TECHNICAL MEMORANDUM

Prepared for: Brian Devereux
Director of Facilities Planning
Puyallup School District
Education Service Center
Puyallup, WA 98372

June 6, 2022

Prepared by: Grette Associates[LLC]
2102 North 30th Street, St. A
Tacoma, WA 98403

File No.: 6156.001

Re: Aliza Property – Feasibility Assessment

1 INTRODUCTION

Grette Associates is under contract with Puyallup School District to prepare a technical memorandum summarizing the critical areas feasibility assessment that was performed at the subject property located at 1201 39th Avenue Southwest (Pierce County parcel 0419043115) in Puyallup, WA. The purpose of this memo is intended to summarize the conditions observed within the northern portion of the subject property referred to as "Parcel B" (Figure 1).

Figure 1. Assessment Area Map

2 METHODS

A Grette Associates City of Puyallup Qualified Professional traversed the subject property on May 26, 2022 to identify any areas that would meet wetland criteria as defined in the U.S. Army Corps of Engineers (USACE) *Federal Wetland Delineation Manual* (1987) and the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (2010). Additionally, staff assessed the site for any features that would be classified as a stream according to WAC 222-16-030 and Chapter 21.06 of Puyallup Municipal Code (PMC).

3 BACKGROUND

3.1 City Critical Area Inventory

The City of Puyallup's Public Data Viewer was queried on May 31, 2022 to determine if any previously-identified wetlands are present within the subject property. According to the City's database, no wetland features are mapped within the subject property (see Attachment A).

3.2 National Wetland Inventory

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) was queried to determine if previously-identified wetlands are present in or near the subject property (USFWS 2022). According to the NWI Interactive Online Mapper, there are no wetlands identified within the subject property (see Attachment B).

3.3 Sensitive Wildlife and Plants

The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) database on-line mapper was queried to determine if state or federally listed fish or wildlife species occur near the subject property (WDFW 2022a). According to the PHS database, there are no PHS species or habitats mapped within the subject property. The nearest mapped feature is located approximately 250 feet north of the subject property along Highway 512. According to WDFW, this feature is a small narrow wetland (see Attachment C).

Additionally, WDFW's SalmonScape on-line mapper was queried to determine what listed SalmonScape species are identified by WDFW to occur within subject property (WDFW 2022b). According to SalmonScape, no natural water features are mapped within the subject property (Attachment D).

The Washington Department of Natural Resources' (WDNR) Wetlands of High Conservation Value mapper was queried to determine if the subject property occurs in a location reported to contain high quality natural heritage wetland occurrences or occurrences of natural heritage features commonly associated with wetlands (WDNR 2019a). According to WDNR's mapper, there are no records of rare plants or high-quality native ecosystems occurring on or in the vicinity of the subject property (Attachment E).

3.4 Forest Practice Rules

The Washington Department of Natural Resources' (WDNR) Forest Practice Application Mapping Tool on-line mapper was queried to identify any streams mapped by WDNR (WDNR 2022). According to WDNR, there is a mapped Type F (fish habitat) stream situated within the eastern portion of the subject property (see Attachment F).

4 RESULTS

During the site assessment, Grette Associates identified a large stockpile mound that appears to be the spoils excavated during the construction of the neighboring Costco development and the construction of the large offsite storm pond situated north of the subject property. The stockpile mound occupies a significant portion of the subject property (see Attachment G, Topographic Survey prepared by Sitts & Hill Engineers (May 2022).

In addition to the stockpile mound, Grette Associates identified a shallow depressional area located in the southeast portion of the subject property adjacent to the stockpile mound. Grette Associates collected wetland delineation data within the central portion of the shallow depressional area where vegetation suggests potential wetland conditions may be present (Figure 2). Conditions were evaluated according to the criteria defined in the USACE's *Manual* (1987) and the USACE's *Regional Supplement* (2010). See Field Datasheet, Attachment H).

