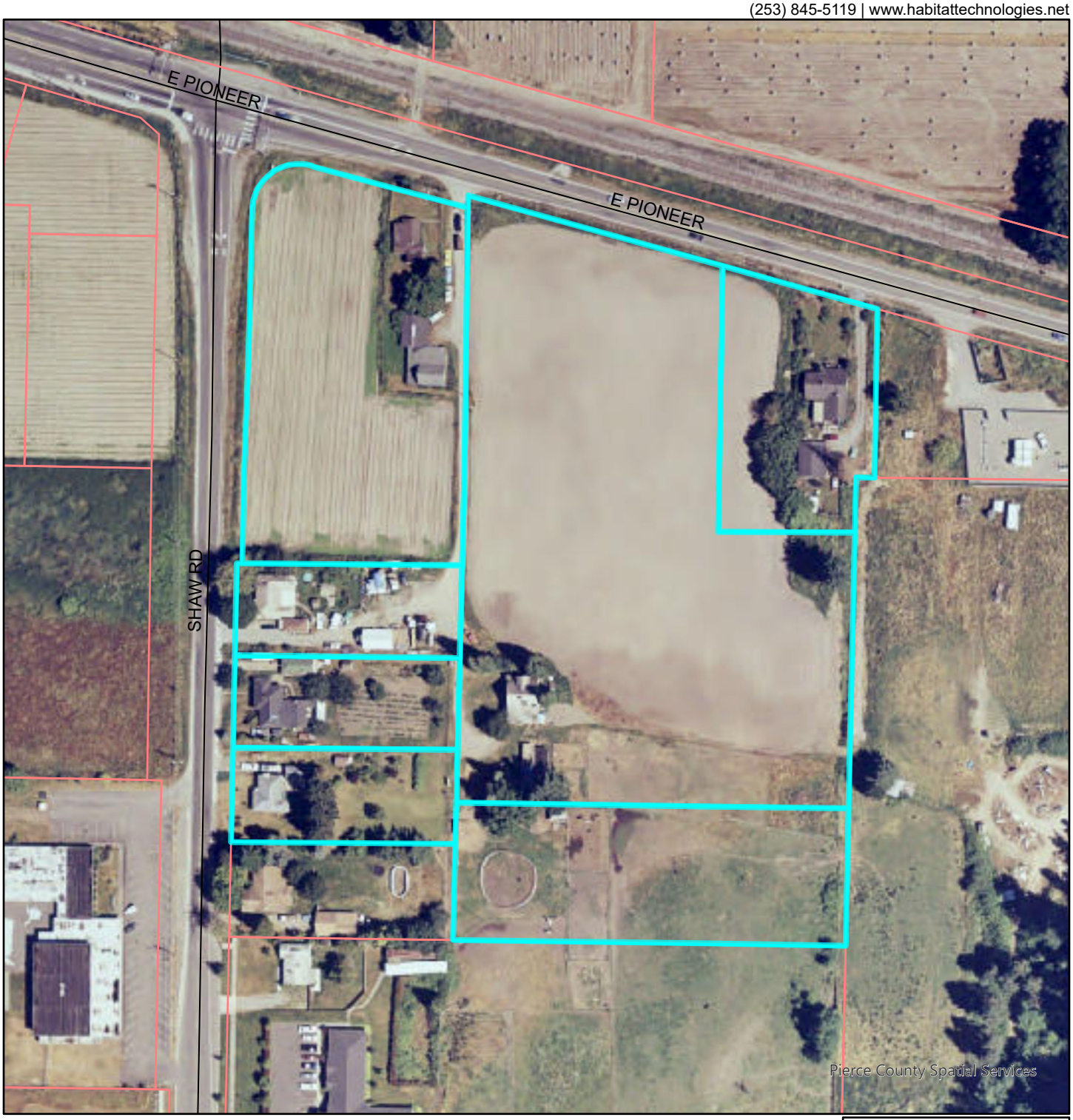
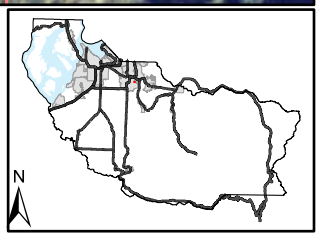


