WETLAND, AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

PORT OF OLYMPIA-SOUTH SOUND COMMERCE CENTER

DECEMBER 2021

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

WETLAND, AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

PORT OF OLYMPIA-SOUTH SOUND COMMERCE CENTER

DECEMBER 2, 2021

PROJECT LOCATION

7380 LINDERSON WAY SOUTHWEST,
TUMWATER, WA 98501

PREPARED FOR

PDC SEATTLE, LLC
8775 FOLSOM BLVD., SUITE 200,
SACRAMENTO, CA 95826

PREPARED BY

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Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting PDC Seattle, LLC (Applicant) with a wetland, and fish and wildlife habitat assessment and environmental planning for a proposed industrial development project at 7380 Linderson Way Southwest in the City of Tumwater, Washington. The subject property is situated in the East/West ¼ of Section 10/40, Township 17 North, Range 02 West, W.M. (Thurston County Tax Parcel Numbers 12710100000 and 12710310100).

SVC investigated the subject property and publicly accessible areas within 300 feet of the site for the presence of potentially regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in the Spring of 2021. Sixteen formal data plots (DP-1 through DP-16) were collected at representative locations throughout the subject property and adjacent properties, all of which confirm non-wetland conditions onsite due to the lack of all three wetland criteria (predominance of hydrophytic vegetation, hydric soils, and wetland hydrology) according to current wetland delineation methodology. All priority species including big brown bat, Townsend's Big-eared bat, Oregon vesper sparrow, and Mazama pocket gopher will be assessed under a separate cover.

The Applicant proposes to develop an industrial facility in the center of the subject property. The proposed project will consist of one 449,100 square foot building, parking facilities, a right-of-way, landscaping, and associated infrastructure. The proposed parking facilities will extend approximately 10 feet offsite to the west onto the adjacent Port of Olympia parcel. Upon thorough investigation no regulated wetland, and fish and wildlife habitat was identified, and as such, no adverse impacts are expected from the proposed project.

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting PDC Seattle, LLC (Applicant) with a wetland, and aquatic fish and wildlife habitat assessment and environmental planning for a proposed industrial development project at 7380 Linderson Way Southwest in the City of Tumwater, Washington. The subject property is situated in the East/West ¼ of Section 10/40, Township 17 North, Range 02 West, W.M. (Thurston County Tax Parcel Numbers 12710100000 and 12710310100).

The purpose of this Wetland, and aquatic Fish and Wildlife Habitat Assessment Report is to document the presence of potentially regulated waterbodies(streams) and wetlands on or near the subject property; to assess potential impacts to these areas from the proposed project; and to provide recommendations to avoid, minimize, and/or mitigate for these impacts if need be.

This report provides conclusions and recommendations regarding:

- Site description, project description, and area of assessment;
- Background research and identification of potentially regulated wetlands, fish and wildlife habitat, and priority species within the vicinity of the proposed project;
- Determination of potentially regulated wetland;
- Standard buffer recommendations, building setbacks, and development limitations;
- Existing and proposed site conditions; and
- Supplemental information for regulatory review.

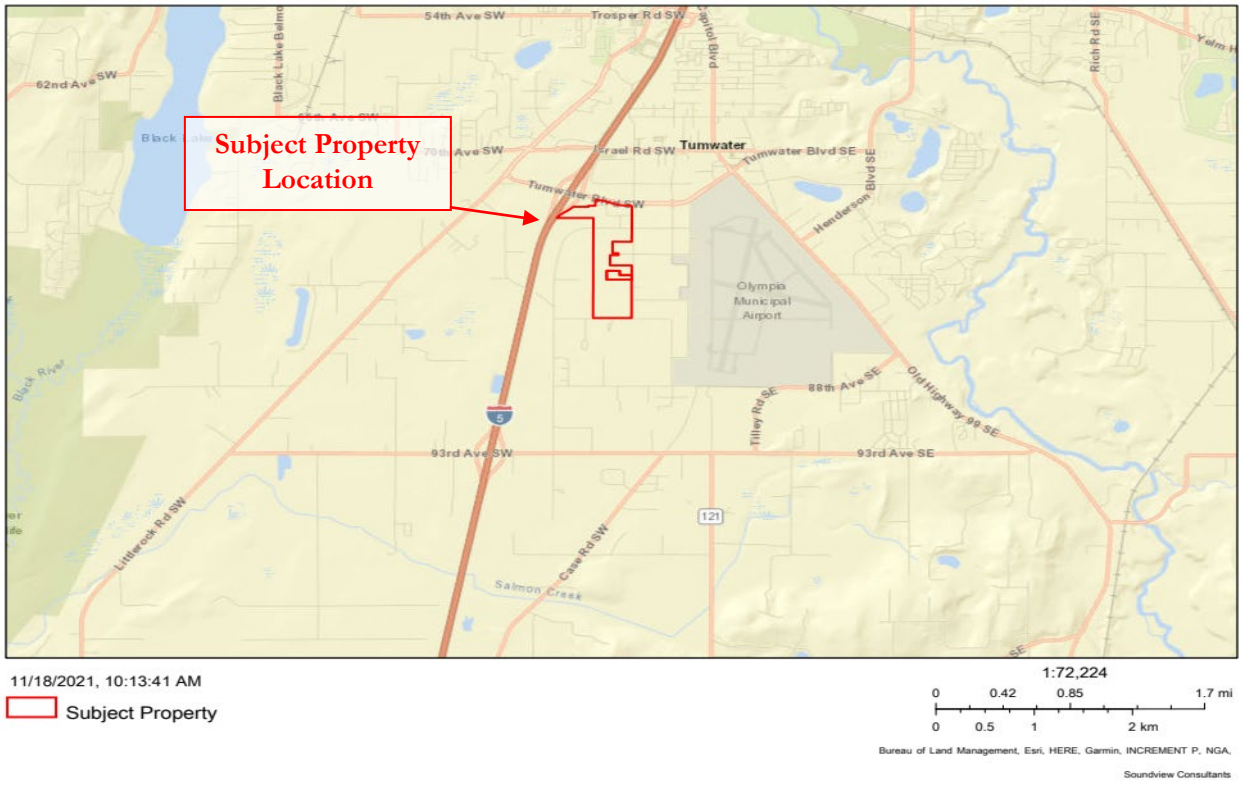
Chapter 2. Proposed Project

2.1 Location

The proposed project consists of a 300-acre site located at 7380 Linderson Way Southwest in the City of Tumwater, Washington. The subject property is situated in the East/West ¼ of Section 10/40, Township 17 North, Range 02 West, W.M. (Thurston County Tax Parcel Numbers 12710100000 and 12710310100).

To access the site from I-5 South, take exit 101 toward Tumwater Boulevard toward New Market Industrial Campus/ Olympia Airport. Upon taking the exit take a left onto Tumwater Boulevard Southeast and continue straight for 0.7 miles. Then upon reaching a roundabout take the first exit onto New Market Street Southwest. In 0.2 mile the subject property will be located on the right.

Figure 1. Vicinity Map



2.1 Project Description

The Applicant proposes to develop an industrial facility in the center of the subject property. The development will consist of a 449,100 square foot building surrounded by a right-of-way, parking facilities, landscaping, and associated infrastructure. All development will be located over 300 feet away from any critical aeras within the vicinity of the property. No wetlands, streams or critical area were observed onsite, and as such, it appears that industrial development of the subject property will not be encumbered by any potentially-regulated wetlands, fish and wildlife habitat, and/or associated buffers.

Chapter 3. Methods

SVC investigated, delineated, and assessed any potentially regulated wetlands, streams and aquatic fish and wildlife habitat on and within 300 feet of the subject property in March 2021. A formal site investigation and data collection was completed for offsite areas on the parcel to the west of the site (Thurston County Tax Parcel 09230001003), as it is also leased by the Applicant. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic maps, National Resource Conservation Service (NRCS) soil survey, Thurston County and City of Tumwater Geographic Information Systems (GIS) data, Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) and SalmonScape mapping tools, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington Department of Natural Resources (DNR) water typing system, and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report.

Wetlands, streams, and select fish and wildlife habitats and species are regulated features per City of Tumwater Municipal Code (TMC) Title 16 (Environment) and subject to restricted uses/activities under the same title. Wetland presence/absence was determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (NRCS, 2018). Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 thru DP-16). Additional test pits were excavated at regular intervals throughout the subject property to confirm wetland presence/absence.

All priority species including big brown bat, Townsend's Big-eared bat, Oregon vesper sparrow, and Mazama pocket gopher have been assessed in the under a separate cover. As such, these species will not be discussed in this report.

Chapter 4. Background and Existing Conditions

4.1 Landscape Setting

The subject property is located in a mixed land use setting in the City of Tumwater. The subject property is adjacent to industrial facilities to the north, Olympia Regional airport and industrial facilities to the east, single family residential units to the south, and a mix of undeveloped land, log yard operations and schools to the west. The portion of the property proposed for development is currently manipulated by the presence of gravel pads and access roads likely used to support historic log yard operations onsite. The northern and southern portion of the property remains largely undeveloped and forested, apart from the additional gravel yards and access roads identified throughout the site. The subject property is located within Water Resource Inventory Area (WRIA) 23 – Upper Chehalis and 13 - Deschutes. The site is generally flat aside from a series constructed hummocks (spoils piles) and drainage swales located throughout the property. A USGS Topographic map is provided in Appendix B1.