The depressional area predominantly consisted of reed canarygrass (*Phalaris arundinacea*), which meets the wetland criteria for hydrophytic vegetation. Soil conditions observed in this area consisted of an upper soil layer (0-8 inches) of very dark grayish brown (10YR3/2) gravelly loam with a layer (8-19 inches) of very dark grayish brown (10YR3/2) gravelly loam containing approximately five percent strong brown redox concentrations beneath. These soil conditions meet the *Redox Dark Surface* hydric soil indicator. No indicators of wetland hydrology were observed in the depressional area and soils were observed dry to a depth of approximately 19 inches.

In summary, the shallow depressional area did not meet all three wetland criteria defined in the USACE's *Regional Supplement* (2010). In addition, Grette Associates did not identify any natural water features within the subject property, including the area where WDNR maps a Type F stream.

Figure 2. General Conditions – Investigated Area

5 DISCUSSION

Based on Grette Associates' observations, it appears that the area where vegetation suggests potential wetland conditions may be present is a manmade depressional area intended to manage stormwater that falls within the subject property and that these conditions have likely established due to the previous grading and fill activities and the lack of regular site maintenance.

More specifically, the subject property appears to have historically been utilized for agricultural purposes and largely resembled a livestock pasture. It is our understanding that during the development of the neighboring Costco facility the subject property was utilized to stockpile spoils

during site preparation. Based on Grette Associates' observations it appears that the areas along the margins of the stockpile mound were graded to prevent stormwater from flowing towards the adjacent stormwater pond and to offsite areas once stockpiling was finished. The depressional area identified in the southeast portion of the subject property adjacent to the stockpile mound appears to have been graded to intercept any surface stormwater that falls on the stockpile mound and to prevent it from flowing offsite onto neighboring properties.

Although the depressional area contains wetland vegetation and hydric soil indicators, no primary wetland hydrology indicators (e.g., surface water, shallow groundwater table, soil saturation) were observed. According to climate data collected at the Seattle-Tacoma Weather Station (Station No. 457473)[1], May received approximately 3.82 inches of rainfall which is approximately 200 percent above the average precipitation (1.88 inches) that occurs in a normal May. Given the absence of surface water, shallow groundwater table, or soil saturation in a period with abnormally wet conditions, it is Grette Associates' professional opinion that the vegetation and soil conditions observed are artificially supported by stormwater runoff associated with previous grading activities and that the depressional area is not wetland given the absence of necessary supporting hydrology.

In addition, Grette Associates observed recent tracks through the central portion of the depressional area that appear to be associated with the work truck(s) accessing installed monitoring wells that were placed within the subject property approximately a month ago. No indication such as ruts or muddy vegetation were observed to suggest this area is supported by shallow groundwater.

6 CONCLUSION

In conclusion, based on the information summarized above, it is Grette Associates' professional opinion that the depressional area adjacent to the stockpile mound is a manmade feature that was constructed to manage surface stormwater runoff after stockpiling was completed and that the vegetation and hydric soil indicators observed have established as a result of the previous grading and fill activities. In summary, no wetland areas (USACE 2010) or natural waters (PMC 21.06.210) are located within Parcel B.

If you have any questions on this wetland verification, please contact me at (253) 573-9300, or by email at chadw@gretteassociates.com.

Regards,

Chad Wallin
Biologist

[1] The Sea-Tac weather station was used due to the incomplete climate data at the McMillin Reservoir (Station No. 455224).

References:

Environmental Laboratory (Corps). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers (Corps). 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.

U.S. Fish and Wildlife Service (USFWS). 2022. Wetland Mapper [map online]. National Wetlands Inventory Queried May 31, 2022. URL: http://www.fws.gov/wetlands/Wetlands-Mapper.html Interactive Layer = "Wetlands".

Washington Department of Fish and Wildlife (WDFW). 2022a. PHS on the Web [map online]. Priority Habitats and Species Queried June 6, 2022. URL: http://wdfw.wa.gov/mapping/phs/.

Washington Department of Fish and Wildlife (WDFW). 2022b. SalmonScape [map online]. All SalmonScape Species. Queried June 6, 2022. URL: http://wdfw.wa.gov/mapping/phs/.

