

# Critical Areas Report for XXXX Jackson Hwy Chehalis, Washington

Prepared for:  
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Project # 187.04

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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:

A handwritten signature in blue ink, appearing to read "Timothy J. Haderly". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

---

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

# INTRODUCTION

## Purpose and Need

Loowit Consulting Group, LLC (LCG) was retained by Lakewood Investor, LLC (Applicant) to complete a critical areas investigation and report at XXXX Jackson Hwy (Subject Site) in Chehalis, Washington (Figure 1 & 2). The Applicant has proposed the construction of a phased multi-family residential facility including site access, street improvements, public supplied sewer/water, on-site parking, lighting and landscaping (Figure 3). Potential critical areas within the subject site prompted the City of Chehalis to request an evaluation of critical areas according to Chehalis Municipal Code (CMC) Title 17 – Division III.



**Photograph 1: Subject site from Kennicott Road looking southeast.**

## Site Description

The subject site consists of a single parcel totaling approximately 4.32 acres of unimproved property. Site specifics include:

Site Address: XXXX Jackson Hwy  
Chehalis, WA

Current Owner: Lakewood Investors, LLC

Tax Parcel Number: 010799001000

Legal Description: Section 3, Township 13 North, Range 2 West, W.M.

Property Size: Approximately 4.32 acres

Jurisdiction: City of Chehalis

The subject site is located southeast of Kennicott Road, northeast of Jackson Hwy, and southwest of Hosanna Ln in the southwestern portion of the City of Chehalis, Washington (Figure 1). The subject site consists of a sloped, unimproved property vegetated with a mix of pasture grass, teasel, thistles, and a few scattered willow clumps in the wetland area. There is no established access into the site for vehicles but a small parking spot in the northern corner of the site provides easy pedestrian access into the property.

Land uses adjacent to the subject site include:

- To the South – Residential and unimproved property
- To the North – Residential
- To the West – Residential and open space
- To the East – Residential and open space

## **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 Chehalis Municipal Code (CMC) Title 17 – Division III.

### Field Investigations

On November 13, 2020, LCG visited the subject site to collect site information, delineate jurisdictional wetlands, and collect site data. Weather conditions at the time of the site investigation consisted of overcast skies with a high of 49.5°F and 0.01 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 41.3 to 67.2°F and low temperatures ranging from 25.0 to 58.5°F. Total recorded precipitation two weeks prior to the site visit (October 30 – November 12) was recorded at 2.91 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)
10/30/2020	37.4	59.3	0.16
10/31/2020	32.9	59.3	0.01
11/1/2020	32.2	64.8	0
11/2/2020	31.0	67.2	0
11/3/2020	38.5	59.0	0.60
11/4/2020	58.5	64.0	0.33

11/5/2020	46.2	59.8	0.78
11/6/2020	33.2	49.4	0.45
11/7/2020	30.3	42.2	0
11/8/2020	25.3	48.3	0
11/9/2020	25.0	41.3	0.13
11/10/2020	37.3	48.1	0.39
11/11/2020	34.2	42.2	0.05
11/12/2020	35.0	46.3	0.01
		Total:	2.91
11/13/2020	39.3	49.5	1.60

Data from Agweathernet

Site investigation work tasks included:

- Documentation of current site conditions
- Documentation of adjacent land uses
- Delineating and flagging of wetlands and streams
- Documentation of wetland/upland conditions with Test Plots

Wetlands were delineated according to methods outlined in the 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)*. Data documenting vegetation, soils, and hydrology were collected and used to determine wetland and uplands at the site. A single depressional wetland (Wetland A) was located in the central portion of the subject site. Wetland boundaries were delineated using documented test plots and subsequently surveyed by Goodman Land Survey, Inc.

## Vegetation

Upland vegetation at the site is a mix of grasses and weeds with a few scattered clumps of willow in the wetland area. On-site wetland areas are dominated by shore pine, reed canary grass and spiraea. Table 2 summarizes wetland and upland vegetation observed at the subject site.

**Table 2: Vegetation Observed**

Scientific Name	Common Name	Wetland Indicator Code
<i>Cirsium arvense</i>	Canada Thistle	FAC
<i>Corylus cornuta</i>	Beaked Hazelnut	FACU
<i>Crataegus douglasii</i>	Black Hawthorn	FAC
<i>Cytisus scoparius</i>	Scotch Broom	UPL
<i>Dactylis glomerata</i>	Orchard Grass	FACU
<i>Daucus carota</i>	Queen Anne's Lace	FACU

<i>Dipsacus fullonum</i>	Teasel	FAC
<i>Fraxinus latifolia</i>	Oregon Ash	FACW
<i>Juncus effusus</i>	Soft rush	FACW
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Poa pratensis</i>	Kentucky Bluegrass	FAC
<i>Pseudotsuga menziesii</i>	Douglas Fir	FACU
<i>Rubus armeniacus</i>	Himalayan Blackberry	FAC
<i>Salix lasiandra</i>	Pacific Willow	FACW
<i>Schedonorus arundinaceus</i>	Tall Fescue	FAC

Wetland Indicator Code

OBL = Obligate (>99% found in wetlands)

FACW = Facultative Wetland (>67% to 99% found in wetlands)

FAC = Facultative (33% to 67% found in wetlands)

FACU = Facultative Upland (1% to <33% found in wetlands)

UPL = Obligate Upland (<1% found in wetlands)

## Soils

According to the US Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey for Lewis County, soils at the site are mapped as summarized in Table 3 and Figure 4).

**Table 3: Soil Summary.**

Soil #	Soil Name	Slope %	Hydric %
89	Galvin silt loam	0-8	15
118	Lacamas silt loam	0-3	97
194	Scamman silty clay loam	5-15	95

Historic land disturbance activities including fill placement, timber harvest, agricultural practices, and general 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 generally slopes to the southwest into a slope wetland area in the southwestern portion of the subject site. Seasonal water drains from the wetland into a culvert beneath Jackson Hwy eventually draining into Dillenbaugh Creek, a tributary of the Chehalis River. Figure 6 depicts mapped streams to the north and south of the subject but nothing within adjacent to the subject site.

