



RUSSELL
DEVELOPMENT LLC.

November 30, 2022

Aquatic and Wetland Assessment

215 Hamilton Road
Section 15 Township 13N Range 2W

**Parcel Numbers: 017896006011, 017896006010, 017897017000,
017896006016, 017896006009, 017909002003, 017909002004**

**Prepared For:
RB Engineering
91 SW 13th St
Chehalis, WA 98532**



January 19, 2022

Chehalis Planning Department
Attn: Tammy Baraconi
1321 S Market Blvd
Chehalis, WA 98532

Re: Wetland and Aquatic Assessment at 215 N Hamilton Road

Parcel Numbers: 017896006009, 017896006010, 017897017000, 017896006011,
017896006016, 017909002003, 017909002004

Dear Ms. Baraconi,

RB Engineering and Mr. Rusty Gill asked me to complete a Wetland and Aquatic Assessment for the seven (7) parcels listed above, five (5) of which are proposed for industrial development (**Appendix A**). These seven (7) parcels total 45 acres and have been used for both mining and material handling for decades. However, the owner has sold the 2 parcels totaling 19 acres on the west side and desires to install three (3) approximately 100,000 sq/ft buildings on 26 acres located on the west side of this complex. A wetland and aquatic assessment are called for as the complex appears to be bisected N-S with potential Critical Areas and a review of NWI maps showed that associated wetlands could be present.

A GIS review showed that five (5) Wetland Reports were submitted between 1998 and 2021 for neighboring properties as shown on **Appendix B**. The parcels highlighted in BLUE with a "X" are neighboring parcels that have a Wetland Report on file. A study of this previous work validates the findings in this report as accurate and consistent with the findings of Wetland Scientists working in this basin since 1998. **Only the 1998 wetland report for 474 Hamilton Road identified and delineated a Cat III wetland; this is the same wetland that is delineated below. The other four (4) Wetland reports do not identify ANY wetlands.** The

properties and reports are listed below; electronic copies will be provided on request or can be obtained from the Lewis County Planning Department.

1998	474 Hamilton Road	017909002003	Findings: Cat III wetland and disturbed area
2002	370 Hamilton Road	017897025001	Findings: No Wetlands
2014	0 N Hamilton Road	017896006013	Findings: No Wetlands, but “ditch on north”
2017	185 N Hamilton Road	017896006013	Findings: NWI mapping inaccurate
2021	215 N Hamilton Road	017896002000	Findings: NWI mapping inaccurate

Appendix C shows an updated National Wetlands Inventory map of the site, corrected for deletions to the NWI map reported and documented by previous Wetland Reports from 1998-2021 for this area. It is knowledge of this previous wetland work, combined with a review of current GIS data and numerous site visits that have focused the scope of this wetland report to the **26-acre area shown on Appendix D, and specifically to the Critical Areas that are located along the west property line.**

Aquatic Assessment:

Current Conditions:

Site visits were conducted in August and November 2022 to identify and delineate wetlands and aquatic habitat in the 26-acre area shown on **Appendix D**. A GPS generated site plan (**Appendix E**) was generated from data collected on site and a WA Water Typing Worksheet (**Appendix F**) are included. **Segment A** on the worksheet, and shown on the **site plan**, is a Type-F stream (<10' BFW) that empties into the Newaukum River through a 3' concrete culvert under Hamilton Road. **Segment B** is a delineated wetland, and **Segment C** is a non-typed 1000' straight “ditch” that collects surface water runoff from farms and businesses that border Hamilton Road and N Hamilton Road.

Data and results:

Segment A - mapped on the site map as a Type-F, having a bank full width of <10', and by **City of Chehalis Code 17.25.030 has a 100' buffer**. This Type-F travels under Hamilton Road through a 3' concrete culvert to the Newaukum River.

Segment B - has been identified, characterized, and delineated using the U.S. Army protocols to be a **Cat III** wetland with **LOW** habitat score (5); **Chehalis Code 17.23.030 shows an 80' buffer**.

Segment C - is an approximately 1000' straight non-typed drainage "ditch", collecting surface water from businesses and farms, running SE to NW, and entering the typed Cat III wetland defined as Segment B above.

Conclusions:

The site map shows, and site visit and WA Water Typing Worksheet (**Appendix F**) confirm, the existence of a Type-F stream and non-typed ditch running along the west side of the site plan (**Appendix E**). **The Type-F carries a 100' buffer distance (CCC 17.25.030, <10') and the non-typed ditch buffer is 0'.**

Wetland Assessment:

Wetland Determination Method

The wetland determination completed by Russell Development followed the Routine Determination Method as per the U.S. Army Corp of Engineers, Wetland Delineation Manual (1987), the 2010 Regional Supplement for Western Mountains, Valleys and Coast Region, as well as the Washington State Wetland Rating System (2014). The Routine Determination Method examines three (3) parameters; vegetation, hydrology, and soils to determine if wetlands exist in a given area. By definition, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as "Waters of the United States" by the U.S. Army Corp of Engineers, and locally by the City of Chehalis Critical Area Code 17.21 and Lewis County Critical Areas Code 17.38.

Current Conditions:

The 1.64-acre Wetland was scored a Cat III using the Western WA Wetland Rating System, and the buffer determined to be 80' using CCC 17.23.030 with a Low Habitat score (5). The wetland collects water from businesses and farms along N Hamilton Road and Hamilton Road. This same wetland was identified and delineated as a Cat III wetland in a 1998 Wetland Report completed for 474 Hamilton Road.

Also shown on the site plan is a .93-acre "disturbed" area in the NW corner of the proposed construction site. This disturbed area was also noted in the 1998 Wetland report; it remains a highly disturbed area and is NOT a wetland (**Appendix E & G**). However, a portion of this "disturbed" area is within the 100' buffer of the Type-F stream and will be included in a future mitigation plan.

determined

Data and Results

To confirm the existence of a wetland, and to delineate the wetland boundary, test pits need to be dug and scored using ACE scoresheets. Although the area reviewed in this report is approximately 26-acres, a review of GIS data and existing Wetland Reports for neighboring properties, indicated that many of the wetlands indicated on the NWI map did not exist (**Appendix C**). During the site visit it was apparent that the only wetland that exists today is the same wetland that was delineated in 1998. Additionally, the west border of the wetland is clearly defined by bare dirt transitioning to the wetland, requiring only one (1) set of pits to delineate the west border. The first **test Pit 1 (Appendix H)** was dug in an area suspected to be within the wetland and **Pit 2** outside the wetland (**Appendix I**). Army Corp Wetland Delineation forms for the Western Mountains, Valleys, and Coast Region were then completed (**Appendix J and K**) and the data used to identify and mark the wetland boundary with **red ribbon**. The wetland was then scored using the Western WA Wetland Rating System (2014) (19 points total) which scored the wetland as a Cat III (**Appendix L**). The 1998 Wetland report also scored this wetland as Cat III.

A visual inspection and GIS review of the neighboring 300' on the west of this site indicates that logistic operations are still taking place, so a site visit was not conducted. It visually appears that much of the information from the 1998 Wetland Report is still current.