Figure 2. Aerial View of the Subject Property

4.2 Soils

The NRCS Soil Survey of Thurston County, Washington identifies four soil series present on the subject property: Everett very gravelly sandy loam, 0 to 8 percent slopes (32), Cagey loamy sand (20), Nisqually loamy fine sand, 0 to 3 percent slopes (73), and Norma silt loam (76). A soil map is provided in Appendix (B2).

Everett very gravelly sandy loam, 0 to 8 percent slopes (32)
According to the NRCS survey, Everett very gravelly sandy loam, 0 to 8 percent slopes, is a very deep, somewhat excessively drained soil. This soil is located on terraces and outwash plains and is formed in glacial outwash. The surface layer is a dark reddish brown very gravelly sandy loam that is about 3 inches thick. The subsoil is 17 inches thick and consists of dark brown and dark yellowish brown extremely gravelly sandy loam. The substratum is olive brown extremely gravelly loamy sand and dark grayish brown extremely gravelly sand spans to a depth of 60 inches or more. Everett very gravelly sandy loam, 0 to 8 percent slopes is primarily a non-hydric soil (NRCS, 2019).

Cagey loamy sand (20)
According to the NRCS survey, Cagey loamy sand is a somewhat very deep, moderately well drained. In a typical profile, the surface layer is dark brown loamy sand to a depth of about 6 inches. Within the subsoil from 6 to 22 inches, the soil is a dark yellowish brown loamy sand, and from 22 to 60 inches is a light olive brown fine sand in the upper 6 inches and light olive brown, mottled fine sand in the lower 54 inches. Permeability is rapid, available water capacity is moderate, runoff is slow, and the hazard of water erosion is slight. Cagey loamy sand is primarily non-hydric but may contain up to 5 percent hydric inclusions of Mckenna soils (NRCS, 1990).

Nisqually loamy fine sand, 0 to 3 percent slopes (73)
According to the NRCS survey, Nisqually loamy fine sand, 0 to 3 percent slopes, is somewhat excessively drained. In a typical profile, the surface layer is black loamy fine sand to a depth of 5 inches. Below this layer from 7 to 26 inches is very dark grey and very dark grayish brown loamy fine sand. Permeability is moderately rapid in the surface layer and very rapid in the substratum. Available water capacity is moderate, runoff is slow, and the hazard of water erosion is slight. Nisqually loamy fine sand, 0 to 3 percent slopes, is listed as non-hydric on the Thurston County Hydric Soils List with up to 4% inclusions of hydric Norma soils (NRCS, N.d.)

Norma silt loam (76)
According to the NRCS survey, Norma silt loam is a very deep, poorly drained soil located in depressions on till plains. In a typical soil profile, the surface layer is a very dark gray silt loam about eight inches thick, and the subsoil is dark grayish brown, mottled sandy loam about 22 inches thick. The substratum to a depth of 60 inches or more is olive gray, mottled sandy loam. Permeability is moderately rapid in Norma soil. Norma silt loam is listed as partially hydric on the Thurston County Hydric Soils List (NRCS, N.d.).

4.3 Vegetation

The forested area located in the northern and southern extent of the subject property is forested with Douglas-fir (*Pseudotsuga menziesii),* beaked hazelnut (*Corylus cornuta*), oceanspray (*Holodiscus discolor*), snowberry (*Symphoricarpos alba*), salal (*Gaultheria shallon*), and California huckleberry (*Vaccinium ovatum*).

Areas throughout the site that have been heavily manipulated by historic log yard operations have been overgrown with common invasive and pioneer plant species such as Black cottonwood (*Populus balsamifera*), Scotch broom (*Cytisus scoparius*), Himalayan blackberry *(Rubus armeniac*us), and snowberry.

The non-native invasive species Scotch broom, Himalayan blackberry and reed canarygrass were found throughout the property.

4.4 Local and National Wetland and Stream Inventories

The Thurston County wetlands and stream inventory (Appendix B3) identifies two potential wetlands located on the central portion and northwest portion of the subject property, and six potential wetlands located offsite and within 300 feet of the subject property. The USFWS NWI map (Appendix B4) does not identify any potential wetlands within 300 feet of the of the subject property. No other potential wetlands or streams are mapped on or within 300 feet of the subject property by the critical area inventories, including the DNR stream typing map (Appendix B5).

It appears the wetlands identified by the Thurston County wetland inventory were likely desktop-mapped and not verified in the field. SVC preformed a thorough investigation of these areas during the site visits and confirmed the lack of wetlands onsite. Please see Chapter 5. Results for more details.

4.5 Priority Species and Habitat

The WDFW PHS map (Appendix B6) identifies the presence of the big brown bat (*Eptesicus fuscus*), and the Townsend's Big-eared bat (*Corynorhinus townsendii*) within the township, an approximately 36-square-mile area, but not necessarily on the subject property.

In addition, the WDFW PHS map identifies distinct populations of the Oregon vesper sparrow *(Pooecetes gramineus affinis)*, and Mazama pocket gopher (*Thomomys mazama*) within 330 feet of the site. The documented locations of the Oregon vesper sparrow are noted within 100 feet of the project area; however, it is likely the species exists over 330 feet from the subject property. PHS data for the Oregon vesper sparrow places accuracy of documentation at a quarter of a mile and notes the most recent documentation is from 2015. It is likely the presence noted near the site would actually belong to a known and well-established Oregon vesper sparrow population known to nest and inhabit the northern extent of the Olympia Regional Airport. All priority species including big brown bat, Townsend's big-eared bat, Oregon vesper sparrow, and Mazama pocket gopher have been thoroughly assessed in the Habitat Conservation Plan (HCP) under a separate cover.

WDFW SalmonScape map (Attachment B7) does not identify any documented or modeled salmonid presence on or within 300 feet of the subject property.

4.6 Floodplain

The FEMA floodplain map (Appendix B8) does not identify the 100-year floodplain onsite.

4.7 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) weather station at Olympia Airport in order to obtain percent of normal precipitation during and preceding the site investigation. A summary of data collected is provided in Table 1.

Table 1. Precipitation Summary[1]

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	Last 30 Days (Observed/Normal)[2]	Year-to-Date (Observed/Normal)[2]	Percent of Normal (Month/Year)
03/18/2021	0.02	0.0	0.31	0.97	3.93/5.69	41.46/37.47	69/110
03/23/2021	0.1	0.1	1.21	1.34	4.38/5.73	42.47/38.37	76/111
03/24/2021	0.4	0.1	1.61	1.72	4.11/5.74	42.87/38.55	71/111

1. Precipitation volume provided in inches. Data obtained from NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew)
2. Year-to-date precipitation is for the calendar year from January 1st to the onsite date(s)

Precipitation for the site investigation on March 18, 2021 was slightly below the statistical normal for the preceding 30 days (approximately 69 percent of normal) and within normal for the water year (approximately 110 percent of normal). Precipitation for the site investigation on March 23, 2021 was within the statistical normal for the preceding 30 days (approximately 76 percent of normal) and within normal for the water year (approximately 111 percent of normal). Precipitation for the site investigation on March 24, 2021 was within the statistical normal for the preceding 30 days (approximately 71 percent of normal) and within normal for the water year (approximately 111 percent of normal. Overall, hydrologic conditions were generally normal for all three site visits. These conditions were considered in making professional wetland determinations.

Chapter 5. Results

SVC preformed a formal site investigation of the subject property and the adjacent parcel to the west. During the investigation SVC investigated presence of potentially regulated wetlands, and aquatic fish and wildlife habitat. Using current methodology, the site assessment confirmed the lack of wetlands or regulated stream features within the subject property. No other potentially regulated wetlands or priority habitats or species were observed on or in the vicinity of the subject property during the site investigation.

5.1 Onsite Wetland Absence

The March 2021 site investigations thoroughly assessed all areas where wetlands are most likely to occur (ie topographic low points) including each of the potential wetland areas identified on the Thurston County wetland inventory map, and confirmed the lack of wetland presence in each polygon. Wetland polygons mapped by Thurston County failed to exhibit all three wetland delineation criteria (a predominance of hydrophytic vegetation, hydric soils, or wetland hydrology) according to current wetland delineation methodology. A total of 16 data plots (DP-1 through DP-16) were collected during the formal assessments. Five data plots (DP-3U, 10U, 14U. 15U, and 16U) are located onsite and four data plots (DP-1U, 7U, 8U, and 9U) are located offsite but within the 300-foot offsite assessment area. The remainder of the data plots (DP-2U, 4U, 5U, 6U, 11U, 12U, and 13U) were located offsite and outside this assessment area. Due to the location, the data outside the assessment area has not been included with this report, but may be provided in future proposals.