## Mapping

Wetland boundary flagging, roads, property boundaries, topography, and other site features were derived from public mapping sources. Wetland flagging, topography, and property



boundaries were surveyed by Goodman Land Surveying, Inc. with additional points mapped with handheld portable GPS equipment with an implied horizontal accuracy of ±11 feet.

## RESULTS and DISCUSSION

### Wetlands

A single slope wetland (Wetland A) was located in the central/southern portion of the subject site ending at the vertical embankment comprising Jackson Hwy (Figure 3). Wetland A is rated a Category III wetland (13 points) with a moderate water quality score of 7 points, a moderate hydrologic score of 5 points, and a moderate habitat score of 5 points (Table 4) according to the *Washington State Wetland Rating System for Western Washington, 2014 Update* (Appendix B).

### Wetland Buffers

According to *CMC 17.23.030*, City of Chehalis requires buffers on jurisdictional wetlands depending on category and habitat score. A Category III wetland with a habitat score of 5 points (20 points under the old system) requires a 100-foot wide buffer. Table 4 summarizes wetland buffer requirements at the subject site based on *CMC 17.23.030*:

**Table 4: Wetland Summary.**

Wetland ID	HGM <sup>A</sup>	Wetland Rating System <sup>B</sup>				Category <sup>B</sup>	Standard Buffer <sup>C</sup> (ft)
		Improving Water Quality	Hydrologic	Habitat	Total		
Wetland A	Slope	7	5	5	17	III	100

<sup>A</sup> Hydrogeomorphic Classification

<sup>B</sup> *Washington State Wetland Rating System for Western Washington: 2014 Update*

<sup>C</sup> *CMC 17.23.030*

## CONCLUSIONS

A single Category III slope wetland (Wetland A) is located within the south-central portion of the subject site and drains into a culvert beneath Jackson Hwy (Figure 3). The City of Chehalis requires a 100-foot wide buffer on Category III wetlands with a moderate habitat score. As currently designed, Phase 1 of the proposed project is located outside of wetlands. The applicant has chosen to apply to fill the on-site wetland and mitigate using credits purchased from the Chehalis Basin Wetland Mitigation Bank. Phase II will be implemented after wetland impact permits are obtained from City of Chehalis, Washington Department of Ecology, and US Army Corps of Engineers.

## 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.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station. Technical Report Y-87-1. January 1987.

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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>).

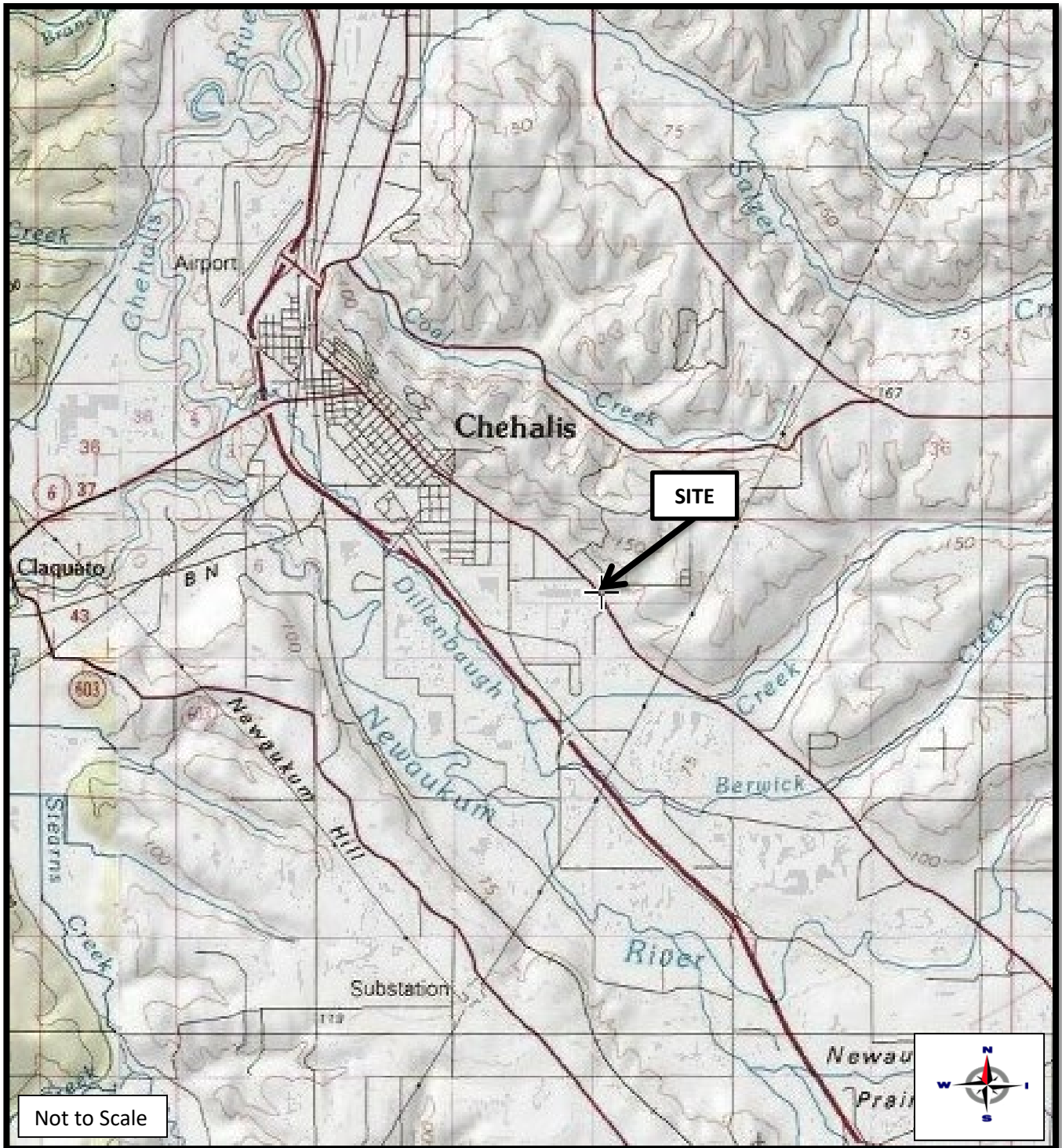
Washington Department of Natural Resources Forest Practices Application Mapping Tool (<https://fpamt.dnr.wa.gov/default.aspx>).

