

Critical Areas Report for 4236 Jackson Highway Chehalis, Washington

Prepared for:
Gary Fox
1169 S. Market Blvd
Chehalis, WA 98532

Project # 345.02

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SIGNATURE PAGE

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned:



Timothy J. Haderly, Principal Scientist/Owner
Loowit Consulting Group, LLC

INTRODUCTION

Purpose and Need

Loowit Consulting Group, LLC (LCG) was retained by Gary Fox (Owner) to complete a critical areas investigation and report on a single tax parcel (Subject Site) located northwest of the intersection of US Hwy 12 and Jackson Highway southeast of Chehalis, Washington (Figures 1 & 2). The applicant proposes to build a commercial storage facility on the site. Mapped critical areas within the subject site prompted Lewis County to request an evaluation of critical areas according to *Lewis County Code (LCC) Chapter 17.38 – Critical Areas*.

Site Description

The Subject Site consists of a single tax parcel totaling approximately 3.31 acres of residential property. Site specifics include:

Site Address: 4236 Jackson Hwy, Chehalis, WA

Current Owner: Gary Fox

Tax Parcel Number: 014491009000

Legal Description: Section 9, Township 12 North, Range 1 West, W.M.

Property Size: Approximately 3.31 acres

Jurisdiction: Lewis County

The irregularly-shaped Subject Site is located northwest of the intersection of US Hwy 12 and Jackson Highway southeast of Chehalis, Washington (Figure 1, Photographs 1 thru 4). Current site usage is residential (Photograph 5), but historically the northern portion (everything north of the residence's driveway) and the southwestern portion (everything west of the residence and south of the driveway) of the site have been used for agriculture. These areas are primarily vegetated with grasses (Photographs 1, 6 and 7) with a narrow band of deciduous trees along the western site boundary.

The southeast portion of the Subject Site is occupied by a single-family residence with a garage and outbuildings (Photograph 5). Native conifers and deciduous trees surround the residence, as do domesticated landscape plantings. There are two site access points, a main driveway along the north side of the house (Photograph 8) and a field road that enters the site from Highway 12, west of the residence (Photograph 1).

A channelized stream (Photograph 9) enters the site near the southeast site corner after passing beneath Jackson Highway. It flows west along the Subject Site's southern site

boundary, before turn south just east of the midpoint of the southern site boundary to cross beneath Highway 12, after which it continues its flow in a southwesterly direction.

There is a Category III wetland on the neighboring property to the west of the Subject Site (Photograph 10). Due to historic fill, the wetland is approximately 5 feet lower than the elevation of the Subject Site's southwestern field, and its easternmost reach ends near the Subject Site's western site boundary.



Photograph 1: Looking northwest across the Subject Site from near its SW corner along Highway 12. The onsite single-family residence is visible at middle left. The secondary site access road is visible at left, exiting Highway 12. The building in the center distance is the church on the neighboring property to the north. [Image source: Google Earth, 6/2023]



Photograph 2: Looking north along Highway 12 from the on-site single-family residence driveway at the approximate midpoint of the eastern site boundary. Site and driveway to the left. Buildings at upper left are the church on the neighboring property to the north.



Photograph 3: Looking south along Jackson Highway (towards its intersection with Highway 12) from the on-site single-family residence driveway at the approximate midpoint of the eastern site boundary. Site and driveway to the right. Residence visible at upper right.



Photograph 4: Looking west along Highway 12 from its intersection with Jackson Highway. The Subject Site is on the right. The trees in the distance just to the right of photo center (beyond the yellow sign in the distance) mark the western site boundary. [Image source: Google Earth, 7/2023]



Photograph 5: Looking northwest from the southeast corner of the Subject Site at the existing single-family residence. The building in the distance is the church on the neighboring property to the north.



Photograph 6: Looking west across the north half (approximate) of the Subject Site from Jackson Highway. Single family residence is to the left and out of frame. Northern property line runs parallel to the shipping contain at middle right, and then jogs to the north. Trees and shrubs in the distance are on the western site boundary. [Image source: Google Earth, 7/2023]



Photograph 7: Looking northeast across the southern portion of the field behind the single-family residence (upper left). Photo taken from near the western site boundary. Gray building at upper right is the church on the neighboring property to the north. The intersection of Jackson Highway and Highway 12 is visible at upper right.



Photograph 8: Looking west along the Subject Site's main access off Jackson Highway. This driveway is immediately north of the single-family residence (at left). The field at right is the northern half of the site. The ditch along the right of the driveway drains to the wetlands to the west.



Photograph 9: Looking west across the western portion of the Subject Site from the southeast corner of the site. This is where the channelized stream emerges after passing beneath Jackson Highway (behind the photographer) and flows west along the east half of the southern site boundary. The building at right is the on-site single-family residence, and the building above the creek is one of its outbuildings.



Photograph 10: Looking west from the Subject Site, through the trees, to the Category III wetland mostly on the neighboring property to the west. These trees are on the Subject Site's western boundary, and the offsite wetland is immediately beyond them. Pink flagging delineating the eastern extent of the wetland hangs in the trees. This photo was taken near the southwest site corner. Highway 12 is visible in the left half of the photo.

Land uses adjacent to the subject site include:

- To the North – Church
- To the South – Hwy 12 and a gas station
- To the East – Coffee shop and vacant land
- To the West – Vacant land and agriculture

METHODS

Desktop Review

Prior to visiting the subject site, LCG conducted a desktop review of readily available mapping resources and other pertinent information including:

- Lewis County Web Map
(<http://ims.lewiscountywa.gov/webmaps/composite2/viewer.htm>). This source provided parcel information, aerial photographs, physical attributes, and other information from the Lewis County Assessor.
- US Fish and Wildlife Service National Wetlands Inventory Wetlands Mapper
(<https://www.fws.gov/wetlands/data/mapper.html>). This mapping source depicts wetlands and streams throughout the United States.

- US Department of Agriculture Natural Resources Conservation Service Web Soil Survey (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>). This source depicts mapped soils including hydric soils throughout the United States.
- Washington Department of Natural Resources Forest Practices Application Mapping Tool (<https://fpamt.dnr.wa.gov/default.aspx>). This mapping source depicts streams and wetlands in Washington State.
- Washington Department of Fish and Wildlife Salmonscape (<http://apps.wdfw.wa.gov/salmonscape/map.html>). This mapping source depicts streams and fish distribution in Washington State.
- Washington Department of Fish and Wildlife Priority Habitat and Species (<http://apps.wdfw.wa.gov/phsontheweb/>). This mapping source depicts priority habitats and species throughout Washington State.

State Regulations

Wetlands are regulated by Washington Department of Ecology (Ecology) under the Water Pollution Control Act and the Shoreline Management Act. The State Environmental Policy Act (SEPA) process is also used to identify potential wetland-related concerns early in the permitting process. All proposed direct and identified indirect impacts to wetlands are reviewed and approved/denied by Ecology using the regulations previously listed.

Streams are regulated by Washington Department of Fish and Wildlife under the State Hydraulic Code, Chapter 77.55 Revised Code of Washington. Projects involving activities within, over, or beneath jurisdictional streams are subject to the Hydraulic Project Approval (HPA) permitting process administered by WDFW.

Federal Regulations

Wetlands are regulated as “waters of the United States” under Section 404 of the Clean Water Act. Section 404 regulations are administered by the US Army Corps of Engineers (USACE).

Local Regulations

Wetlands and other critical areas are regulated by the *Lewis County Code (LCC) Chapter 17.38 – Critical Areas*.

Field Investigations

On March 3, 2025, LCG visited the subject site to collect site information, evaluate mapped streams, mapped wetlands, and collect site data. Weather conditions at the time of the site investigation consisted of overcast skies with a high of 52.3°F and 0.11 inches of rain the previous 24 hours. Recorded climatological history from the Chehalis Airport two weeks prior to visiting the site was characterized with high temperatures ranging from 50.0 to 64.2°F and low temperatures ranging from 31.5 to 47.5°F. Total recorded precipitation two weeks prior to the site visit (February 2nd – March 3rd) was recorded at 3.18 inches (Table 1, Appendix C).

Table 1: Weather Data at Chehalis Airport, Washington.

Date	Minimum Temp (Deg F)	Maximum Temp (Deg F)	Total Precipitation (in)
2/17/2025	37.5	53.6	0.19
2/18/2025	39.5	51.6	0.07
2/19/2025	43.8	50.5	0.20
2/20/2025	36.5	50.5	0.00
2/21/2025	37.6	52.6	0.10
2/22/2025	47.5	54.8	0.49
2/23/2025	41.7	56.3	0.42
2/24/2025	39.5	53.0	0.88
2/25/2025	32.5	51.0	0.71
2/26/2025	32.2	55.7	0.00
2/27/2025	31.5	64.2	0.00
2/28/2025	37.9	61.8	0.01
3/1/2025	35.5	63.1	0.00
3/2/2025	41.0	50.0	0.11
		Total:	3.18
3/3/2025	38.8	52.3	0.00

Data from Washington State University AgWeatherNet

Site investigation work tasks included:

- Documentation of current site conditions
- Documentation of adjacent land uses
- Determination of wetlands and streams

Vegetation

Vegetation at the site is dominated by Reed canary Grass onto top of imported fill material, likely spoils from ditch off-site cleaning. The only exceptions to this monoculture are on the western site boundary, which is marked by a narrow strip of Oregon Ash with a scant understory of Nootka Rose, and a small grove of the same behind the existing single-family residence. A variety of domestic landscape plants and deciduous and coniferous trees were observed around the residence, as well as Common Ivy along the stream on the southern site boundary. Table 2 summarizes vegetation observed at the subject site.

