King County Parcel No. 9353300590

Critical Area Report

King County Parcel No. 9353300590

Critical Area Report & Buffer Mitigation Plan

Prepared For:

Vu Vuong

Prepared by:

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Revised September 30th, 2025

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Biologist

Date

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

Peterman Consulting, LLC has been contracted to perform a critical areas assessment and to prepare a critical area report. The subject property (King County parcel No. 9353300590) is located near 156th Ave SE (Figure 1). The site is located within Section 11 Township 23N, and Range 05E, W.M. The purpose of this assessment and report is to document all wetlands, streams, and buffers that are on or within 300 feet of the subject property.

Figure 1. Vicinity map.

FEATURE SUMMARY

A Peterman Consulting biologist visited the subject property on December 2nd, 2024 and July 14th, 2025 to conduct an assessment to identify any wetlands or streams that are within 300 feet of the subject property.

Peterman Consulting identified one wetland feature (WA) that was found to be partially located on the subject property (Figure 2) and another (WB) that was located entirely offsite but within 300 feet. The onsite wetland contained all three wetland criteria 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). The wetlands were rated according to King County Code (KCC) 21A.24.318 and the Washington State Department of Ecology's (Ecology) *Washington State Wetland Rating System for Western WA – 2014 Update* (Hruby 2014). A delineation summary, field

datasheets and wetland rating forms are presented in Appendices B, C and D, respectively. A summary of the wetlands is provided in Table 1.

Table 1. Wetland feature summary

Feature	Size (Approximate)	Cowardin Class[1]	Hydrology Modifier	HGM Class	Wetland Category	Standard Buffer Width[2]
WA	1.3 acres	PFO	Seasonally Flooded, Saturated	Depressional	II	150 ft.
WB	42,000 sq. ft.	PFO, PSS	Seasonally Flooded, Saturated, Adjacent Stream	Depressional	II	150 ft.

[1] Classification based on Cowardin et. al. (1979).
[2] According to Chapter 21A.24.325 of the KCC.

Figure 2. Map showing the subject property and the wetlands.

BACKGROUND

Existing Conditions

The subject property is approximately 0.25 acres in size and is undeveloped. Access to the property was gained from 156th Ave SE which abuts the east border of the subject property. Most of the neighboring properties have private residences. The subject property is designated as residential and zoned as R4. The subject property is located within the Lake Washington-Sammamish River subwatershed (HUC 12) of the Cedar-Sammamish Watershed (WRIA 8) The topography of the subject property is

generally flat. The vegetation on the subject property includes a mix of native and nonnative species.

Local Critical Areas Inventory

A review of the King County iMap website was conducted to identify any known critical areas with the vicinity of the subject property (iMap 2024). According to iMap, there are no critical areas mapped on or within 300 feet of the subject property (Appendix E). The nearest critical area mapped is a stream located approximately 560 feet to the southeast.

National Wetlands Inventory

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) was queried to determine if previously-identified wetlands are present on or near the subject property (USFWS 2024). According to the NWI Interactive Online Mapper, there are no wetlands mapped on or within 300 feet of the subject property (Appendix E). The nearest mapped wetland is a freshwater forested wetland located approximately 550 feet to the southwest.

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 on or near the subject property (WDFW 2024a). According to the PHS database, there are no priority habitats or species located on or within 300 feet of the subject property (Appendix E). The nearest mapped feature is an emergent wetland located approximately 760 feet to the southwest.

Additionally, WDFW's SalmonScape on-line mapper was queried to determine if salmonids are known to use the subject property or surrounding area (WDFW 2024b). According to SalmonScape, there are no streams that flow through the subject property. The nearest aquatic feature is a seasonal stream located approximately 480 feet to the southeast (Appendix E).

The Washington Department of Natural Resources' (WDNR) Natural Heritage Information System 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. According to WDNR data, there are no records of rare plants or high quality native ecosystems occurring on or in the vicinity of the subject property.

Forest Practice Rules

The Washington Department of Natural Resources' (WDNR) Forest Practice Application Mapping Tool on-line mapper was queried to identify the water typing of any streams mapped by WDNR (WDNR 2024). According to WDNR, there are no streams listed on or within 300 feet of the subject property and the nearest stream feature to the subject property is an unnamed stream, located approximately 0.4 miles to the north. This stream is designated as a Type F stream (Appendix E). Type F streams are known to have documentation of fish utilization or they meet the physical criteria to support fish habitat.

Soil Information

According to the Natural Resources Conservation Service's (NRCS) Web Soil Survey (NRCS 2024), the soils on the subject property are listed as being 85 percent Alderwood gravelly sandy loam and 15 percent minor components. Alderwood gravelly sandy loam is not designated as a hydric soil (Appendix E). The other minor component soils on the property are Everett and Indianola both at 5 percent and neither is listed as a hydric soil. Also listed are 3 percent of Shalcar and 2 percent of Norma, both of which are designated as hydric soils.

PRECIPITATION ANALYSIS

During the site assessment, the SeaTac National Weather Station (NWS Station 457473) recorded 0.00 inches of rainfall (NOAA 2024a). In the 14 days preceding the site assessment, 1.49 inches of rainfall was recorded at the station.

The total precipitation recorded at the station from December 1st, 2023 through November 30th, 2024 (35.16 inches) was approximately 89 percent of the normal rainfall (39.34 inches) that occurs during a typical water year (NOAA 2024b). Table 2 below presents an analysis of the appropriate NRCS WETS table for the three months preceding the field investigation.

Table 2. WETS precipitation analysis

Preceding Month	WETS Rainfall Percentile (inches)		Measured Rainfall[1] (inches)	Conditions[2]	Condition Value[3]	Month Weight	Value
	30%	70%					
November	4.35	7.23	4.86	Normal	2	3	6
October	2.25	4.35	3.04	Normal	2	2	4
September	0.74	2.04	0.62	Dry	1	1	1
						Sum:	11

[1] Observed rainfall for the month (NOAA 2024b)
[2] Dry conditions are below 30% WETS table value, Normal conditions are between 30% and 70% of the WETS table values, Wet conditions are above 70% of the WETS table value.
[3] Dry equals a value of 1, normal equals a value of 2, wet equals a value of 3

Bins were established to evaluate the overall rainfall period during the field investigation; drier (sum in 6-9), normal (sum is 10-14), wet (sum is 15-18). A sum of 11 indicates that hydrologic conditions are normal. Data from the start of the year for the accumulated precipitation for that weather station shows that it has remained below the normal average since the end of March (Appendix E).

METHODS

All accessible areas of the assessment area were traversed and data were collected to confirm the wetland boundaries. The wetland was delineated according to the procedures described in the U.S. Army Corps of Engineers (USACE) *Federal Wetland Delineation Manual* (1987), and the Corps' *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (2010). Paired data plots and soil test pits were excavated to evaluate conditions. Guidance from the Corps' *Regional Supplement* was used to evaluate the data at each data point.

Plants were determined to be more or less associated with wetlands based on their wetland indicator (FAC) status. The percent dominance for each plant strata was determined using the 50-20 Rule, which is the recommended method for selecting dominant species from a plant community in instances where quantitative data are available (USACE 2010). In utilizing this rule, dominants are the most abundant species that individually or collectively accounts for more than 50 percent of the total coverage of vegetation in the stratum plus any other species that, by itself accounts for at least 20 percent of the total. The area within 300 ft of the parcel boundary was inspected either visually or through aerial photograph interpretation to determine if other critical areas are within the assessment area.

Hydrophytic Vegetation

The U.S. Fish and Wildlife Service (USFWS) and the NWI have established a rating system that has been applied to commonly occurring plant species on the basis of their frequency of occurrence in wetlands (Table 3). Species indicator status expresses the range in which plants may occur in wetlands and non-wetlands (uplands). Under this system, vegetation is considered hydrophytic when there is an indicator status of facultative (FAC), facultative wetland (FACW) or obligate wetland (OBL). The hydrophytic vegetation criterion for wetland determination is met when more than 50 percent of the dominant species in the plant community are FAC or wetter. The Corps' *National Wetland Plant List* (Lichvar 2020) was used to determine vegetation indicator status.

Table 3. Definitions for USFWS plant indicator status

Plant Indicator Status Category	Indicator Status Abbreviation	Definition (Estimated Probability of Occurrence)
Obligate Upland	UPL	Occur rarely (<1 percent) in wetlands, and almost always (>99 percent) in uplands
Facultative Upland	FACU	Occur sometimes (1 percent to <33 percent) in wetlands, but occur more often (>67 percent to 99 percent) in uplands
Facultative	FAC	Similar likelihood (33 percent to 67 percent) of occurring in both wetlands and uplands
Facultative Wetland	FACW	Occur usually in wetlands (>67 percent to 99 percent), but also occur in uplands (1 percent to 33 percent)
Obligate Wetland	OBL	Occur almost always (>99 percent) in wetlands, but rarely occur in uplands (<1 percent)
Not Listed	NL	Not listed due to insufficient information to determine status

Wetland Hydrology

Evidence of permanent or periodic inundation (water marks, drift lines, drainage patterns), or soil saturation to the surface for 12 consecutive days or more during the growing season meets the hydrology criterion. Oxidized root channels in the top 12 inches and hydrogen sulfide are primary indicators and water-stained leaves and geomorphic position are secondary indicators of wetland hydrology. Hydrology

conditions were compared to the Field Indicators of Wetland Hydrology detailed in the Corps' *Regional Supplement*.

Hydric Soils

Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper soil horizons are considered hydric soils. Field indicators include histosols, the presence of a histic epipedon, a sulfidic odor, low soil chroma, and gleying. Soil conditions were compared to the Field Indicators of Hydric Soils detailed in the Corps' *Regional Supplement*.

RESULTS

The site assessment resulted in the identification of one wetland feature (WA) that met all three wetland criteria defined by USACE's *Regional Supplement* (2010). Paired data plots were sampled to evaluate wetland and upland conditions for both of the wetlands.

Wetland WA

Wetland WA is a palustrine, forested wetland located in a topographic depression that is approximately 1.3 acres in size (Appendix A).

Vegetation

The vegetation in the wetland area consisted of FAC tree species such as alder (*Alnus rubra*), FACW shrub species like hardhack (*Spiraea douglasii*) and FACW emergent species like tall mannagrass (*Glyceria elata*). The dominance test was used to assess hydrophytic vegetation indicators.

Hydrology

During the site visit surface water, saturation and a high water table were all observed. Saturation and a high water table were observed within 12 inches of the soil surface. The wetland meets the A1, A2, and A3 wetland hydrology indicators detailed in the Corps' 2010 *Regional Supplement*.

Hydric Soils

Soils observed within the wetland consisted of an upper layer (0-5 inches) of very dark brown (10YR 2/2) loam and a lower layer (5-13) of gray (10YR 5/2) clay loam with dark yellowish brown (10YR 4/4) redox features at 40 percent. Based on these observations, the soils meet the F3 hydric soil indicator for a Depleted Matrix.

Wetland WB

Wetland WB is a Palustrine Forested, Scrub Shrub wetland located in a topographic depression that is approximately 42,000 square feet in size (Appendix A).

Vegetation

The vegetation in the wetland area consisted of FAC tree species such as red alder (*Alnus rubra*), and FACW shrubs such as hardhack (*Spiraea douglasii*), as well as the OBL emergent species skunk cabbage (*Lysichiton americanus*).

Hydrology

Hydrologic support for Wetland WB is primarily provided by inputs from precipitation events and site topography as well as a stream that connects with the southern portion of the wetland. Wetland WB is situated in a slight depression where in some areas, surface water accumulates from precipitation events and from shallow groundwater reaching the surface.

Hydric Soils

The wetland's soils were not sampled as the wetland is located entirely off site of the subject property. Seasonal inundation, an associated stream, and the presence of a hydrophytic vegetation community would indicate that hydric soils are likely to be present in the wetland area.