DP-10U and DP-16U represent the two potential wetland polygons mapped by Thurston County onsite. Both DP-10U and DP-16U lack hydric soils and hydrology, but met indicators for hydrophytic vegetation through the Dominance Test. Species present in both plots varied in wetland status and are generally dominated by common colonizers of disturbed areas including red alder (*Alnus rubra)*, black cottonwood (*Populus balismerfera)*, reed canary grass (*Phalaris arundinacea)* and Himalayan blackberry. Given past land use of the site, it is presumed colonization occurred post disturbance. Both formal data plots have relatively dark soils with no redox present in the profile. DP-10U consisted of very dark gray (10YR 3/1) sandy loam from 0 to 15 inches, and DP-16U consisted of very dark gray (10YR 3/1) sandy loam from 0 to 6 inches underlain by very dark greyish brown (10YR 3/2) sandy loam from 6 to 16 inches. Overall, soils at both data plots lacked necessary redox concentrations to meet hydric soil indicators, and showed no evidence of a depleted matrix within the first 12 inches of the soil surface. No direct signs of wetland hydrology, such as surface water, a high groundwater table, or soil saturation within the upper 12 inches of the soil surface, were observed at either data plot. The investigation occurred at the optimal time to view wetland conditions, during the beginning of the growing season under generally normal hydrologic conditions; lack of wetland hydrology during this time frame supports the non-wetland determination. As such, neither data plot met all three wetland criteria, thus confirming wetland absence onsite.

Thurston County potential wetland polygons within 300 feet of the proposed parking area that extends offsite minimally, were represented by DP-1U, DP-7U, DP-8U and DP-9U. None of these data plots met all three wetland criteria. DP-1U failed to meet all three criteria, whereas DP-7U and DP-8U did support a hydrophytic plant community due to the presence of common facultative species, but lacked hydric soils and wetland hydrology. DP-9U also showed evidence of a hydrophytic plant community due to the presence of common disturbance tolerant species, but also exhibited hydric soils meeting

indicator S5 (Sandy Redox). However, DP-9U did not show any evidence of wetland hydrology. If this area were functioning as wetland, it is expected that wetland hydrology would be present at this time of year in the early growing season under normal hydrological conditions. Furthermore, the presence of several facultative-upland species, namely Scotch broom and sworfern, which generally do not tolerate extended periods of inundation or saturation, further indicates that this area does not support wetland hydrology. It is possible that the observed soils were a result of historical disturbance (importing of hydric soils, removal of topsoil, or historical change in hydrology). As a result, DP-9U is also determined not to meet wetland criteria.

5.2 Onsite Ditches

Four artificially excavated ditches were observed onsite, two north of the proposed project area (Ditch Z, and Y) and two south of the proposed project area (Ditch X, and W). Ditch Z and Y can both be characterized by steep vertical banks, which clearly have been intentionally excavated to likely support historic stormwater conveyance and capture onsite. Neither ditch exhibited a defined bed and bank or sorting and scouring of substrate, characteristic of natural erosional features, nor water present within the features at the time of the investigation during the wet season. Similarly, Ditch X and W have been artificially excavated to likely support stormwater management onsite. Ditch X and W can be characterized by uniform and linear channels which lack naturally defined bed and banks. Both features appear to have been filled in the past. All onsite ditches lack connectivity to a mapped upstream or downstream tributary. Per TMC 16.32.030.U *"Waters of the state" are defined in Washington Administrative Code (WAC) 222-16-030 and 222-16-031 and exist now or hereafter amended.* Per WAC 222-16-031(5) "Type 5 Waters" *means all segments of natural waters within the bankfull width of the defined channels that are not Type 1, 2, 3, or 4 Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of the year and are not located downstream from any stream reach that is a Type 4 Water. Type 5 Waters must be physically connected by an above-ground channel system to Type 1, 2, 3, or 4 Waters.* As each ditch onsite lacks a naturally defined channel and has been artificially constructed to support preexisting stormwater management, and have no downstream connection to typed waters none of the ditches are anticipated to be regulated.

5.2 Onsite Stormwater Ponds

Multiple stormwater ponds were identified on or within 300 feet of the formal investigation area. These stormwater ponds appear to have been artificially and intentionally excavated due to the unnatural sharp edges, intentional rectangular shapes, and steep sides that are all distinctive of manmade conditions. In addition, the stormwater detention ponds appear to have been created out of uplands. Prior to their construction, no evidence on aerials of potential inundation or ground saturation or distinct changes in vegetation were present in the area that would indicate the presence of a potential wetland. Furthermore, all mapped soils in these areas are considered primarily non-hydric soils. Per TMC 16.28.30.FF, 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*". Therefore, the stormwater detention ponds on and within 300 feet of the formal investigation area are not considered regulated features under TMC 16.28.

Chapter 6. Regulatory Considerations

The site investigations in March 2021 confirmed the lack of wetland or stream presence on and within 300 feet of the subject property. No other potentially regulated wetlands or waterbodies were identified on or near the subject property. As such, local critical areas regulations are not anticipated or discussed below. Priority species were not assessed by SVC and will be submitted under separate cover.

6.1 State and Federal Considerations

In a December 2, 2008 memorandum from the Environmental Protection Agency (EPA) and USACE, joint guidance is provided that describes waters that are to be regulated under section 404 of the CWA (USACE, 2008). This memorandum was amended on February 2, 2012 where the EPA and USACE issued a final guidance letter on waters protected by the CWA.

The 2012 guidance describes the following waters where jurisdiction would be asserted: 1) traditional navigable waters, 2) interstate waters, 3) wetlands adjacent to traditional navigable waters, 4) non-navigable tributaries of traditional navigable waters that are relatively permanent meaning they contain water at least seasonally (e.g. typically three months and does not include ephemeral waters), and 5) wetlands that directly abut permanent waters. The regulated waters are those associated with naturally occurring waters and water courses and not artificial waters (i.e. stormwater pond outfalls).

The 2012 memorandum further goes on to describe waters where jurisdiction would likely require further analysis: 1) Tributaries to traditional navigable waters or interstate waters, 2) Wetlands adjacent to jurisdictional tributaries to traditional navigable waters or interstate waters, and 3) Waters that fall under the "other waters" category of the regulations.

In addition, the 2012 guidance identifies thirteen waters or areas where jurisdiction will not be asserted: 1) Wet areas that are not tributaries or open waters and do not meet the agencies regulatory definition of "wetlands", 2) Waters excluded from coverage under the CWA by existing regulations, 3) Waters that lack a "significant nexus: where one is required for a water to be jurisdictional, 4) Artificially irrigated areas that would revert to upland if the irrigation ceased, 5) Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing, 6) Artificial reflecting pools or swimming pools excavated in uplands, 7) Small ornamental waters created by excavating and/or diking dry land to retain water for primarily aesthetic reasons, and puddles, 8) Water-filled depressions created incidental to construction activity, 9) Groundwater, including groundwater drained through subsurface drainage systems, 10) Erosional features (gullies and rills), 11) Non-wetland swales, 12) Ditches that are excavated wholly in uplands, drain only uplands or non-jurisdictional waters, and have no more than ephemeral flow, and 13) Ditches that do not contribute flow, either directly or through other waterbodies, to a traditional navigable water, interstate water, or territorial sea.

As each identified onsite ditch (Ditch Z, Y, X, and W) has been artificially excavated and do not contribute flow to other waterbodies or traditionally navigable waters they are not regulated under the CWA.

Chapter 7. Closure

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

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

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

Chapter 8. References

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Appendix A — Methods and Tools