Table 2: Vegetation Observed

Scientific Name	Common Name	Wetland Indicator Code
<i>Conium maculatum</i>	Poison Hemlock	FAC
<i>Fraxinus latifolia</i>	Oregon Ash	FACW

<i>Hedera helix</i>	Common Ivy	FACU
<i>Holcus lanatus</i>	Velvet Grass	FAC
<i>Lolium perenne</i>	Perennial Ryegrass	FAC
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Poa pratensis</i>	Kentucky Bluegrass	FAC
<i>Rosa nutkana</i>	Nootka Rose	FAC
<i>Schedonorus arundinaceus</i>	Tall Fescue	FAC

Wetland Indicator Code

OBL = Obligate (Almost always occur in wetlands)

FACW = Facultative Wetland (Usually occur in wetlands, but may occur in non-wetlands)

FAC = Facultative (Occur in wetlands and non-wetlands)

FACU = Facultative Upland (Usually occur in non-wetlands, but may occur in wetlands)

UPL = Obligate Upland (Almost never occur in wetlands)

Soils

According to the US Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey for Lewis County, there are two soils present at the Subject Site, Lacamas silt loam and Prather silty loam. Lacamas silt loam, a soil common to floodplains and terraces in the local area, comprises the majority of soils on the site. Glacially-derived Prather silty loam is minorly present in the northwest corner of the site along the northern site boundary. Soils at the site are mapped as summarized in Table 3 and Figure 4).

Table 3: Soil Summary.

Soil #	Soil Name	Slope %	Hydric %
118	Lacamas silt loam	0 – 3	90
167	Prather silty clay loam	0 – 5	5

Historic land disturbance activities including agriculture, timber harvest and general filling/grading may have altered natural soil conditions at the site resulting in soils that may be somewhat different than those mapped by NRCS.

Hydrology

The Subject Site is located on a nearly level historic terrace. This terrace is drained by a number of generally northeast to southwest flowing streams, tributaries of Olequa Creek, and are often associated with wetland complexes due to the soil types and the terrain. Precipitation that does not absorb in situ onsite variously flows overland to the unnamed Type F stream on the southern site boundary, to the roadside ditches, or to the farm ditch that runs east/west along the north side of the residence's primary access.

The US Fish and Wildlife Service National Wetlands Inventory (NWI) Map (Figure 5) depicts a large wetland complex trending northeast to southwest along the historic path of the area's unnamed Type F stream. These wetlands are interrupted by both Jackson Highway and Highway 12 in the area of the Subject Site. It depicts the Subject Site as hosting a large Freshwater Emergent wetland in its northern portion and its southwest portion with the

wetland's easternmost point being approximately 20 feet west of the eastern site boundary, near Jackson Highway. The mapped wetland is depicted as transitioning to a Freshwater Forested/Shrub wetland approximately 68 feet from the western site boundary before continuing off-site to the west on the neighboring property. According to the NWI's depiction, the only upland onsite is in its southeast portion around the existing single-family residence, and in the east and west corners of the northernmost portion of the site.

According to the Washington Department of Natural Resources Forest Practices Application Mapping Tool, an unnamed Type F (Fish) stream, tributary of Olequa Creek to the southwest, originates northeast of the site. This unnamed stream is depicted as entering the site at its southeast corner from beneath Jackson Highway, and running east to west along the southern site boundary before turning south and flowing offsite beneath Highway 12 approximately 125 feet east of the southwest site corner, just east of the approximate midpoint of the southern site boundary (Figure 6).

Mapping

Roads, property boundaries, topography, and other site features were derived from public mapping sources with additional survey points mapped by Butler Surveying, Inc. of Chehalis, Washington, and further augmented with data collected using handheld portable GPS equipment with an implied horizontal accuracy of ± 11 feet.

RESULTS and DISCUSSION

Wetlands

A depressional wetland (Wetland "A") was located adjacent to the western site boundary, mostly on the neighboring property to the west (Figure 3). Wetland "A" is rated as Category III wetland (17 points) with a low water quality score of 5 points, a low hydrologic score of 5 points, and a moderate habitat score of 6 points (Table 4) according to the *Washington State Wetland Rating System for Western Washington, 2014 Update* (Appendix B).

Wetland Buffers

According to *LCC 17.38.270, Table 17.38-3*, Lewis County requires buffers on jurisdictional wetlands depending on category, habitat score, and proposed land use intensity. A Category III wetland with and expected high intensity land use requires a 150 foot wide buffer while a moderate impact level requires a 110-foot wide buffer. Table 4 summarizes wetland buffer requirements at the subject site based on *LCC 17.38.270, Table 17.38-3*:

Table 4: Wetland Summary.

Wetland ID	HGM ^A	Wetland Rating System ^B				Category ^B	Standard Buffer ^C (ft)
		Improving Water Quality	Hydrologic	Habitat	Total		
Wetland A	Depressional	6	5	6	17	III	150 110

^A Hydrogeomorphic Classification

^B Washington State Wetland Rating System for Western Washington: 2014 Update

^C LCC 17.38.270, Table 17.38-3. 150 feet for High Intensity and 110 feet for Moderate Intensity for Category III wetlands.

LCC 17.38.2801.a allows the reduction of the high intensity buffer to the moderate intensity buffer if a habitat corridor is provided and measures to minimize impacts are implemented (Table 17.38-4, see below).

Table 17.38-4

Impact Type	Activities and Uses that Cause Disturbances	Examples of Measures to Reduce Impacts
Stormwater runoff	• Parking lots • Roads • Manufacturing • Residential areas • Commercial • Landscaping	• Provide stormwater detention and treatment meeting the latest adopted Stormwater Management Manual for all impervious surfaces that drain to the wetland • Provide infiltration, except where soil conditions preclude • Prevent flow from lawns that directly enters the buffer through swales or other interception
Lights	• Residential • Warehouses • Manufacturing • Parking lots	• Direct lights away from wetland
Noise	• Residential • Commercial • Warehouse • Manufacturing	• Locate activity that generates noise away from wetland • Place loading areas, garbage pickup and other pickup/delivery functions on the building side furthest removed from the wetland
Toxic runoff	• Parking lots • Roads • Manufacturing • Residential areas • Application of agricultural pesticides • Landscaping • Pesticides • Herbicides • Fertilizer	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 feet of wetland • Require development and implementation of integrated pest management plan to reduce chemical use
Pets and human disturbance	• Residential areas	• Fence buffer area with privacy fencing • Plant dense native vegetation to delineate buffer edge
Lack of native vegetation in buffer	• Buffer will not provide functions	• Ensure minimum vegetation relative density of 20 or plant to 300 stems per acre

Table 17.38-4

Impact Type	Activities and Uses that Cause Disturbances	Examples of Measures to Reduce Impacts
Change in water regime	• Impermeable surfaces • Lawns • Tilling	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Dust	• Tilled fields	• Use best management practices to control dust

A corridor will be provided to the wetland to the west via protected wetland and wetland buffer on the Subject Site. The wetland contains priority habitat in the form of snags, logs, and riparian habitat to the adjacent stream. The Applicant will implement the measures, as much as practicable, to the 110 foot wide buffer area as well as placing the area under a recorded conservation easement.

Streams

An unnamed channelized Type F stream course flows east to west along the east half of the southern site boundary. It enters the property at the southeast site corner after passing under Jackson Highway, and exits the property just east of the approximate midpoint of the southern site boundary.

Stream Buffers

LCC 17.38.420 - Table 17.38-6 requires a minimum 150-foot wide buffer on Type F streams but does allow the buffer to be reduced to 100 feet if the stream bed is less than 10 feet in width (Figure 3). A pedestrian survey of the unnamed stream along the southern boundary of the Subject Site indicates the average stream width does not exceed 8 feet in width within any given 100 foot survey section. Therefore buffers at the site for this unnamed stream would not exceed 100 feet in width.

Much of the buffer is currently interrupted by existing buildings, roads, and other improvements associated with the existing residence. These area would not be considered functional or jurisdictional buffer due to the existing developments.

CONCLUSIONS

A Category III wetland (Wetland "A") was located along the western property boundary of the Subject Site. The wetland requires a standard 150-foot buffer that can be reduced to 110 feet if a corridor is provided and minimization measures implemented. A Type F stream is located in the southern portion of the Subject Site. The stream requires a 150 foot wide buffer that can be reduced to 100 feet if the stream channel is less than 10 feet in width. It is the opinion of

Loowit Consulting Group, LLC (LCG) that proposed developments on the subject site can be implemented with no direct or indirect impacts to regulated critical areas or associated buffers.

LIMITATIONS

The findings and conclusions contained in this document were based on information and data available at the time this document was prepared and evaluated using standard Best Professional Judgment. LCG assumes no responsibility for the accuracy of information and data generated by others. Local, State, and Federal regulatory agencies may or may not agree with the findings and conclusions contained in this document.