Legend

Tax Parcels
- Base Parcel
- Condominium
- Other
- Roads

County - 1998 Ortho



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Date: 10/14/2021 04:11 PM

Figure 8a 2005 Aerial Photo

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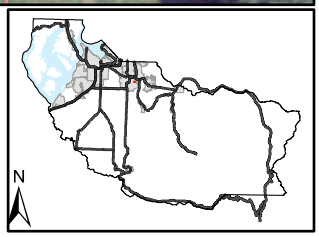
Legend

Tax Parcels

- Base Parcel
- Condominium
- Other
- Roads



County - 2005 Ortho

1:1,800

0 37.5 75 150 Feet

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: 10/14/2021 04:15 PM

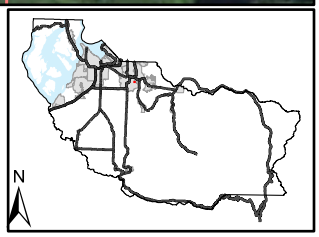
Figure 8b 2020 Aerial Photo

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

Legend

Tax Parcels

- Base Parcel
- Condominium
- Other
- Roads



County - 2020 Ortho

1:1,800

0 37.5 75 150 Feet

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: 10/14/2021 04:16 PM

ExpertGPS

Figure 9 Site Graphic

50 ft

MN
15°20'

REFERENCE AND BACKGROUND LIST

Adamus, P.R., E.J. Clairain Jr., R.D. Smith, and R.E. Young. 1987. Wetland Evaluation Technique (WET); Volume II: Methodology, Operational Draft Technical Report Y-87, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Cowardin, Lewis M. et al, 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, U.S. Fish and Wildlife Service, U.S. Department of the Interior, FWS/OBS-79/31.

Herrera Environmental Consultants 2001. Wetland Technical Study - Shaw Road/East Pioneer Avenue Development Area Puyallup, Washington. Prepared for The Abbey Road Group Land Development Services Company, LLC, Puyallup, Washington. unpublished

Hitchcock, C.L., A. Cronquist. 1977. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.

Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

JCA (John Comis Associates, LLC) 2020. Verification report for the wetland and stream delineations at East Town Crossing. Prepared for The Abbey Road Group Land Development Services Company, LLC, Puyallup, Washington by John Comis Associates, LLC, Tacoma, Washington. unpublished.

JCA. 2021. Biological habitat assessment for the East Town Crossing. Prepared for The Abbey Road Group Land Development Services Company, LLC, Puyallup, Washington by John Comis Associates, LLC, Tacoma, Washington. unpublished.

Lichvar,R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetlands Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. http://wetland-plands. Usace.army.mil/

Reppert, R.T., W. Sigleo, E. Stakhiv, L. Messman, and C. Meyers. 1979. Wetland Values - Concepts and Methods for Wetland Evaluation. Research Report 79-R1, U.S. Army Corps of Engineers, Institute for Water Resources, Fort Belvoir, Virginia.

United States Army Corps of Engineers, 1987. Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. March 1987.

United States Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), Environmental Laboratory ERDC/EL TR-08-13.

US Climate Data, 2015 http://www.usclimatedata.com/climate/tacoma/washington/united-states/uswa0441/0441/2014/1

USDA, 2009. Stream Visual Assessment Protocol Version 2. 190-VI-NBH:https://efotg.sc.egov.usda.gov.

USDA Natural Resource Conservation Service Plants Database, 2015 (for hydrophytic plan classification): http://plants.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. Web Soil Survey. 2016 http://vewsoilsurvey.nrcs.usda.gov/app/newfeatures.2.3.htm.

US Fish and Wildlife Service. Stream Visual Assessment Manual. https://www.fws.gov.

US Fish and Wildlife Service National Wetland Inventory Mapper, 2016 (for NWI wetland mapping): http://www.fws.gov/wetlands/Data/Mapper.html.

Washington State Department of Ecology. 1997. Washington State Wetlands Identification and Delineation Manual. Publication Number 96-94.