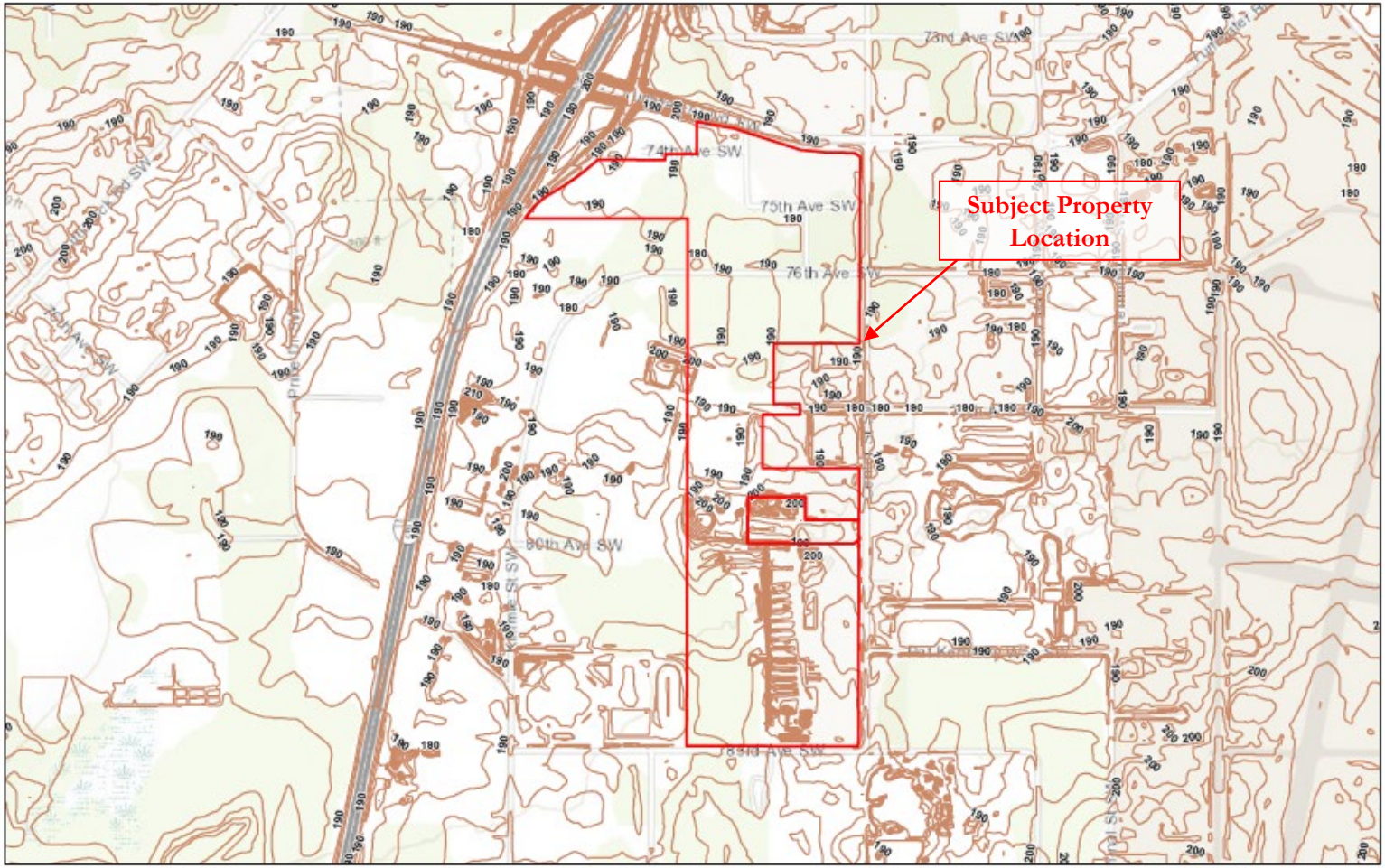
Table A-1. Methods and tools used to prepare the report.

Parameter	Method or Tool	Website	Reference
Wetland Presence/Absence	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf	**Environmental Laboratory.** 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Core of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)	http://www.usace.army.mil/CECW/Documents/cecwo/reg/west_mt_finalsupp.pdf	**U.S. Army Corps of Engineers.** 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Indicator Status	2016 National Wetland Plant List	https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf	**Lichvar**, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
Plant Names	USDA Plant Database	http://plants.usda.gov/	Website
	Flora of the Pacific Northwest	http://www.washington.edu/uwpress/search/books/HITFLC.html	**Hitchcock**, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	Website GIS data based upon: **Goldin, 1992.** Soil Survey of Whatcom County Area, Washington. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
Hydric Soils Data	NRCS Hydric Soils List	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html	Website
Threatened and Endangered Species	Washington Natural Heritage Program	http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences	**Washington Natural Heritage Program** (Data published 07/19/17). Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	http://wdfw.wa.gov/hab/phspage.htm	**Priority Habitats and Species (PHS) Program** (Data requested 07/24/18). Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife (WDFW).
	NOAA fisheries species list and maps	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm and http://www.nmfs.noaa.gov/pr/species/	Website
	USFWS species lists by County	http://www.fws.gov/westwafwo/se/SE_List/endangered_Species.asp	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/salmonscape/	Website
Report Preparation	Tumwater Municipal Code	https://www.codepublishing.com/WA/Tumwater	TMC Chapter 16 Environment: 16.28 (Wetland Protection Standards), 16.32 (Fish And Wildlife Habitat Protection)

Appendix B — Background Information

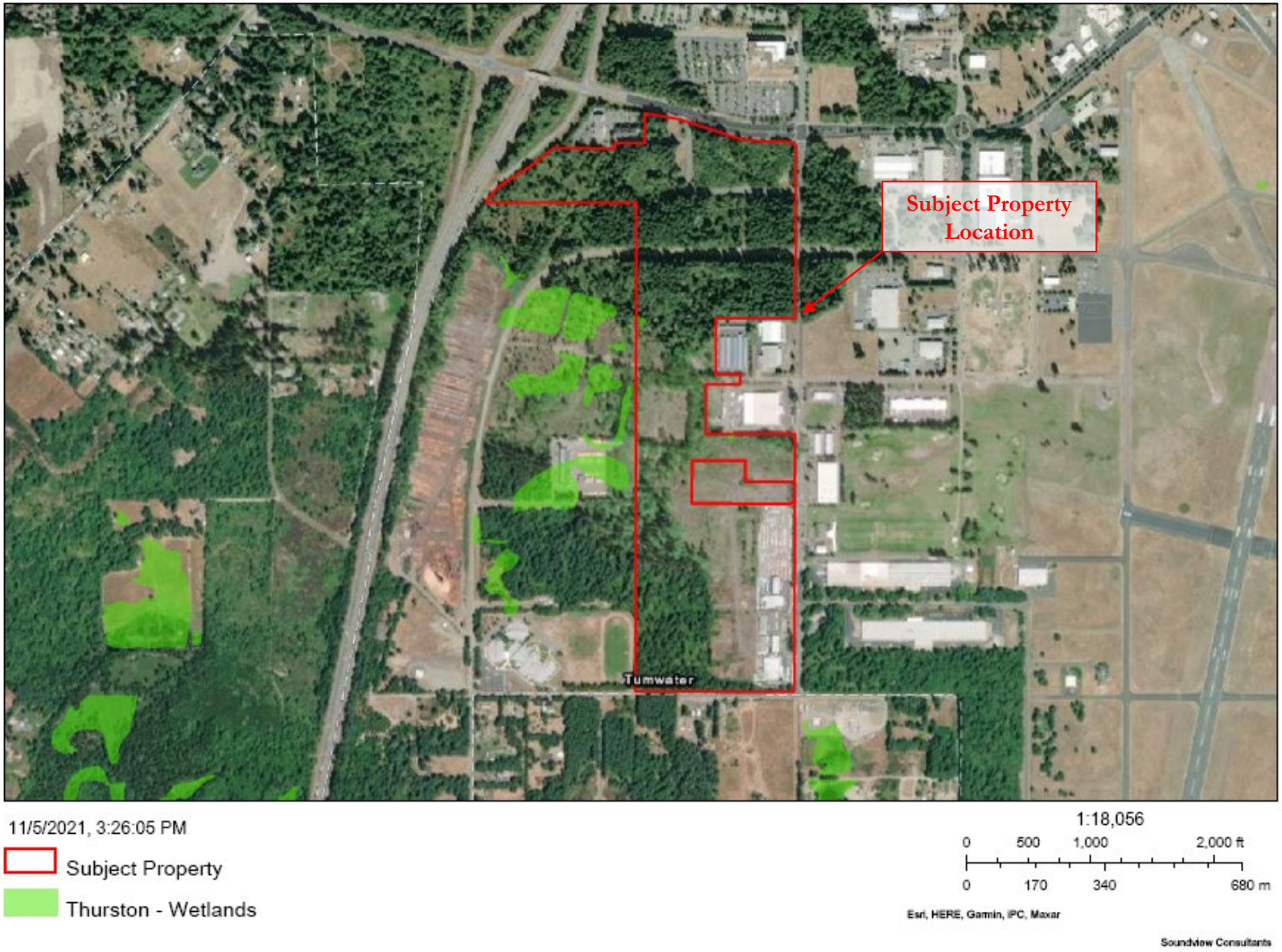
This appendix includes a USGS Topographic Map (B1), NRCS Soil Survey Map (B2), Thurston County Wetlands and Streams Inventory (B3), USFWS NWI Map (B5), DNR Stream Typing Map (B5), WDFW PHS Map (B6), WDFW SalmonScape Map (B7), and FEMA Floodplain Map (B8).