Conclusion:

The 1.63-acre wetland indicated on the attached site plan (**Appendix E**) was scored a **Cat III (19 points)**, with a **LOW Habitat score (5)** so the buffer required by **CCC 17.23.030 is 80'**. An 80' buffer is shown on the site plan.

It has been noted on the site plan (Appendix E) that both the Wetland and Aquatic buffers, totalling **2.33 total acres**, have been **HIGHLY** disturbed with little to no vegetation remaining. These buffers will need a **separate mitigation plan per Chehalis Code 17.23.052**.

Buffer Enhancement Recommendations:

The functional values of the existing buffers are relatively low. Downstream riparian buffers consist of formerly disturbed stockpile areas but are well vegetated with perennial grasses and some woody species. Opportunities for woody vegetative enhancement on the riparian buffers is limited as those occur mainly under the BPA overhead lines. The wetland buffers are also previously disturbed by grading activity and have been infested for some years with invasive species including Himalayan blackberry, Scotch Broom and Reed Canary grass.

Much of this noxious vegetation has been recently removed which provides an opportunity for enhancement plantings. Buffer enhancement plantings should include a mixture of trees, woody shrubs and groundcovers to provide a fully planted and diverse vegetative condition. Areas nearest the wetland should utilize Obligate or Facultative Wet species including evergreen and deciduous tree species along with large woody shrubs to increase shade. Outer portions of the buffer should include Fac-Wet and FAc-Up species including evergreen and deciduous canopy trees to provide a Shrub-Shrub component supporting habitat. All areas of the buffer should be seeded and permanently stabilized for erosion protection.

Buffer enhancement plantings should be monitored for performance, with contingency specifications for replanting and ongoing maintenance during establishment.

Summary:

After review of GIS data, previously completed Wetland Reports, and a thorough site visit it appears that this proposed industrial site can be constructed without negatively impacting the existing critical areas (Type-F stream and Cat III Wetland) identified. **A 100' buffer should be associated with the Type-F stream and an 80' buffer for the Cat III Wetland.**

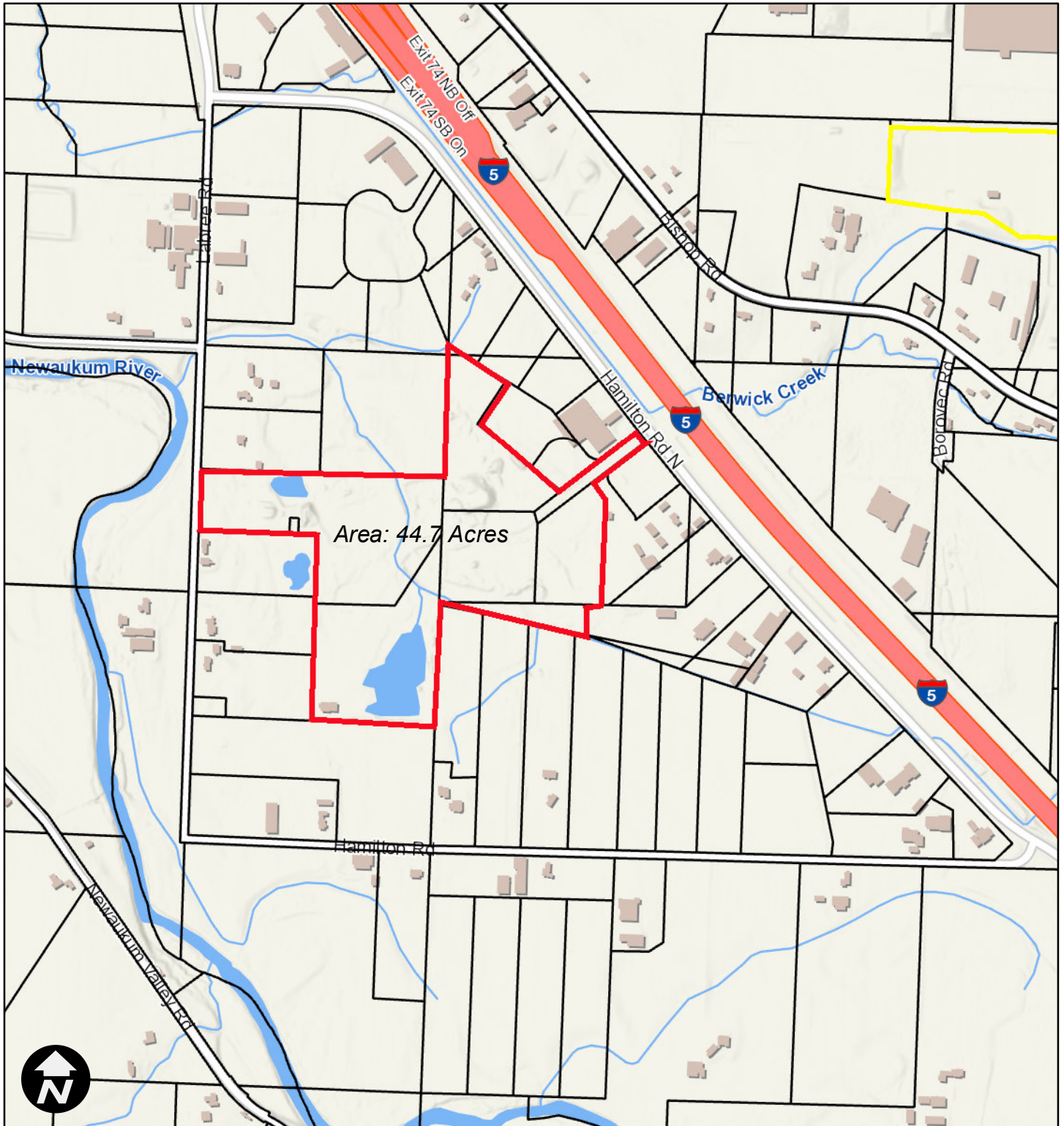
Although the NWI shows a significant array of "potential wetlands" on this site, a review of past Wetland reports, and site visit, confirmed that the only Critical Areas existing on the five (5) parcels included in this report have been addressed.

A separate mitigation needs to be created for the buffers as the soils have been highly disturbed.

Additional Appendixes:



- M - 1 KM Circle; used for Western WA Wetland Scoring.
- N - Contour Map of site.
- O - Web Soil Survey Map
- P - Photo of Type-F stream looking N
- Q - Photo of Delineated Wetlands
- R - Photo of non-typed "ditch" south
- S - Russell Qualifications