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/>).

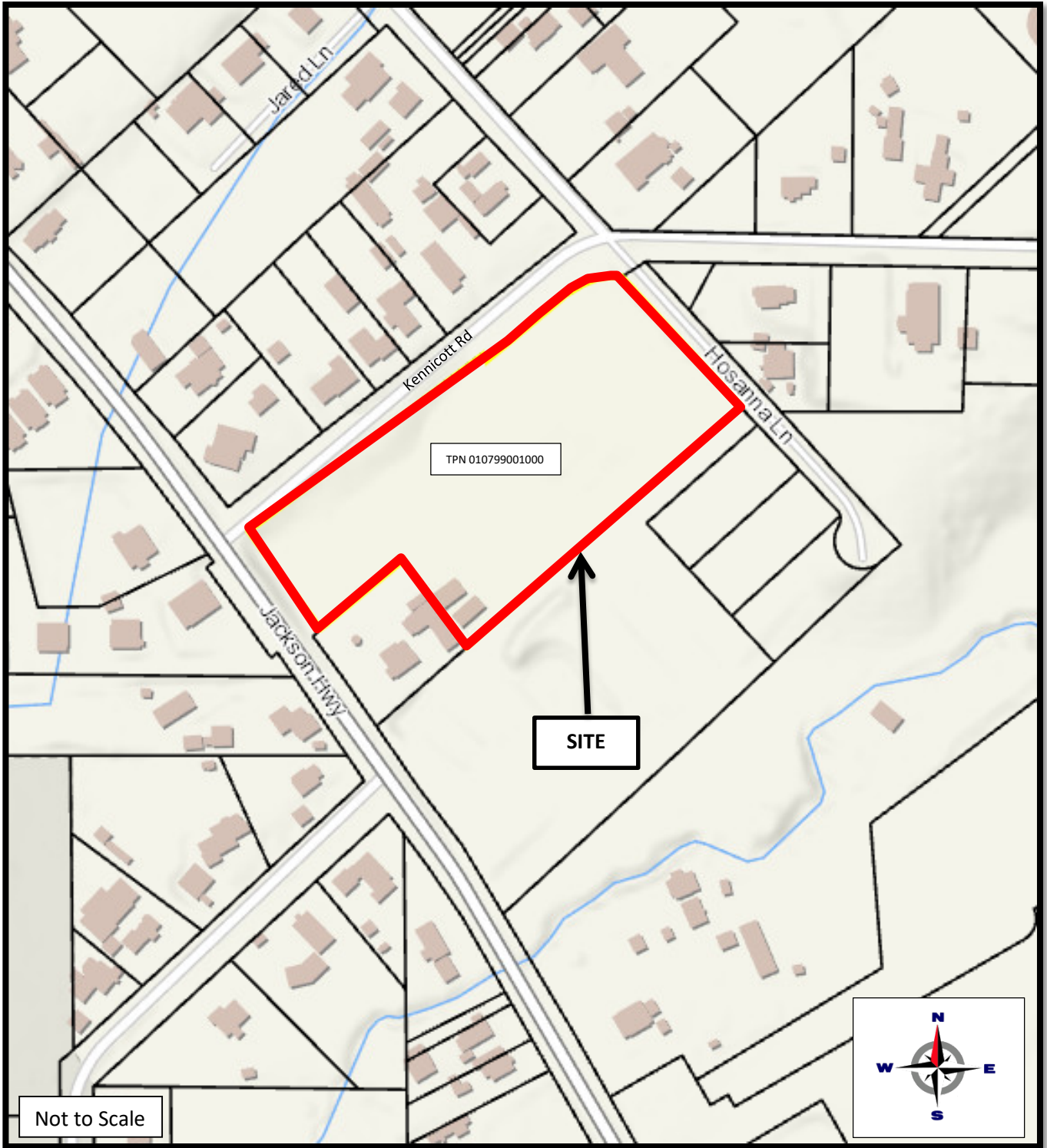
## **FIGURES**

- 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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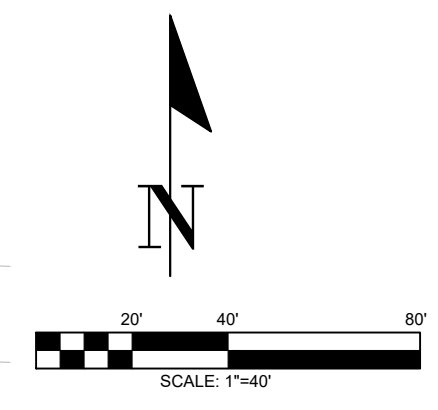
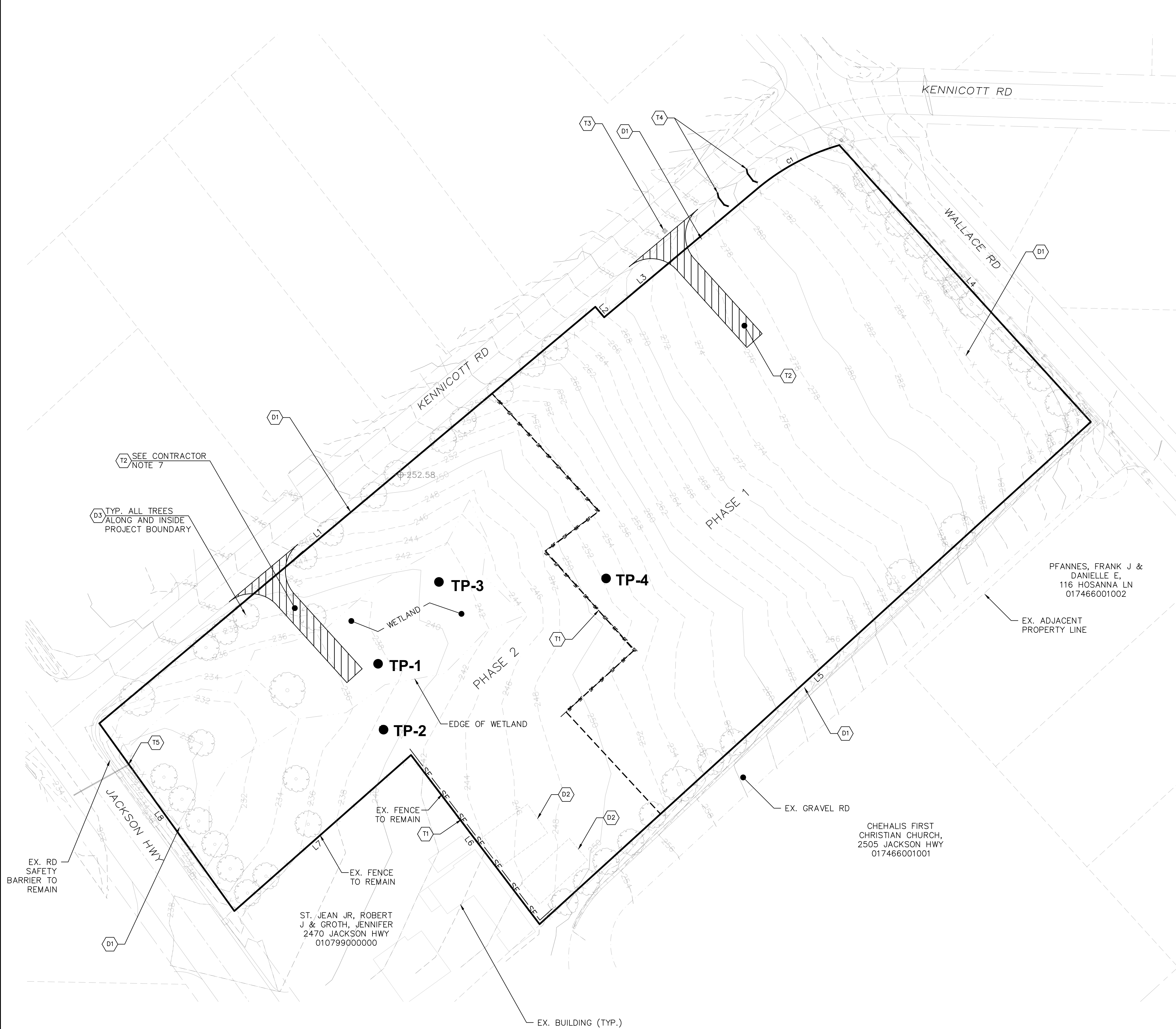
**Figure 1**  
**Site Location Map**  
**Jackson Villa #4**



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**Figure 2**  
**Parcel Map**  
**Jackson Villa #4**

SECTION 03 TOWNSHIP 13N RANGE 02W



- TESC NOTES:**
- (T1) INSTALL SILT FENCE. SEE DETAIL 3-4 SHEET C1.2.
  - (T2) INSTALL 100' LONG CONSTRUCTION ENTRANCE. SEE DETAIL 3-2 SHEET C1.2.
  - (T3) INSTALL INLET PROTECTION TO EX CATCH BASIN. SEE DETAIL 3-5 SHEET C1.2.
  - (T4) INSTALL STRAW BALE BARRIER AS SHOWN AND IN ACCORDANCE WITH DETAIL 3-6 ON SHEET C1.2. BALES TO BE INSTALLED ALONG EXISTING DITCH SHOWN ON THIS SHEET. BALES WILL BE REMOVED ONCE SITE IS STABILIZED.
  - (T5) INSTALL TWO LAYERS OF WATTLES AND A SWATH OF SILT FENCE AROUND THE INLET FOR CULVERT INLET PROTECTION.