Appendix B1. Topographic Map

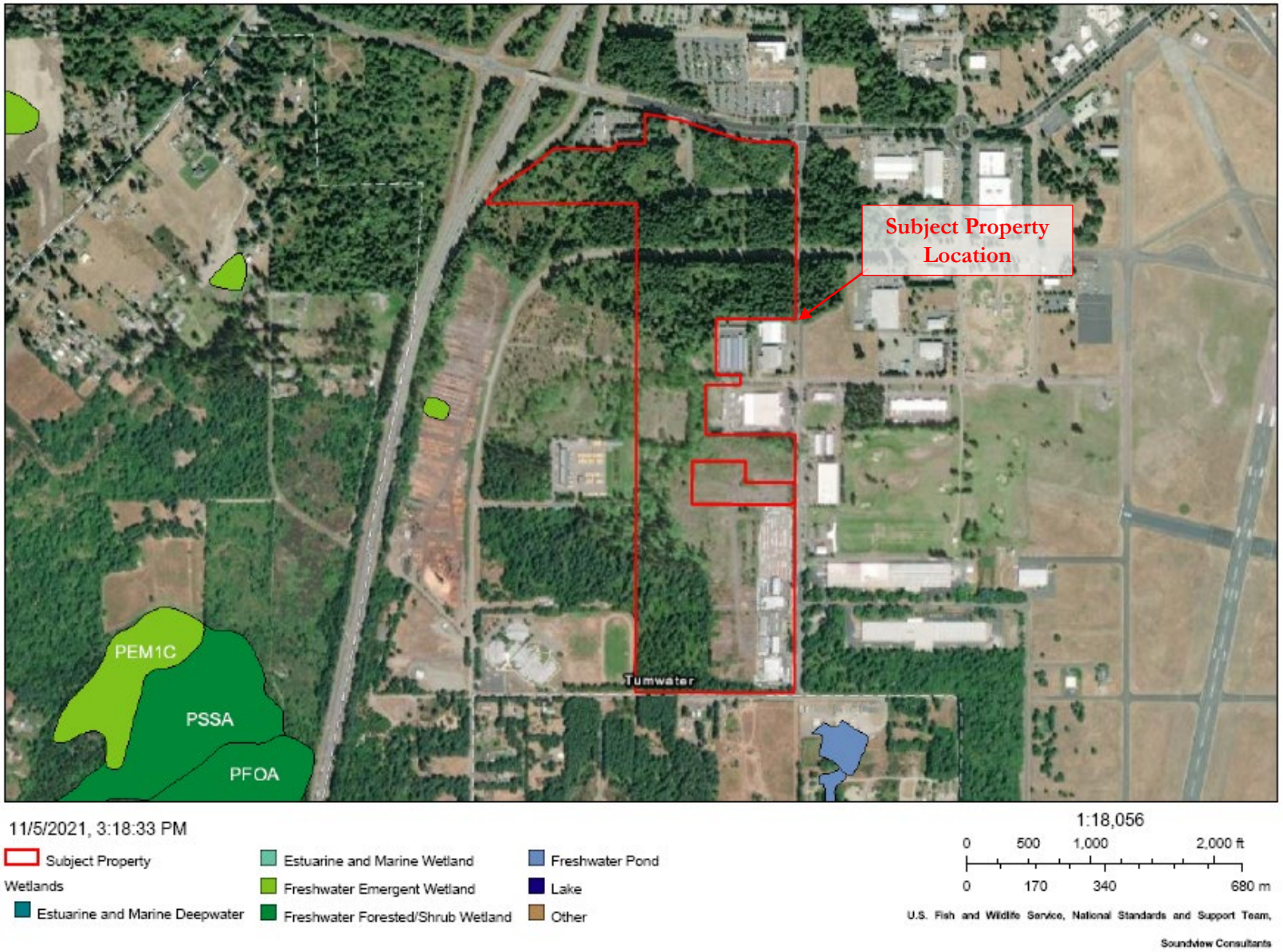


Appendix B2. NRCS Soil Survey Map

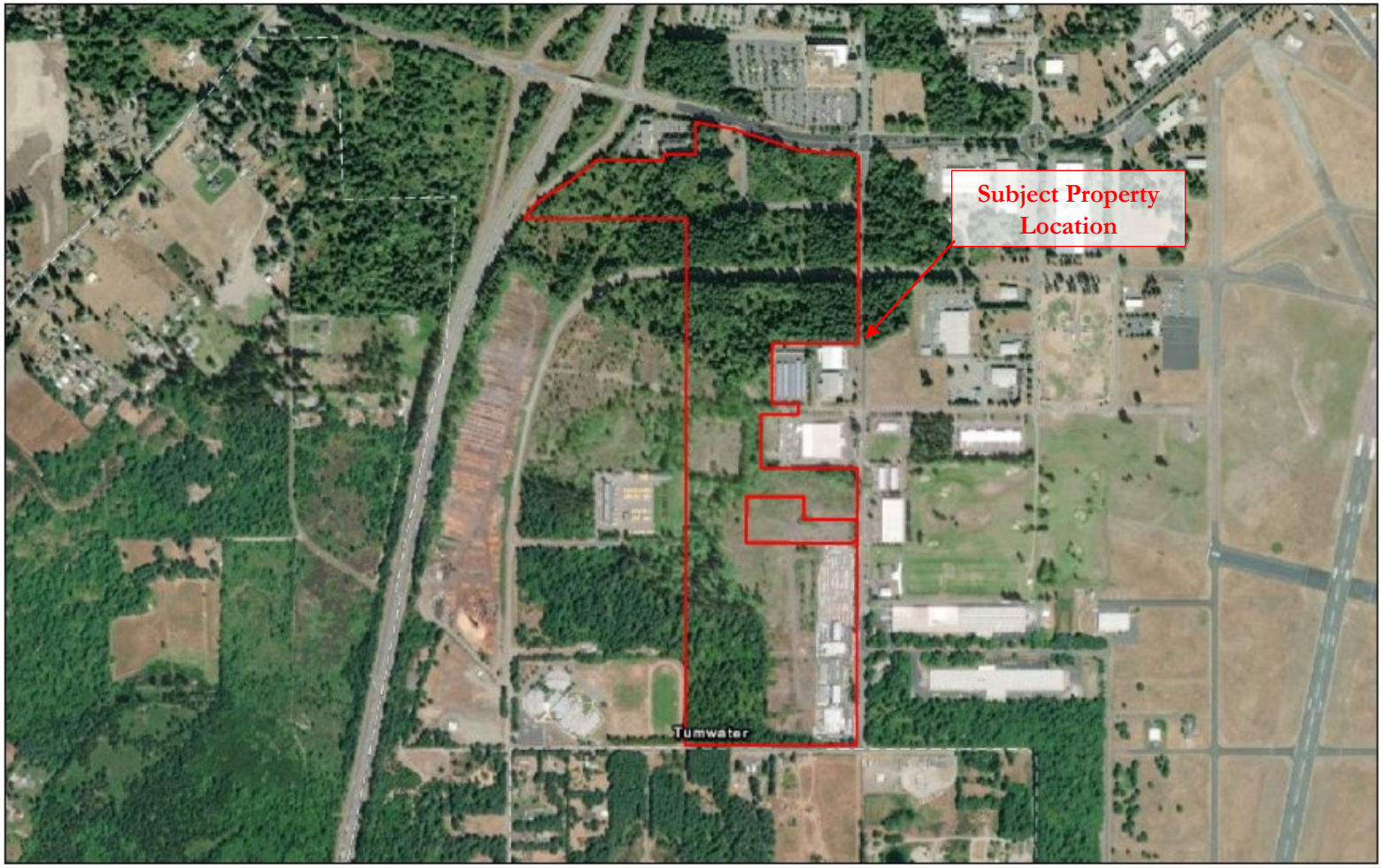
Appendix B3. Thurston County Wetlands Inventory