Functions and Values

Like all wetlands, Wetlands WA and WB provide some level of water quality enhancement, hydrology, and habitat functions (Table 4). The wetlands likely filter out sediments and toxins from shallow groundwater, preventing them from entering nearby streams. The wetlands also likely provide some foraging and refuge for small mammals as well as foraging and refuge for birds and amphibians. Wetland rating forms are included in Appendix D.

Table 4. Wetland rating and categorization summary.

Feature	HGM Class	Water Quality	Hydrology	Habitat	Total	Category
WA	Depressional	6	8	6	20	II
WB	Depressional	6	8	6	20	II

SUMMARY

In summary, the site assessments performed on December 2nd, 2024 and July 14th, 2025 resulted in the observation of one wetland that was partially located near the subject property's west border and another wetland located entirely offsite but within 300 feet. All onsite portions of the wetland were delineated (Appendix A). Additional sample points were established during July 14th, 2025 to address issues raised by a King County letter dated June 11th, 2025. Wetland WA was rated as depressional Category II feature with habitat scores of 6. According to KCC 21A.24.325, category II wetlands located within the Urban Growth Area and have a moderate habitat score are required to have a 150-foot buffer from the flagged boundary. The buffer also has an additional 15-foot building setback (Figure 3). Wetland WB also has a 150-foot buffer, however, critical area buffers only extend beyond the edge of transportation or utility infrastructure when the buffer on the other side of the right-of-way provides significant biological or hydrological functions in relation to the portion of the buffer adjacent to the wetland. The existing condition of the buffer on the subject property does not provide significant functions like screening, noise reduction, and water quality improvement to justify extending Wetland WB's buffer across 156th Ave SE. No other critical areas were observed within 300 feet of the subject property. The roadside ditch along the east

property line is not a regulated aquatic feature because the ditch is sourced from stormwater and is not sourced by a wetland or another aquatic feature.

Figure 3. Map showing wetland and buffer.

BIOLOGIST QUALIFICATIONS

Tom Peterman

Tom Peterman is a Biologist with training in wetland science and ecological restoration. Tom has professional experience in wetland and stream restoration, mitigation planning and monitoring, fisheries and marine mammal monitoring, and fish and wildlife assessments. Tom has earned a graduate degree and a certificate in wetland science and management from the University of Washington. Tom is certified as an Professional Wetland Scientist (#3676) with the Society of Wetland Scientists. For a list of representative projects, please contact him at Peterman Consulting.

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King County Parcel No. 9353300590

Critical Area Report
Appendix A: Wetland Delineation Map


Parcel No. 9353300590
Wetland
Wetland Boundary Flagging
Soil Analysis Pits
SP3
SP2
SP1
156th Ave SE
0
50
100 ft

King County Parcel No. 9353300590

Critical Area Report
Appendix B: Wetland Summary

WA WETLAND SUMMARY		
Approximate Size (acres):	1.3	
Cowardin Classification[1]:	PFO	
HGM Classification[2]:	Depressional	
Wetland Category[3]:	II	
Wetland Buffer Width[4]:	150 ft.	
Sample Plot Total[5]:	5	
Hydrophytic Vegetation Present (Y/N)?	Yes	
Hydric Soil Indicator?	Yes	
Wetland Hydrology Present?	Yes	

Summary of Findings	
Dominant Vegetation:	The vegetation in the wetland area consisted of FAC tree species such as alder (*Alnus rubra*), FACW shrub species like hardhack (*Spiraea douglasii*) and FACW emergent species like tall mannagrass (*Glyceria elata*). The dominance test was used to assess hydrophytic vegetation indicators.
Soil Profile:	Soils observed within the wetland consisted of an upper layer (0-5 inches) of very dark brown (10YR 2/2) loam and a lower layer (5-13) of gray (10YR 5/2) clay loam with dark yellowish brown (10YR 4/4) redox features at 40 percent. Based on these observations, the soils meet the F3 hydric soil indicator for a Depleted Matrix.
Primary Hydrological Support:	During the site visit surface water, saturation and a high water table were all observed. Saturation and a high water table were observed within 12 inches of the soil surface. The wetland meets the A1, A2, and A3 wetland hydrology indicators detailed in the Corps' 2010 *Regional Supplement*.

[1] Classification based on Cowardin et al. (1979).
[2] HGM classification based on Brinson, M.M. (1993).
[3] Wetland rating was determined based on the guidelines defined in the local municipal code.
[4] Wetland buffer was determined based on the local municipal code.
[5] Sample plot total includes the collective amount of wetland and upland samples plots examined to define the wetland boundary.

King County Parcel No. 9353300590

Critical Area Report
Appendix C: Datasheets

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

Project/Site: Parcel No. 9353300590 City/County: King Sampling Date: 12/2/2024

Applicant/Owner: Vuong State: _____ Sampling Point: SP1

Investigator(s): TP Section, Township, Range: 11, 23N, 5E

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

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

Soil Map Unit Name: Alderwood NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus trichocarpa	70	Y	FAC
2. Thuja plicata	5	N	FAC
3. Acer macrophyllum	5	N	FACU
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	90	Y	FAC
2.			
3.			
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 6 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 80

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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 X No _____

Remarks:

SOIL

Sampling Point: SP1

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
0-13	10YR 3/2	100					loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** X

Remarks:

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 X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** X

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

Remarks:

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

Project/Site: Parcel No. 9353300590 City/County: King Sampling Date: 12/2/2024

Applicant/Owner: Vuong State: _____ Sampling Point: SP2

Investigator(s): TP Section, Township, Range: 11, 23N, 5E

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

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

Soil Map Unit Name: Alderwood NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus trichocarpa	50	Y	FAC
2. Alnus rubra	30	Y	FAC
3. Thuja plicata	10	N	FAC
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	70	Y	FAC
2. Rubus spectabilis	15	N	FAC
3. Rubus ursinus	5	N	FACU
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 6 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 90

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:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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 X No _____

Remarks:

SOIL

Sampling Point: SP2

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
0-3	10YR 2/2	100					loam	
3-13	10YR 3/2	100					loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** X

Remarks:

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 X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** X

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

Remarks:

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

Project/Site: Parcel No. 9353300590 City/County: King Sampling Date: 12/2/2024

Applicant/Owner: Vuong State: _____ Sampling Point: SP3

Investigator(s): TP Section, Township, Range: 11, 23N, 5E

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

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

Soil Map Unit Name: Alderwood NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	50	Y	FAC
2. Populus trichocarpa	20	Y	FAC
3. Thuja plicata	10	N	FAC
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus ursinus	30	Y	FACU
2. Rubus spectabilis	10	Y	FAC
3. Ileq aquifolium	5	Y	FACU
4. Spiraea doiglasii	5	Y	FACW
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 6 ft)			
1. Glyceria elata	30	Y	FACW
2. Geum macrophyllum	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (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:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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 X No _____

Remarks:

SOIL

Sampling Point: SP3

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	10YR 2/2	100					loam	
5-13	10YR 5/2	60	10YR 4/4	40	C	M	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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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 X No _____ Depth (inches): 1

Water Table Present? Yes X No _____ Depth (inches): 2

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 1

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

King County Parcel No. 9353300590

Critical Area Report
Appendix D: Wetland Rating Forms

Wetland name or number WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): WA Date of site visit: 12/2/2024

Rated by Tom Peterman Trained by Ecology? X Yes ___No Date of training 10/2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y X N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H (M) L	H (M) L	**TOTAL**
Score Based on Ratings	6	6	5	17

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number WA

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number WA

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

   NO – go to 5 **YES –** The wetland class is **Slope**

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

Wetland name or number WA

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

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number WA

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	9

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: __**3 or 4 = H** X **1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: __**2-4 = H** X **1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number WA

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	8

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: __**3 = H** X **1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 • There are no problems with flooding downstream of the wetland. points = 0	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	

Rating of Value If score is: __**2-4 = H** X **1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number WA

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. **1**

____Aquatic bed	4 structures or more: points = 4
____Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
X Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

X The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods **1**

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated	4 or more types present: points = 3
X Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	2 types present: points = 1
X Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

H 1.3. Richness of plant species **1**

Count the number of plant species in the wetland that cover at least 10 ft^2.

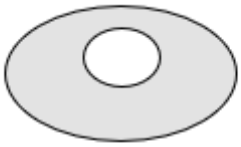
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

H 1.4. Interspersion of habitats **0**

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

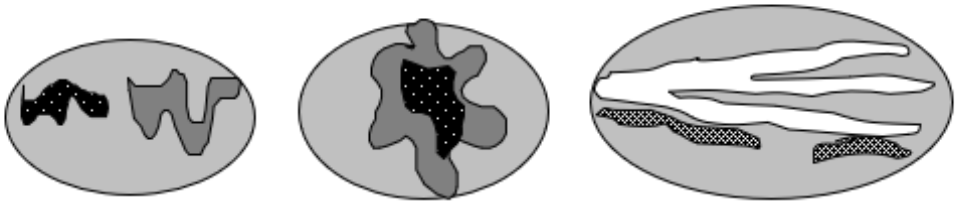
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



Wetland name or number WA

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). X Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	3
Total for H 1 Add the points in the boxes above	6

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 2.6 **+** [(% moderate and low intensity land uses)/2] 3.4 **=** 6.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 17.4 **+** [(% moderate and low intensity land uses)/2] 16.8 **=** 34.2 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: __**4-6 = H** X **1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: __**2 = H** X **1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number WA

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number WA

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

— **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

X — **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number WA

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

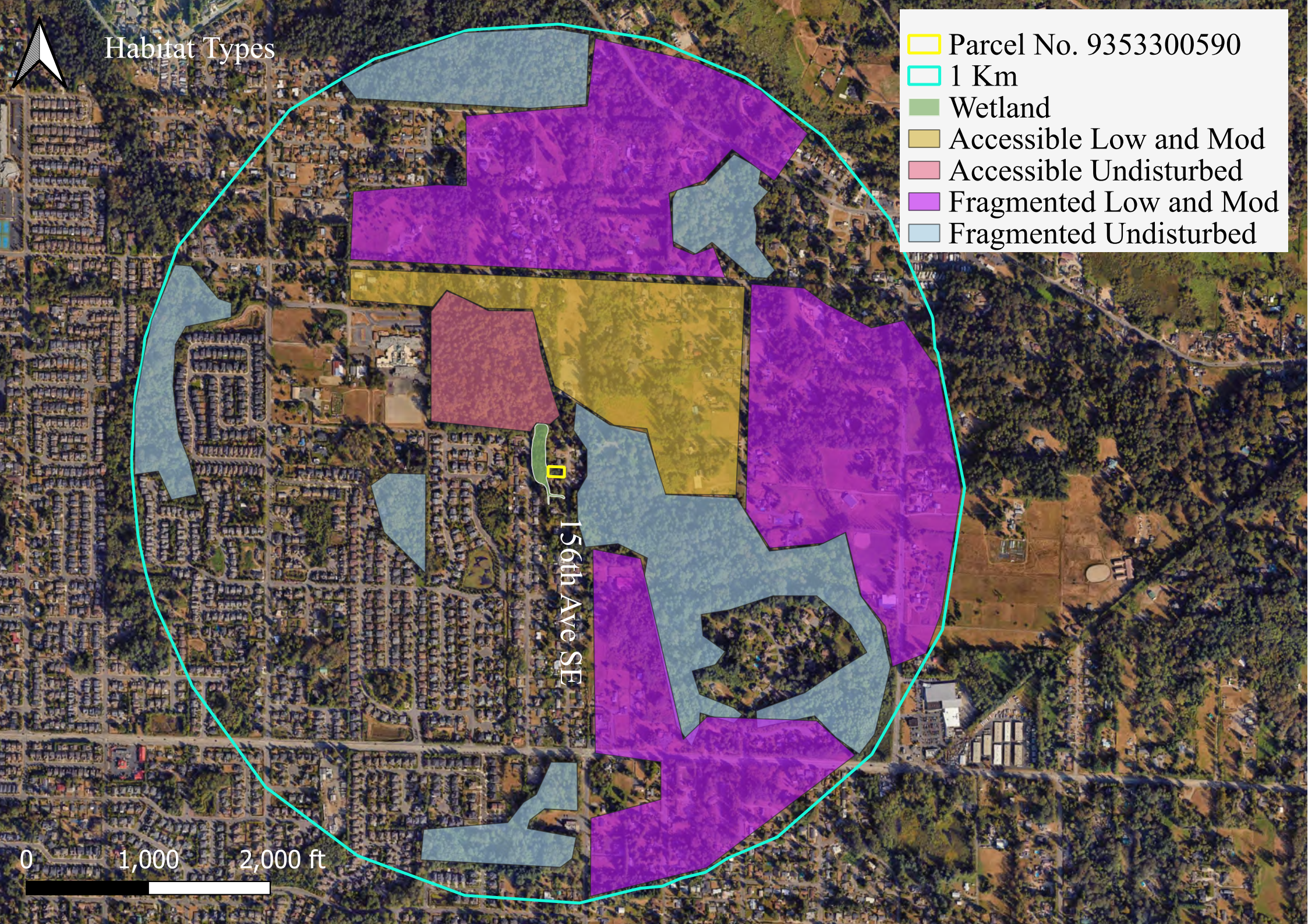
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No) = **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No) – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No) = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No) – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No) = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata

[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number WA

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

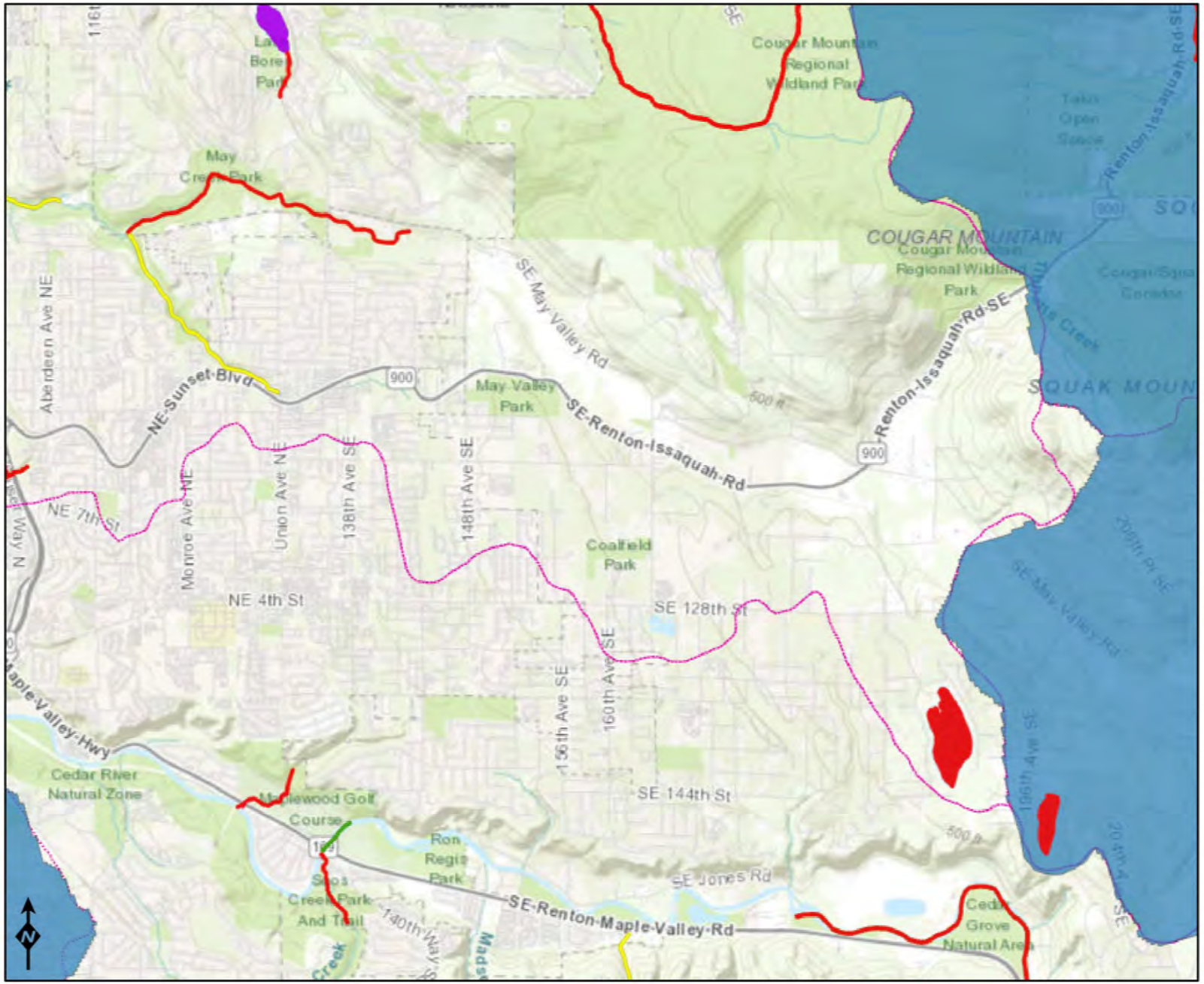

Habitat Types
Parcel No. 9353300590
1 Km
Wetland
Accessible Low and Mod
Accessible Undisturbed
Fragmented Low and Mod
Fragmented Undisturbed
156th Ave SE
0
1,000
2,000 ft


Hydroperiods
Parcel No. 9353300590
150-Foot Assessment Area
Saturated
Seasonal Flooding
156th Ave SE
0
100
200 ft


Cowardin Class
Parcel No. 9353300590
150-Foot Assessment Area
Forested
156th Ave SE
0
100
200 ft

December 16, 2024

Water Quality Atlas



Esri, NASA, NGA, USGS, FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

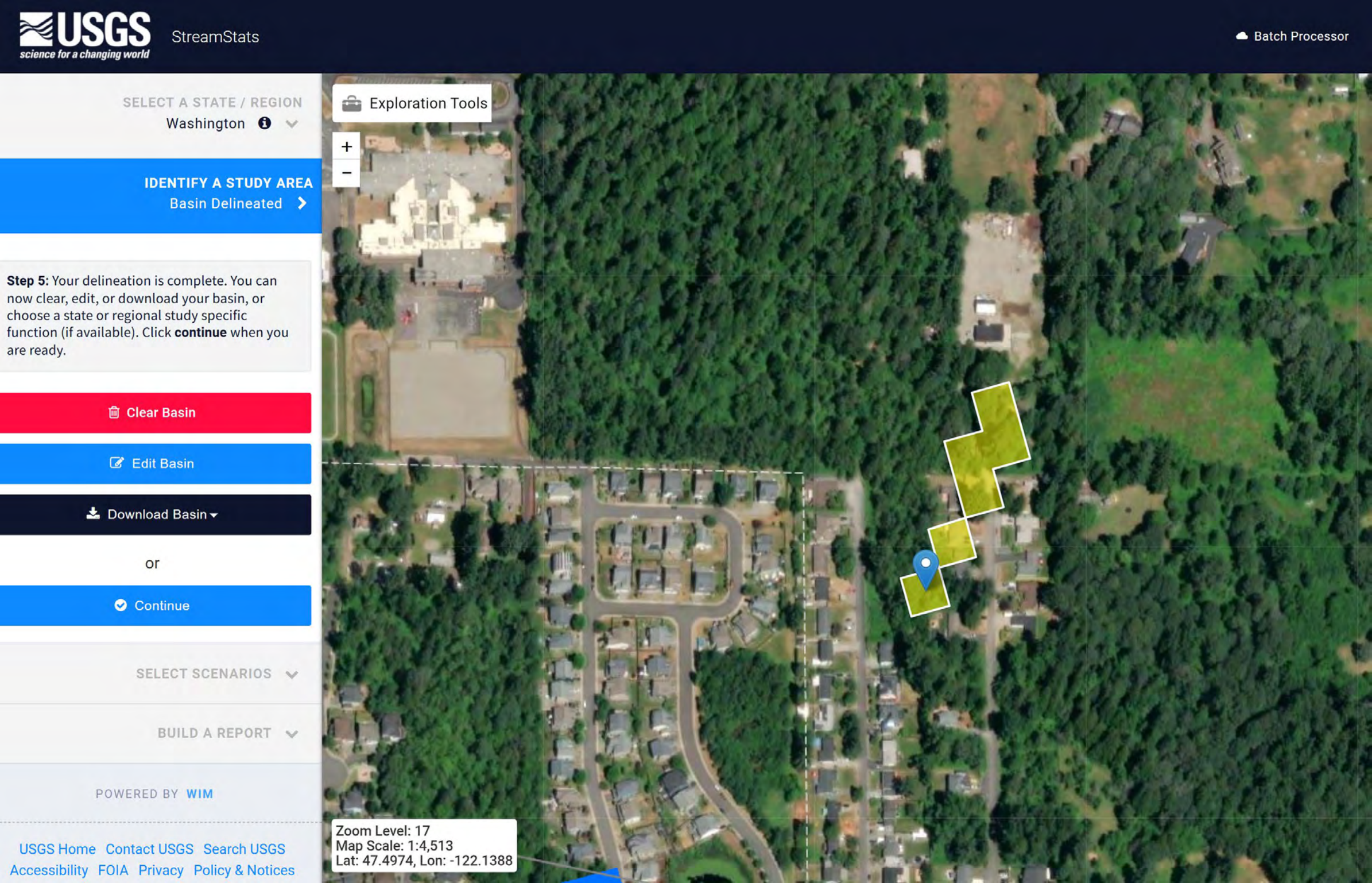
Assessed Water/Sediment

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

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

WQ Improvement Projects
- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

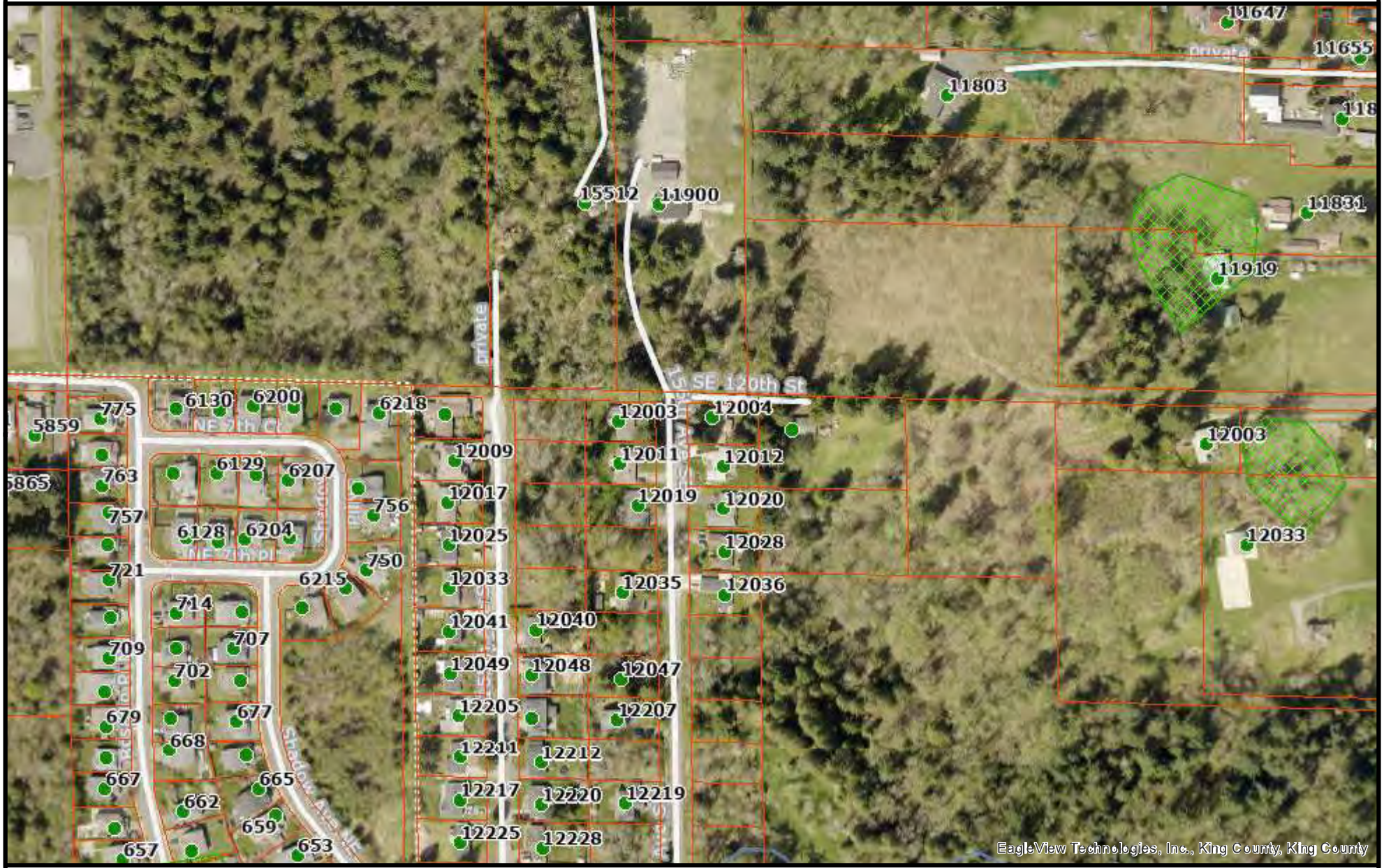
Subbasins (12 digit HUCs)
- HUC boundary