- DEMOLITION NOTES:**
- (D1) EX. FENCE TO BE REMOVED.
  - (D2) EX. STRUCTURE TO BE REMOVED.
  - (D3) EX. TREE TO BE REMOVED.

- NOTES TO CONTRACTOR:**
1. ALL EXPOSED SOIL SURFACES SHALL BE SEEDED WITH AN EROSION CONTROL SEED MIX OR HYDROSEEDING IF NOT WORKED WITHIN 7 CALENDAR DAYS FROM MAY 1 TO SEPTEMBER 30. SOIL SHALL BE COVERED WITHIN 2 DAYS FROM OCTOBER 1 TO APRIL 30.
  2. SEEDED AREAS WILL BE COVERED WITH MULCH, HAY OR OTHER PROTECTIVE COVERING APPROVED BY THE ENGINEER TO PREVENT WASHOUT DURING RAIN EVENTS.
  3. CONTRACTOR SHALL APPLY WATER TO GRAVEL SURFACES DURING CONSTRUCTION TO MINIMIZE FUGITIVE DUST.
  4. ROUTINE INSPECTION AND MAINTENANCE OF ALL INSTALLED EROSION AND SEDIMENT CONTROL BMPs, ESPECIALLY AFTER STORMS, IS REQUIRED.
  5. PERIODIC STREET CLEANING MAY BE NECESSARY TO REMOVE ANY SEDIMENT TRACKED OFF THE SITE.
  6. IN THE EVENT PROPOSED BMPs FAIL, APPROPRIATE MEASURES MUST BE TAKEN TO STOP SEDIMENTS FROM ENTERING WATERWAYS.
  7. NO CONSTRUCTION OR DEMOLITION WILL BE ALLOWED IN PHASE 2 AREA UNTIL STATE AUTHORIZATION.