Washington Department of Natural Resources (WDNR). 2022a. Wetlands of High Conservation Value Mapper [map online]. Queried June 6, 2022. URL: https://www.dnr.wa.gov/NHPwetlandviewer

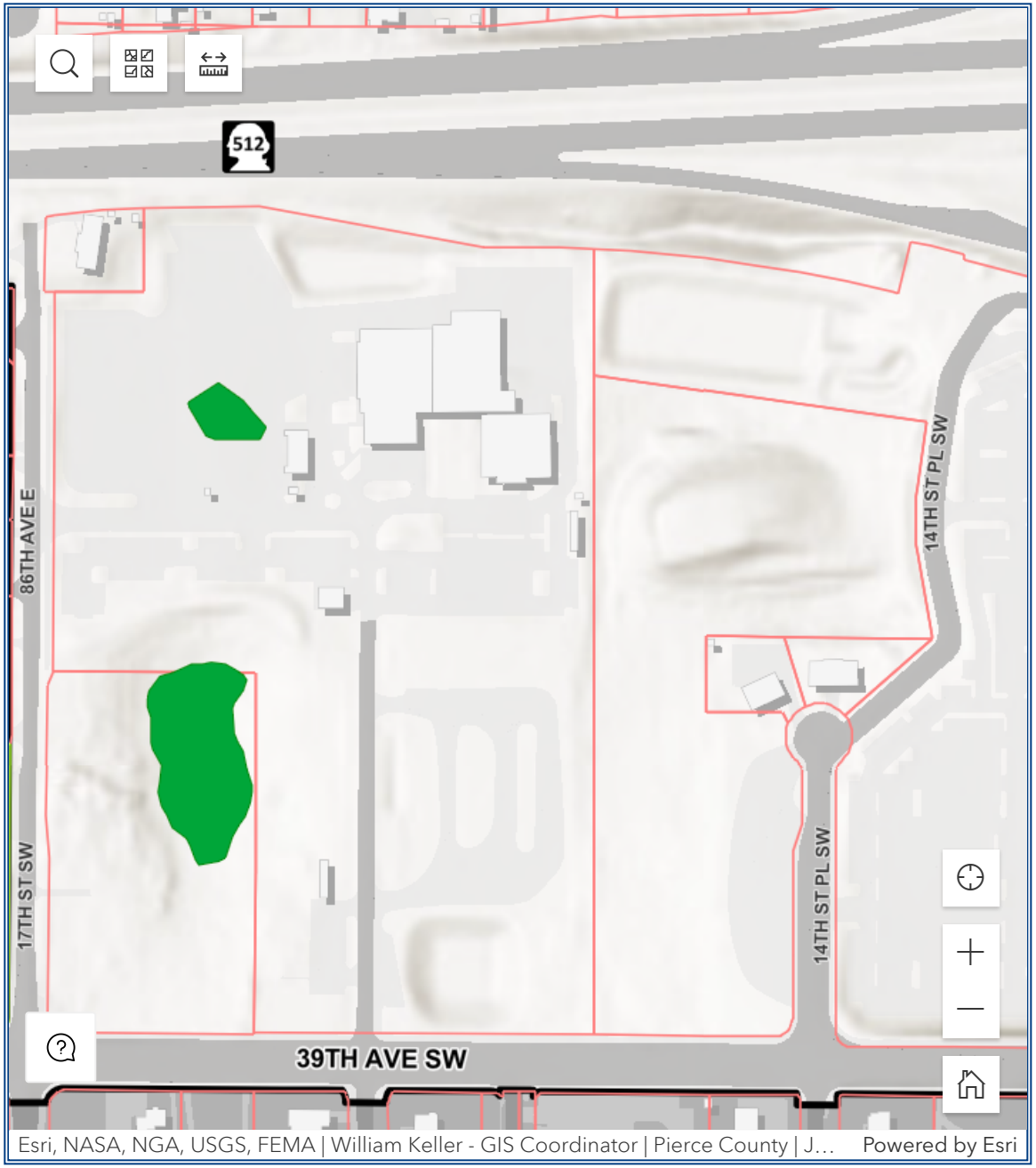
Washington Department of Natural Resources (WDNR). 2022. Forest Practices Application Mapping Tool [map online]. Streams and Water Type Breaks. Queried May 31, 2022. URL: https://fortress.wa.gov/dnr/protectiongis/fpamt/index.html