USGS
science for a changing world
StreamStats
Batch Processor
SELECT A STATE / REGION
Washington
IDENTIFY A STUDY AREA
Basin Delineated
Step 5: Your delineation is complete. You can now clear, edit, or download your basin, or choose a state or regional study specific function (if available). Click continue when you are ready.
Clear Basin
Edit Basin
Download Basin
or
Continue
SELECT SCENARIOS
BUILD A REPORT
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Exploration Tools
Zoom Level: 17
Map Scale: 1:4,513
Lat: 47.4974, Lon: -122.1388

King County Parcel No. 9353300590

Critical Area Report
Appendix E: Queried Database Figures

King County iMap



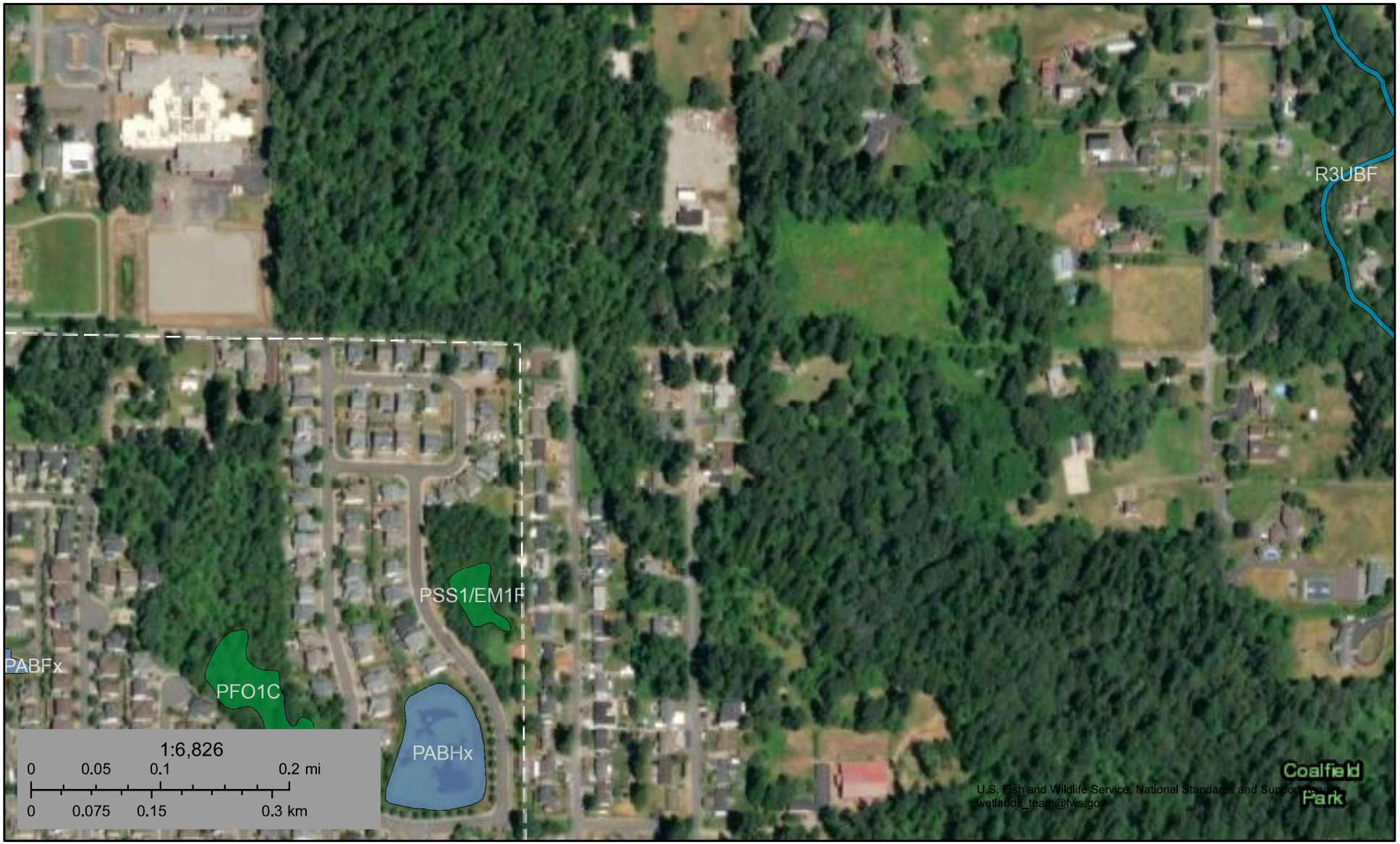
Date: 12/17/2024 Notes:

N

King County

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands

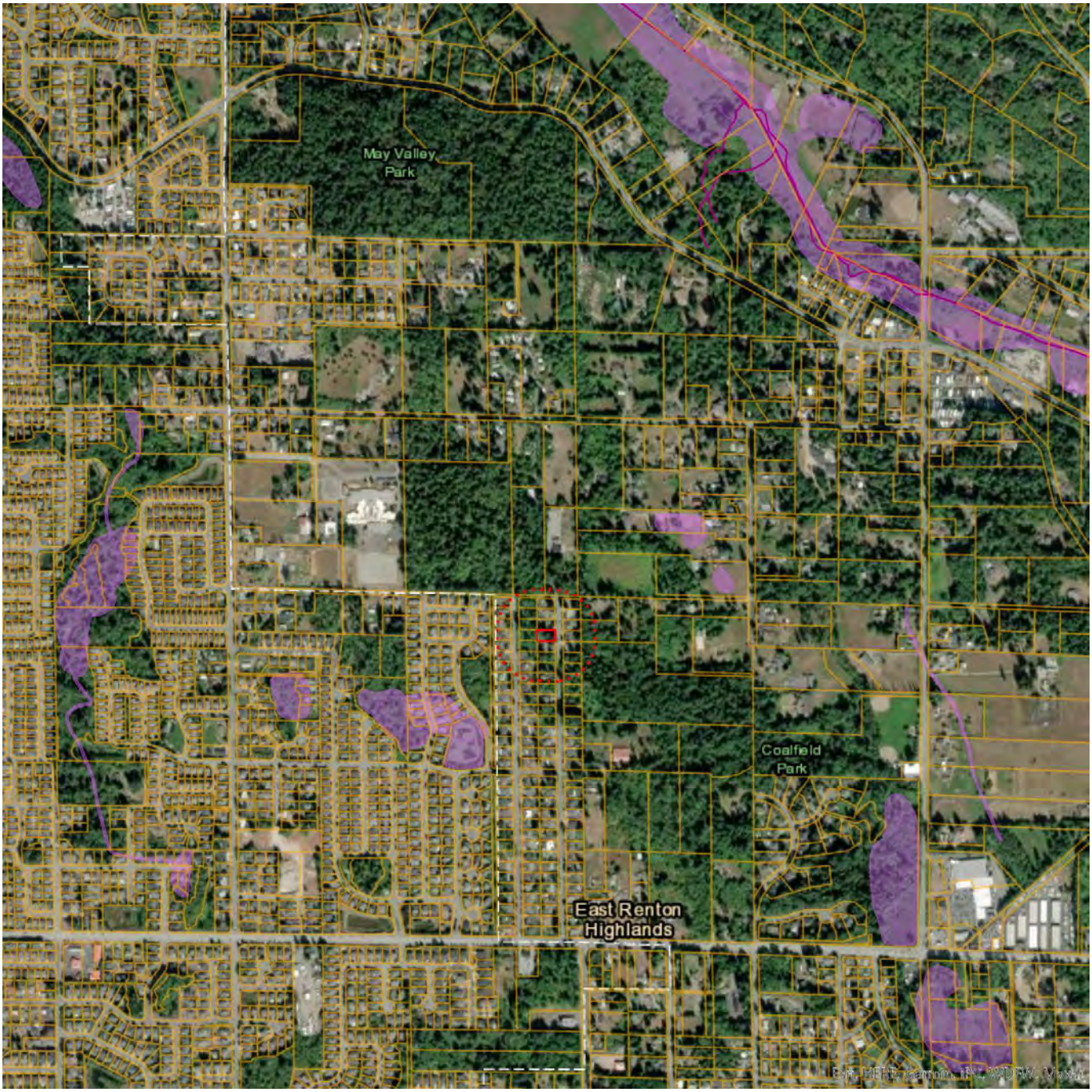


December 17, 2024

Wetlands

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

Priority Habitats and Species on the Web



Buffer radius: 300 Feet

Report Date: 12/17/2024, Parcel ID: 9353300590

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.