REFERENCES

Anderson, P., Meyer, S., Olson, P., Stockdale, E. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Shorelands and Environmental Assistance Program Washington State Department of Ecology Olympia, Washington. Publication no. 16-06-029. October 2016 Final Review.

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U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

US Department of Agriculture Natural Resources Conservation Service Web Soil Survey (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>).

US Fish and Wildlife Service National Wetlands Inventory Wetlands Mapper (<https://www.fws.gov/wetlands/data/mapper.html>).

Washington Department of Natural Resources Forest Practices Application Mapping Tool (<https://fpamt.dnr.wa.gov/default.aspx>).

Washington Department of Fish and Wildlife Salmonscape
(<http://apps.wdfw.wa.gov/salmonscape/map.html>).

Washington Department of Fish and Wildlife Priority Habitat and Species
(<http://apps.wdfw.wa.gov/phsontheweb/>).

FIGURES

Figure 1 – Site Location Map

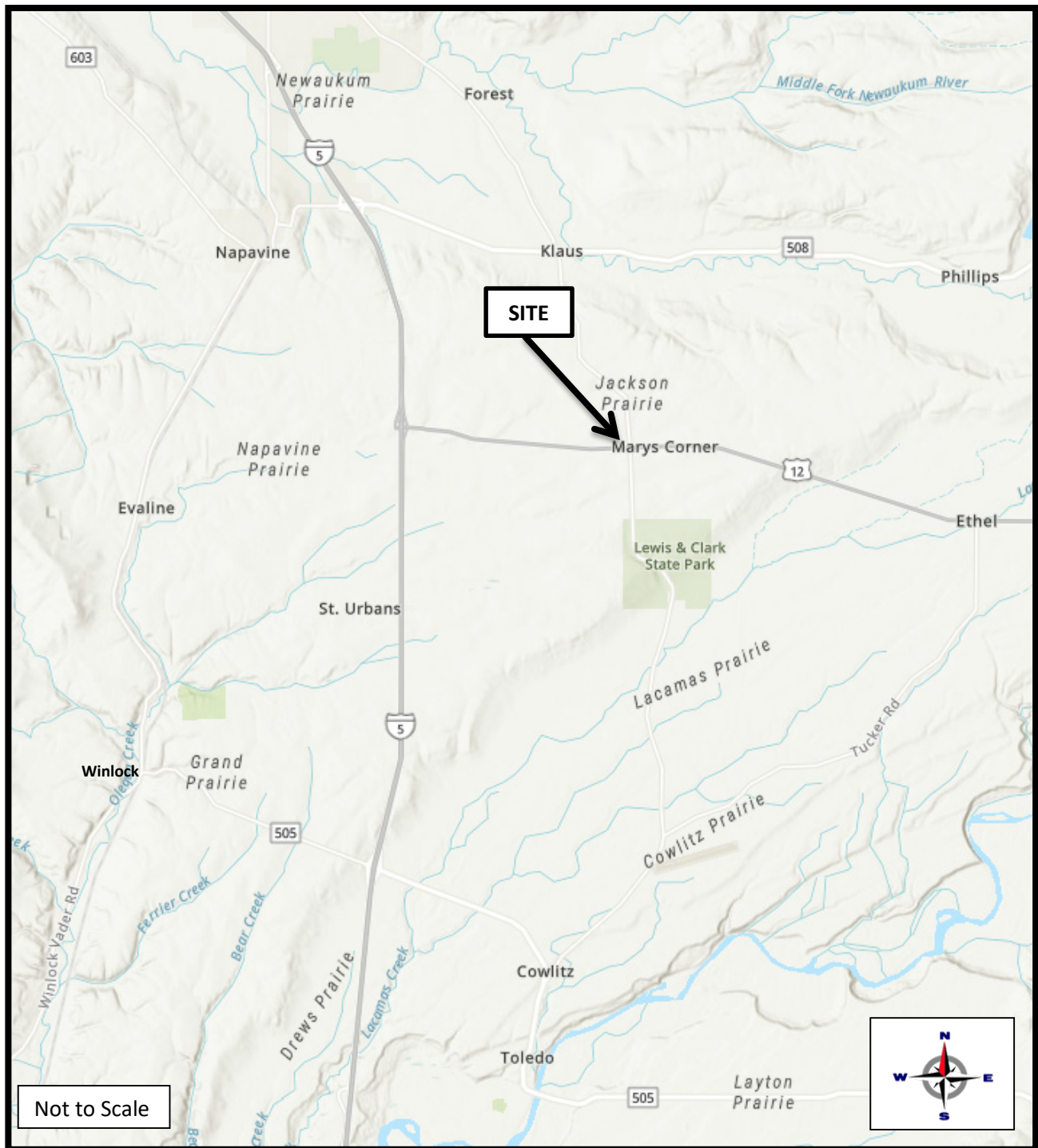
Figure 2 – Parcel Map

Figure 3 - Site Map

Figure 4 – Soils Map

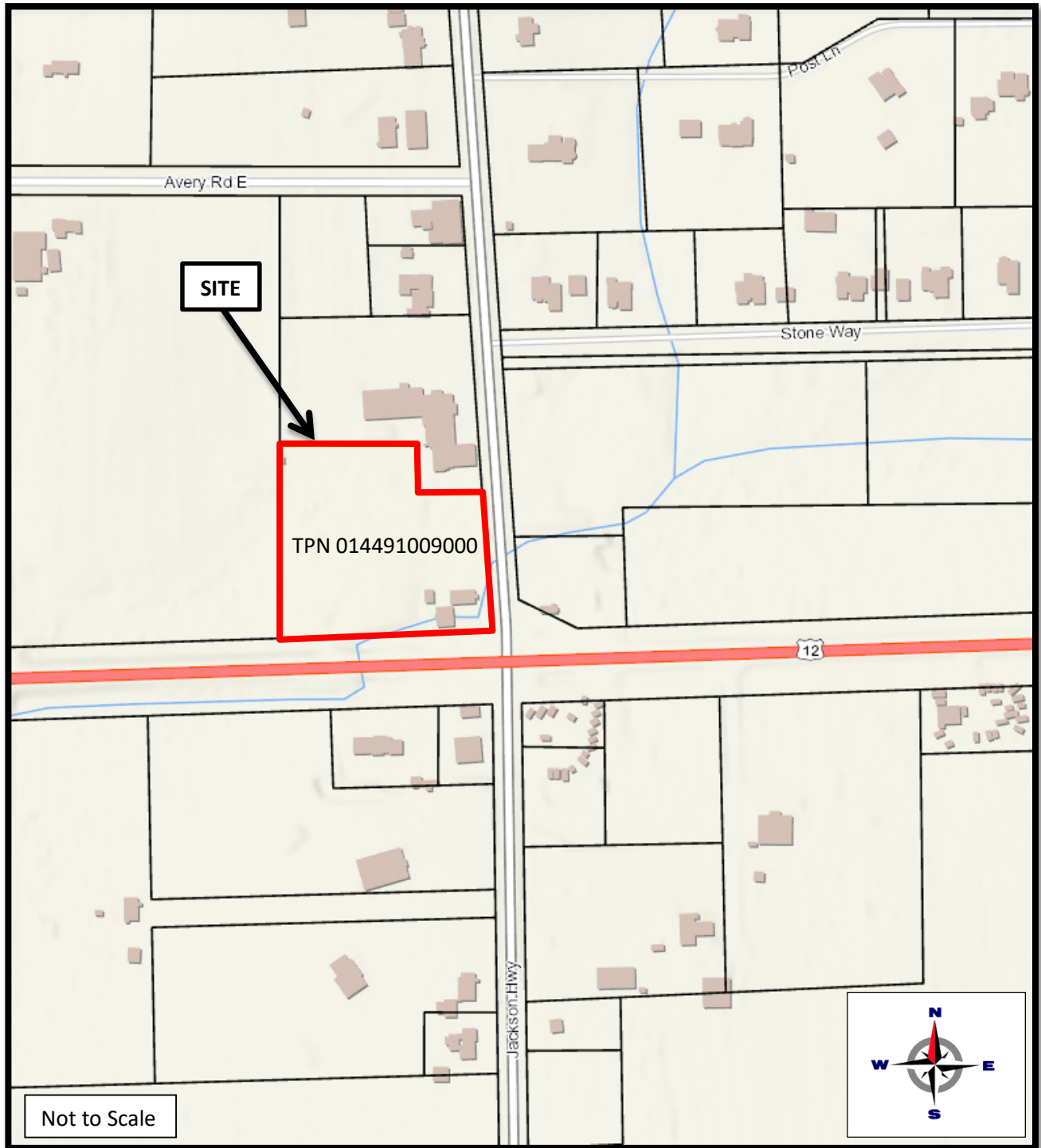
Figure 5 - National Wetlands inventory Map