**LINE TABLE**

Line #	Bearing	Length
L1	S49° 58' 51.00"W	472.03
L2	N40° 01' 09.00"W	10.00
L3	S49° 58' 51.00"W	145.84
L4	N42° 17' 06.00"W	272.52
L5	N47° 40' 14.69"E	543.52
L6	N37° 13' 46.00"W	154.81
L7	N48° 33' 44.00"E	171.73
L8	S35° 44' 51.00"E	168.43

**CURVE TABLE**

Curve #	Radius	Length
C1	161.44	68.03

DRAWING TITLE: EX. CONDITION, DEMO AND TESC PLAN

SCALE: 1:40

DATE: 01/20/21

DRAWN: SD

CHECKED: AF

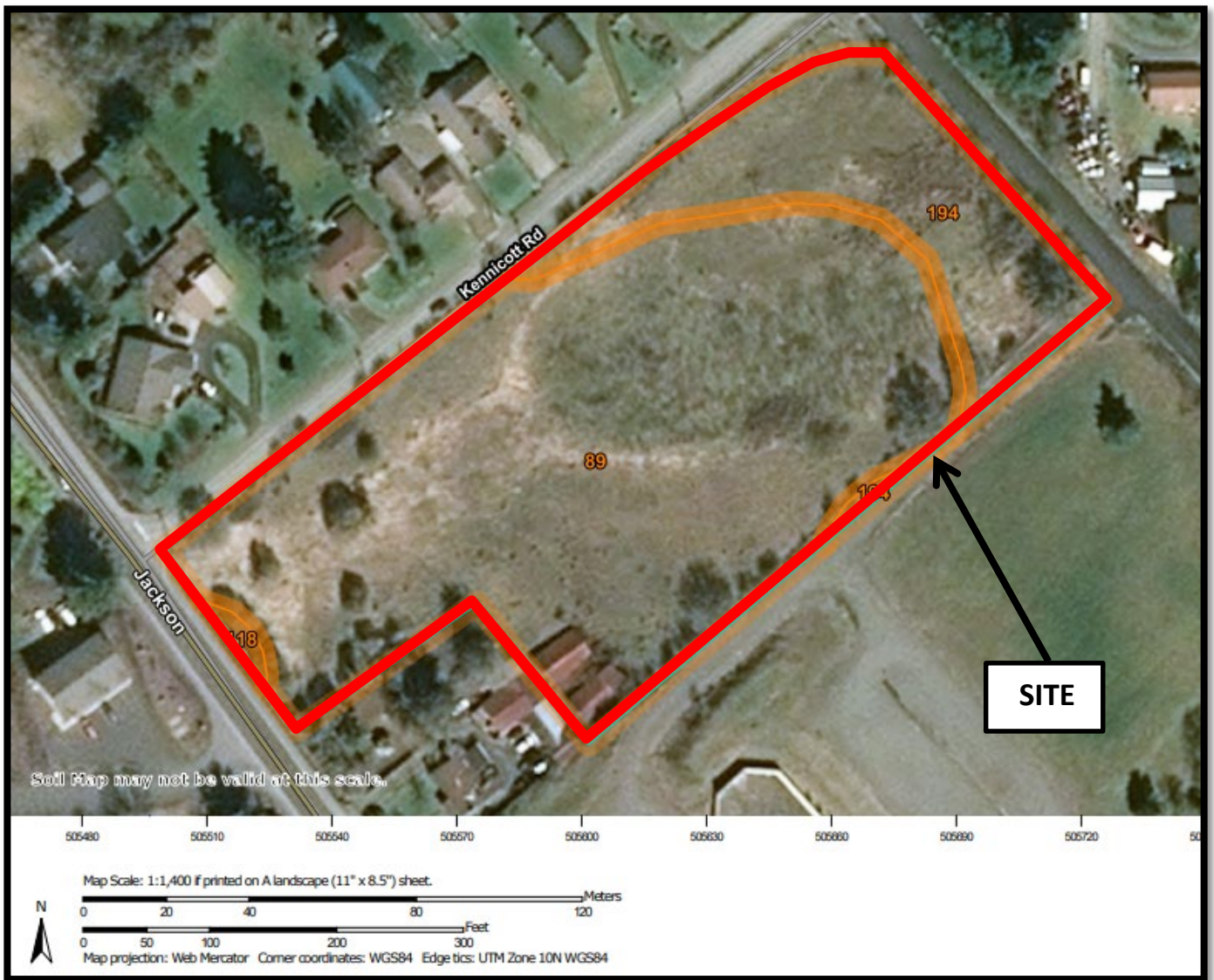
PROJECT NAME: JACKSON VILLA 4

FULLER DESIGNS  
1101 KRESKY AVE  
CENTRALIA, WA 98531  
(360) 807-4420

REV.	DESCRIPTION	DATE
0	PRELIMINARY - FOR PERMIT	01/20/21
1		

Figure 3 - Site Map

PRELIMINARY  
FOR PERMIT ONLY



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
89	Galvin silt loam, 0 to 8 percent slopes	3.5	77.5%
118	Lacamas silt loam, 0 to 3 percent slopes	0.0	0.5%
194	Scamman silty clay loam, 5 to 15 percent slopes	1.0	22.0%
<b>Totals for Area of Interest</b>		<b>4.5</b>	<b>100.0%</b>

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**Figure 4**  
**Soils Map**  
**Jackson Villa #4**