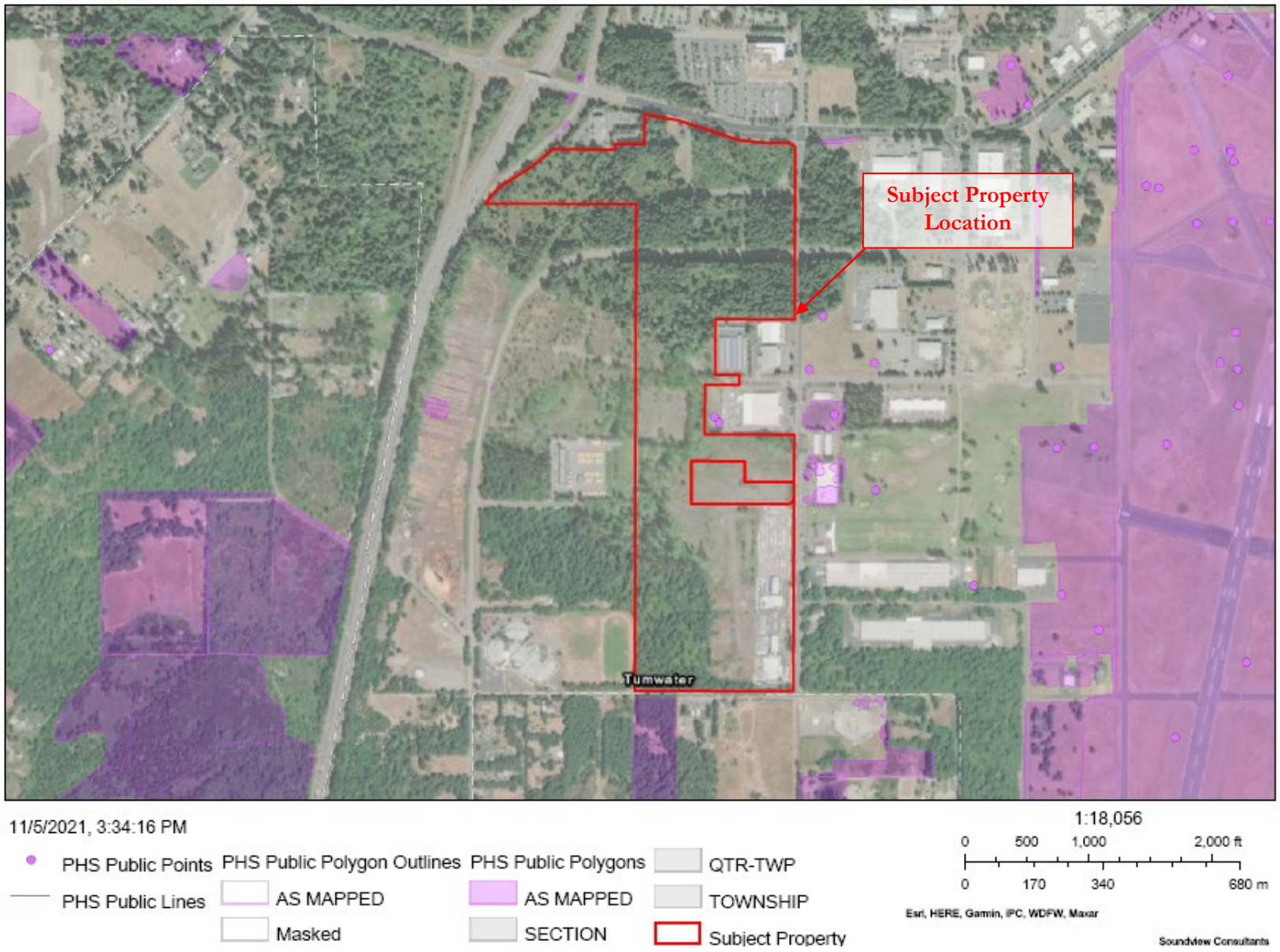
Appendix B4. USFWS NWI Map



Appendix B5. DNR Stream Typing Map



Appendix B6. WDFW PHS Map



PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Oregon vesper sparrow	N/A	Candidate	No
Mazama (Western) pocket gopher	Threatened	Threatened	No
Big brown bat	N/A	N/A	Yes
Townsend's Big-eared Bat	N/A	Candidate	Yes

Oregon vesper sparrow	
Scientific Name	*Pooecetes gramineus affinis*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT
Accuracy	1/4 mile (Quarter Section)
Notes	OREGON VESPER SPARROW. SUMMER RESIDENT & CERTAIN NESTER IN VICINITY OF OLYMPIA AIRPORT, 2015 LOC UPDATED PER WDFW RECORD REVIEW.
Source Record	70492
Source Dataset	WS_OccurPoint
Source Date	WS_OccurPoint
Source Name	SKRILETZ, J/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026
Geometry Type	Points

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT CENTER/78TH
Accuracy	GPS
Notes	GOPHER CAPTURE SITE FOR GENETIC HAIR SAMPLE COLLECTION
Source Record	141197
Source Dataset	WS_OccurPoint
Source Date	WS_OccurPoint
Source Name	PERRY, K./WDFW
Source Entity	WA Dept, of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Points

Oregon vesper sparrow	
Scientific Name	*Pooecetes gramineus affinis*
Priority Area	Occurrence
Site Name	OLYMP|A A|RPORT
Accuracy	1/4 mile (Quarter Section)
Notes	OREGON VESPER SPARROW. SUMMER RES|DENT & CERTA|N NESTER |N V|C|N|TY OF OLYMP|A A|RPORT.
Source Record	70490
Source Dataset	WS_OccurPoint
Source Date	WS_OccurPoint
Source Name	SKRILETZ, J/WDFW
Source Entity	WA Dept, of Fish and Wildlife
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026
Geometry Type	Points

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	78TH AVE SW PORT OF OLYMPIA
Accuracy	Map 1:12,000 <= 33 feet
Notes	MAZAMA POCKET GOPHER MOUNDS DETECTED ON CLEARED (WESTERN) PORTION OF PARCEL, TREED PORTION (EASTERN) UNOCCUPIED. MAPPED LOCATION IS ~CENTER OF OCCUPIED PORTION OF PARCEL.
Source Record	3644
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, T./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	CENTER STREET/KARTING
Accuracy	GPS
Notes	MAZAMA (WESTERN) POCKET GOPHER MOUND SYSTEM. WAYPOINTS TAKEN AT 19 RECENTLY ACTIVE MOUNDS, SEE SOURCE DATA IN SURVEY BINDER FOR COORDINATES. LOCATION UPDATED 2/2011.
Source Record	3563
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	TIRHI, M/WDFW;MCCALLUM, M/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	TUMWATER BOULEVARD INTERCHANGE
Accuracy	GPS
Notes	MAZAMA POCKET GOPHER MOUND CONCENTRATION AREA. OCCUPIED AREA AND MOUND COUNT MODIFIED PER NEW DATA SUBMITTED 2/2012.
Source Record	4387
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	KRIPPNER, L./ADOLFSON
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

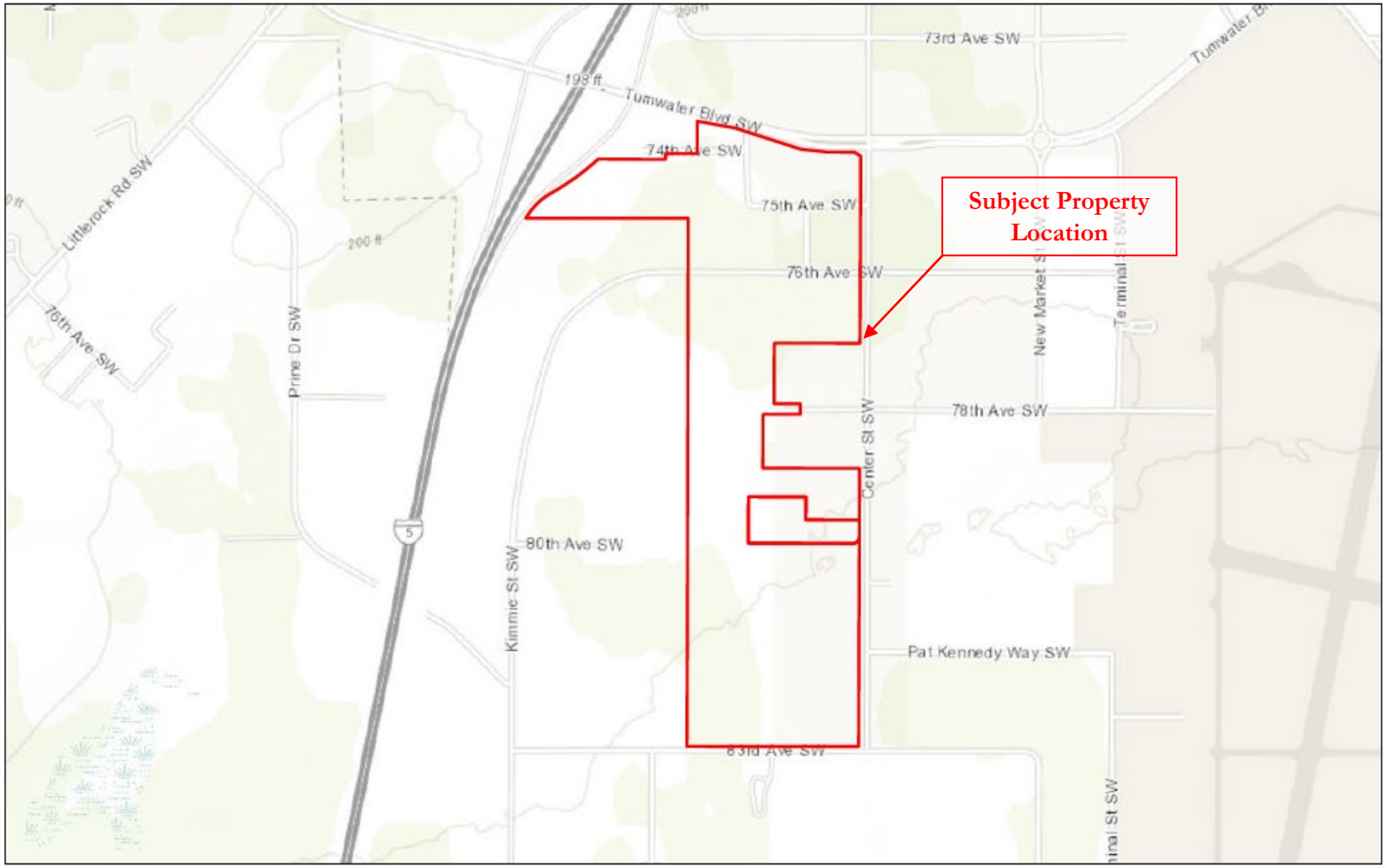
Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	TUMWATER BLVD.
Accuracy	GPS
Notes	MAZAMA (YELM) POCKET GOPHER MOUND CONCENTRATIONS ADJACENT TO SIDEWALK ON S. SIDE OF TUMWATER BLVD. POLYGON IS NOT PRECISE.
Source Record	4541
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, T/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	83RD AVENUE SW
Accuracy	1/8 mile (Quarter/Quarter Section)
Notes	S|TE DEL|NEATED BY PARCEL BOUNDARY. CAROL SK|NNER TRUSTEE PROPERTY,
Source Record	5205
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	UNKNOWN/USFWS
Source Entity	WA Dept, of Fish and Wi|d|ife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