Letter ANSI A Portrait

December 17, 2024

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

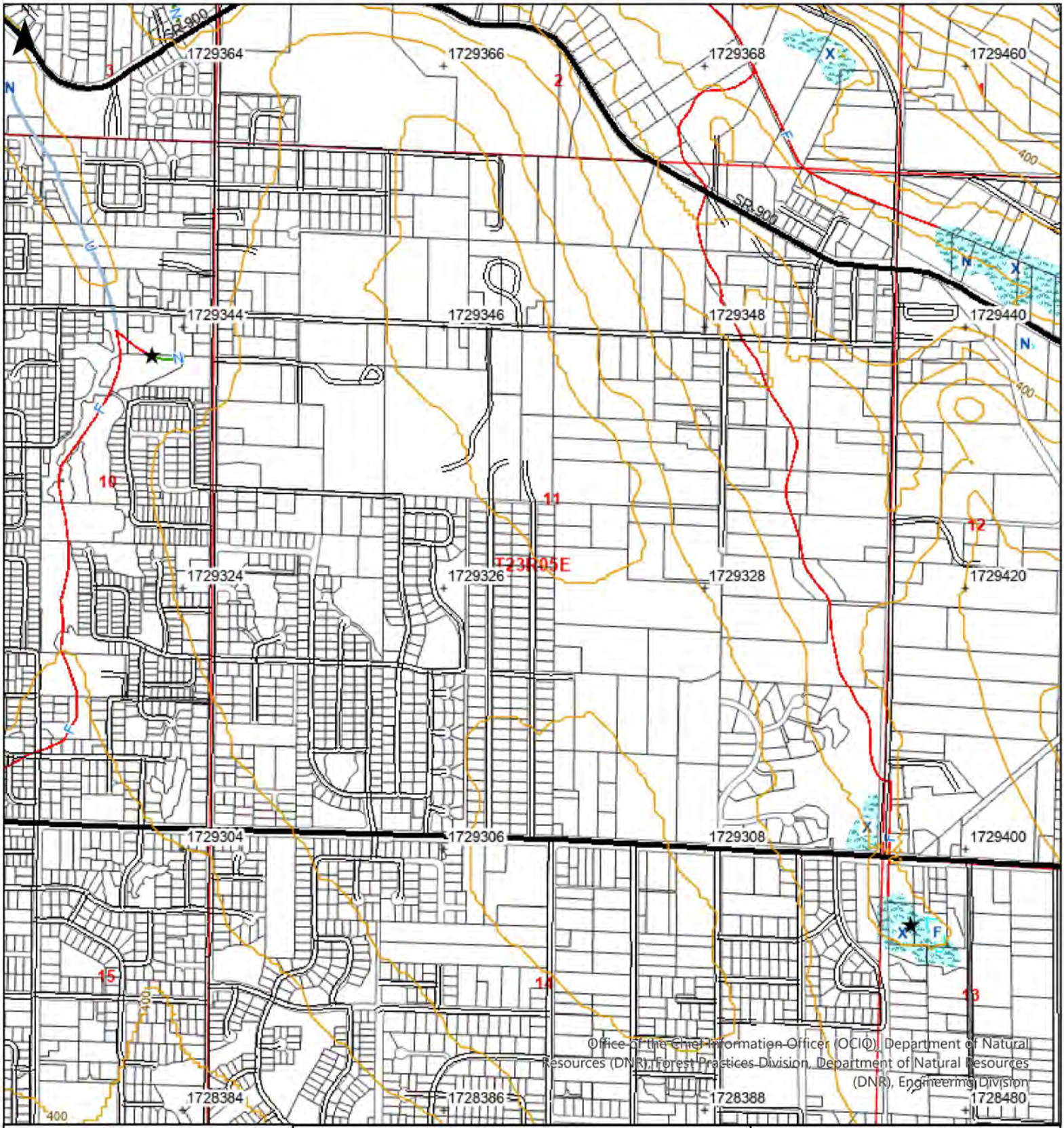
Partial Fish Passage Blockage

Not a barrier

All SalmonScape Species

Restoration Division of the DFW Habitat Program, USGS/NHD, Dale Gombert (WDFW), Esri, HERE, Garmin, iPC, WDFW, Maxar

Forest Practices Activity Map - Application #_____



Map Symbols

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

Additional Information

Legal Description

S10 T23.0N R05.0E, S13 T23.0N R05.0E, S03 T23.0N R05.0E, S14 T23.0N R05.0E, S01 T23.0N R05.0E, S12 T23.0N R05.0E, S02 T23.0N R05.0E, S15 T23.0N R05.0E, S11 T23.0N R05.0E

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Approximate Scale : 1:12,000

0 500 1,000 2,000 Feet

Date: 12/17/2024 Time: 12:04 PM

Map Scale: 1:348 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 15 30 60 90

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 20, Aug 27, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2022—Aug 8, 2022

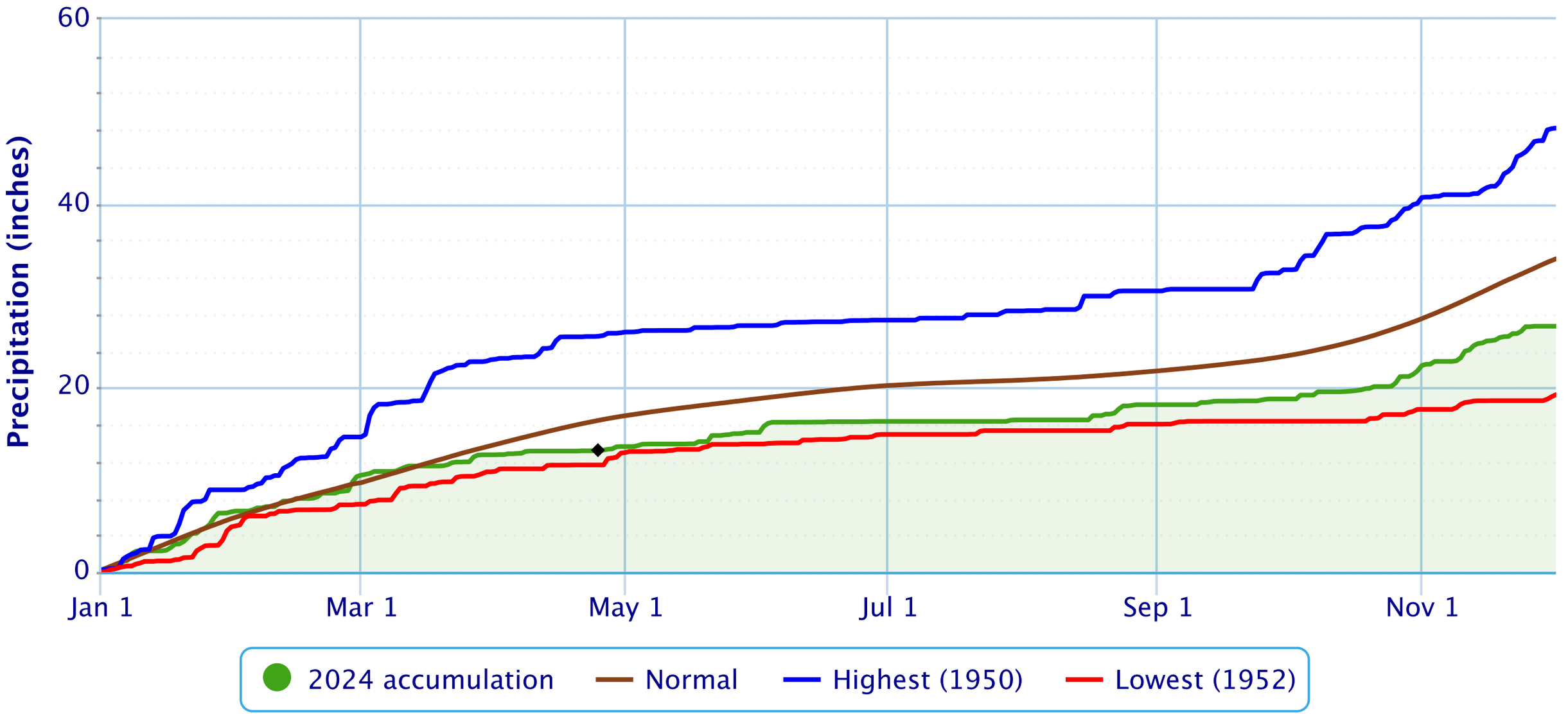
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes	0.6	100.0%
Totals for Area of Interest		**0.6**	**100.0%**

Accumulated Precipitation - SEATTLE TACOMA AIRPORT, WA

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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King County Parcel No. 9353300590

Buffer Mitigation Plan

King County Parcel No. 9353300590

Buffer Mitigation Plan

Prepared For:

Vu Vuong

Prepared by:

Peterman Consulting, LLC
12450 80th Ave S
Seattle, WA 98178
(206) 666-8736

October 1st, 2025

Tom Peterman MEH, PWS
Biologist

Date

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

Peterman Consulting, LLC has been contracted to prepare a buffer mitigation plan in support of the proposed construction of a single family residence at King County parcel No. 9353300590. The purpose of this plan is to demonstrate compliance with King County Code (KCC) Chapter 21A.24. The project design plan is attached for reference in Appendix A. Photographs of the subject property are attached in Appendix B. A map of the impact and restoration areas is included in Appendix C.

EXISTING CONDITIONS

The subject property is approximately 0.25 acres in size and is undeveloped. Access to the property was gained from 156th Ave SE which abuts the east border of the subject property. Most of the neighboring properties have private residences. The subject property is designated as residential and zoned as R4. The subject property is located within the Lake Washington-Sammamish River subwatershed (HUC 12) of the Cedar-Sammamish Watershed (WRIA 8). There is a small portion of a large wetland located near the subject property's west border. The vegetation on the subject property is a mix of native and nonnative species and has patches of invasive Himalayan blackberry (*Rubus armeniacus*).

Figure 1. Map showing the wetland and buffer.

The wetland's buffer is defined according to King County Code (KCC) 21A.24.325. The wetland is rated as a Category II feature (Table 1). According to KCC 21A.24.325, the wetland buffer is 150-feet for Category II wetlands with moderate habitat scores within the Urban Growth Area. The entire subject property is situated within the wetland's buffer.

Table 1. Wetland feature summary

Feature	Size (Approximate)	Cowardin Class[1]	Hydrology Modifier	HGM Class	Wetland Category[2]	Buffer Width[2]
WA	1.3 acres	PFO	Seasonally Flooded, Saturated	Depressional	II	150 ft.

[1] Classification based on Cowardin et. al. (1979).
[2] According to Chapter 21A.24.325 of the KCC.

WILDLIFE STUDY AND HABITAT ASSESSMENT

A Peterman Consulting biologist visited the subject property on March 13th, 2025 to conduct a wildlife study and habitat assessment. The assessment included traversing the subject property and observing habitat conditions and any potential wildlife use within the project site. Based on the proximity to the wetland, the buffer area on the subject property likely provides some foraging and refuge for small mammals as well as foraging and refuge for birds and amphibians.

There were no habitats or active breeding sites observed for the species listed in KCC Section 21A.24.382 or for any federal or state listed endangered, threatened, sensitive, and candidate species. Wildlife activity on the subject property is likely limited by the proximity and intensity of surrounding residential development, and the fragmentation of local habitat and corridors relative to major wildlife networks.

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 on or near the subject property (WDFW 2025a). According to the PHS database, there are no priority habitats or species mapped on or within 300 feet of the subject property. Additionally, WDFW's SalmonScape on-line mapper was queried to determine if salmonids are known to use the subject property or surrounding area (WDFW 2025b). According to SalmonScape, there is a seasonal stream southeast of the subject property by approximately 315 feet. The seasonal stream does not have documentation of fish habitat or utilization.

PROJECT DESCRIPTION

The proposed work for this project includes the construction of a new single family residence (Appendix A). The project would take place entirely within the standard 150-foot wetland buffer. The proposed building footprint will be approximately 3,024 ft^2. Proposed activities within the buffer will include clearing the top layer of vegetation and grading. There is no proposed work in

the wetland and all construction activity will be conducted from equipment staged in upland areas.

ALTERNATIVES ANALYSIS

The purpose of the proposed project is to develop a single-family residence that conforms with the critical area alteration exception development standards in KCC 21A.24.070. The proposed design plan disturbs less than 5,000 ft^2 of wetland buffer. Based on the size of the parcel, there are no feasible alternatives available to relocate the proposed residence and provide less adverse impact.

MITIGATION APPROACH

Per KCC 21A.24.125, all uses and activities within a critical area or its associated buffer shall be avoided or, where that is not possible, minimize all adverse impacts to those critical areas and/or buffers. As summarized above, there is a critical area buffer that extends across the entire property and denies development and reasonable use.

The proposed project will minimize impacts by not exceeding 5000 ft^2 of total footprint and it will be located as close to 156th Ave SE as possible, to minimize access impacts. Native vegetation will be retained when achievable. Additionally, onsite mitigation is proposed in the form of enhancement of 4,560 ft^2 of buffer. 3,024 ft^2 will be used to compensate for buffer impacts on the subject parcel. The remaining 1,536 ft^2 is intended to be used for proposed buffer impacts to King County Parcel No. 9353300540 from the construction of a single family home. In Peterman Consulting's professional opinion, the combination of actions will improve the habitat functions of the remaining buffer and comply with King County code.

BUFFER ENHANCEMENT PLAN

Impact Analysis

This impact analysis is intended to summarize the potential impacts of the proposed project on the identified wetland and the associated buffer as well as demonstrate that the proposed project will conform to the development standards defined in Chapter 21A.24 of the KCC. Per KCC 21A.25.080, adverse impacts to important habitats and associated buffers shall be fully compensated to improve overall habitat functions as a result of the actions of this project. Overall, the potential for impacts to the wetland due to construction is expected to be minimal.