**Wetlands**

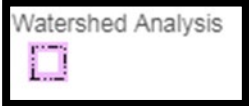
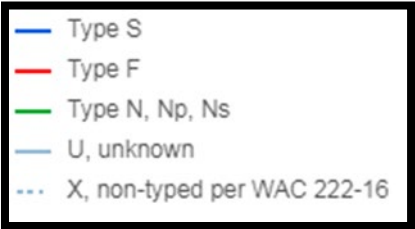
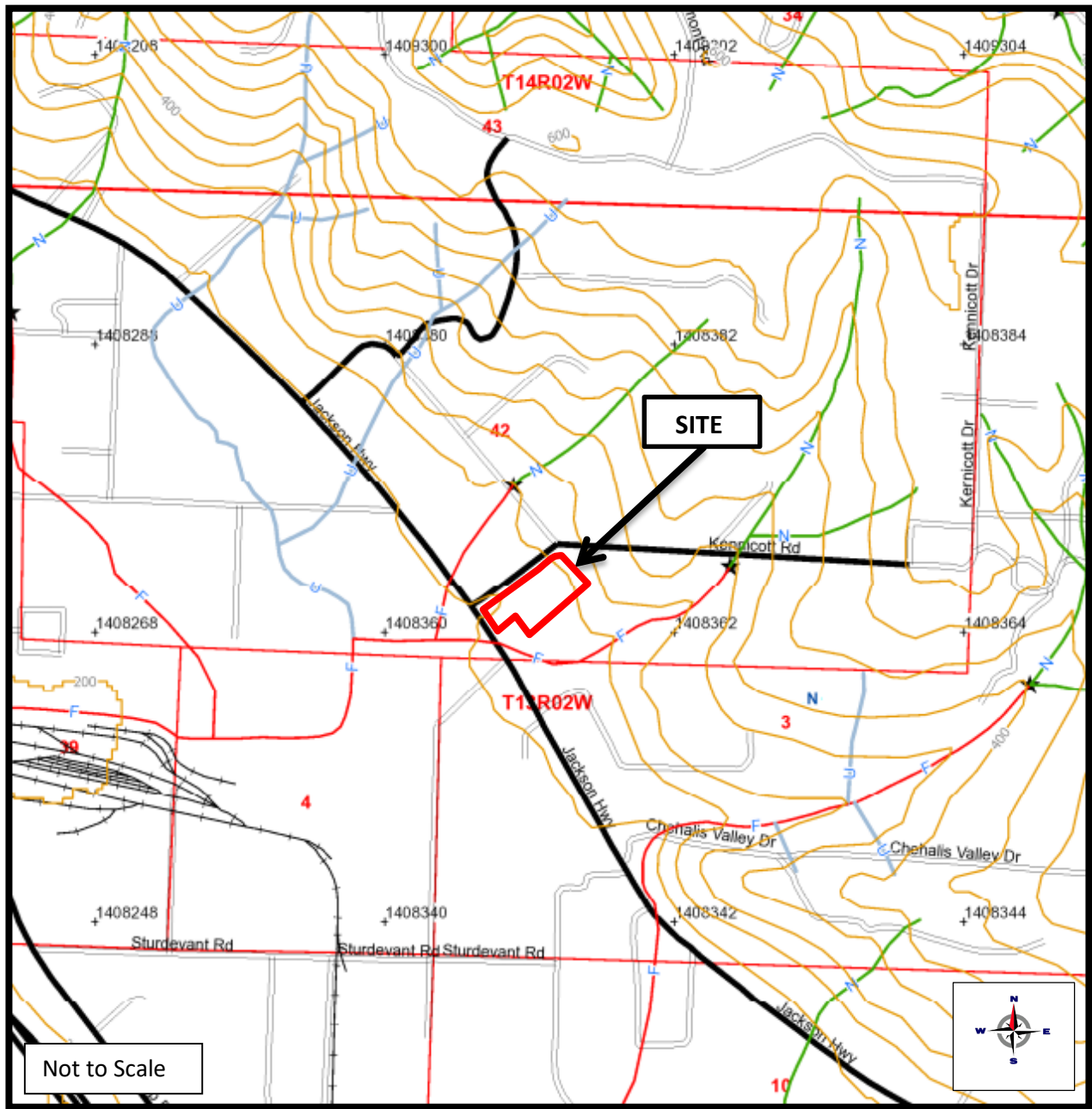
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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**Figure 5**  
**National Wetlands Inventory Map**  
**Jackson Villa #4**



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**Figure 6**  
**Stream Map**  
**Jackson Villa #4**

## **APPENDIX A - DATA FORMS**

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

Project/Site: Jackson Villa 4 - XXXX Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 11/13/2020  
 Applicant/Owner: Lakewood Investors, LLC State: WA Sampling Point: TP-1  
 Investigator(s): T. Haderly Section, Township, Range: Section 3, Township 13 North, Range 2 West  
 Landform (hillslope, terrace, etc.): Terrace Local relief: Sloped Slope (%): 0-3%  
 Subregion (LRR): A Lat: 46.641101 Long: -122.927069 Datum: WGS84  
 Soil Map Unit Name: #89 Galvin silt loam NWI classification: PEM1A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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:	1 (A)
2. _____	%	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	%	_____	_____		100 (A/B)
4. _____	%	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC	
Total Cover:	%	_____	_____	<b>Prevalence Index worksheet</b>	
Sapling/Shrub Stratum (Plot size: 5 ft. radius)				Total % Cover of: _____ Multiply by:	
1. _____	%	_____	_____	OBL species	0 x 1 = 0
2. _____	%	_____	_____	FACW species	0 x 2 = 0
3. _____	%	_____	_____	FAC species	0 x 3 = 0
4. _____	%	_____	_____	FACU species	0 x 4 = 0
5. _____	%	_____	_____	UPL species	0 x 5 = 0
Total Cover:	%	_____	_____	Column Totals:	0 (A) 0 (B)
Herb Stratum (Plot size: 5 ft radius)				Prevalence Index = B/A = _____	
1. <i>Phalaris arundinacea</i>	100%	yes	FACW	<b>Hydrophytic Vegetation Indicators:</b>	
2. _____	%	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
3. _____	%	_____	_____	<input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
4. _____	%	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.	
5. _____	%	_____	_____		
6. _____	%	_____	_____		
7. _____	%	_____	_____		
8. _____	%	_____	_____	<b>Hydrophytic Vegetation Present?</b>	
Total Cover:	100%	_____	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: 30 ft radius)					
1. _____	%	_____	_____		
2. _____	%	_____	_____		
Total Cover:	%	_____	_____		
% Bare Ground in Herb Stratum 0%					