Figure 6 – Stream Map



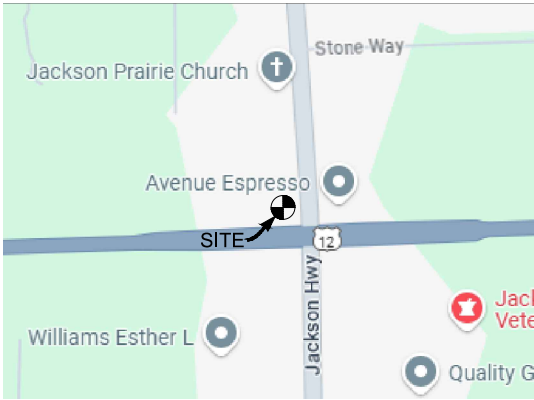
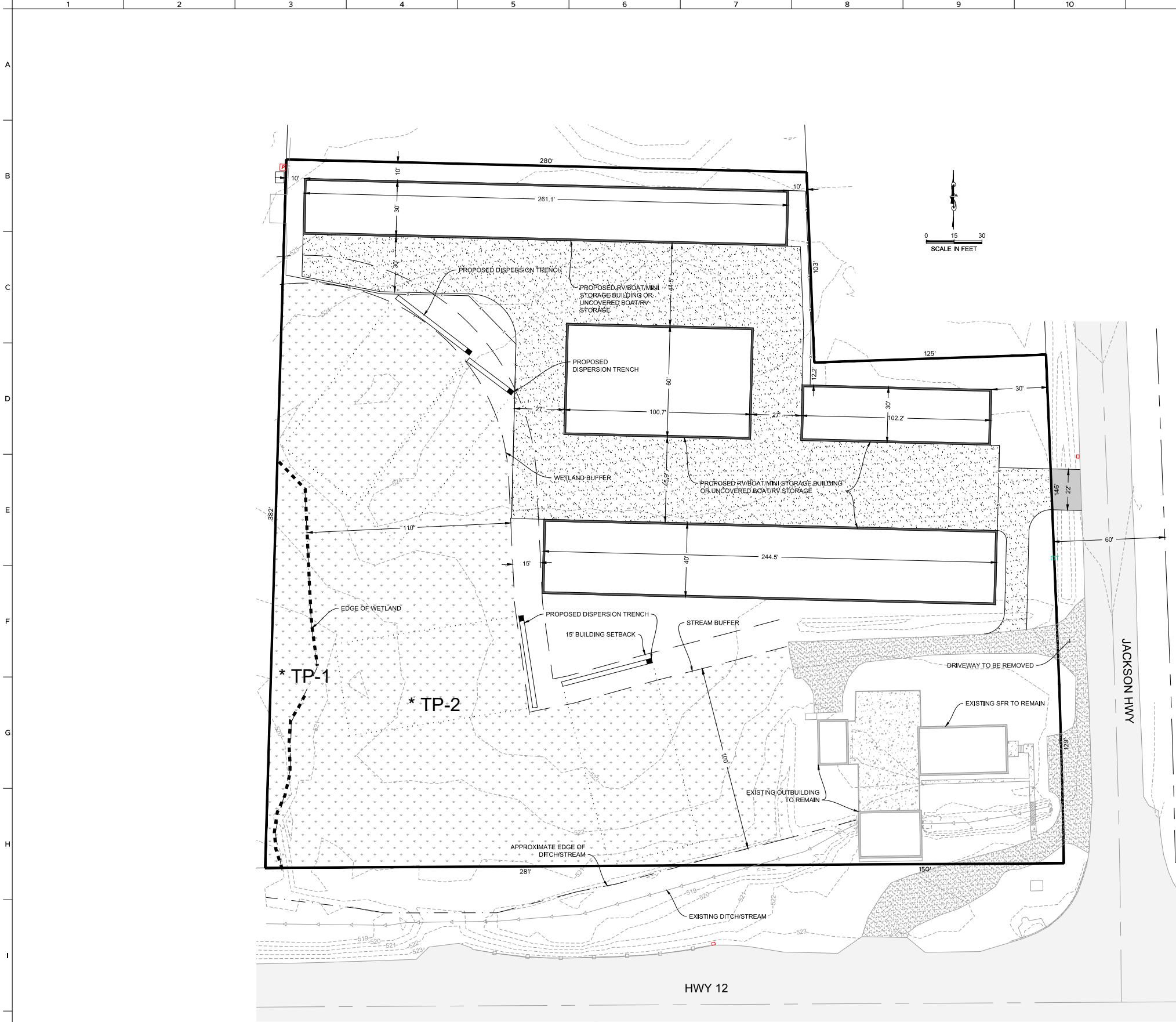
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Figure 1
Site Location Map
4236 Storage Facility



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Figure 2
Parcel Map
4236 Storage Facility



VICINITY MAP
NOT TO SCALE

SITE DATA

PARCEL #:	014491009000
SITE ADDRESS:	4236 JACKSON HWY CHEHALIS, WA 98532
GROSS ACREAGE:	3.32 AC (PER SURVEY DATA)
ZONING:	CC
EXISTING USE:	SINGLE-FAMILY RESIDENTIAL
PRESIDING JURISDICTION:	LEWIS COUNTY, WA

PROPOSED STORAGE
FACILITY

4236 JACKSON HWY
CHEHALIS, WA 98532
LEWIS COUNTY TPN 014491009000

SITE PLAN

Figure 3

PROJ. NO:	GF201
REVIEWED BY:	NDT
DESIGNED BY:	NDT
DRAWN BY:	RCB
DATE:	04-06-2026

Know what's BELOW
Call 811 before you dig.



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
118	Lacamas silt loam, 0 to 3 percent slopes	3.3	99.1%
167	Prather silty clay loam, 0 to 5 percent slopes	0.0	0.9%
Totals for Area of Interest		3.3	100.0%

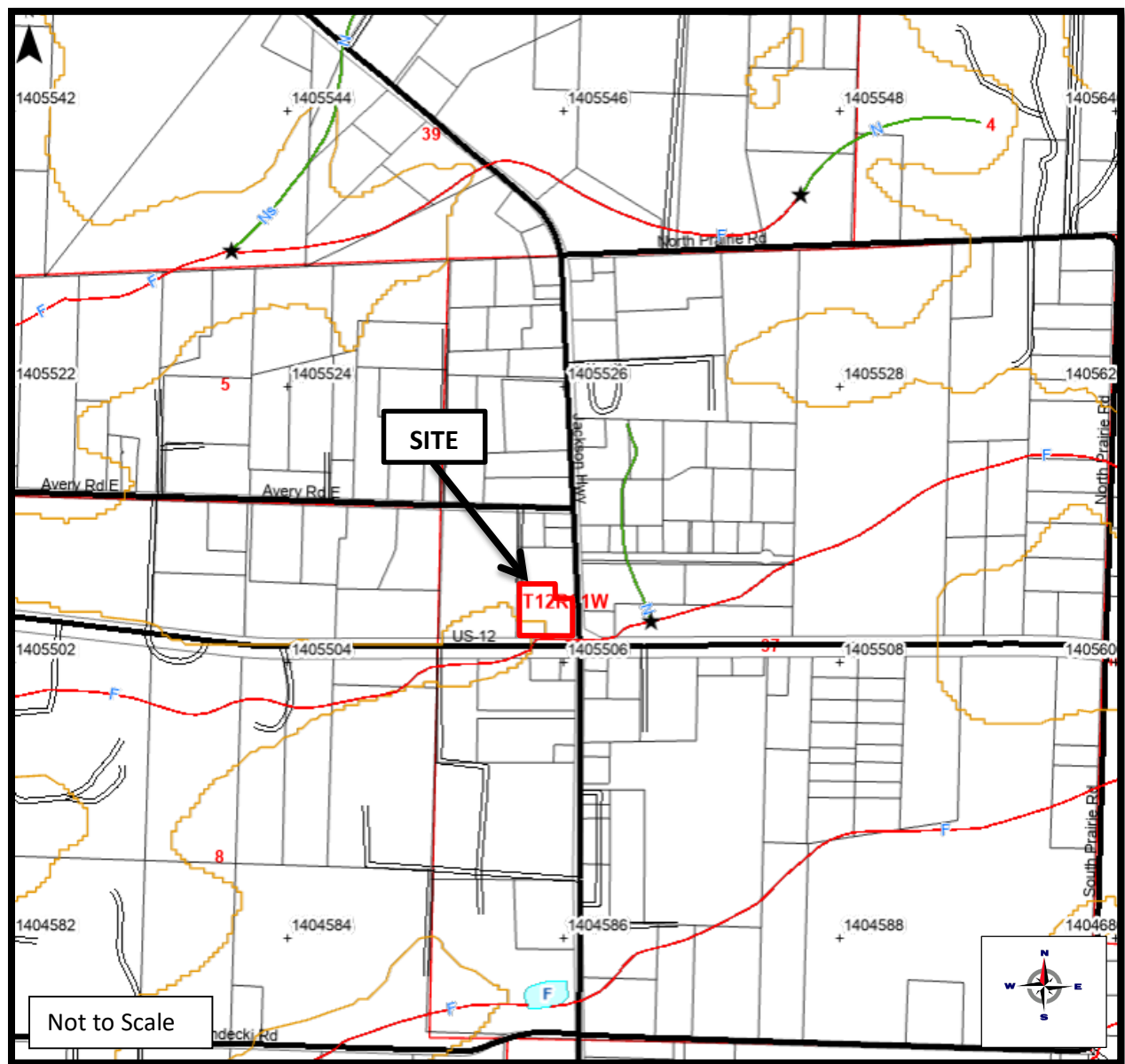
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Figure 4
Soils Map
4236 Storage Facility