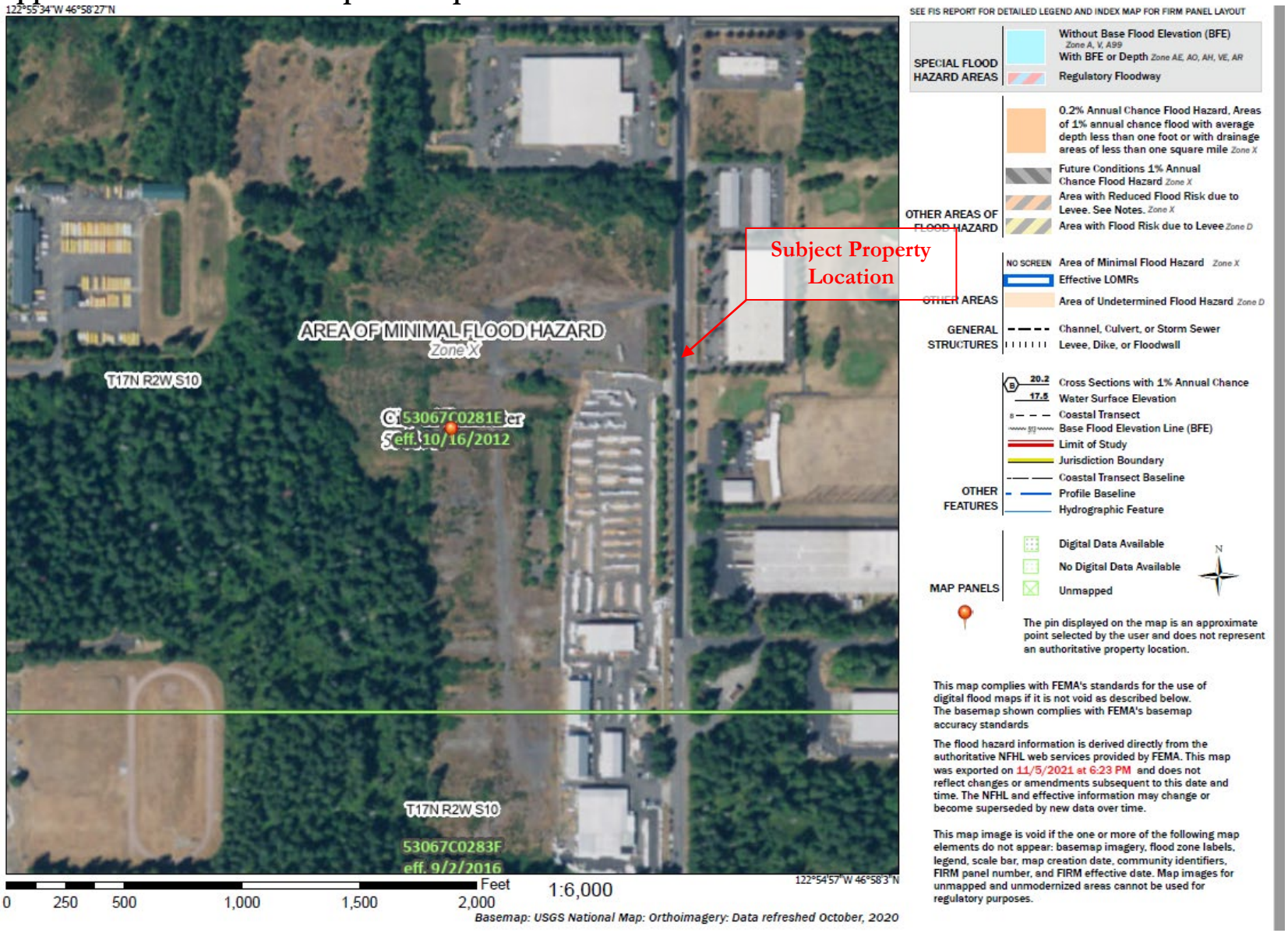
Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

Appendix B7. WDFW SalmonScape Map



Appendix B8. FEMA Floodplain Map



Appendix C — Site Plans

PORT OF OLYMPIA - SOUTH SOUND COMMERCE CENTER - EXISTING CONDITIONS

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

PORT OF OLYMPIA
SOUTH SOUND COMMERCE CENTER
7380 LINDERSON WAY SW
TUMWATER, WA 98501

THURSTON COUNTY PARCEL NUMBERS:
12710100000 and 12710310100

DATE:	11/11/2021
JOB:	1144.0031
BY:	JML/RJK
SCALE:	1 " = 350 '
FIGURE NO.	1

PORT OF OLYMPIA - SOUTH SOUND COMMERCE CENTER - PROPOSED PROJECT

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

PORT OF OLYMPIA
SOUTH SOUND COMMERCE CENTER
7380 LINDERSON WAY SW
TUMWATER, WA 98501

THURSTON COUNTY PARCEL NUMBERS:
12710100000 and 12710310100

DATE:	11/11/2021
JOB:	1144.0031
BY:	JML/RJK
SCALE:	1 " = 350 '
FIGURE NO.	2

Appendix D – Data Forms

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/18/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-1U

Investigator(s): Jake Layman Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 46.970619 Long: -122.92475525 Datum: WGS 84

Soil Map Unit Name: Cagey loamy sand NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
No wetland criteria met. Data collected ~360 south of inholding parcel (no. 78110000100) on parcel no. 09230001003

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Gaultheria shallon	35	Yes	FACU
2. Corylus cornuta	35	Yes	FACU
3. Rubus spectabilis	25	Yes	FAC
4. Holodiscus discolor	10	No	FACU
5. Tsuga heterophylla	5	No	FACU
	110	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Holcus lanatus	35	Yes	FAC
2. Lapsana communis	20	Yes	FACU
3. Rubus ursinus	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (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:
No hydrophytic vegetation criteria met.

SOIL

Sampling Point: DP-1U

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 - 10	10YR 2/2	100	-	-	-	-	SaLo	Sandy Loam
10 - 15	10YR 3/3	100	-	-	-	-	SaLo	Fine 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: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/18/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-3U

Investigator(s): Jake Layman Section, Township, Range: 10,17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 46.972308 Long: -122.92199397 Datum: WGS 84

Soil Map Unit Name: Cagey loamy sand NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all three wetland criteria met; lacking hydrology. Data collected ~600 east of inholding parcel (no. 78110000100) on parcel no. 12710100000. Area shows evidence of past disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Populus balsamifera	50	Yes	FAC
2. Rubus armeniacus	5	No	FAC
3.			
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Phalarus arundinacea	65	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 35

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:
Hydrophytic vegetation criteria met through the Dominance Test.

SOIL

Sampling Point: DP-3U

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 - 16	10YR 3/1	95	2.5Y 5/4	5	C	M	GrLoSa	Gravelly Loamy 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: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soils criteria met through indicator S5.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/23/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-7U

Investigator(s): Jake Layman Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 46.974128 Long: -122.92486587 Datum: WGS 84

Soil Map Unit Name: Norma Silt Loam NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all wetland criteria met; only hydrophytic vegetation criteria met. Located in a central location on parcel no. 09230001003 that is ~850 feet west of 78th Ave SW. Area shows sign of past disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	15	Yes	FAC
2.			
3.			
4.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	30	Yes	FAC
2. Cytisus scoparius	10	No	UPL
3. Symphoricarpos albus	10	No	FACU
4. Oemleria cerasiformis	10	No	FACU
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Holcus lanatus	40	Yes	FAC
2. Rubus ursinus	25	Yes	FACU
3. Poa sp.*	15	No	FAC
4. Cirsium vulgare	10	No	FACU
5. Hypericum perforatum	5	No	FACU
6. Leucanthemum vulgare	2	No	FACU
7.			
8.			
9.			
10.			
11.			
	97	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 3

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:
Hydrophytic vegetation criteria met through the dominance test.
*could not be identified to species, presumed FAC for scoring purposes.

SOIL

Sampling Point: DP-7U

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	-	-	-	-	Lo	Loam
4 - 12	10YR 3/2	100	-	-	-	-	GrSaLo	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: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/23/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-8U

Investigator(s): Jake Layman Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 46.973807 Long: -122.92407176 Datum: WGS 84

Soil Map Unit Name: Norma silt loam NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all wetland criteria met; only hydrophytic vegetation criteria met. Located in a central location on parcel no. 09230001003 that is ~1,059 feet east of Kimmie St SW. Area shows sign of past disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	60	Yes	FAC
2.			
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	80	Yes	FAC
2. Populus balsamifera	10	No	FAC
3. Oemleria cerasiformis	5	No	FACU
4.			
5.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Ranunculus repens	65	Yes	FAC
2. Agrostis capillaris	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 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:
Hydrophytic vegetation criteria met through the dominance test.