Attachment A

City of Puyallup Public Data Viewer

Data layers

- Utilities
- Transportation
- Recreation
- Environment
  - City Maintained Street Trees
  - Regulated Floodplain
  - Seclusion Areas
  - General Habitat Areas
  - Potential Landslide Hazard
  - Puyallup Soils
  - Lahar Hazard Area
  - Wetlands
  - Shoreline Master



Legend

Environment

Wetlands

Status Code

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

Parcels

Tax Parcels

TaxParcelType

- Base Parcel
- Condominium
- Condominium
- Other

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands

Attachment B

May 31, 2022

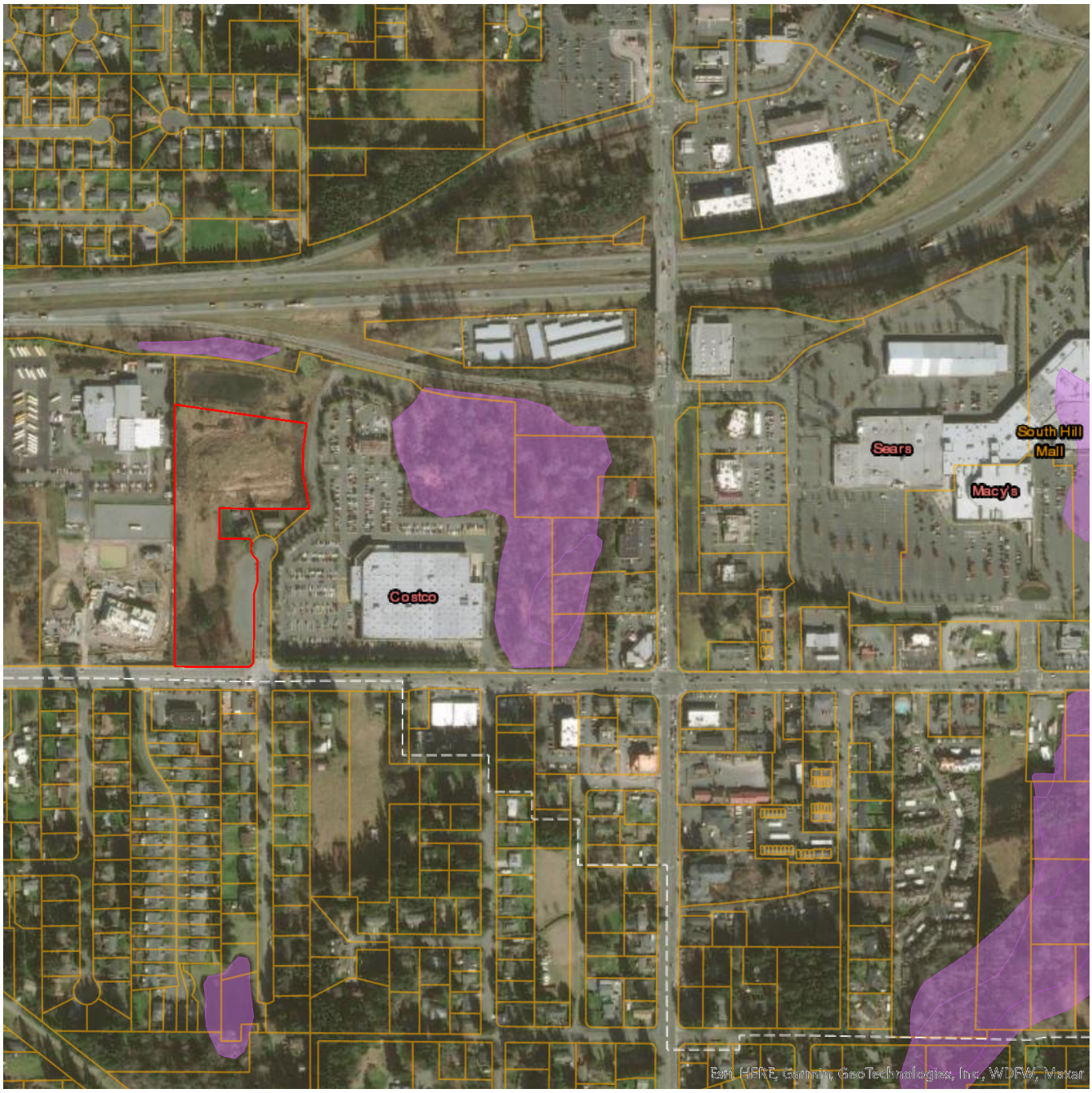
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Priority Habitats and Species on the Web