determined



11/29/2022, 10:42:10 AM

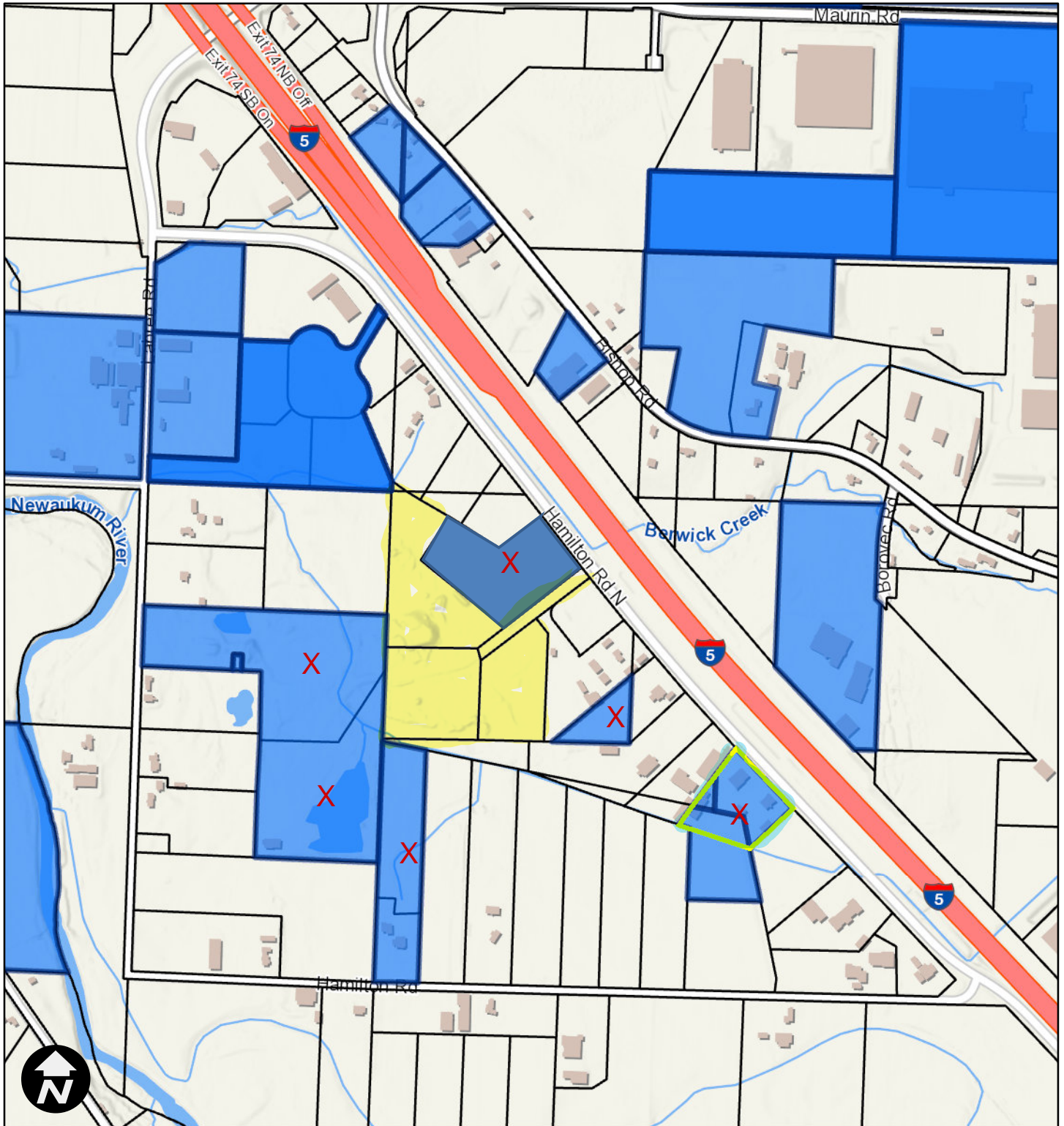
1:9,028

-  Parcels
-  Parcels

0 400 800 1,600 ft
NAD 1983 StatePlane Washington South FIPS 4602 Feet



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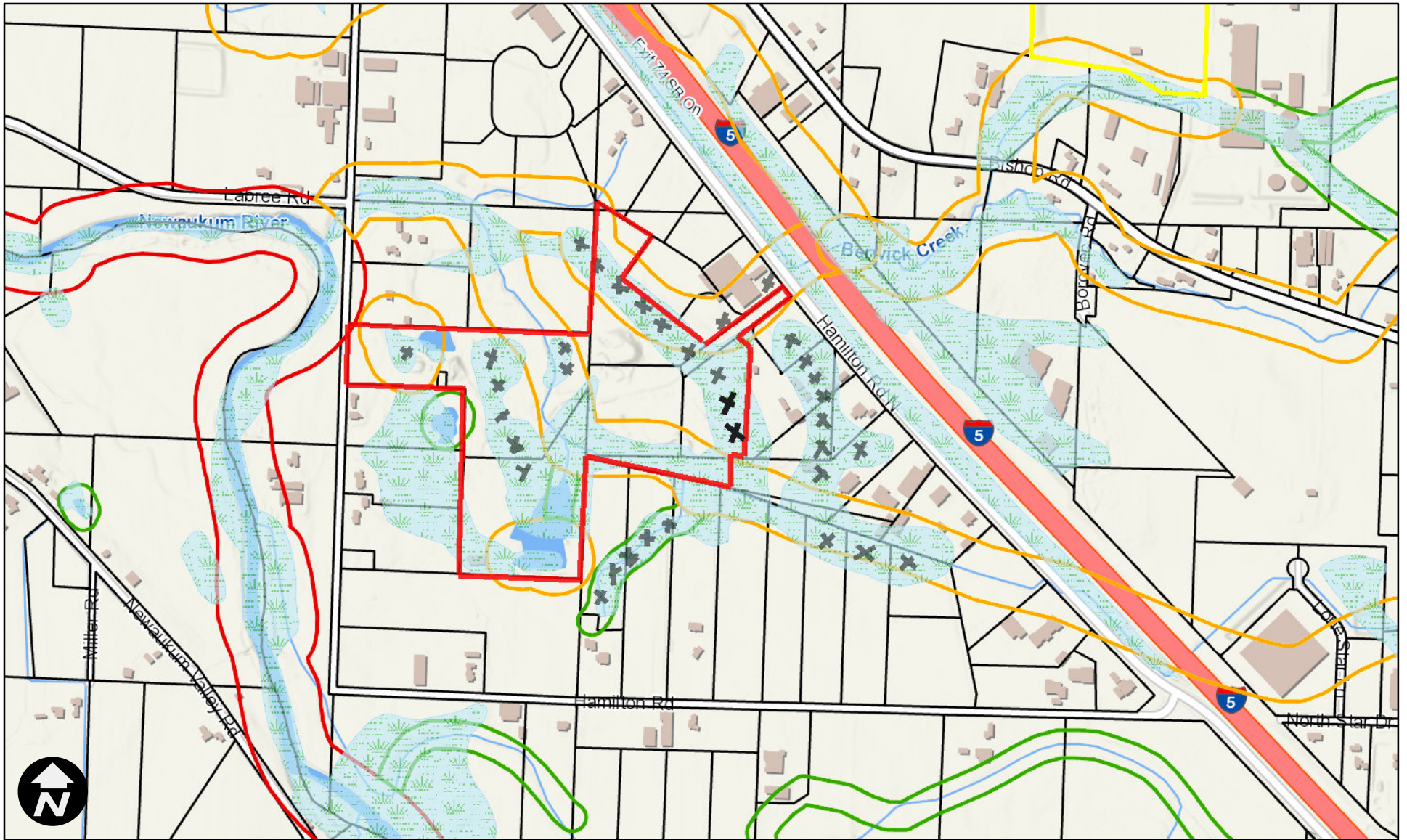
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-  Parcels
-  Wetland Reports
-  Parcels