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 – Field Data

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-1

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Briscot NWI classification: somewhat poorly

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	<2	no	FAC
2. Cytisus scoparius	<2	no	UPL
3. Populus trichocarpa - seedlings	<1	no	FAC
4.			
5.			
	<4 = Total Cover		
Herb Stratum (Plot size: 15ft radius)			
1. Agrostis tenuis	85	yes	FAC
2. Hypochaeris lanatum	trace	no	FACU
3. Plantago major	trace	no	FACU
4. Daucus carota	trace	no	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: dominated by a typically used seeded erosion contorl grass

SOIL

Sampling Point: SP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					SL	
2-24	10YR 4/2	100						very gravelly sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils. Compacted imported fill

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-2

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Briscot NWI classification: somewhat poorly

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	trace	no	FAC
2. Cytisus scoparius	trace	no	UPL
3. Populus trichocarpa - seedlings	<1	no	FAC
4. Rubus laciniatus	trace	no	FACU
5.			
	<2 = Total Cover		
Herb Stratum (Plot size: 15ft radius)			
1. Agrostis tenuis	10	yes	FAC
2. Hypochaeris lanatum	trace	no	FACU
3. Plantago major	trace	no	FACU
4. Daucus carota	trace	no	FACU
5. Tanacetum vulgare	90	yes	FACU
6. Poa spp.	trace	no	FAC
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: dominated by Tansy and a typically used seeded erosion contorl grass

SOIL

Sampling Point: SP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 4/2	100						very gravelly sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils. Compacted imported fill

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-3

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Briscot NWI classification: somewhat poorly

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	trace	no	FAC
2. Cytisus scoparius	trace	no	UPL
3.			
4. Rubus laciniatus	trace	no	FACU
5.			
	<2	= Total Cover	
Herb Stratum (Plot size: 15ft radius)			
1. Agrostis tenuis	85	yes	FAC
2. Hypochaeris lanatum	trace	no	FACU
3. Plantago major	trace	no	FACU
4. Daucus carota	trace	no	FACU
5. Tanacetum vulgare	<2	no	FACU
6. Poa spp.	<5	no	FAC
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: dominated by a typically used seeded erosion contorl grass

SOIL

Sampling Point: SP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-36	10YR 4/2	100						very gravelly sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils. Compacted imported fill.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-4

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Puyallup NWI classification: moderately well

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	trace	no	FAC
2.			
3.			
4. Rubus laciniatus	trace	no	FACU
5.			
	<2 = Total Cover		
Herb Stratum (Plot size: 15ft radius)			
1. Phalaris arundinacea	100	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: edge of several feet of fill to the north and a prior homesite to the south.

SOIL

Sampling Point: SP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-14	10YR 2/2	100						dense roots and fine sandy loam
14-30	10YR 3/2	100						loamy fine sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-5

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Puyallup NWI classification: moderately well

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus trichocarpa - young	95	yes	FAC
2.			
3.			
4.			
	95 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	25	yes	FAC
2. Cytisus scoparius	<2	no	UPL
3.			
4. Rubus laciniatus	<10	no	FACU
5.			
	<40 = Total Cover		
Herb Stratum (Plot size: 15ft radius)			
1. Agrostis tenuis	20	yes	FAC
2. Hypochaeris lanatum	<10	no	FACU
3. Plantago major	<10	no	FACU
4. Daucus carota	trace	no	FACU
5. Tanacetum vulgare	<10	no	FACU
6. Poa spp.	<10	no	FAC
7. Dactylis glomerata	20	yes	FACU
8.			
9.			
10.			
11.			
	<70 = Total Cover		
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: grove of even aged (10-12 year old) black cottonwood grove

SOIL

Sampling Point: SP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100						gravely loam fill
4-24	10YR 4/2	100						very gravelly sandy loam fill

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils. Compacted imported fill.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

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

Project/Site: East Town Center City/County: City of Puyallup Sampling Date: 14 OCT 21

Applicant/Owner: State: Washington Sampling Point: SP-6

Investigator(s): Habitat Technologies Section, Township, Range: S35/26, T20N, R04E

Landform (hillslope, terrace, etc.): valley terrace Local relief (concave, convex, none): flat Slope (%):

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: Briscot NWI classification: somewhat poorly

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

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

Remarks: Entire project site filled and leveled with several feet of imported gravelly sandy loam imported fill between 2002 and 2005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus trichocarpa - young	30	yes	FAC
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. Rubus armeniacus	<10	no	FAC
2. Cytisus scoparius	<2	no	UPL
3.			
4. Rubus laciniatus	<10	no	FACU
5.			
	<20 = Total Cover		
Herb Stratum (Plot size: 15ft radius)			
1. Agrostis tenuis	50	yes	FAC
2. Hypochaeris lanatum	<10	no	FACU
3. Plantago major	<5	no	FACU
4. Daucus carota	<2	no	FACU
5. Tanacetum vulgare	<2	no	FACU
6. Poa spp.	<10	no	FAC
7.			
8.			
9.			
10.			
11.			
	<70 = Total Cover		
Woody Vine Stratum (Plot size: 15ft radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: dominated by a typically used seeded erosion contorl grass

SOIL

Sampling Point: SP-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100						gravely loam fill
6-24	10YR 4/2	100						very gravelly sandy loam fill

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: NO prominent field indicators of hydric soils. Compacted imported fill.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: NO prominent field indicators of wetland hydrology.