Attachment C



Report Date: 06/06/2022, Parcel ID: 0419043115

The Priority Habitats and Species (PHS) datasets do not contain information for your project area. This does not mean that species and habitats do not occur in your project area. PHS data, points, lines and polygons are mapped only when occurrences of these species or habitats have been observed in the field. Unfortunately, we have not been able to comprehensively survey all sections in the state and therefore, it is important to note that priority species and habitats may occur in areas not currently known to the Department.

SalmonScape Database Attachment D

June 6, 2022

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

WA Wetlands of High Conservation Value Attachment E

6/6/2022, 8:06:46 AM

Counties

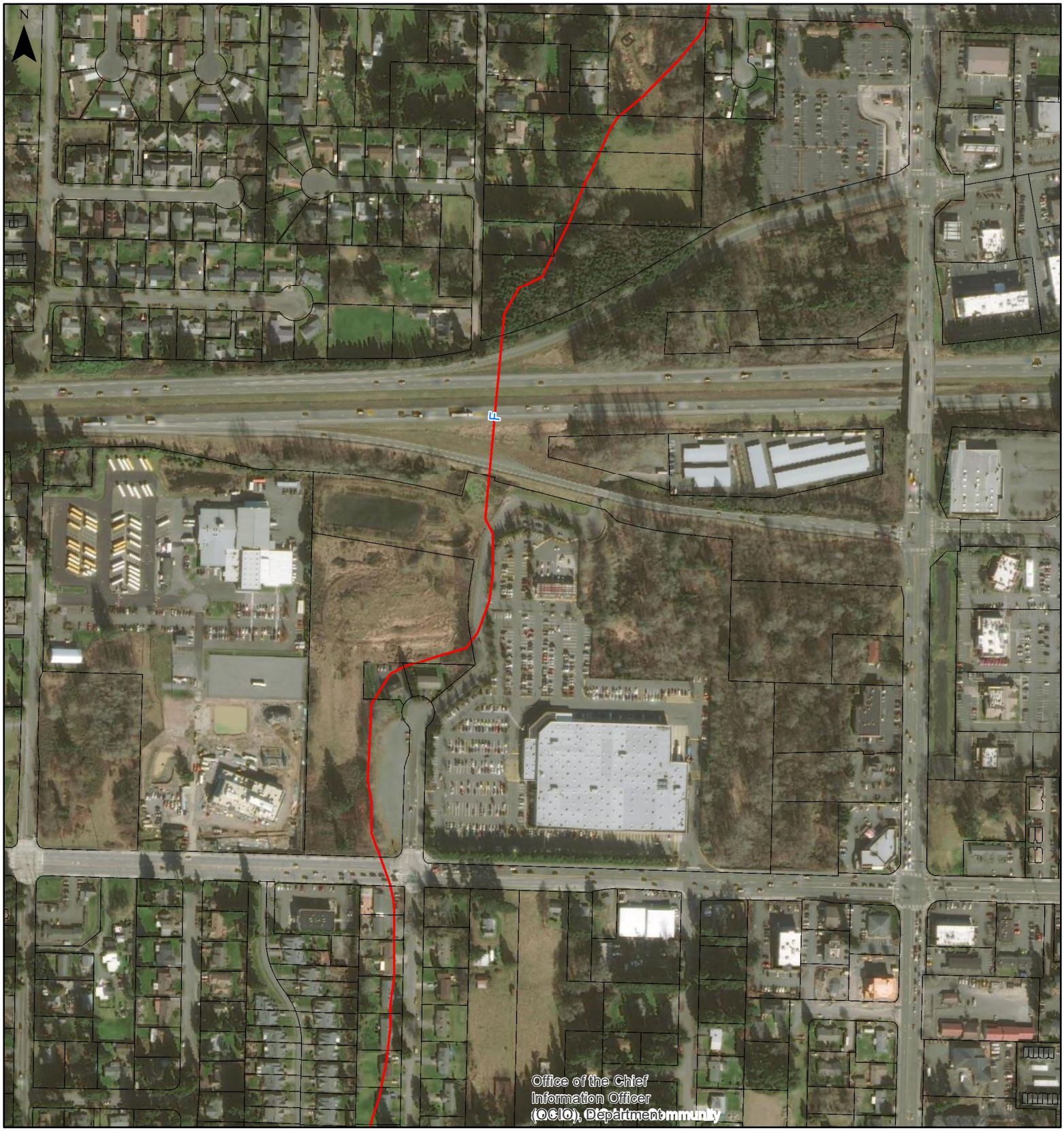
1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Forest Practices Activity Map - Application #_____Attachment F