0 400 800 1,600 ft
NAD 1983 StatePlane Washington South FIPS 4602 Feet



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- Parcels
- Wetlands
- Stream Buffers**
- Fish 150'
- Non-Fish 75'
- Shoreline 150'
- Parcels

0 412.5 825 1,650 ft
 NAD 1983 StatePlane Washington South FIPS 4602 Feet





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-  Parcels
-  Parcels

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NAD 1983 StatePlane Washington South FIPS 4602 Feet



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**BLUE SKY REAL PROPERTIES LLC
WETLAND REVIEW / AQUATIC ASSESSMET**

Appendix E












**LEWIS CO. PARCEL #017897017000, #017896006010, #017896006016,
#017896006009, #017896006011, #017909002003, #017909002004**

**PART SECTION 15 (13N-2W)
PART SECTION 16 (13N-2W)**

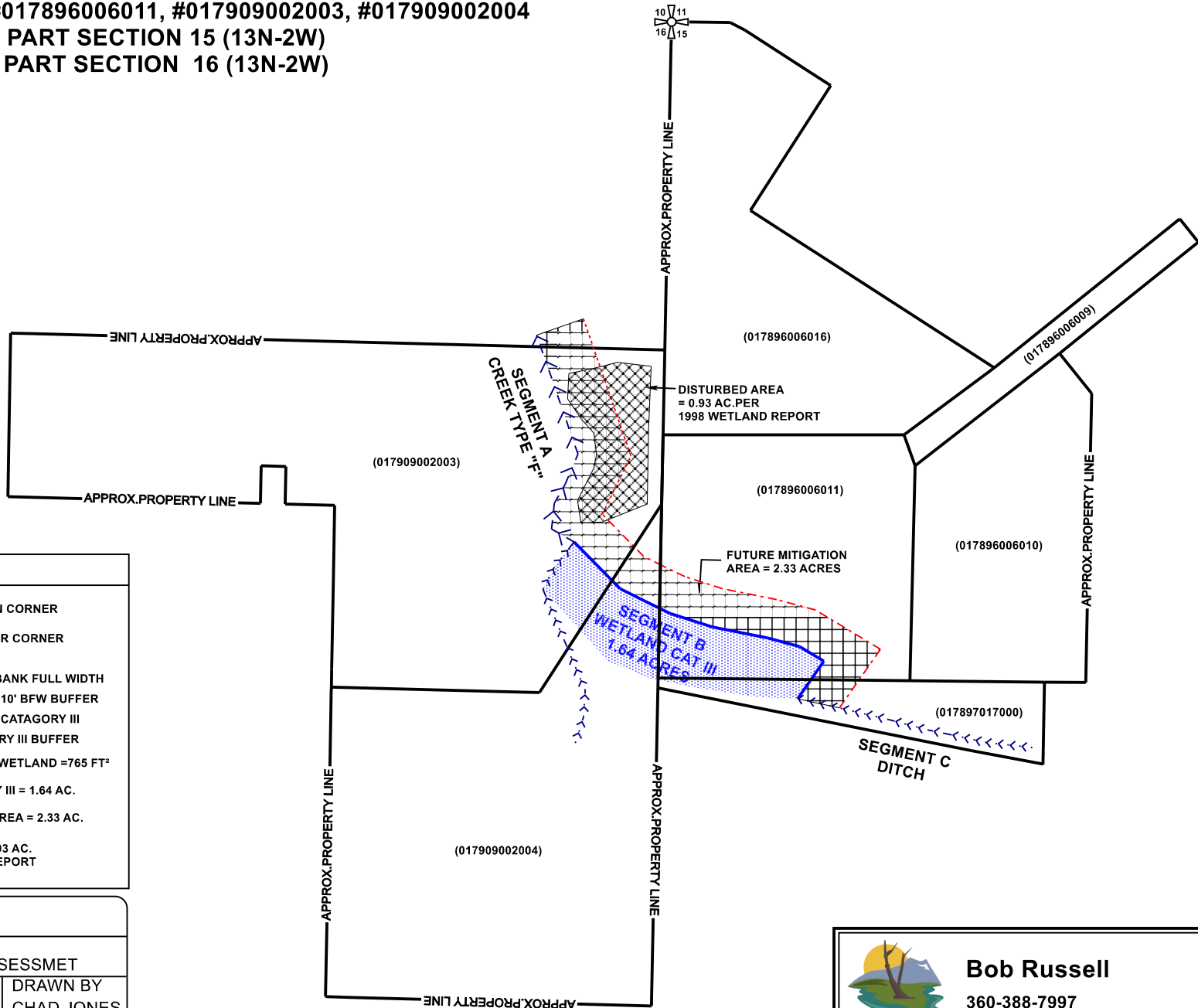


TRAVERSED WITH
--- TRIMBLE 6000 SERIES GPS

LEGEND

-  CALCULATED SECTION CORNER
-  CALCULATED QUARTER CORNER
-  DITCH
-  CREEK TYPE "F" <10' BANK FULL WIDTH
-  100' CREEK TYPE "F" <10' BFW BUFFER
-  WETLAND BOUNDARY CATAGORY III
-  80' WETLAND CATAGORY III BUFFER
-  NON JURISTICTIONAL WETLAND =765 FT²
-  WETTLAND CATAGORY III = 1.64 AC.
-  FUTURE MITIGATION AREA = 2.33 AC.
-  DISTURBED AREA = 0,93 AC. PER 1998 WETLAND REPORT

FILE NAME 22-06 GILL.TRV		
DRAWING WETLAND REV / AQUATIC ASSESSMET		
SCALE 300 Ft/In	DATE 11-29-2022	DRAWN BY CHAD JONES
JOB 22-06	REVISION 1/1	SHEET 1/1




Bob Russell
360-388-7997
P.O. Box 902, Chehalis, WA 98532
bobrusselldevelopment@gmail.com

Appendix F

Western Washington Water Type Classification Worksheet

Stream/Segment ID: A Stream/Segment ID: B Stream/Segment ID: C

Date Observed: 8/5/22 Date Observed: 8/5/22 Date Observed: 8/5/22

1. Do you have a protocol survey? (See the Board Manual Section 13) Or, does the stream have waiver characteristics? (See WAC 222-16-031(3) (b) (ii))

No. Continue.

No. Continue.

No. Continue.

Yes. Attach documentation or approved WTMF number:

Yes. Attach documentation or approved WTMF number:

Yes. Attach documentation or approved WTMF number:

Fish found. Stop.

Fish found. Stop.

Fish found. Stop.

No fish found. Go to 6.

No fish found. Go to 6.

No fish found. Go to 6.

2. Were fish observed or are fish known to use the stream any time of the year?

Yes. Type F water. Stop.

Yes. Type F water. Stop.

Yes. Type F water. Stop.

No. Continue.

No. Continue.

No. Continue.

3. Is there an impoundment (ponded water) upstream of the assessed segment, that is greater than .5 acres?

Yes. Type F water. Stop.

Yes. Type F water. Stop.

Yes. Type F water. Stop.

No. Continue.

No. Continue.

No. Continue.

4. Are there segments within or above the assessed portion of the stream where the average BFW is two feet or greater? AND the average stream gradient is less than or equal to 16%?