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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR3/3	80%	7.5YR4/4	20%	D	M	Silt Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6)  <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Minerals (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Redox Depressions (F8)	<b>Indicators for Problematic Hydric Soils</b> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--

<sup>3</sup>Indicators of hydrophytic vegetation and Wetland hydrology must be present

<b>Restrictive Layer (if present):</b>  Type: _____  Depth (inches): _____  Remarks: _____	<b>Hydric Soil Present?</b>  Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>  Primary Indicators (min. of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, &amp; 4B)</b> <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Salt Crust (B11) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b> <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b> <input type="checkbox"/> Frost-Heave Hummocks (D4)
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>1-2</u> Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>6</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>surface</u> (Includes Capillary fringe)	<b>Wetland Hydrology Present?</b>  Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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: Jackson Villa 4 - XXXX Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 11/13/2020  
 Applicant/Owner: Lakewood Investors, LLC State: WA Sampling Point: TP-2  
 Investigator(s): T. Haderly Section, Township, Range: Section 3, Township 13 North, Range 2 West  
 Landform (hillslope, terrace, etc.): Terrace Local relief: Sloped Slope (%): 0-3%  
 Subregion (LRR): A Lat: 46.64173 Long: -122.926865 Datum: WGS84  
 Soil Map Unit Name: #89 Galvin silt loam NWI classification: none

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

**VEGETATION** (Use scientific names)

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: 30 ft radius)				<b>Dominance Test Worksheet</b> 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)
1. _____	%	_____	_____	
2. _____	%	_____	_____	
3. _____	%	_____	_____	
4. _____	%	_____	_____	
Total Cover:	%			
<b>Sapling/Shrub Stratum</b> (Plot size: 5 ft. radius)				<b>Prevalence Index worksheet</b> 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. _____	%	_____	_____	
2. _____	%	_____	_____	
3. _____	%	_____	_____	
4. _____	%	_____	_____	
Total Cover:	%			
<b>Herb Stratum</b> (Plot size: 5 ft radius)				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.
1. <i>Dipsacus fullonum</i>	90%	yes	FAC	
2. <i>Schedonorus arundinaceus</i>	10%	no	FAC	
3. <i>Poa pratensis</i>	10%	no	FAC	
4. _____	%	_____	_____	
5. _____	%	_____	_____	
6. _____	%	_____	_____	
7. _____	%	_____	_____	
8. _____	%	_____	_____	
Total Cover:	110%			
<b>Woody Vine Stratum</b> (Plot size: 30 ft radius)				
1. _____	%	_____	_____	
2. _____	%	_____	_____	
Total Cover:	%			
% Bare Ground in Herb Stratum <u>0%</u>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR5/3	100%		%			Silt Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

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

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

**Indicators for Problematic Hydric Soils**

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

<sup>3</sup>Indicators of hydrophytic vegetation and Wetland hydrology must be present

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Remarks: \_\_\_\_\_

**Hydric Soil Present?**

Yes  No

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (min. 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)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, & 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 (D4)

**Field Observations:**

Surface Water Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 Saturation Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 (Includes Capillary fringe)

**Wetland Hydrology Present?**

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: Jackson Villa 4 - XXXX Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 11/13/2020  
 Applicant/Owner: Lakewood Investors, LLC State: WA Sampling Point: TP-3  
 Investigator(s): T. Haderly Section, Township, Range: Section 3, Township 13 North, Range 2 West  
 Landform (hillslope, terrace, etc.): Terrace Local relief: Sloped Slope (%): 0-3%  
 Subregion (LRR): A Lat: 46.60926 Long: -122.927337 Datum: WGS84

Soil Map Unit Name: #89 Galvin silt loam NWI classification: PEM1A  
 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

## VEGETATION (Use scientific names)

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
<b>Tree Stratum</b> (Plot size: 30 ft radius)				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	%			
2. _____	%			
3. _____	%			
4. _____	%			
Total Cover:	%			
<b>Sapling/Shrub Stratum</b> (Plot size: 5 ft. radius)				<b>Prevalence Index worksheet</b> 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>Salix lasiandra</i>	10%	yes	FACW	
2. _____	%			
3. _____	%			
4. _____	%			
Total Cover:	10%			
<b>Herb Stratum</b> (Plot size: 5 ft radius)				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.
1. <i>Phalaris arundinacea</i>	100%	yes	FACW	
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
8. _____	%			
Total Cover:	100%			
<b>Woody Vine Stratum</b> (Plot size: 30 ft radius)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	%			
2. _____	%			
Total Cover:	%			
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks:				



**SOIL**

Sampling Point: TP-3

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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR3/3	80%	7.5YR4/4	20%	D	M	Silt Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils</b>
<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 checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Minerals (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and Wetland hydrology must be present

<b>Restrictive Layer (if present):</b>	<b>Hydric Soil Present?</b>
Type: _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Depth (inches): _____	
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (2 or more required)</b>
Primary Indicators (min. of one required; check all that apply)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, & 4B)	<input type="checkbox"/> Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" 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 checked="" 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 (D4)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b>
Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>1-2</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>6</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>surface</u> (Includes Capillary fringe)	

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: Jackson Villa 4 - XXXX Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 11/13/2020  
 Applicant/Owner: Lakewood Investors, LLC State: WA Sampling Point: TP-4  
 Investigator(s): T. Haderly Section, Township, Range: Section 3, Township 13 North, Range 2 West  
 Landform (hillslope, terrace, etc.): Terrace Local relief: Sloped Slope (%): 0-3%  
 Subregion (LRR): A Lat: 46.640792 Long: -122.927243 Datum: WGS84  
 Soil Map Unit Name: #89 Galvin silt loam NWI classification: none