Existing Wetland Buffer Conditions

The existing buffer habitat on the subject property consists of a mix of native and nonnative species (Appendix C). The forested canopy consists of cottonwood (*Populus trichocarpa*), big leaf maple (*Acer macrophyllum*), western redcedar (*Thuja plicata*), and Douglas fir (*Pseudotsuga menziesii*). The shrub species consisted of vine maple (*Acer circinatum*), hazelnut (*Corylus cornuta*), osoberry (*Oemleria cerasiformis*), and patches of holly (*Ilex aquifolium*) and Himalayan blackberry (*Rubus armeniacus*). Groundcover species include sword fern

(*Polystichum munitum*), thimbleberry (*Rubus parviflorus*), trailing blackberry (*Rubus ursinus*) and a small patch of yellow archangel (*Lamium galeobdolon*).

Wetland Buffer Impacts

The current buffer area within the project provides some protection to the natural functions of the onsite wetland. The potential impacts from the proposed construction activities are to the wetland buffer vegetation and hydrology. The total amount of new impervious surfaces is 3,024 ft^2. Prior to disturbance, the extents of the addition would be marked using high visibility flagging.

Vegetation Impacts

The current buffer includes areas of the project that will undergo clearing and construction activities. Proposed impacts include removal of existing buffer vegetation. All of the work is set to occur in an area where the vegetation is a mix of native and nonnative species. The proposed activities are expected to have a modest impact on the effectiveness of the buffer to provide the existing level of water quality, hydrology and habitat functions.

Hydrology Impacts

Other potential impacts of the proposed action could include potential accidental spills and releases of sediment-laden runoff. Due to the distance to the wetland, the project area provides only limited water quality or hydrologic protection to the wetland. Erosion from upland ground-disturbing activities has the potential to contribute to sediment inputs to the wetland.

To minimize the risk of an accidental spill of hazardous materials during construction, the project contractor will implement spill prevention Best Management Practices (BMPs) to minimize potential direct effects to water quality. The contractor will also ensure the use of an erosion control plan to prevent the degradation of buffer conditions due to sediment-laden runoff. Overall, direct impacts to the wetland resulting from the proposed project are not anticipated to occur.

Buffer Enhancement Goals

The goal of the buffer enhancement described herein is to offset potential impacts from the addition to the structure. Mitigation for the unavoidable impacts will be offset with the enhancement of onsite wetland buffer. Native vegetation will be installed over 4,560 ft^2 of wetland buffer that has been degraded by previous land disturbances. The enhanced buffer area will provide increased quality of function over the existing buffer conditions including increased native species diversity, increased habitat complexity, and increased buffer screening and water quality enhancement.

Enhancement Plant Schedule

Installation of native shrubs and trees should occur in either the early spring or late fall planting season. Table 2 specifies the selection of native plant species to be planted within the identified areas. The selected native species are adapted to grow within the planting areas based on moisture tolerances and available sunlight, as well as use in similar, previously successful buffer

installations in the area. Almost all of the species below are also found currently in the wetland buffer on the subject property.

The landscape contractor shall make a good faith effort to secure all species specified in this plan. All plant stock will be obtained from a reputable, local dealer and will be free of any diseases or defects. Plant species will be native to the Puget Sound Trough; no hybrids or nonnative varieties will be allowed. Variations from the approved plan with respect to native species will require review and approval by King County and the project biologist prior to purchase and installation.

Table 2. Buffer Enhancement Plant Schedule

Scientific Name	Common Name	Size	Spacing	Quantity
Trees				
Thuja plicata	western redcedar	1 gallon	12 ft. on center	12
Shrubs				
Rubus spectabilis	salmonberry	1 gallon	6 ft on center	15
Oemleria cerasiformis	osoberry	1 gallon	6 ft on center	15
Acer circinatum	vine maple	1 gallon	6 ft on center	15
Cornus sericea	red osier dogwood	1 gallon	6 ft on center	15
Groundcover				
Polystichum munitum	sword fern	4 in. pot	4 ft on center	60
Gaultheria shallon	salal	4 in. pot	4 ft on center	60
Mahonia nervosa	Oregon grape	4 in. pot	4 ft on center	60

Preparation and Installation of Plant Materials

The landscape contractor shall verify the location of all elements of the enhancement plan prior to installation. The project biologist may adjust the locations of enhancement elements during the installation period as necessary, with final approval from King County.

Circular plant pits with vertical sides will be excavated for all container stock. The pits should be at least twice the diameter of the root system, and the depth of the pit should accommodate the entire root system. The bottom of each pit will be scarified to a depth of at least 4 inches, and the pit should be thoroughly wetted prior to plant insertion to prevent capillary stress. The planting hole shall be amended with a mixture of topsoil and organic material if necessary to provide appropriate rooting media. Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water pits upon completion of backfilling. No filling should occur around stems. Do not use frozen or muddy mixtures for backfilling. Form a ring of

soil around the edge of each planting pit to retain water, and install at least a 2-1/2 inch layer of organic mulch around the base of each container plant. Ensure the mulch ring does not come into contact with the plant stem to avoid stem rot.

Buffer Mitigation Maintenance

Temporary Irrigation

The project proponent will provide regular irrigation to the buffer enhancement areas for the first year following the installation of plant materials. Irrigation should commence by June 1st and should stop by September 15th or as determined by the project biologist. The project proponent may choose to use any feasible method to supply supplemental irrigation as long as any associated irrigation infrastructure is removed after the irrigation period, or after installed plants are mature enough to survive without supplemental irrigation.

Site Maintenance

Maintenance of the enhancement area for the duration of the monitoring period will be the responsibility of the Applicant. Annual maintenance visits should be conducted by a landscaping contractor, at the direction of the biologist. During each maintenance visit, all litter including paper, plastic, bottles, debris, etc., will be removed. Any invasive plant species (such as Himalayan blackberry, holly, or yellow archangel) shall also be removed during site maintenance. Work to be completed on the second maintenance visit (one year after plant installation) also includes replacement of dead or failed plant materials with plantings of the same species, size and location as original plantings. Replacement plantings are to be installed during the dormant period.

Performance Standards

Performance standards provide a clear means of evaluating the success of an enhancement action. The following performance standards have been developed to reflect the goals and functional objectives of this plan (Table 3). Success of the enhancement plantings in regards to species richness and enhancement of buffer functions will be based upon the site meeting these standards. In addition, coverage by invasive weed species will be monitored to evaluate the habitat value of the enhanced buffers.

In the event the site fails a Performance Standard, the project biologist, Applicant and King County staff will meet in good faith to evaluate the potential causes for the failing Performance Standard(s) and determine an appropriate contingency action or actions.

Table 3. Performance Standards

Enhancement Goal	Functional Objective	Performance Standard	Parameter Measured	Year Inspected	Sampling Method
Enhance functioning of wetland buffer	Plant 4,560 square feet of wetland buffer with native tree and shrub species	1. Minimum 80% survival of planted vegetation at the end of Year 3 (100% survival at Year 1).	Survivorship	1,2,3	Plant Census
		2. Minimum of four (4) native shrub species and three (3) herbaceous species will be present within the planting area at the end of Year 3.	Plant structural diversity	1,2,3	Plant Census
		3. Minimum 50% aerial coverage of installed species within the enhancement area at the end of Year 3.	Aerial coverage	1,2,3	Line-Intercept
		4. No more than 10% aerial coverage by invasive weed species within the planted buffer area during all monitoring years.	Aerial coverage and species composition	1,2,3	Line-Intercept

MONITORING AND CONTINGENCY SCHEDULE

Monitoring Schedule

A monitoring program will be established for the project in order to regularly evaluate the progress of the buffer enhancement area. Monitoring inspections and reports will be prepared by a qualified biologist, and follow the Monitoring Schedule detailed below.

- Immediately after plant installation ("As-Built report", within 30 days following installation);
- Late in the growing season of the first year after plant installation;
- Late in the growing season of the second year after plant installation;
- Once in year 3

Vegetation monitoring conducted in the later portion of the growing season should be conducted within the period between July 15 and September 15.

Installation Monitoring

Installation monitoring will require coordination between the project biologist and landscaping personnel in order to ensure that the enhancement areas are properly prepared and plantings are installed in an appropriate manner, as outlined in this plan. A pre-planting meeting will be held to discuss the planting plan. The overall purpose of the meeting will be to discuss the primary

intent of the plan, establish lines of communication between the project biologist and landscaping personnel, and address any questions or problems. The biologist will inspect and approve the planting stock, review the plans with the field crew to ensure they both recognize the species selected for installation and understand the staking, and will also observe plant installation to ensure plants are installed appropriately. In addition, the biologist will assist the landscape contractor in making any final adjustments in the planting schedule or plan, as needed, in response to field conditions.

Any changes made to the planting schedule or plan in response to field conditions will be documented in the As-built report to be submitted to King County following the post-installation inspection.

Post-Installation Inspection

Compliance monitoring will consist of evaluating the plantings after installation to confirm the plan was followed and plants were installed appropriately. A walk-through survey will be conducted to serve as the as-built survey, including inspection of all planted vegetation to verify that all design features agreed to in this plan have been correctly and fully implemented. Any changes made in the field will be consistent with the overall objective of the plan. In addition, permanent photo-points and monitoring transects will be established within the enhancement areas to be used during the long-term monitoring.

Compliance monitoring will be conducted by a qualified biologist. The buffer enhancement area will be walked and observations including plant health and vigor, mulching, plant spacing, and installation issues will be documented. In addition, photographs will be taken at the permanent photo-points to document the installation. Following completion of the compliance monitoring, an As-Built Report will be prepared by the qualified biologist verifying that all design features have been correctly implemented. Any changes to the planting plan will also be discussed in this report. The As-Built Report will be submitted to King County within 30 days of the completion of plant installation. King County will be responsible for inspecting and approving the As-Built Report.

Long-Term Monitoring

Long-term monitoring will be conducted over a three year period with observations conducted following the Monitoring Schedule. The purpose of the long-term monitoring program will be to evaluate the survival and maintenance of the plant communities within the enhancement areas to determine if the goals and objectives of this plan have been met. Photographs will be taken at photo-points to document the status of the plantings.

Monitoring reports that describe the status of the enhancement will be submitted following each monitoring visit. King County will be the agency responsible for inspecting and approving the monitoring reports. The long-term monitoring at the site will be conducted according to the following methods.

Plant Census

The plant census will be conducted by qualified biologists walking throughout the enhancement area. A mortality count of each species planted in the areas will be documented, to be compared to the as-built results for the plant survival calculation. In addition, the condition of the planted vegetation will be documented to qualitatively describe the growth trajectory of the vegetation community, including plant health and vigor, reproductive potential, and signs of wildlife use.

Line-Intercept Method

The line-intercept method (Canfield 1941) will be used to quantify the planted shrubs and trees along each established monitoring transect. The transect lines established during the as-built inspections will be used as the sampling area for the line-intercept method. The field procedure follows:

- The measuring tape will be laid out along the transect with the sampling crew making sure to stay on the left side of the transect to avoid disturbing the vegetation to be sampled. The samplers will make sure the tape is taut, straight, and anchored firmly.
- Starting at the end of the transect line, the species and intercept length of each shrub and small tree along the transect will be recorded on the line-intercept data form. The intercept length is the portion of the transect length intercepted by a perpendicular projection of the plant's foliage.
- The total length of the transect sampled will be recorded.

The procedure will be repeated for each transect. The estimated percent cover for the site will be calculated by dividing the sum of the intercept lengths by the total length of all sampled transects.

Photograph Points

During the as-built inspections and documentation, permanent photo points will be established. These points will be used during each monitoring visit (including the installation inspection) to document the development of the enhancement vegetation. The photographs will be taken facing the same direction each monitoring year, and will be included as an appendix to the annual monitoring report submitted to King County.

Contingency Plan

If the monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement a contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the enhancement fail to meet the success criteria, a contingency plan will be developed and implemented with King County input and approval. Such plans are prepared on a case-by-case basis to reflect the failed enhancement characteristics. Contingency/adaptive management actions may include, but are not limited to:

- Replacing all plants lost to vandalism, drought, or disease, as necessary.

- Replacing any plant species with a 20% or greater mortality rate after three growing seasons with the same species or similar species approved by the biologist and King County.
- Increased irrigation in the enhancement area only as necessary during dry weather if plants appear to be too dry, with an appropriate quantity of water.