APPENDIX B – Habitat Technologies Key Staff

HABITAT TECHNOLOGIES

In a nutshell, Habitat Technologies provides an expanded scope of environmental services for a diverse realm of clients over a wide range of project types. Our clients included private citizens, private companies (large and small), public and Tribal agencies, and local citizen groups. Our projects range from the single-family homeowner, through modest to very large commercial/industrial and residential developments, into public utilities installation and public port/industrial commission economic developments. Also included within this list of projects are local parks and environmental restoration actions undertaken by volunteer citizens, and programs undertaken by community groups.

Habitat Technologies provides estuarine, wetland, and stream identification and delineation; populations and physical habitat assessments; wetland functional value analysis; limiting factor evaluations; impact mitigation, restoration, and monitoring; water quality and hydrology analysis; analysis of threatened and endangered plants and animals; environmental permitting/resource agency interactions; and expert testimony critique/presentation. Habitat Technologies has actively planned, designed, and monitored the restoration, creation, and relocation of estuarine and freshwater wetlands, and stream/riparian corridors. These projects have involved the sampling and analysis of resource information, onsite evaluation and delineation, documentation of present fish and wildlife populations, and projection of future fish and wildlife habitat benefits. Such onsite work leads to the development of project elements which ensures the avoidance, minimization, and compensation of environmental impacts.

Other projects completed target the onsite evaluation of aquatic and terrestrial species utilization and available habitats. These projects involved formal and informal fish, bird, reptile, amphibian, and mammal surveys, with special emphasis given to raptors and threatened and endangered plants, fish, and wildlife.

An essential primary component of each project is the coordination of proposed project activities with local, state, and federal permitting and resource agencies, Indian tribes, and local private interests. Habitat Technologies targets permitting activities early in the project planning process to assure that the time required to obtain required environmental permits and costs associated with potential project design modifications are held to a minimum. We continue our coordination of these permitting activities through the entire process should public hearings or further actions be required.

Habitat Technologies has initiated several wetland mitigation projects which entail the creation of freshwater and estuarine wetlands from non-wetlands or degraded wetland areas. These creation activities target the enhancement of fish and wildlife habitats, as well as, the creation of plant communities native to the local area. One of the beneficial elements of such wetland creations is the establishment of a relatively low maintenance wetland area which provides essential habitats for native plant, fish, and wildlife species. Such creations can also become a very valuable amenity to the overall project.

wetlands, streams, fisheries, wildlife – mitigation and permitting solutions
P.O. Box 1088, Puyallup, Washington 98371
253-845-5119 contact@habitattechnologies.net

HABITAT TECHNOLOGIES

Office Location: Habitat Technologies, 606 East Main, Suite C2, Puyallup, WA 98372
Mailing Address: Habitat Technologies, P.O. Box 1088, Puyallup, WA 98371

Contact Persons: Thomas D. Deming and Bryan W. Peck
Voice 253-845-5119
E-mail tom@habitattechnologies.net / bryan@habitattechnologies.net

Key Staff: **Thomas D. Deming** obtained a Bachelor of Science Degree in Fisheries Science in 1978, a Bachelor of Science Degree in Wildlife Science from Oregon State University in 1978, and a Juris Doctor Degree from the University of Puget Sound School of Law in 1987. Mr. Deming is a Certified Professional Wetland Scientist through the Society of Wetland Scientists since the inception of the certification program in 1995. Mr. Deming is also listed as an approved "wetland specialist," approved "wildlife biologist," and approved "fishery biologist" kept by Pierce County and a number of other local permitting jurisdictions.

Mr. Deming routinely provides site-specific assessments of wetlands, streams, fish/wildlife habitats and species presence, and endangered/threatened species to address proposed project related impacts within the federal, state, tribal, and local permitting processes. These assessments include a review of impact avoidance and impact mitigation associated with proposed actions and habitat restoration.