Yes. Type F water. Stop.

Yes. Type F water. Stop.

Yes. Type F water. Stop.

No. Continue.

No. Continue.

No. Continue.

5. Are there segments within or above the assessed portion of the stream where the average BFW is two feet or greater? AND the average stream gradient is between 16% and 20%? AND, the contributing basin to the stream is greater than 50 acres?

Yes. Type F water. Stop.

Yes. Type F water. Stop.

Yes. Type F water. Stop.

No. Continue.

No. Continue.

No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?

Yes. Type Np water. Go to 9.

Yes. Type Np water. Go to 9.

Yes. Type Np water. Go to 9.

No. Continue.

No. Continue.

No. Continue.

7. Is the stream segment downstream of a perennial source of water?

Yes. Type Np water. Go to 9.

Yes. Type Np water. Go to 9.

Yes. Type Np water. Go to 9.

No. Continue.

No. Continue.

No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?

Yes, Type Ns water. Stop.

Yes, Type Ns water. Stop.

Yes, Type Ns water. Stop.

No, non-typed water.

No, non-typed water.

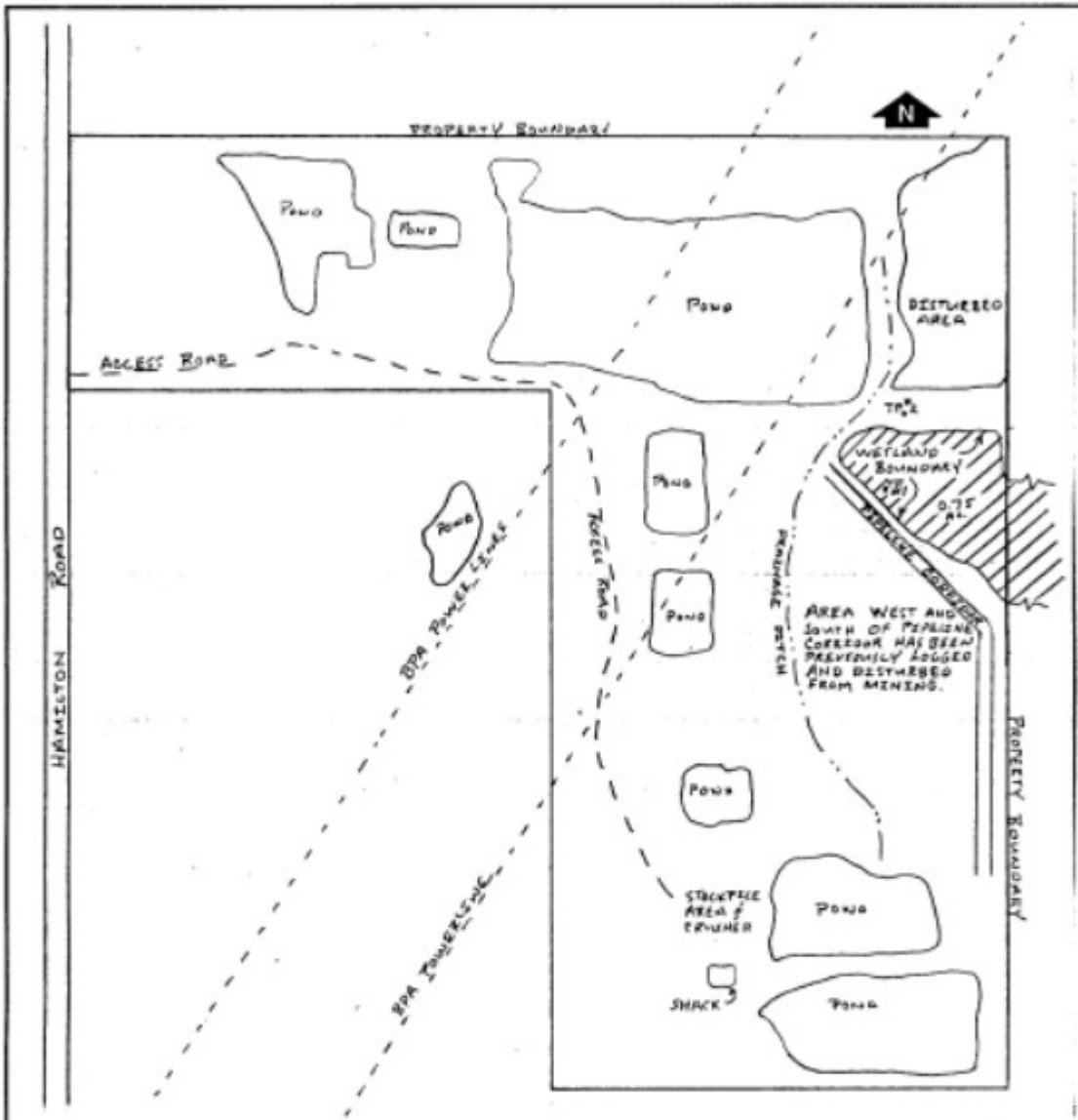
No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).

Stream/Segment ID B

Description:

Wetland is the end of the channel. Beyond the wetland is a XXX' straight ditch that feeds into wetland.



ECOLOGICAL LANDSCAPE SERVICES, INC.
 NATURAL RESOURCE CONSULTING AND LAND PLANNING
 1339 Commerce Ave., Suite 308
 Longview, WA 98632
 (360) 578-1371
 Fax (360) 414-9305

FIGURE 2
SITE MAP
 Scale 1" = 200 feet
 August 4, 1998

WETLAND DETERMINATION LOCATED EAST OF HAMILTON ROAD CHEHALIS, WA
 Section 16, T13N, R2W WM
 For
 Chehalis Sand & Gravel, Inc.
 480 Hamilton Road
 Chehalis, WA 98532





Appendix J

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

Project/Site: 215 Hamilton Road City/County: Chehalis, Lewis County Sampling Date: 8/22/22
 Applicant/Owner: Rusty Gill State: WA Sampling Point: Pt 1
 Investigator(s): Robert Russell Section, Township, Range: Sec 15 Twn 13N Rng 2W
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): <5%
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 172 - Reed Silty Clay Loam 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>Y</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus latifolia</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Alnus Rubra</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>170</u> x 2 = <u>340</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = <u>2.1</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix Lucida</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
= Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>70</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Carex obnupta</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				
				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2							
4-16	10YR 3/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): 1"
 Water Table Present? Yes No Depth (inches): <3"
 Saturation Present? Yes No Depth (inches): 0"
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