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Figure 5
National Wetlands Inventory Map
4236 Storage Facility



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Figure 6
Stream Map
4236 Storage Facility

APPENDIX A – DATA SHEETS

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

Project/Site: 4236 Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 3/3/2025
 Applicant/Owner: Gary Fox State: WA Sampling Point: TP-1
 Investigator(s): T. Haderly Section, Township, Range: Section 9, Township 12 North, Range 1 West
 Landform (hillslope, terrace, etc.): Terrace Local relief: Flat Slope (%): 0-3%
 Subregion (LRR): A Lat: 46.544504 Long: -122.824385 Datum: WGS84
 Soil Map Unit Name: 118 Lacamas Silt Loam NWI classification: PFOC

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soils Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks:	

VEGETATION (Use scientific names)

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
1. <i>Fraxinus latifolia</i>	30%	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	%			
3. _____	%			
4. _____	%			
Total Cover: 30%				
Sapling/Shrub Stratum (Plot size: 335 ft. radius)				Prevalence Index worksheet Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1= <u>0</u> FACW species <u>0</u> x 2= <u>0</u> FAC species <u>0</u> x 3= <u>0</u> FACU species <u>0</u> x 4= <u>0</u> UPL species <u>0</u> x 5= <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A= _____
1. <i>Rosa nutkana</i>	10%	yes	FAC	
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
Total Cover: 10%				
Herb Stratum (Plot size: 5 ft radius)				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) ☐ 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.
1. <i>Phalaris arundinacea</i>	90%	yes	FAC	
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
8. _____	%			
Total Cover: 90%				
Woody Vine Stratum (Plot size: 30 ft radius)				
1. _____	%			
2. _____	%			
Total Cover: %				
% Bare Ground in Herb Stratum _____ %				Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:	
----------	--

SOIL

Sampling Point: TP-1

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		
0-8	10YR3/2	100%		%			Silt loam	
8-18	10YR 4/2	60%	5YR4/4	40%			Silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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.)

Indicators for Problematic Hydric Soils

☐ Histosal (A1)

☐ Sandy Redox (S5)

☐ 2 cm Muck (A10)

☐ Histic Epipedon (A2)

☐ Stripped Matrix (S6)

☐ Red Parent Material (TF2)

☐ Black Histic (A3)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Very Shallow Dark Surface (TF12)

☐ Hydrogen Sulfide (A4)

☐ Loamy Gleyed Matrix (F2)

☐ Other (Explain in Remarks)

☐ Depleted Below Dark Surface (A11)

☐ Depleted Matrix (F3)

☐ Thick Dark Surface (A12)

☐ Redox Dark Surface (F6)

☐ Sandy Mucky Minerals (S1)

☐ Depleted Dark Surface (F7)

☐ Sandy Gleyed Matrix (S4)

☐ Redox Depressions (F8)

³Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Hydric Soil Present?

Type: _____

Depth (inches): _____

Yes☒ No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators
(2 or more required)

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

☐ Surface Water (A1)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, & 4B)

☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ High Water Table (A2)

☐ Salt Crust (B11)

☐ Drainage Patterns (B10)

☐ Saturation (A3)

☐ Aquatic Invertebrates (B13)

☐ Dry-Season Water Table (C2)

☐ Water Marks (B1)

☐ Hydrogen Sulfide Odor (C1)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Sediment Deposits (B2)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Geomorphic Position (D2)

☐ Drift Deposits (B3)

☐ Presence of Reduced Iron (C4)

☐ Shallow Aquitard (D3)

☐ Algal Mat or crust (B4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ FAC-Neutral Test (D5)

☐ Iron Deposits (B5)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Surface Soil Cracks (B6)

☐ Other (Explain in Remarks)

☐ Frost-Heave Hummocks (D4)

☐ Inundation Visible on Aerial Imagery (B7)

Field Observations:

Wetland Hydrology Present?

Surface Water Present? Yes☒ No☐ Depth (Inches): 6-12

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

Saturation Present? Yes☒ No☐ Depth (Inches): surface

(Includes Capillary fringe)

Yes☒ No☐

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: 4236 Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 3/3/2025
 Applicant/Owner: Gary Fox State: WA Sampling Point: TP-2
 Investigator(s): T. Haderly Section, Township, Range: Section 9, Township 12 North, Range 1 West
 Landform (hillslope, terrace, etc.): Terrace Local relief: Flat Slope (%): 0-3%
 Subregion (LRR): A Lat: 46.544591 Long: -122.823921 Datum: WGS84
 Soil Map Unit Name: 118 Lacamas Silt Loam NWI classification: PEM1C

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soils Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks:	

VEGETATION (Use scientific names)

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
1. _____	%	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	%	_____	_____	
3. _____	%	_____	_____	
4. _____	%	_____	_____	
Total Cover:	%			
Sapling/Shrub Stratum (Plot size: 335 ft. radius)				
1. _____	%	_____	_____	Prevalence Index worksheet Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
2. _____	%	_____	_____	
3. _____	%	_____	_____	
4. _____	%	_____	_____	
5. _____	%	_____	_____	
Total Cover:	%			
Herb Stratum (Plot size: 5 ft radius)				
1. <i>Phalaris arundinacea</i>	90%	yes	FAC	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) ☐ 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.
2. _____	%	_____	_____	
3. _____	%	_____	_____	
4. _____	%	_____	_____	
5. _____	%	_____	_____	
6. _____	%	_____	_____	
7. _____	%	_____	_____	
8. _____	%	_____	_____	
Total Cover:	90%			
Woody Vine Stratum (Plot size: 30 ft radius)				
1. _____	%	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	%	_____	_____	
Total Cover:	%			
% Bare Ground in Herb Stratum _____ %				

Remarks:	
----------	--

SOIL

Sampling Point: TP-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		
0-18	various	100%		%			Fill	See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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.)

Indicators for Problematic Hydric Soils

☐ Histosal (A1)

☐ Sandy Redox (S5)

☐ 2 cm Muck (A10)

☐ Histic Epipedon (A2)

☐ Stripped Matrix (S6)

☐ Red Parent Material (TF2)

☐ Black Histic (A3)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Very Shallow Dark Surface (TF12)

☐ Hydrogen Sulfide (A4)

☐ Loamy Gleyed Matrix (F2)

☐ Other (Explain in Remarks)

☐ Depleted Below Dark Surface (A11)

☐ Depleted Matrix (F3)

☐ Thick Dark Surface (A12)

☐ Redox Dark Surface (F6)

☐ Sandy Mucky Minerals (S1)

☐ Depleted Dark Surface (F7)

☐ Sandy Gleyed Matrix (S4)

☐ Redox Depressions (F8)

³Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present):

Hydric Soil Present?

Type: _____

Yes☐ No☒

Depth (inches): _____

Remarks: Various earthen fill materil including soil, gravel, rocks, bricks, concrete, etc.

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators
(2 or more required)

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

☐ Surface Water (A1)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, & 4B)

☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ High Water Table (A2)

☐ Salt Crust (B11)

☐ Drainage Patterns (B10)

☐ Saturation (A3)

☐ Aquatic Invertebrates (B13)

☐ Dry-Season Water Table (C2)

☐ Water Marks (B1)

☐ Hydrogen Sulfide Odor (C1)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Sediment Deposits (B2)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Geomorphic Position (D2)

☐ Drift Deposits (B3)

☐ Presence of Reduced Iron (C4)

☐ Shallow Aquitard (D3)

☐ Algal Mat or crust (B4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ FAC-Neutral Test (D5)

☐ Iron Deposits (B5)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Surface Soil Cracks (B6)

☐ Other (Explain in Remarks)

☐ Frost-Heave Hummocks (D4)

☐ Inundation Visible on Aerial Imagery (B7)

Field Observations:

Wetland Hydrology Present?

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

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

Saturation Present? Yes☐ No☒ Depth (Inches): _____

(Includes Capillary fringe)

Yes☐ No☒

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

Remarks:

APPENDIX B – WETLAND RATING

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 3/35025

Rated by T. Haderly Trained by Ecology? ☒ Yes ☐ No Date of training 12/2014

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☐ N

NOTE: Form is not complete without the required figures (figures can be combined).

Source of base aerial photo/map Google Earth, Lewis County GIS

OVERALL WETLAND CATEGORY III (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

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	
Score Based on Ratings	6			5			6			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 A

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	A3
Hydroperiods	D 1.4, H 1.2	A1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	A1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	A1
Map of the contributing basin	D 4.3, D 5.3	A6
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	A2
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 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 (<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 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 (<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 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	

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 _____

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 A

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). 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	1
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</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > 1/2 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	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 > 1/2 total area of wetland points = 4 Area seasonally ponded is ≥ 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0	0
Total for D 1	4

Rating of Site Potential If score is ☐ 12-16 = H ☐ 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	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	3

Rating of Landscape Potential If score is: ☒ or 4 = H ☐ 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 in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	0
Total for D 3	0

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

Wetland name or number A

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	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 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		6

Rating of Site Potential If score is: ☐ 2-16 = H ☒ 5-11 = 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	0	
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: ☐ = 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. 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. <u>Choose the highest score if more than one condition is met.</u> 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. <i>Explain why</i> _____ points = 0 • There are no problems with flooding downstream of the wetland. points = 0	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		0

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

Wetland name or number A

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.