SOIL

Sampling Point: DP-8U

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 - 8	10YR 2/1	100	-	-	-	-	Lo	Loam
8 - 16	10YR 3/3	100	-	-	-	-	SaLo	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: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/23/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-9U

Investigator(s): Jake Layman Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): A2 Lat: 46.974986 Long: -122.92434603 Datum: WGS 84

Soil Map Unit Name: Nisqually loamy fine sand, 0 to 3 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all wetland criteria met; lacking hydrology. Located in a central location on parcel no. 09230001003 that is ~900 feet east of Kimmie St. SW and ~730 feet south of 76th Ave SW. Area shows sign of past disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	35	Yes	FAC
2.			
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Cytisus scoparius	40	Yes	UPL
2. Spiraea douglasii	25	Yes	FACW
3. Rubus armeniacus	2	No	FAC
4.			
5.			
	67	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Poa sp.*	35	Yes	FAC
2. Polystichum munitum	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (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:
Hydrophytic vegetation criteria met through the dominance test.
*could not be identified to species, presumed FAC for scoring purposes.

SOIL

Sampling Point: DP-9U

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 - 5	2.5Y 3/2	98	2.5Y 5/4	2	C	M	LoSa	Loamy Sand
5 - 15	2.5Y 3/2	95	2.5Y 5/4	5	C	M	LoSa	Loamy 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: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil indicators met through S5.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/23/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-10U

Investigator(s): Jake Layman Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 46.975532 Long: -122.92367981 Datum: WGS 84

Soil Map Unit Name: Nisqually loamy fine sand, 0 to 3 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all three wetland criteria met; only hydrophytic vegetation criteria met. Located on the western edge of parcel no. 09230001003 that is ~700 feet northwest of 78th Ave SW. Area shows signs of past disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	35	Yes	FAC
2. Populus balsamifera	10	Yes	FAC
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Gaultheria shallon	30	Yes	FACU
2. Spiraea douglasii	25	Yes	FACW
3. Cytisus scoparius	10	No	UPL
4. Symphoricarpos albus	10	No	FACU
5. Ilex aquifolium	10	No	FACU
	85	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Agrostis capillaris	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:
Hydrophytic vegetation criteria met through the dominance test.

SOIL

Sampling Point: DP-10U

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 - 8	7.5YR 3/1	100	-	-	-	-	SaLo	Sandy Loam
8 - 15	7.5YR 3/1	100	-	-	-	-	GrSaLo	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: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/24/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-14U

Investigator(s): Ryan Krapp Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 46.968523 Long: -122.92187189 Datum: WGS 84

Soil Map Unit Name: Cagey loamy sand NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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: No wetland criteria met. Located in the SW corner of parcel no. 12710100000;~450 feet north of 83rd Ave SW and 880 ft west of Center St SW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	10	Yes	FACU
2. Pinus contorta	5	Yes	FAC
3.			
4.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Corylus cornuta	80	Yes	FACU
2. Gaultheria shallon	60	Yes	FACU
3. Mahonia aquifolium	5	No	FACU
4.			
5.			
	145	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Polystichum munitum	10	Yes	FACU
2. Rubus ursinus	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (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: No hydrophytic vegetation criteria met.

SOIL

Sampling Point: DP-14U

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 - 7	10YR 2/1	100	-	-	-	-	GrSaLo	Gravelly, Sandy Loam
7 - 15	10YR 3/3	100	-	-	-	-	GrSaLo	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: None

Depth (inches): N/A

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/24/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-15U

Investigator(s): Ryan Krapp Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 46.978641 Long: -122.92354340 Datum: WGS 84

Soil Map Unit Name: Nisqually loamy fine sand, 0 to 3 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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: No wetland criteria met. Located in the SW corner of parcel no. 12710100000;~400 feet west of Harper Street SW and 580 ft north of 76th Ave SW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	5	Yes	FACU
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Corylus cornuta	90	Yes	FACU
2. Gaultheria shallon	40	Yes	FACU
3. Symphoricarpos albus	10	No	FACU
4. Rosa gymnocarpa	10	No	FACU
5.			
	150	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Pteridium aquilinum	10	Yes	FACU
2. Polystichum munitum	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (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: No hydrophytic vegetation criteria met.

SOIL

Sampling Point: DP-15U

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 - 16	10YR 2/2	100	-	-	-	-	SaLo	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: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

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

Project/Site: 1144.0031 - Port Olympia City/County: Tumwater/ Thurston Sampling Date: 03/24/21

Applicant/Owner: PDC Seattle, LLC State: WA Sampling Point: DP-16U

Investigator(s): Ryan Krapp Section, Township, Range: 10, 17N, 02W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 46.972996 Long: -122.92059534 Datum: WGS 84

Soil Map Unit Name: Nisqually loamy fine sand, 0 to 3 percent slopes NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
Not all wetland criteria met; only hydrophytic vegetation criteria met. Located on the eastern edge of parcel no. 12710100000;~430 feet south of 78th Ave SW and 560 ft west of Center St SW. Area shows signs of past disturbance

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	20	Yes	FAC
2. Pseudotsuga menziesii	15	Yes	FACU
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	40	Yes	FAC
2. Cornus alba	5	No	FACW
3.			
4.			
5.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Phalaris arundinacea	60	Yes	FACW
2. Hypericum perforatum	10	No	FACU
3. Holcus lanatus	10	No	FAC
4. Agrostis capillaris	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15

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:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-16U

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 3/1	100	-	-	-	-	SaLo	Sandy Loam
6-16	10YR 3/2	100	-	-	-	-	SaLo	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: None

Depth (inches): N/A

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

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): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrologic criteria met.

Appendix E— Qualifications

All field inspections, habitat assessments, and supporting documentation, including this ***Wetland, and Fish and Wildlife Habitat Assessment*** for the ***Port of Olympia South Sound Commerce Center*** were prepared by, or under the direction of Ben Wright of SVC. In addition, field investigations or report preparation were performed by Rachael Hyland and Jake Layman.

Ben Wright

Senior Fisheries Biologist
Professional Experience: 18 years

Ben Wright is a Senior Fisheries Biologist with a varied background in lake ecology, stream ecology, fisheries biology, water quality and climate science. Ben has 13 years of experience at the federal level providing technical assistance for both the development of infrastructure projects and management of aquatic resources. He has experience developing biological assessments, water quality monitoring plans, and fisheries management plans. Ben has an additional 10 years of experience working on long-term ecological monitoring programs related to lakes, streams, water quality and climate.

Ben earned a Bachelor of Science degree in Genetics and Cell Biology with an emphasis in aquatic ecology from Washington State University and has a graduate certificate in Fisheries Management from Oregon State University. Ben's expertise includes endangered species monitoring, assessments and permitting, and NEPA documentation across disciplines gained during his work on federal highway projects. Ben also has experience in fish population assessments, utilizing genetic analysis, spawning escapement and movement studies. Ben has received formal training from the Washington State Department of Ecology in the Using the Revised 2014 Wetland Rating System for Western Washington, How to Determine the Ordinary High Water Mark, Navigating SEPA, How to Conduct a Forage Fish Survey and Puget Sound Costal Processes, Shoreline Modifications and Beach Restoration. Ben has completed 40-hour wetland delineation training for the Western Mountains, Valleys, & Coast and Arid West Regional Supplement. Most recently, Ben has completed a short course in River Sediment Dynamics from River Restoration Northwest.

Rachael Hyland, WPIT

Environmental Scientist & Certified Ecologist
Professional Experience: 8 years

Rachael Hyland is an Environmental Scientist with extensive wetland and stream delineation and regulatory coordination experience. Rachael has a background in wetland and ecological habitat assessments in various states, most notably Washington, Connecticut, Massachusetts, Rhode Island, and Ohio. She has experience in assessing wetland, stream, riparian, and tidal systems, as well as complicated agricultural and disturbed sites. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects. She also has extensive knowledge of bats and their associated habitats and white nose syndrome (*Pseudogymnoascus destructans*), a fungal disease affecting bats which was recently documented in Washington.

Rachael earned a Bachelor of Science degree in Ecology and Evolutionary Biology from the University of Connecticut, with additional ecology studies at the graduate level. Rachael is a Wetland Professional in Training (WPIT) through the Society of Wetland Scientists as well as a Certified Ecologist through the Ecological Society of America. She has completed 40-hour wetland delineation training for Western Mountains, Valleys, & Coast and Arid West Regional Supplement, in addition to formal training for the Northcentral and Northeast supplement, and experience with the Midwest, Eastern Mountains and Piedmont, and Atlantic and Gulf Coast supplements. She has also received formal training from the Washington State Department of Ecology in the Using the Revised 2014 Wetland Rating System for Western Washington, How to Determine the Ordinary High Water Mark, Navigating SEPA, Selecting Wetland Mitigation Sites Using a Watershed Approach, and Wetland Classification. Rachael has also received training from the Washington State Department of Transportation in Biological Assessment Preparation for Transportation Projects and is listed by WSDOT as a junior author for preparing Biological Assessments.