Appendix K

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

Project/Site: 215 Hamilton Road City/County: Chehalis, Lewis County Sampling Date: 8/22/22
 Applicant/Owner: Rusty Gill State: WA Sampling Point: 2
 Investigator(s): Robert Russell Section, Township, Range: Sec 15 Town 13N Rng 2W
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): <5%
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 172 - Reed Silty Clay Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Alnus Rubra</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>25</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:	
			<u>40</u> = Total Cover	Total % Cover of:	Multiply by:
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				OBL species _____	x 1 = _____
1. <u>Rubus laciniatus</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	FACW species _____	x 2 = _____
2. _____	_____	_____	_____	FAC species <u>40</u>	x 3 = <u>120</u>
3. _____	_____	_____	_____	FACU species <u>130</u>	x 4 = <u>520</u>
4. _____	_____	_____	_____	UPL species _____	x 5 = _____
5. _____	_____	_____	_____	Column Totals:	<u>160</u> (A) <u>640</u> (B)
			<u>60</u> = Total Cover	Prevalence Index = B/A = <u>4.0</u>	
<u>Herb Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Festuca pratensis</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Bellis perennis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	___ 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 ¹	
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	___ 5 - Wetland Non-Vascular Plants ¹	
6. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
			<u>70</u> = Total Cover	Hydrophytic Vegetation Present?	
<u>Woody Vine Stratum</u> (Plot size: _____)				Yes _____	No <u>X</u>
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
			_____ = Total Cover		
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/3							
4-16	10YR 4/3							
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.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil Present? Yes _____ No <u> X </u>		
Type: _____ Depth (inches): _____								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)					
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					
Field Observations:			Wetland Hydrology Present? Yes _____ No _____		
Surface Water Present?	Yes _____ No _____	Depth (inches): _____			
Water Table Present?	Yes _____ No _____	Depth (inches): _____			
Saturation Present? (includes capillary fringe)	Yes _____ No _____	Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

Appendix L

Wetland name or number 1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 017896006011 Date of site visit: 8/22/22
 Rated by Robert Russell Trained by Ecology? Yes No Date of training 3/2019
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY _____ (based on functions _____ 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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	
Landscape Potential	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	H <input checked="" type="radio"/> M <input type="radio"/> L <input type="radio"/>	H <input type="radio"/> M <input type="radio"/> L <input checked="" type="radio"/>	
Value	H <input checked="" type="radio"/> M <input type="radio"/> L <input type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L <input type="radio"/>	TOTAL
Score Based on Ratings	7	7	5	19

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	

Wetland name or number _____

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	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 (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	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 (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
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 (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

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 sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO - go to 5

YES - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number 1

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 1

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	2
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	3
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	3
Total for D 1 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 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above		2

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

Wetland name or number 1

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	2
Wetland has an intermittently flowing stream or 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	
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	3
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	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	3
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	
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	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	3

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		1
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	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	
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	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 1

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:	
Depressions cover $> \frac{3}{4}$ area of wetland	points = 8
Depressions cover $> \frac{1}{2}$ area of wetland	points = 4
Depressions present but cover $< \frac{1}{2}$ area of wetland	points = 2
No depressions present	points = 0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin classes)	
Trees or shrubs $> \frac{2}{3}$ area of the wetland	points = 8
Trees or shrubs $> \frac{1}{3}$ area of the wetland	points = 6
Herbaceous plants (> 6 in high) $> \frac{2}{3}$ area of the wetland	points = 6
Herbaceous plants (> 6 in high) $> \frac{1}{3}$ area of the wetland	points = 3
Trees, shrubs, and ungrazed herbaceous $< \frac{1}{3}$ area of the wetland	points = 0
Total for R 1	Add the points in the boxes above

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources _____	Yes = 1 No = 0
Total for R 2	Add the points in the boxes above

Rating of Landscape Potential If score is: 3-6 = H 1 or 2 = M 0 = L

Record the rating on the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 No = 0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (<i>answer YES if there is a TMDL for the drainage in which the unit is found</i>)	Yes = 2 No = 0
Total for R 3	Add the points in the boxes above

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number _____

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are <u>NOT</u> Cowardin classes).</i> Forest or shrub for $> \frac{1}{3}$ area OR emergent plants $> \frac{2}{3}$ area points = 7 Forest or shrub for $> \frac{1}{10}$ area OR emergent plants $> \frac{1}{3}$ area points = 4 Plants do not meet above criteria points = 0	
Total for R 4	Add the points in the boxes above

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

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1
Total for R 5	Add the points in the boxes above

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

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	
R 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
Total for R 6	Add the points in the boxes above

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

Wetland name or number 1

LAKE FRINGE WETLANDS

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

L 1.0. Does the site have the potential to improve water quality?	
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes):	
Plants are more than 33 ft (10 m) wide	points = 6
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1
Plants are less than 6 ft wide	points = 0
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed.	
Cover of herbaceous plants is >90% of the vegetated area	points = 6
Cover of herbaceous plants is $>^{2/3}$ of the vegetated area	points = 4
Cover of herbaceous plants is $>^{1/3}$ of the vegetated area	points = 3
Other plants that are not aquatic bed $>^{2/3}$ unit	points = 3
Other plants that are not aquatic bed in $>^{1/3}$ vegetated area	points = 1
Aquatic bed plants and open water cover $>^{2/3}$ of the unit	points = 0
Total for L 1	Add the points in the boxes above

Rating of Site Potential If score is: 8-12 = H 4-7 = M 0-3 = L

Record the rating on the first page

L 2.0. Does the landscape have the potential to support the water quality function of the site?	
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	Yes = 1 No = 0
L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?	Yes = 1 No = 0
Total for L 2	Add the points in the boxes above

Rating of Landscape Potential: If score is: 2 or 3 = H 1 = M 0 = L

Record the rating on the first page

L 3.0. Is the water quality improvement provided by the site valuable to society?	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the lake or basin in which the unit is found.	Yes = 2 No = 0
Total for L 3	Add the points in the boxes above

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number 1

LAKE FRINGE WETLANDS

Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion

L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not include Aquatic bed): <i>Choose the highest scoring description that matches conditions in the wetland.</i>		
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 6	
> ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2	
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0	

Rating of Site Potential: If score is: 6 = M 0-5 = L

Record the rating on the first page

L 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	
Total for L 5	Add the points in the boxes above	

Rating of Landscape Potential If score is: 2 = H 1 = M 0 = L

Record the rating on the first page

L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.		
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit	points = 2	
There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1	
Other resources that could be impacted by erosion	points = 1	
There are no resources that can be impacted by erosion along the shores of the unit	points = 0	

Rating of Value: If score is: 2 = H 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number _____

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	

Rating of Site Potential If score is: 12 = H 6-11 = M 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
		Yes = 1 No = 0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources _____	Yes = 1 No = 0	
Total for S 2	Add the points in the boxes above	

Rating of Landscape Potential If score is: 1-2 = M 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 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
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
		Yes = 1 No = 0
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
		Yes = 2 No = 0
Total for S 3	Add the points in the boxes above	

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number 1

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.</i>	
Dense, uncut, rigid plants cover > 90% of the area of the wetland	points = 1
All other conditions	points = 0

Rating of Site Potential If score is: 1 = M 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?	
	Yes = 1 No = 0

Rating of Landscape Potential If score is: 1 = M 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1
No flooding problems anywhere downstream	points = 0

S 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

Total for S 6	Add the points in the boxes above
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Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number 1

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

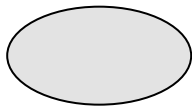
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

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

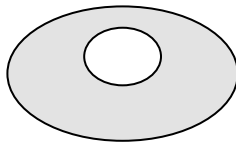
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H 1.4. Interspersion of habitats

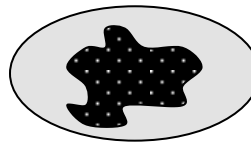
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