These assessments have included formal wetland boundary delineation using the *Corps of Engineers Wetland Delineation Manual* (1987 Manual); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (2010 Supplement); the *Washington State Wetlands Rating System* (2004, 2008, 2014 versions); and local critical areas ordinances. These assessments have included onsite and offsite wetland and habitat evaluations, the review of existing reports, the preparation of associated mapping, the documentation of field observations and field assessment data within appropriate data forms, and the preparation of wetland rating worksheets following the criteria established within the Washington Department of Ecology Wetland Rating System for Western Washington. Mr. Deming has also completed an analysis of pre- and post-hydrology patterns associated with project related impacts, an analysis of existing and proposed plant community characteristics, an analysis of soil characteristics, and a wide variety of seasonal hydrology monitoring programs within existing wetlands and in created mitigation wetlands.

Mr. Deming has prepared permit application submittal materials (i.e. local critical areas ordinances, SEPA, NEPA, JARPA) to meet specific projects and has prepared compensatory mitigation plans and implementation/monitoring programs to address permitting requirements at the local, state, tribal, and federal levels. Mr. Deming has also been active in the development of administrative programs and is often called upon to provide expert witness testimony within court proceedings and public hearings.

Mr. Deming has both received and provided instruction in a wide variety of training in the use of the various federal and state manuals to accurately identify, define, and evaluate wetland, stream, wildlife, and estuarine/marine resources. Prior to starting Habitat Technologies Mr. Deming spent more than 10 years as an environmental biologist with the Puyallup Indian Tribe, as well as a number of prior short-term positions with the U.S. Fish and Wildlife Service, the U.S. Forest Service, the U.S. National Marine Fisheries Service, the Oregon Department of Fish and Wildlife, and as a commercial fisherman.

Mr. Deming has prepared and implemented restoration and enhancement programs to address wetlands, streams, and wildlife mitigation programs. These restoration and enhancement programs utilize native plants and natural habitat features to ensure project success and suitability to the project area. Mr. Deming has also undertaken a number of projects which focus on the development of local jurisdiction resource protection and stormwater management issues.

Key Staff: **Bryan W. Peck** obtained his work experience through on-the-job assessments and professional training since 1999. Mr. Peck is identified as an approved "wetland specialist" by Pierce County along with a number of other local jurisdictions, and has completed numerous site-specific assessments of wetland, stream, wildlife, and endangered/threatened species issues associated with a wide variety of proposed site development actions and habitat restoration projects. These assessments also addressed project related impact avoidance and unavoidable impact mitigation within the federal, state, and local permitting processes.

Mr. Peck has completed a variety of formal wetland boundary delineations using the *Corps of Engineers Wetland Delineation Manual* (1987 Manual); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (2010 Supplement); the *Washington State Wetlands Rating System* (2004, 2008, 2014 versions); and local critical areas ordinances. These assessments have included onsite and offsite evaluations, the review of existing resource mapping data, the preparation of associated mapping, the documentation of field observations and field assessment data within appropriate data forms, and the preparation of wetland rating worksheets following the criteria established within the Washington Department of Ecology Wetland Rating System for Western Washington. Mr. Peck also provides an analysis of pre- and post-hydrology patterns associated with project related impacts, provides an analysis of existing and proposed plant community characteristics along with soil characteristics.

Along with the onsite defining of wetland boundaries and field data plot locations Mr. Peck has also undertaken seasonal hydrology monitoring programs to define wetland boundaries and characteristics, and completed soil monitoring to define soil profiles especially within areas of review soil modification. Mr. Peck has identified the ordinary high water mark associated with seasonal wetlands, permanently flowing and intermittent streams, and intertidal areas.

Mr. Peck has prepared permit application submittal materials to meet specific projects and has prepared compensatory mitigation plans and implementation/monitoring programs to address permitting requirements at the local, state, and federal levels.

PHOTOS

Generally view westerly across the northern portion of the project site.

General view of Sample Plot #2 in the northwestern portion of the project site.

View of the depth of fill in the central portion of the project site – SP#3.

General view westerly at SP#4. Edge of fill to right and prior homesite area to left.

Small grove of black cottonwood saplings in the southern portion of the project site.

General view northerly across the project site.