Reporting

Monitoring reports will be prepared at the end of the monitoring year; these reports will summarize the results of each monitoring site visit. The monitoring report will be submitted to King County as per the schedule. The monitoring reports will document the changes that have occurred within the enhancement areas and make recommendations for improvements and/or corrective measures for any problems noted during the monitoring visits. The report will also document any and all maintenance activities conducted. The monitoring reports will be due to King County by December 31st of each year that monitoring activities occur.

BIOLOGIST QUALIFICATIONS

Tom Peterman

Tom Peterman is a Biologist with training in wetland science and ecological restoration. Tom has professional experience in wetland and stream restoration, mitigation planning and monitoring, fisheries and marine mammal monitoring, and fish and wildlife assessments. Tom has earned a graduate degree and a certificate in wetland science and management from the University of Washington. Tom is certified as a Professional Wetland Scientist (#3676) with the Society of Wetland Scientists. For a list of representative projects, please contact him at Peterman Consulting.

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

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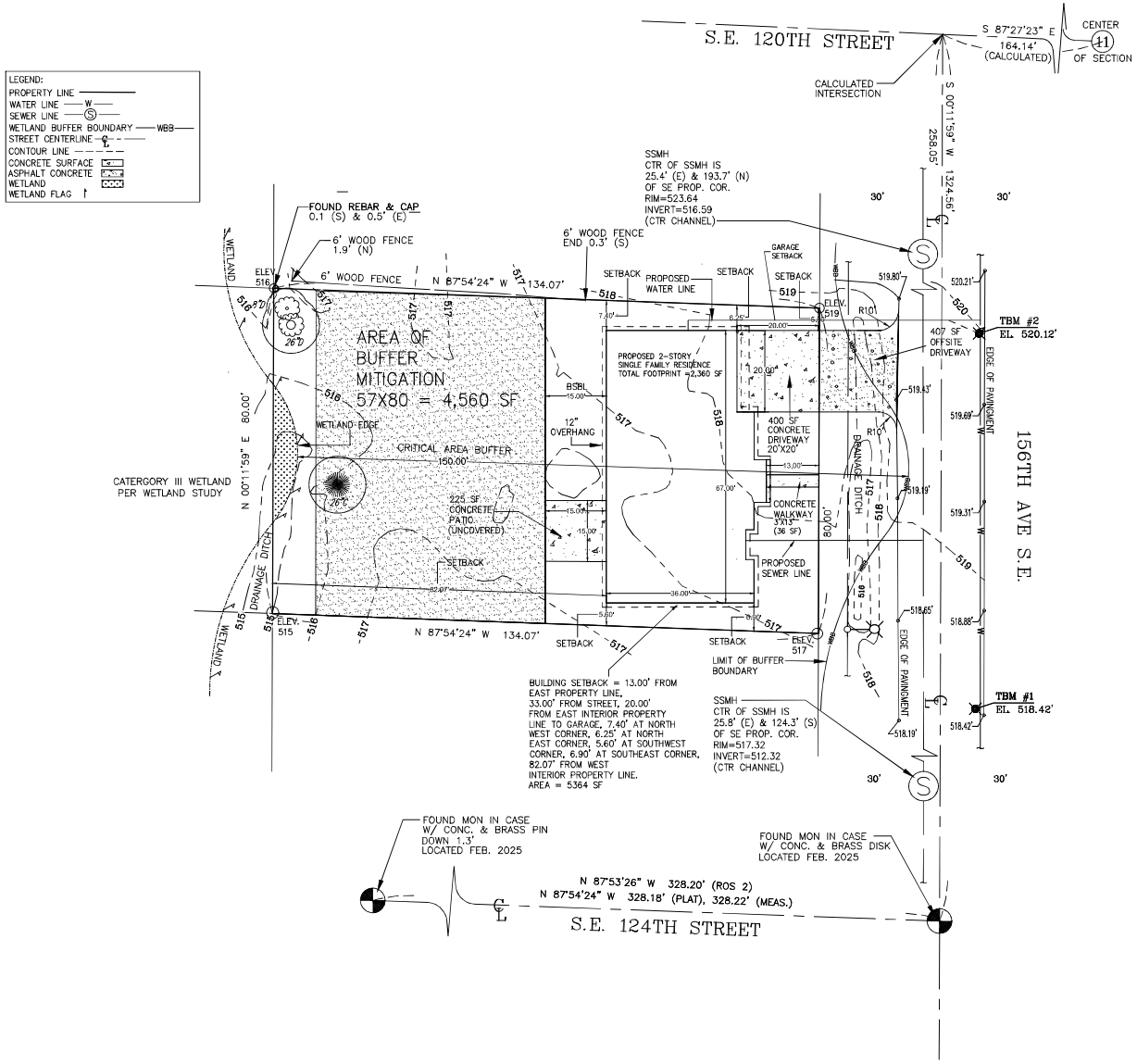
King County Parcel No. 9353300590

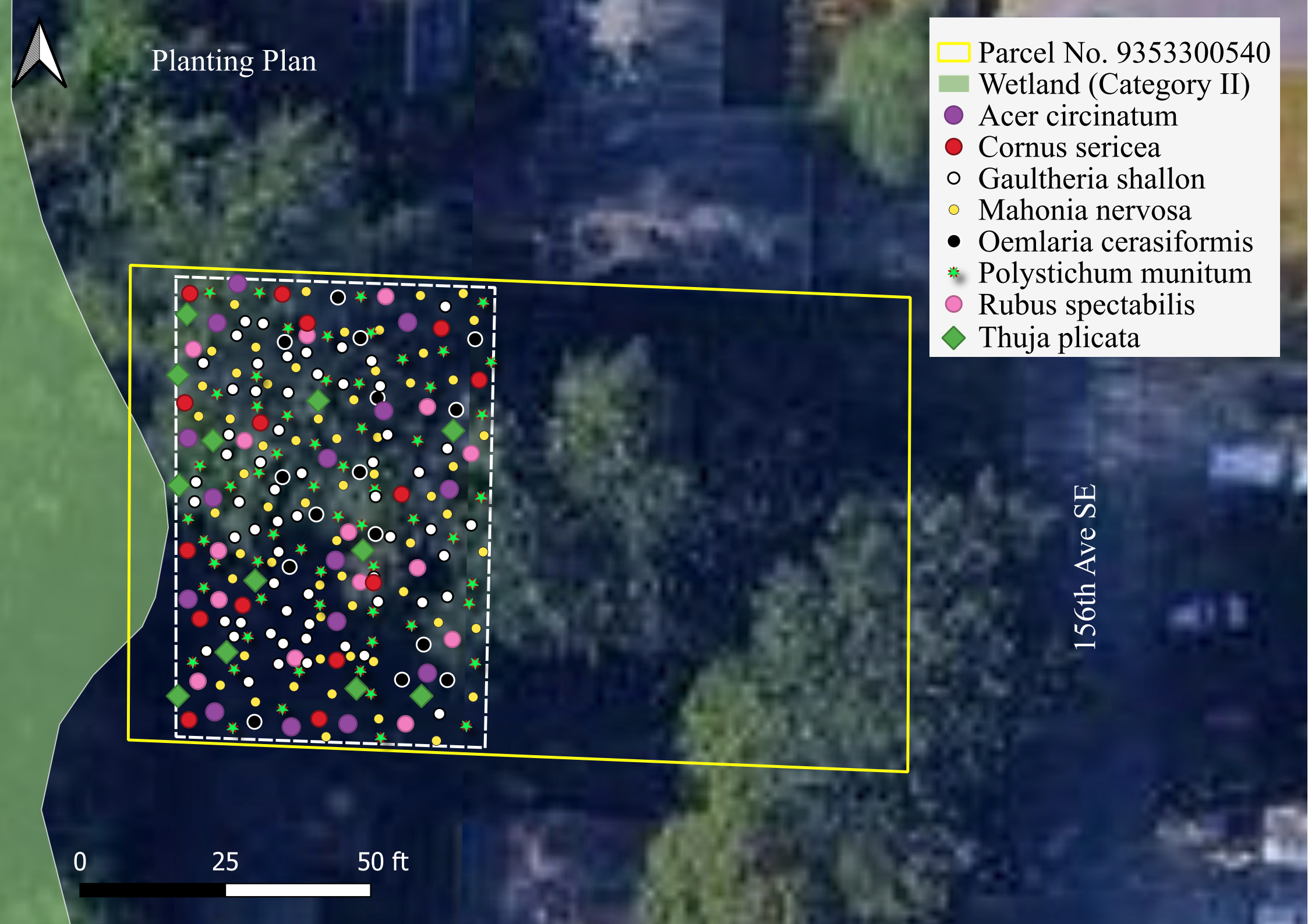
Buffer Mitigation Plan
Appendix A. Site Plans


LEGEND:
PROPERTY LINE
WATER LINE — W —
SEWER LINE — S —
WETLAND BUFFER BOUNDARY — WBB —
STREET CENTERLINE
CONTOUR LINE
CONCRETE SURFACE
ASPHALT CONCRETE
WETLAND
WETLAND FLAG
S.E. 120TH STREET
S 87°27'23" E
164.14'
(CALCULATED)
CENTER
(11)
OF SECTION
CALCULATED INTERSECTION
S 00°11'59" W
258.05'
1324.56'
SSMH
CTR OF SSMH IS
25.4' (E) & 193.7' (N)
OF SE PROP. COR.
RIM=523.64
INVERT=516.59
(CTR CHANNEL)
FOUND REBAR & CAP
0.1' (S) & 0.5' (E)
6' WOOD FENCE
1.9' (N)
6' WOOD FENCE
END 0.3' (S)
6' WOOD FENCE
N 87°54'24" W 134.07'
WETLAND
ELEV.
516
AREA OF
BUFFER
MITIGATION
57X80 = 4,560 SF
WETLAND EDGE
CRITICAL AREA BUFFER
150.00'
CATERGORY III WETLAND
PER WETLAND STUDY
N 00°11'59" E 80.00'
DRAINAGE DITCH
225 SF
CONCRETE
PATIO
(UNCOVERED)
SETBACK
PROPOSED
WATER LINE
PROPOSED 2-STORY
SINGLE FAMILY RESIDENCE
TOTAL FOOTPRINT =2,360 SF
BSBL
12"
OVERHANG
400 SF
CONCRETE
DRIVEWAY
20'X20'
CONCRETE
WALKWAY
3'X15'
(36 SF)
PROPOSED
SEWER LINE
GARAGE
SETBACK
ELEV.
519
R10'
407 SF
OFFSITE
DRIVEWAY
TBM #2
EL. 520.12'
EDGE OF PAVING
156TH AVE S.E.
TBM #1
EL. 518.42'
ELEV.
515
N 87°54'24" W 134.07'
ELEV.
517
LIMIT OF BUFFER
BOUNDARY
BUILDING SETBACK = 13.00' FROM
EAST PROPERTY LINE,
33.00' FROM STREET, 20.00'
FROM EAST INTERIOR PROPERTY
LINE TO GARAGE, 7.40' AT NORTH
WEST CORNER, 6.25' AT NORTH
EAST CORNER, 5.60' AT SOUTHWEST
CORNER, 6.90' AT SOUTHEAST CORNER,
82.07' FROM WEST
INTERIOR PROPERTY LINE.
AREA = 5364 SF
SSMH
CTR OF SSMH IS
25.8' (E) & 124.3' (S)
OF SE PROP. COR.
RIM=517.32
INVERT=512.32
(CTR CHANNEL)
FOUND MON IN CASE
W/ CONC. & BRASS PIN
DOWN 1.3'
LOCATED FEB. 2025
FOUND MON IN CASE
W/ CONC. & BRASS DISK
LOCATED FEB. 2025
N 87°53'26" W 328.20' (ROS 2)
N 87°54'24" W 328.18' (PLAT), 328.22' (MEAS.)
S.E. 124TH STREET

King County Parcel No. 9353300590

Buffer Mitigation Plan

Appendix B. Map of Mitigation Area


Planting Plan
Parcel No. 9353300540
Wetland (Category II)
Acer circinatum
Cornus sericea
Gaultheria shallon
Mahonia nervosa
Oemlaria cerasiformis
Polystichum munitum
Rubus spectabilis
Thuja plicata
156th Ave SE
0
25
50 ft

King County Parcel No. 9353300590

Buffer Mitigation Plan
Appendix C. Site Photos

Site photos

Photo 1. Looking south at the proposed buffer mitigation area.