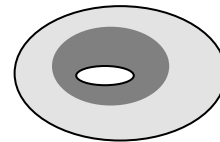
None = 0 points



Low = 1 point

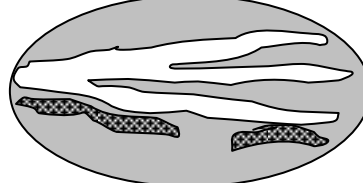
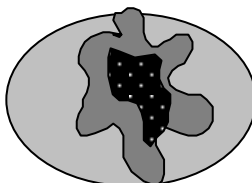
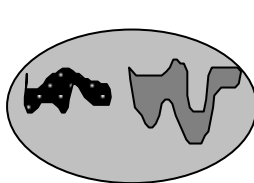


Moderate = 2 points



2

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



Wetland name or number 1

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		1
Total for H 1	Add the points in the boxes above	8

Rating of Site Potential If score is: 15-18 = H X 7-14 = M 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?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u> </u> + [(% moderate and low intensity land uses)/2] <u> </u> = <u> </u>% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat <u> </u> + [(% moderate and low intensity land uses)/2] <u> </u> = <u> </u>% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>		-2
Total for H 2	Add the points in the boxes above	0

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

H 3.0. Is the habitat provided by the site valuable to society?		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i> Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> 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</p>		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 _____

WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

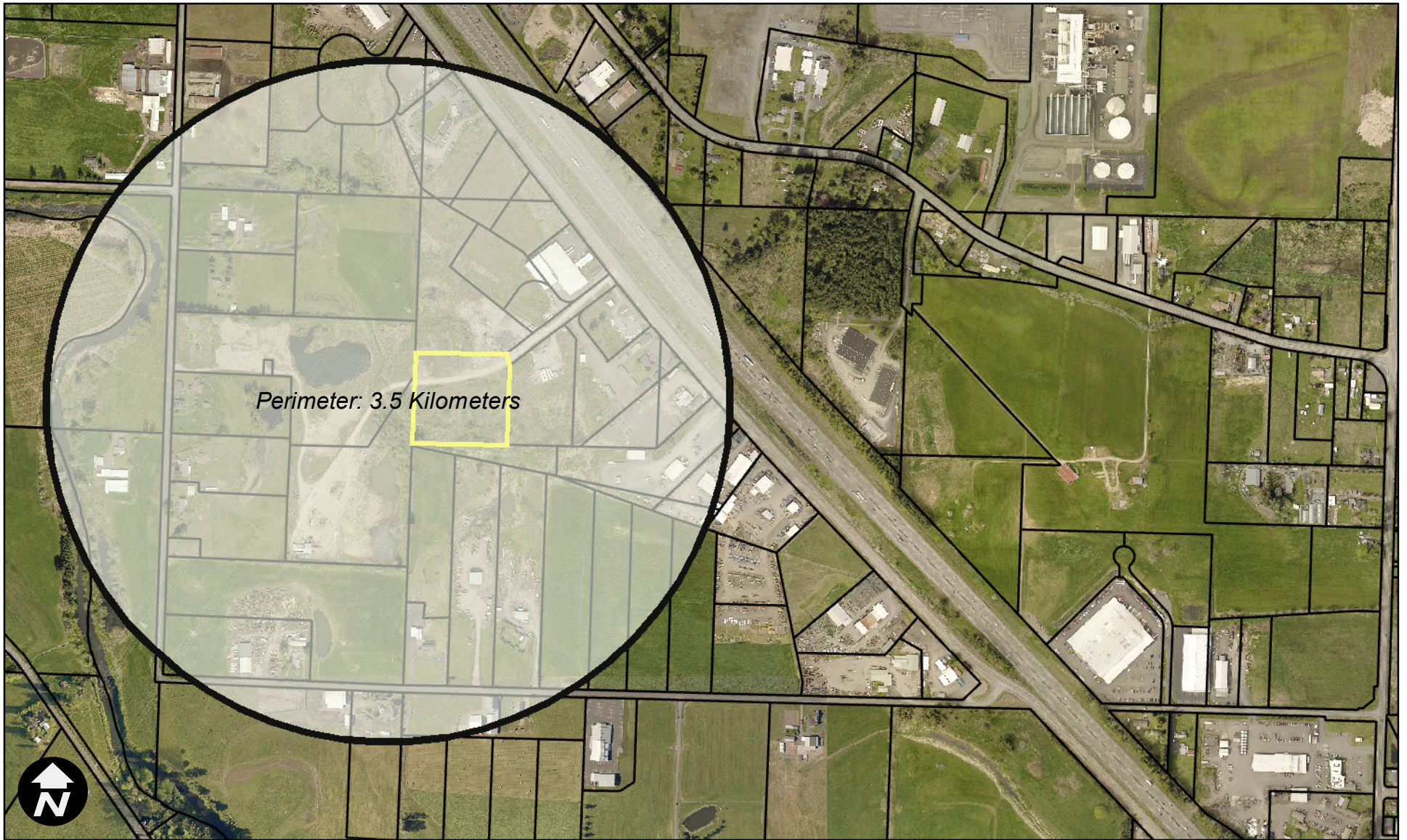
Wetland name or number _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Estuarine wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt <p align="right">Yes –Go to SC 1.1 No= Not an estuarine wetland</p>	
<p>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?</p> <p align="right">Yes = Category I No - Go to SC 1.2</p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <ul style="list-style-type: none"> — 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 <i>Spartina</i>, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <p align="right">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p align="right">Yes – Go to SC 2.2 No – Go to SC 2.3</p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p align="right">Yes = Category I No = Not a WHCV</p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p align="right">Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV</p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p align="right">Yes = Category I No = Not a WHCV</p>	Cat. I
<p>SC 3.0. Bogs</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>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?</p> <p align="right">Yes – Go to SC 3.3 No – Go to SC 3.2</p> <p>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?</p> <p align="right">Yes – Go to SC 3.3 No = Is not a bog</p> <p>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?</p> <p align="right">Yes = Is a Category I bog No – Go to SC 3.4</p> <p>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.</p> <p>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?</p> <p align="right">Yes = Is a Category I bog No = Is not a bog</p>	Cat. I