2

- | | |
|---|----------------------------------|
| ☐ 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/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

2

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 |
| ☒ 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

- ☐ 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 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, Canada thistle**

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

H 1.4. Interspersion of habitats

2

Decide from the diagrams below whether interspersions 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



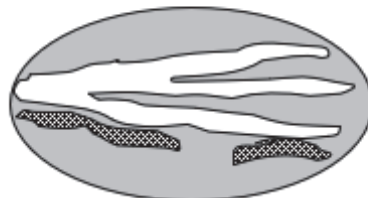
Low = 1 point



Moderate = 2 points



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



Wetland name or number A

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. ☒ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ☒ 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) ☐ 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 10

Rating of Site Potential If score is: ☐ 5-18 = H ☒ 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?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. Calculate: % relatively undisturbed habitat <u>3</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>3</u> % 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 <u>5</u> + [(% moderate and low intensity land uses)/2] <u>40</u> = <u>45</u> % 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	2
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 2

Rating of Landscape Potential If score is: ☐ 4-6 = H ☒ 1-3 = M ☐ 0-1 = 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? <i>Choose only the highest score that applies to the wetland being rated.</i> 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 ☒ 1 = M ☐ 0 = L	Record the rating on the first page

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.

Wetland name or number A

- ☐ **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.
- ☒ **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.

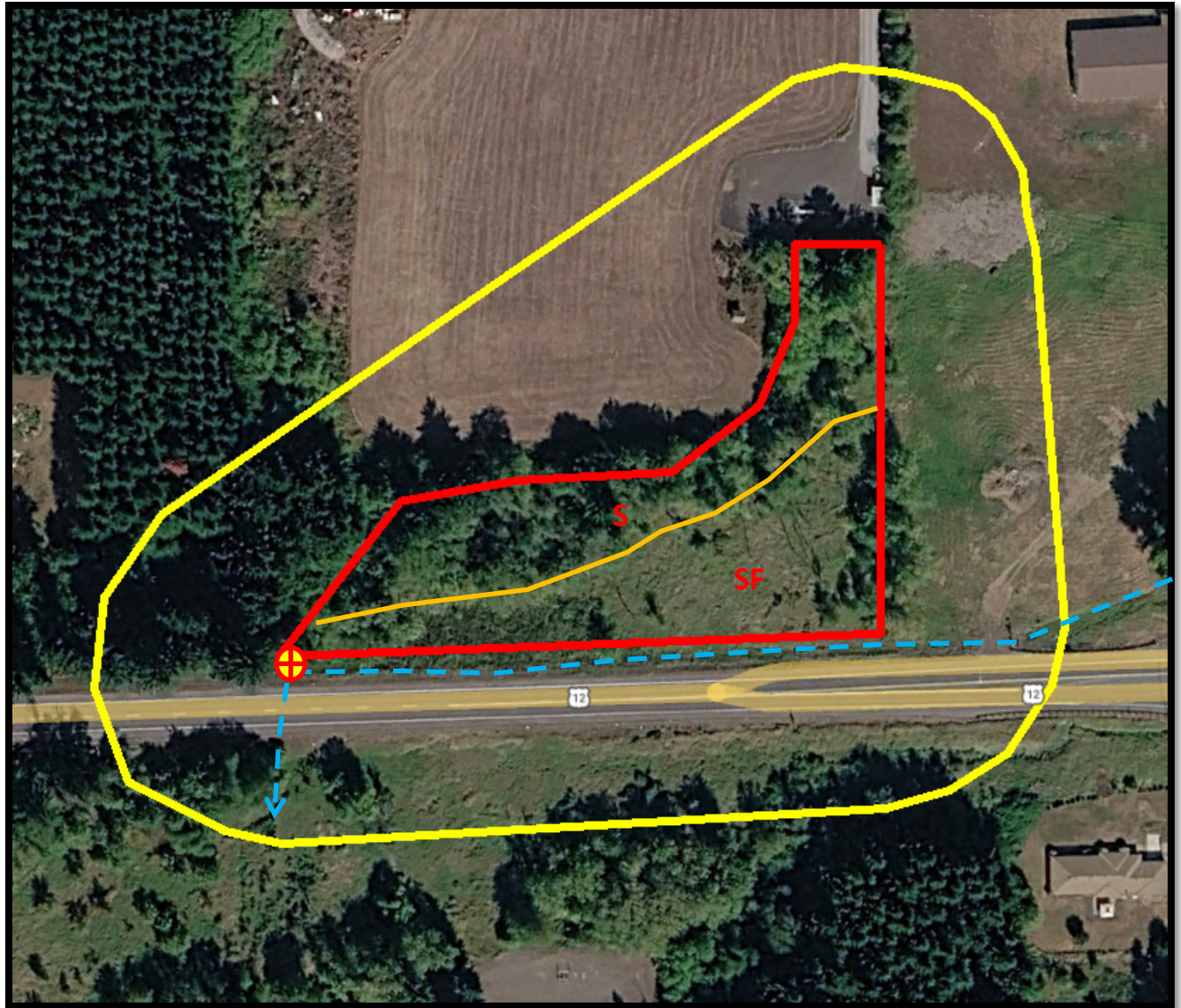
¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

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>	
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 <i>Spartina</i>, 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 unmowed 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? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i> 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

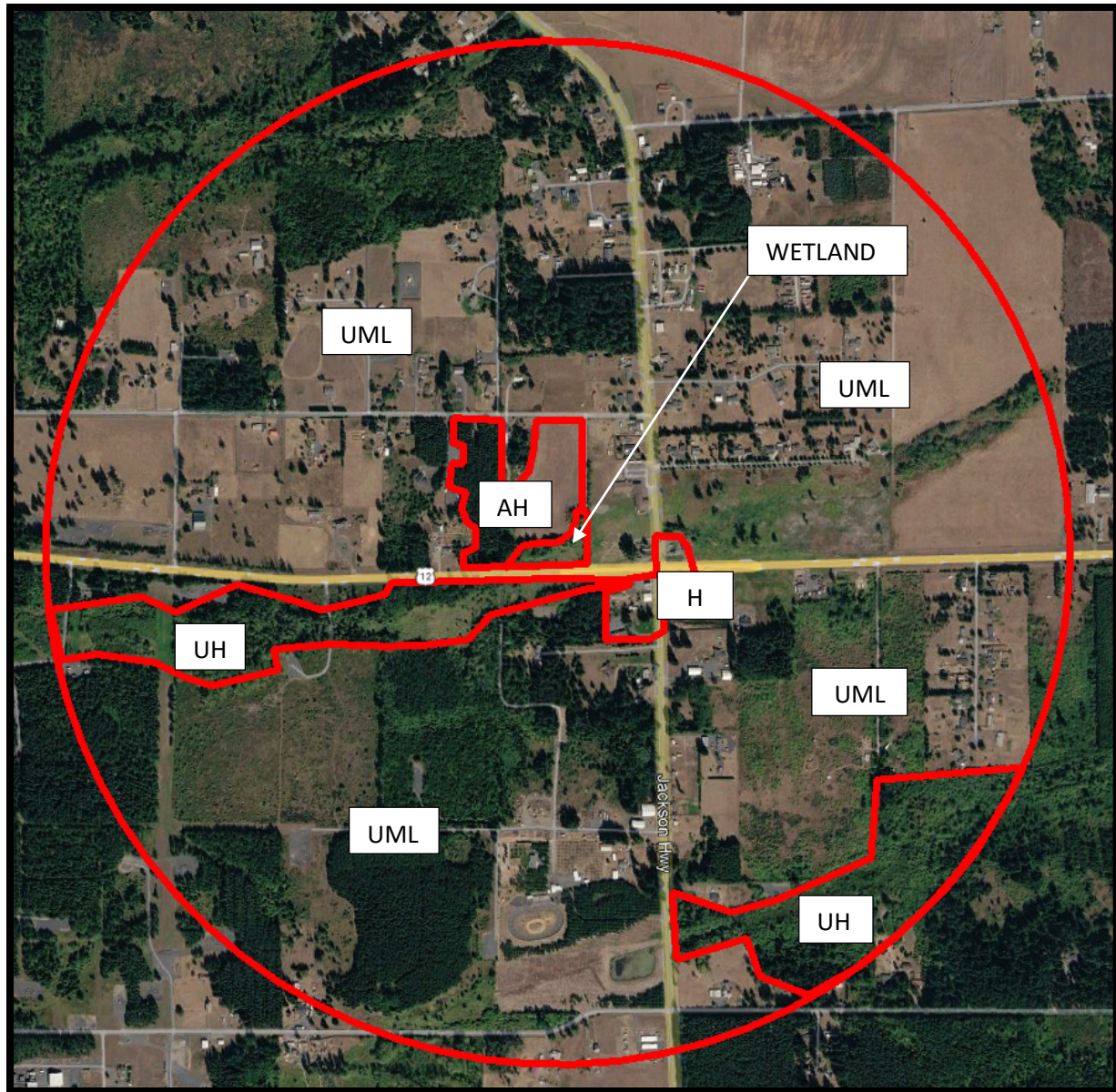
SC 4.0. Forested Wetlands		
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? <i>If you answer YES, you will still need to rate the wetland based on its functions.</i>		
☐	Old-growth 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 (<i>needs to be measured near the bottom</i>)	
☐	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		Cat. I
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 unmowed grassland.	Cat. II
☐	The wetland is larger than 1/10 ac (4350 ft²)	
Yes = Category I No = Category II		
SC 6.0. Interdunal Wetlands		
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer YES, you will still need to rate the wetland based on its habitat functions.</i>		
In practical terms that means the following geographic areas:		
☐	Long Beach Peninsula: Lands west of SR 103	Cat I
☐	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		Cat. II
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		Cat. III
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. IV
Category of wetland based on Special Characteristics		
If you answered No for all types, enter "Not Applicable" on Summary Form		NA