Map Symbols

- Harvest Boundary
- Road Construction
- Stream
- RMZ / WMZ Buffers
- Rock Pit
- Landing
- Waste Area
- Clumped WRTS/GRTS
- Existing Structure

Additional Information

Legal Description

S08 T19.0N R04.0E, S04 T19.0N R04.0E
S05 T19.0N R04.0E, S09 T19.0N R04.0E

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

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

0 0.1 Miles

Date: 5/31/2022 Time: 12:09:16 PM

Attachment G

CONTINUES SHEET 4 OF 4

NORTH

HORIZONTAL SCALE: 1"=20'

20 0 20 40

Depressional Area

FOUND LATH

FOUND LATH

FOUND LATH

FOUND LATH IN GRAVEL PATCH

FOUND LATH

10' WIDE EASEMENT GRANTED TO P.S.P.L. DATED 1964 AFN 2041088

STORM CATCH BASIN TYPE II
RIM=373.64
IE=369.58, 12" PVC E

STORM CATCH BASIN TYPE II
RIM=373.59
IE=366.39, 12"PVC N
IE=366.50, 12"PVC S
IE=366.47, 12"PVC W
LADDER ENE

T-POST (TYP.)

FRESH DIRT

FRESH DIRT

FRESH DIRT

FRESH DIRT

FOUND 1/2" REBAR AND CAP "LS 18103 DELTA", 04/14/2022

FOUND T-POST

SHED

CONC. FOOTING STONE

ASPHALT

10"&2X12" CEDAR

3" CHAIN LINK FENCE

CULVERT, 12" CONC. WITH PVC INLAY IE= 360.16

APPROX. PIPE DIRECTION

2022 MAPPING EFFORT

3" PIPE (CONT. SOUTH)