Wetland name or number _____

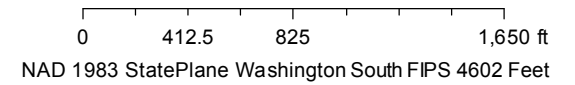
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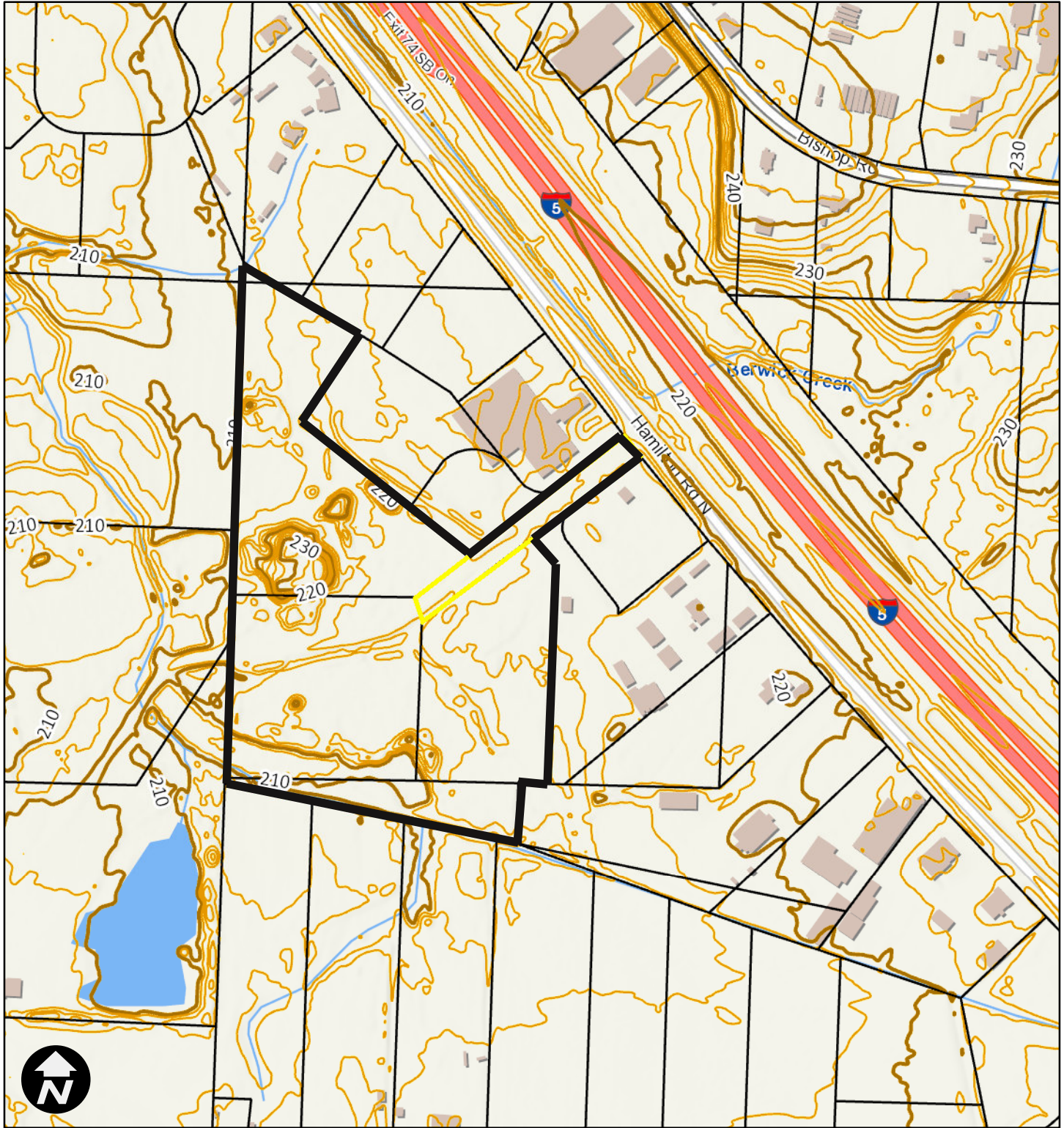
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-  Parcels
-  Parcels



Lewis County does not guarantee the accuracy of the information shown on this map and is not responsible for any use or misuse by others regarding this material. It is provided for general informational purposes only. This map does not meet legal, engineering, or survey standards. Please practice due diligence and consult with licensed experts before making decisions.



9/6/2022, 8:04:20 AM

1:4,514

 Parcels

 Parcels

2ft Contour

 2ft

 10ft

0 205 410 820 ft
 NAD 1983 StatePlane Washington South FIPS 4602 Feet



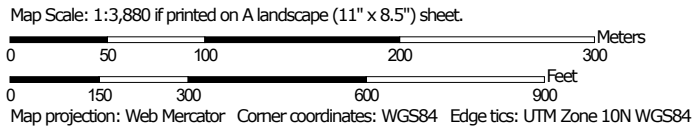
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Appendix O

Soil Map—Lewis County Area, Washington (Gill Property)



Soil Map may not be valid at this scale.




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: Lewis County Area, Washington

Survey Area Data: Version 21, Aug 31, 2021

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

Date(s) aerial images were photographed: Nov 21, 2021—Nov 22, 2021

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
1	Alvor silty clay loam	4.4	5.8%
48	Chehalis silty clay	12.4	16.3%
61	Cloquato silt loam	3.0	4.0%
118	Lacamas silt loam, 0 to 3 percent slopes	25.2	33.1%
152	Olequa silt loam, 0 to 5 percent slopes	5.2	6.8%
166	Pits	0.9	1.2%
172	Reed silty clay loam	20.0	26.4%
173	Reed silty clay loam, channeled	4.8	6.3%
Totals for Area of Interest		76.0	100.0%









Critical Area Qualifications for Robert Russell

Formal Education

1976-1980 BS General Chemistry - Oregon State University
1980-1982 Graduate Work in Synthetic Organic Chemistry - Oregon State University
1990-1992 MS Aeronautical Engineering - Naval Postgraduate School
1997-2018 Technical Association of the Pulp and Paper Industry

Environmental Training

2007-2022 Lewis County Landowner with forest land, wetlands, riparian area, and Salmon.
Mar 2018 Completed Army Corp of Engineers Wetland Delineation Training Program.
Mar 2019 Completed 2014 WA State Wetland Rating System Training.
July 2019 Complete Forest Stewardship Training with WA State Extension Service.
June 2019 First Wetland delineations submitted and accepted by County Planning Dept.
Have since had reports approved by the Cities of Centralia and Chehalis.
Sept 2019 Completed Grass, Sedge, and Rush Identification with Coastal Training Program.

Technical and Professional Organizations

1997-2018 Technical Association of the Pulp and Paper Industry
2021-present Lewis County representative to the Chehalis Basin Habitat Work Group.
2021-present Lewis County Planning Commission
2022-present Board member of the Coast Salmon Partnership

Richard Chinn Environmental Training, Inc.

certifies that

Robert Russell

has successfully completed a

38 Hour Army Corps of Engineers Wetland Delineation Training Program

issued Certificate No. 8340 and 3.8 CEUs, March 5 - 8, 2018, in Seattle, Washington

This course is pre-approved by the Society of Wetland Scientists Professional Certification Program to provide 2.5 Training Credits and/or Points.



Richard Chinn, PWS

Richard Chinn Environmental Training, Inc.

804 Cottage Hill Way, Brandon, FL 33511-8098

813.655.7549 • FAX: 813.354.4659 • info@richardchinn.com • <http://www.richardchinn.com>

This training has been based in part on the U. S. Army Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1 (1987 manual), as provided for in the training materials developed in conjunction with Section 307(e) of the Water Resources Development Act of 1990 for the Wetland Delineator Certification Program.





Certificate of Completion

“Using the Revised Washington State Wetland Rating System (2014) in Western Washington”

Instructors: Amy Yahnke, Zach Meyer

March 20-21, 2019, Lacey – 12 Hours

This Certificate is awarded to

Robert Russell

M. Cathy Angell

3/22/19

M. Cathy Angell, Coastal Training Program Coordinator

Date