150 ft Offset ———
 SF = Seasonally Flooded
 S = Saturated
 Stream = - - - - -
 Outlet = ⊕

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Figure A1
 Hydroperiods
 4236 Jackson Hwy



Google Earth Pro

Accessible Habitat

3% Undisturbed (AH)

0% Moderate & Low Intensity Land Use/2 = (AML)

Undisturbed Habitat

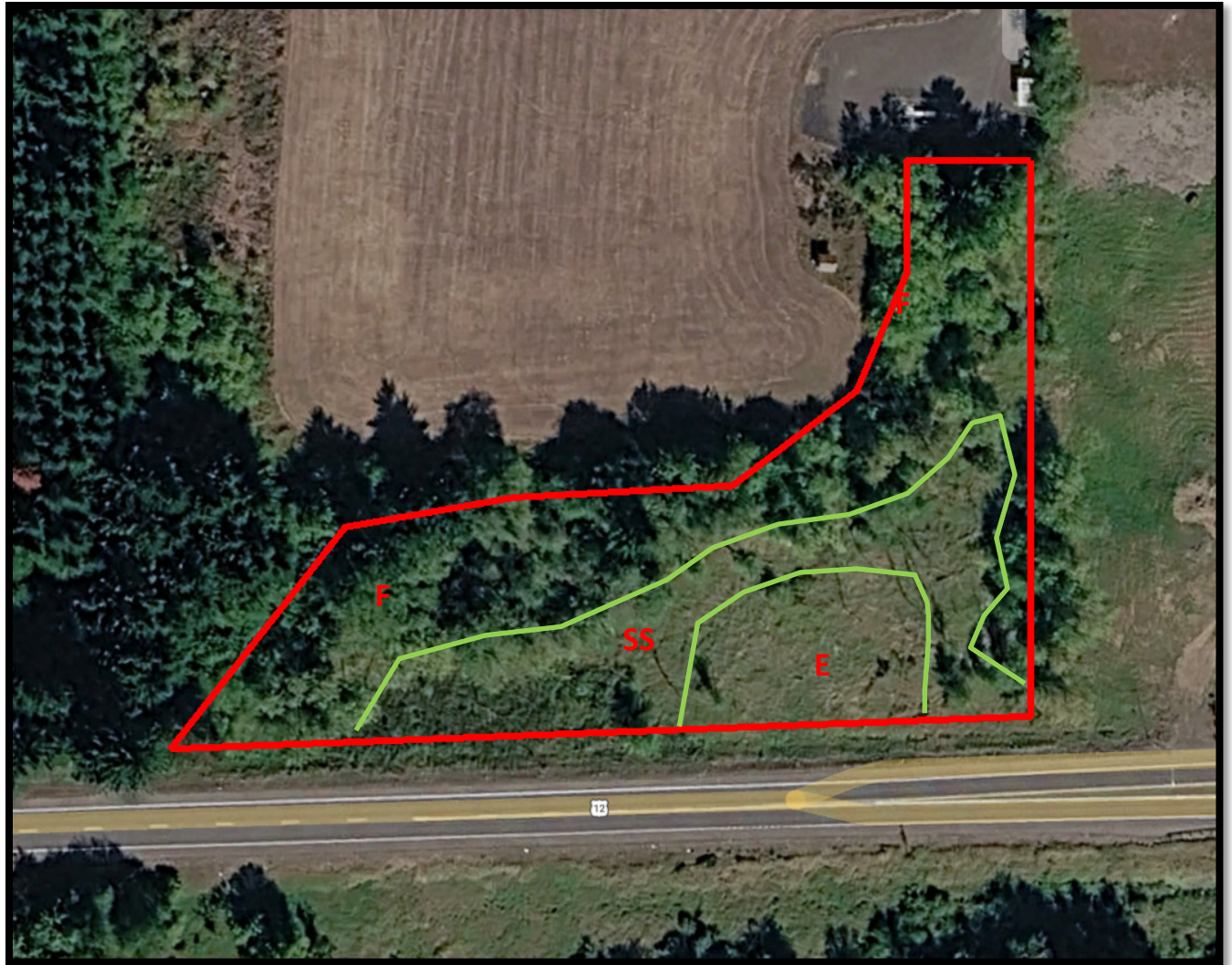
7% Undisturbed (UH)

89% Moderate & Low Intensity Land Use/2 = (UML)

High Intensity = HI (6%)

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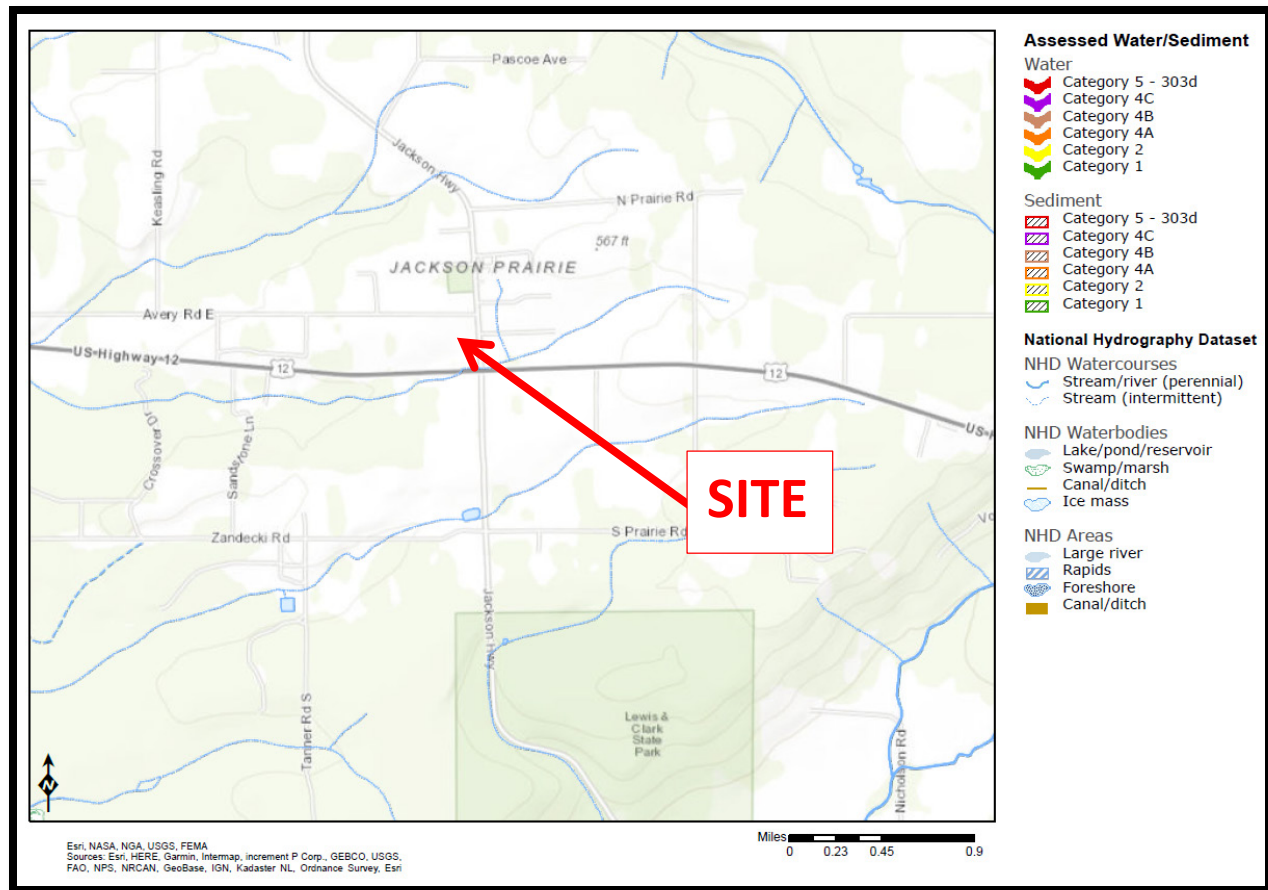
Figure A2
1km Polygon
4236 Jackson Hwy



E = Emergent
SS = Scrub Shrub
F = Forest

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Figure A3
Cowardin Plant Classes
4236 Jackson Hwy