Photo 2. Looking west towards the buffer and Wetland WA.

Photo 3. Looking west at Wetland WA and the proposed mitigation area.

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Photo 4. Looking east towards 156th Ave SE.

KING COUNTY PARCEL NO. 9353300590

BUFFER MITIGATION PLAN

APPENDIX D. BOND QUANTITY WORKSHEET

King County

Critical Areas Mitigation
Bond Quantity Worksheet

Project Name:

Date: 10/1/2025

Prepared by:

Project Number: PREA24-0345

Applicant:

Peterman Consulting, LLC

Location: Parcel No. 9353300590

Phone Number:

PLANT MATERIALS*

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	$5.00	Each	180.00		$ 900.00
PLANTS: Container, 1 gallon, medium soil	$11.50	Each	72.00		$ 828.00
PLANTS: Container, 2 gallon, medium soil	$20.00	Each			$ -
PLANTS: Container, 5 gallon, medium soil	$36.00	Each			$ -
PLANTS: Seeding, by hand	$0.50	SY			$ -
PLANTS: Slips (willow, red-osier)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Stakes (other)	$2.00	Each	0.00		$ -
					$ -
					$ -
* All costs include installation				*TOTAL*	**$ 1,728.00**

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit			Cost
Compost, vegetable, delivered and spread	$37.88	CY	1.00		$ 37.88
Decompacting till/hardpan, medium, to 6" depth	$1.57	CY			$ -
Decompacting till/hardpan, medium, to 12" depth	$1.57	CY			$ -
Hydroseeding	$0.51	SY			$ -
Labor, general (landscaping)	$40.00	HR			$ -

Labor, general (construction)	$40.00	HR	24.00		$ 960.00
Labor: Consultant, supervising	$55.00	HR	1.00		$ 55.00
Labor: Consultant, on-site re-design	$95.00	HR			$ -
Rental of decompacting machinery & operator	$70.00	HR			$ -
Sand, coarse builder's, delivered and spread	$42.00	CY			$ -
Staking material (set per tree)	$7.00	Each			$ -
Surveying, line & grade	$250.00	HR			$ -
Surveying, topographical	$250.00	HR			$ -
Watering, 1" of water, 50' soaker hose	$3.62	MSF			$ -
Irrigation - temporary	$3,000.00	Acre	0.10		$ 300.00
Irrigation - buried	$4,500.00	Acre			$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	$1.02	SY			$ -
					$ -
					$ -
				TOTAL	**$ 1,352.88**

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit			Cost
Fascines (willow)	$ 2.00	Each			$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	$1,000.00	Each			$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	$400.00	Each			$ -
Logs, w/o root wads, 16"-24" diam., 30' long	$245.00	Each			$ -
Logs w/ root wads, 16"-24" diam., 30' long	$460.00	Each			$ -
Rocks, one-man	$60.00	Each			$ -
Rocks, two-man	$120.00	Each			$ -
Root wads	$163.00	Each			$ -
Spawning gravel, type A	$22.00	CY			$ -
Weir - log	$1,500.00	Each			$ -
Weir - adjustable	$2,000.00	Each			$ -
Woody debris, large	$163.00	Each			$ -
Snags - anchored	$400.00	Each			$ -
Snags - on site	$50.00	Each			$ -
Snags - imported	$800.00	Each			$ -
					$ -
					$ -
* All costs include delivery and installation				*TOTAL*	**$ -**

EROSION CONTROL

ITEMS	Unit Cost	Unit			Cost
Backfill and Compaction-embankment	$ 4.89	CY			$ -
Crushed surfacing, 1 1/4" minus	$30.00	CY			$ -
Ditching	$7.03	CY			$ -
Excavation, bulk	$4.00	CY			$ -
Fence, silt	$1.60	LF			$ -
Jute Mesh	$1.26	SY			$ -
Mulch, by hand, straw, 2" deep	$1.27	SY			$ -
Mulch, by hand, wood chips, 2" deep	$3.25	SY			$ -
Mulch, by machine, straw, 1" deep	$0.32	SY			$ -
Piping, temporary, CPP, 6"	$9.30	LF			$ -
Piping, temporary, CPP, 8"	$14.00	LF			$ -
Piping, temporary, CPP, 12"	$18.00	LF			$ -
Plastic covering, 6mm thick, sandbagged	$2.00	SY			$ -
Rip Rap, machine placed, slopes	$33.98	CY			$ -
Rock Constr. Entrance 100'x15'x1'	$3,000.00	Each			$ -
Rock Constr. Entrance 50'x15'x1'	$1,500.00	Each			$ -
Sediment pond riser assembly	$1,695.11	Each			$ -
Sediment trap, 5' high berm	$15.57	LF			$ -
Sediment trap, 5' high berm w/spillway incl. riprap	$59.60	LF			$ -
Sodding, 1" deep, level ground	$5.24	SY			$ -
Sodding, 1" deep, sloped ground	$6.48	SY			$ -
Straw bales, place and remove	$600.00	TON			$ -
Hauling and disposal	$20.00	CY			$ -
Topsoil, delivered and spread	$35.73	CY			$ -
					$ -
					$ -
				TOTAL	**$ -**

GENERAL ITEMS

ITEMS	Unit Cost	Unit			Cost
Fencing, chain link, 6' high	$18.89	LF			$ -
Fencing, chain link, corner posts	$111.17	Each			$ -
Fencing, chain link, gate	$277.63	Each			$ -

Fencing, split rail, 3' high (2-rail)	$10.54	LF			$ -
Fencing, temporary (NGPE)	$1.20	LF			$ -
Signs, sensitive area boundary (inc. backing, post, install)	$28.50	Each	1.00		$ 28.50
					$ -
					$
					$ -
				TOTAL	**$ 28.50**

OTHER				*(Construction Cost Subtotal)*	**$ 3,109.38**
ITEMS	Percentage of Construction	Unit			Cost
Mobilization	10%				$ 310.94
Contingency	30%				$ 932.81
				TOTAL	**$ 1,243.75**

MAINTENANCE AND MONITORING	NOTE: Projects with multiple permit requirements may be required to have longer monitoring and maintenance terms. This will be evaluated on a case-by-case basis for development applications. Monitoring and maintance ranges may be assessed anywhere from 5 to 10 years.				
Maintenance, annual					
Less than 1,000 sq.ft. and buffer impact only	$ 1.08	SF	900.00	(Includes monitoring)	$ 972.00
Less than 1,000 sq.ft. with wetland or aquatic area impacts	$ 1.35	SF		(Includes monitoring)	$ -
Larger than 1,000 sq.ft. but < 1 acre -buffer impact only	$ 360.00	EACH	3.00	(8 hrs @ 45/hr)	$ 1,080.00
Larger than 1,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 450.00	EACH	0.00	(10 hrs @ $45/hr)	$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,600.00	DAY		(WEC crew)	$ -
Larger than 5 acres - buffer and / or wetland or aquatic area impacts	$ 2,000.00	DAY		(1.25 X WEC crew)	$ -
Monitoring, annual					
Larger than 1,000 sq.ft. but < 1 acre -buffer impact only	$ 720.00	EACH		(8 hrs @ 90/hr)	

Larger than 1,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 900.00	EACH		(10 hrs @ $90/hr)	$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,440.00	DAY		(16 hrs @ $90/hr)	$ -
Larger than5 acres - buffer and / or wetland or aquatic area impacts	$ 2,400.00	DAY		(24 hrs @ $90/hr)	$ -
Maintenance and Monitoring Inspection (DDES), annual	$362.25	EACH		(2.5 hrs @ $144.90/hr)	$ -
Maintenance and Monitoring Inspection (DDES), final	$579.60	EACH		(4 hrs @ $144.90/hr)	$ -
				TOTAL	**$ 2,052.00**

Total	**$6,405.13**

FLOOD PLAIN SURVEY
FOR
TAX PARCEL No.
935330-0590

FOR
VU VUONG

PREPARED BY

4 SITE SURVEYING, LLC
4227 S MERIDIAN C-445
PUYALLUP, WA. 98374
DAN TOUMA
(206) 304-3567

SEPTEMBER 2025

I. PROJECT OVERVIEW

Figure 1: project Narrative
Figure 2: Site Location
Figure 3: FIRM MAP
Figure 4: Flood Survey

II. OFF-SITE ANALYSIS

Study Area Definition and Maps

III. III. SPECIAL REPORTS AND STUDIES

Wetland Report
Flood Development permit application
Floodplain Development Permit worksheet

PROJECT OVERVIEW NARRATIVE:

This Flood Plain survey assessment has been prepared to address King County site requirements for an existing vacant lot and is based on 2021 KCSWDM 4.4.2. The site is Tax Parcel #935330-0590. The site is Lot 29, Block 2, of Assessor's Plat of White Fence Ranch, according to the Plat recorded in Volume 65, Page 6 and being in the NE ¼ of the SW ¼ Section 11, Township 23 North, Range 5 East. W.M.

The survey was performed in August of 2025 by 4 Site Surveying, LLC

The proposed project involves an area of 10,720 square feet or 0.25 acres in area. There are scattered trees, brush and briars covering the entire single-family lot. The site is sloping to the West to the East to a wetland located on the easterly side of the site. There is a Wetland study that is enclosed that was prepared by Peterman Consulting, LLC dated August 19, 2025.

I. OFF-SITE ANALYSIS AND FLOOD ANALYSIS

The flood plain elevation is based on **KCSWM 2021 approximate floodplain study (Per Table 4.4.2.A)** for the proposed site that was prepared by 4 site surveying. We used the Approximate Floodplain Study based on the 2 foot above the downstream overflow elevation of a water feature for which the floodplain has not been delineated in accordance with KCC 21A.24.

The intent of the approximate floodplain study is to reduce the required analysis in those situations where the project site is adjacent to a flood hazard area, but by virtue of topographical relief. The minimum 2 feet clearance above the downstream overflow elevation is based on a downstream analysis of the existing ditch on the west side of the existing 156th Ave S. The existing road side ditch then is directed south along the ditch approximate 470+/- feet to a 24" Concrete pipe with an invert elevation of 512.36 feet. The 24" concrete then heads east thought the 24" Concrete pipe for 44 feet. Then continues in a easterly direction along a swale to a stream 2400+/-. Then eventually northerly to May Creek.

The existing 156th Ave SE Road has an elevation of 516.5' at the intersection of 156th Ave SE and the 24" pipe crossing the road. Based on the Invert elevation of the existing invert elevation of the 24" concrete pipe being 512.36'. The overflow and the Approximate base flood elevation would be 516.36'. based on KSWDM table 4.4.2.A

Task 1: Study Area Definition and Maps

The properties to the West, East and North discharge to the east to the existing ditch on 156th Ave SE, Then east along the 24" concrete pipe.

Task 2: Resource Review

Using the King County I Map interactive tool, it was found that there are no immediate critical areas upstream or downstream of the property.

Task 3: Field Inspection

The Site was visited on December 18th, 2024, and a 1/4-mile downstream investigation was made. There are no reported problems to be encountered during our investigation.

Task 4. Drainage System Description

The entire site falls within the May Creek Drainage Basin. The surface runoff from the site is directed east and West to Drainage ditch and Swales. Then to the ditch in the west side of 156th Ave SE. then South to the 24" concrete pipe Then heads east to the along a Drainage swale to a Stream 2400+/- downstream

Task 5. Mitigation of Existing or Potential Problem

No mitigation is proposed for this project. No downstream problem is noted during our downstream investigation.

II. SPECIAL REPORTS AND STUDIES

Wetland Technical Memorandum by Peterman Consulting, LLC dated August 19, 2025.