UTILITY CLEANOUT RIM=364.81

FOUND T-POST

TOP OF WALL BURIED

6" 8"X24" COTTONWOOD
18" COTTONWOOD
8" COTTONWOOD

CONCRETE RETAINING WALL

TOP OF WALL BURIED

24" COTTONWOOD

12" COTTONWOOD

2022 MAPPING EFFORT

STORM CATCH BASIN
RIM=374.62
IE=370.62, 12"PVC SE

STORM CATCH BASIN TYPE II
RIM=374.61
IE=367.45, 12"PVC N
IE=367.48, 12"PVC SW
IE=367.47, 12" PVC NW
LADDER SE

ASPHALT

2" VERTICAL PVC PIPE

FRESH DIRT

LAWN

2022 MAPPING EFFORT

EDGE OF MOWING

HEDGE-TREE

FALLING WIRE FENCE

2" VERTICAL PVC PIPE

FRESH DIRT

2022 MAPPING EFFORT

2018 MAPPING EFFORT

2022 MAPPING EFFORT

MATCH LINE - SEE SHEET 3 OF 4

6' CHAIN LINK FENCE

BARK/LANDSCAPING

GATE

LEGEND

- FOUND MONUMENT AS NOTED
- CALCULATED MONUMENT POSITION
- FOUND REBAR / IRON PIPE AS NOTED
- SURVEY CONTROL POINT, AS NOTED
- SANITARY SEWER MANHOLE
- UTILITY CLEANOUT
- STORM MANHOLE
- STORM CATCH BASIN
- STORM CULVERT
- ROOF DRAIN
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- IRRIGATION CONTROL VACVE
- UTILITY POLE
- JUNCTION BOX
- POWER VAULT
- POWER CABINET
- POWER MANHOLE
- LIGHT POLE
- BOLLARD
- GATE POST
- TELEPHONE RISER
- COMMUNICATIONS VAULT
- MONITORING WELL
- DECIDUOUS TREE
- EVERGREEN TREE
- ROCK
- T-POST
- TPN TAX PARCEL NUMBER
- FF FINISH FLOOR ELEVATION
- BOUNDARY LINE
- LOT LINE
- SECTION LINE
- ROAD CENTERLINE
- STORM DRAIN LINE
- SANITARY SEWER LINE
- BURIED WATER LINE
- BURIED GAS LINE
- BURIED POWER LINE
- BURIED TELECOMM. LINE
- OVERHEAD POWER LINE
- CHAIN LINK FENCE
- WIRE FENCE
- ASPHALT SURFACE
- CONCRETE SURFACE
- GRAVEL SURFACE
- RIPRAP SURFACE

REVISIONS

APPROVALS

DESIGNED CHS

DRAWN DMS

CHECKED 05/09/2022

DATE

SCALE AS NOTED

SEAL

PRELIMINARY

PREPARED BY

sitts&hill

CIVIL | STRUCTURAL | SURVEY
4815 CENTER STREET | TACOMA, WA 98409
PHONE: (253) 474-9449 | FAX: (253) 474-0153
http://www.sittshill.com/

PREPARED FOR

PUYALLUP SCHOOL DISTRICT
323 – 12TH ST NW
PUYALLUP, WA 98371

PROJECT

PUYALLUP SCHOOL DISTRICT
SUPPORT CAMPUS – ALIZA SITE
SOUTH HILL, PUYALLUP, WA

SHEET TITLE

TOPOGRAPHIC SURVEY

SHEET NO.

3 OF 4

PROJECT NO.

19668

D:\19600\19668\Drawings\19668 - Topo Sheet 3.dwg last edited: 05/09/22 3:34pm by: sanderc

Attachement H

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

Project Site: Aliza Property - "Parcel B" City/County: Puyallup / Pierce Sampling Date: 5/26/22
Applicant/Owner: State: WA Sampling Point: SP-1
Investigator(s): Walker Section, Township, Range:
Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): ___ Slope (%): ___
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
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 ☐	Is the Sampled Area within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☒ No ☐		
Wetland Hydrology Present?	Yes ☐ No ☒		

Remarks: - May climate conditions appear to be wetter than normal.
- Site has undergone clearing, grading, and stockpiling. Topo doesn't reflect historical conditions.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = ___, 20% = ___	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
50% = ___, 20% = ___		= Total Cover	
Herb Stratum (Plot size: 5')			
1. PHAR	90%	Y	FACW
2. Galium spp. (GAAP)	10%	N	FACU
3. CIAR	5%	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = ___, 20% = ___	105%	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
50% = ___, 20% = ___		= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x1 =	___
FACW species	___	x2 =	___
FAC species	___	x3 =	___
FACU species	___	x4 =	___
UPL species	___	x5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: ____

SOIL

Sampling Point: SP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	100%	—	—	—	—	loam w/ gravel	
8-19	10YR3/2	95%	7.5YR4/6	5%	C	M	loam w/ gravel	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soils Present? Yes ☒ No ☐

Remarks:
- FG layer starting just w/ 12 inches.
- SP-1 appears to be w/ gradual depressional area associated with stockpile of fill.
- Constructed to potentially manage runoff from large mound

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 Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:
- Soils dry to a depth of 19 inches
- No primary hydro. observed.