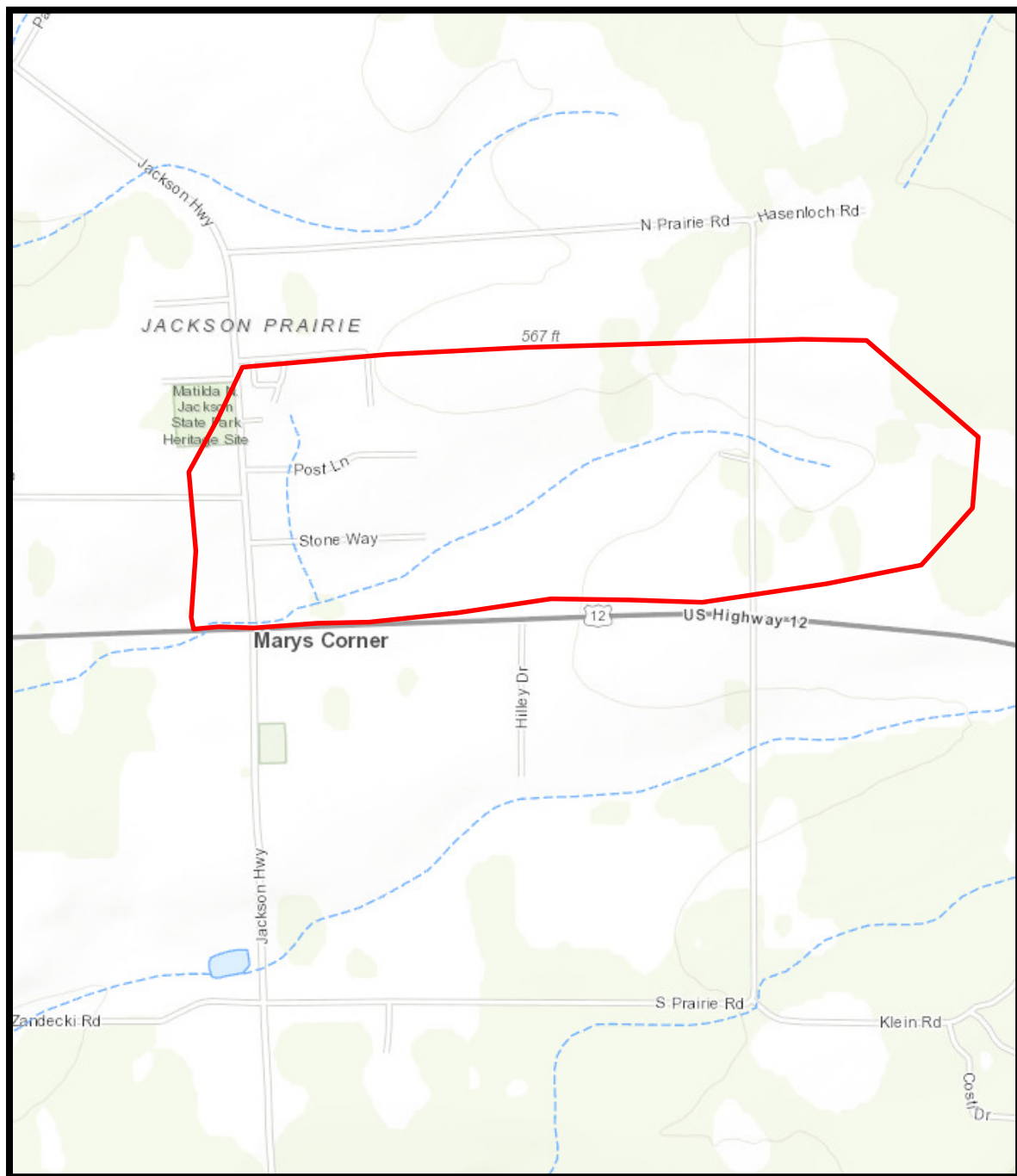
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Figure A4
303(d) Listed Waters
4236 Jackson Hwy

Approved WQ Assessment Candidate List Contact Us WQ Atlas							
Category 3 listings contain data insufficient in determining water quality, therefore are removed from your results. Include these 15 omitted listings.							
New Search Modify Search Export							
Show 25 entries							
Search Results - 3 Matched Listings							
Listing ID ^	AU ID	Medium †	Parameter	Category †	Waterbody Name	WRIA	†
45910	17080005000337_001_001	Water	Bacteria - Fecal coliform	5	OLEQUA CREEK	26-Cowlitz	
47763	17080005000337_001_001	Water	Dissolved Oxygen	2	OLEQUA CREEK	26-Cowlitz	
72850	17080005000337_001_001	Water	Temperature	5	OLEQUA CREEK	26-Cowlitz	
Showing 1 to 3 of 3 entries							
New Search Modify Search Export							

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Figure A5
 TMDL
 4236 Jackson Hwy



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Figure A6
CONTRIBUTING BASIN
4236 Jackson Hwy

APPENDIX C - CLIMATOLOGICAL DATA

Chehalis, WA Airport



Graph Table

1-16 of 16

Rows

Date ▲	Air Temp						Rel. Hum. (%)			Sol. Rad. (W/m²)			Precip. (in)			Wind							
	5 ft (°F)			30 ft (°F)												Speed (mph)				Speed (mph)			
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max					
Feb 16, 2025	44.3	45.4	47.0	44.2	45.2	46.8	93.7	94.9	95.8	0.0	4.8	39.0	0.00	0.13	0.01	2.5	4.4	5.3	3.2	5.2	6.5	SSE	
Feb 17, 2025	37.5	45.1	53.6	40.4	45.5	52.4	54.3	91.2	99.9	0.0	82.7	553.0	0.00	0.19	0.02	0.0	3.3	6.7	0.4	4.6	9.0	S	
Feb 18, 2025	39.5	46.7	51.6	40.2	46.7	51.1	0.2	76.4	99.9	0.0	48.9	314.0	0.00	0.07	0.01	0.0	3.7	8.2	0.0	5.0	9.8	S	
Feb 19, 2025	43.8	46.8	50.5	44.0	46.8	50.1	83.2	90.2	98.4	0.0	44.5	253.0	0.00	0.20	0.02	0.0	5.6	13.7	0.8	7.6	16.2	SSW	
Feb 20, 2025	36.5	44.8	50.5	39.4	45.0	50.0	70.0	87.0	99.1	0.0	67.5	370.0	0.00	0.00	0.00	0.0	3.0	6.1	0.1	4.3	7.0	S	
Feb 21, 2025	37.6	45.4	52.6	39.2	45.6	51.9	59.1	83.6	96.6	0.0	34.5	264.0	0.00	0.10	0.03	0.0	3.1	7.2	0.0	4.3	8.8	SSE	
Feb 22, 2025	47.5	50.6	54.8	47.4	50.3	54.7	71.1	90.0	98.9	0.0	21.7	171.0	0.00	0.49	0.04	0.0	6.8	12.0	1.6	8.4	14.1	S	
Feb 23, 2025	41.7	49.8	56.3	44.6	50.0	55.9	0.0	81.1	99.9	0.0	21.9	117.0	0.00	0.42	0.04	0.0	2.3	9.7	0.1	4.0	13.0	S	
Feb 24, 2025	39.5	45.4	53.0	40.2	45.4	52.5	86.5	93.6	99.5	0.0	40.6	420.0	0.00	0.88	0.13	0.0	5.0	15.1	0.2	6.8	18.6	SSE	
Feb 25, 2025	32.5	44.7	51.0	35.7	45.0	49.5	48.0	88.3	99.6	0.0	66.2	588.0	0.00	0.71	0.05	0.0	7.6	17.8	0.1	10.0	23.2	SSW	
Feb 26, 2025	32.2	40.4	55.7	32.3	41.0	55.1	0.3	39.9	99.2	0.0	123.8	635.0	0.00	0.00	0.00	0.0	1.3	4.2	0.0	2.4	5.5	SSW	
Feb 27, 2025	31.5	46.4	64.2	34.2	47.8	63.3	0.5	46.5	99.0	0.0	162.4	586.0	0.00	0.00	0.00	0.0	2.1	6.7	0.0	3.4	8.8	SSW	
Feb 28, 2025	37.9	46.7	61.8	40.8	47.5	61.3	0.2	45.8	99.3	0.0	131.4	622.0	0.00	0.01	0.01	0.0	1.1	5.2	0.0	2.2	7.4	S	
Mar 1, 2025	35.5	45.9	63.1	35.7	46.6	62.5	0.4	44.6	99.0	0.0	140.0	632.0	0.00	0.00	0.00	0.0	1.0	4.0	0.0	2.2	5.4	SSW	
Mar 2, 2025	41.0	46.2	50.0	42.0	46.3	49.8	29.4	95.5	99.7	0.0	36.2	195.0	0.00	0.11	0.02	0.0	0.6	4.2	0.0	1.5	5.6	SSW	
Mar 3, 2025	42.9	46.4	51.2	43.5	46.5	50.8	73.1	90.3	99.3	0.0	106.2	407.0	0.00	0.00	0.00	0.0	2.0	5.9	0.2	3.2	6.7	SSW	

1-16 of 16