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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:	1 (A)	
2. _____	%	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)	
3. _____	%	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC	100 (A/B)	
4. _____	%	_____	_____			
Total Cover:	%					
Sapling/Shrub Stratum (Plot size: 5 ft. radius)				<b>Prevalence Index worksheet</b>		
1. _____	%	_____	_____	Total % Cover of: _____ Multiply by:		
2. _____	%	_____	_____	OBL species	0 x 1= 0	
3. _____	%	_____	_____	FACW species	0 x 2= 0	
4. _____	%	_____	_____	FAC species	0 x 3= 0	
5. _____	%	_____	_____	FACU species	0 x 4= 0	
Total Cover:	%	UPL species				0 x 5= 0
Herb Stratum (Plot size: 5 ft radius)				Column Totals:	0 (A) 0 (B)	
1. <i>Schedonorus arundinaceus</i>	70%	yes	FAC	Prevalence Index = B/A= _____		
2. <i>Poa pratensis</i>	20%	no	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
3. <i>Cirsium arvense</i>	20%	no	FAC			
4. <i>Dipsacus fullonum</i>	10%	no	FAC			
5. _____	%	_____	_____			
6. _____	%	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.		
7. _____	%	_____	_____			
8. _____	%	_____	_____			
Total Cover:	120%					
Woody Vine Stratum (Plot size: 30 ft radius)				<b>Hydrophytic Vegetation Present?</b>		
1. _____	%	_____	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
2. _____	%	_____	_____			
Total Cover:	%					
% Bare Ground in Herb Stratum 0%						
Remarks:						

**SOIL**

Sampling Point: TP-4

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 <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR5/3	100%		%			Silt Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Minerals (S1)         | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils**

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

<sup>3</sup>Indicators of hydrophytic vegetation and Wetland hydrology must be present

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Remarks:

**Hydric Soil Present?**

Yes  No

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, &amp; 4B)</b> |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)  |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                                       |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                                     |
| <input type="checkbox"/> Algal Mat or crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)                        |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |  |

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 (D4)

**Field Observations:**

Surface Water Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 Saturation Present? Yes  No  Depth (Inches): \_\_\_\_\_  
 (Includes Capillary fringe)

**Wetland Hydrology Present?**

Yes  No

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

Remarks:

## **APPENDIX B - WETLAND RATING SUMMARY**

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland "A" Date of site visit: 11/13/2020

Rated by T. Hader;y Trained by Ecology?  Yes  No Date of training Dec-14

HGM Class used for rating Slope Wetland has multiple HGM classes?  Yes  No

**NOTE: Form is not complete with out the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**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

**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>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	L	M	
Value	H	M	L	<b>Total</b>
<b>Score Based on Ratings</b>	7	5	5	<b>17</b>

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	<b>X</b>

## 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	A3
Hydroperiods	H 1.2	A1
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	A1
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to another figure</i> )	S 4.1	A1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	A1
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	A2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	A4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	A5

## HGM Classification of Wetland in Western Washington

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

- 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

### 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	0
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic <i>(use NRCS definitions):</i>	Yes = 3 No = 0	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 (&gt;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	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	
<b>Total for S 1</b> Add the points in the boxes above		<b>6</b>

**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	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		0
Other Sources	Yes = 1 No = 0	
<b>Total for S 2</b> Add the points in the boxes above		<b>1</b>

**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	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	1
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 the unit is found?</i>	Yes = 2 No = 0	2
<b>Total for S 3</b> Add the points in the boxes above		<b>3</b>

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

### 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 &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>  Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland                      points = 1 All other conditions    points = 0	1

**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 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	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	1	
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	1

**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

**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

0

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 types 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**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. *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

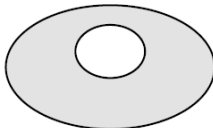
0

H 1.4. Interspersion of habitats

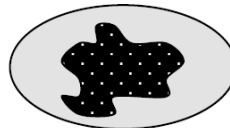
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



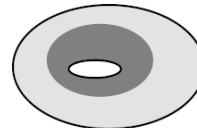
**None = 0 points**



**Low = 1 point**

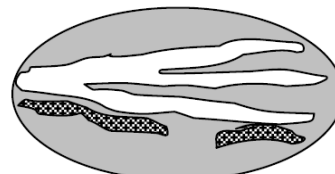
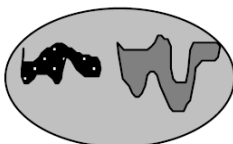


**Moderate = 2 points**



0

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



<p><b>H 1.5. Special habitat features:</b>                  Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long)</li> <li><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</li> <li><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> 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)</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 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>)</li> <li><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>)</li> <li><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)</li> </ul>	0
<p><b>Total for H 1</b> <span style="float: right;">Add the points in the boxes above</span></p>	<b>1</b>

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

<b>H 2.0. Does the landscape have the potential to support the habitat function of the site?</b>	
<p><b>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</b>                  Calculate:                  1 % undisturbed habitat + ( _____ 0 % moderate &amp; low intensity land uses / 2 ) = 1%</p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> <li>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></li> <li>20 - 33% of 1 km Polygon <span style="float: right;">points = 2</span></li> <li>10 - 19% of 1 km Polygon <span style="float: right;">points = 1</span></li> <li>&lt; 10 % of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	0
<p><b>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</b>                  Calculate:                  6 % undisturbed habitat + ( _____ 45 % moderate &amp; low intensity land uses / 2 ) = 28.5%</p> <ul style="list-style-type: none"> <li>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></li> <li>Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span></li> <li>Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span></li> <li>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></li> </ul>	2
<p><b>H 2.3 Land use intensity in 1 km Polygon: If</b>                  &gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (-2)</span>                  ≤ 50% of 1km Polygon is high intensity <span style="float: right;">points = 0</span></p>	0
<p><b>Total for H 2</b> <span style="float: right;">Add the points in the boxes above</span></p>	<b>2</b>

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

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>	
<p><b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose <i>only the highest score that applies to the wetland being rated</i>.</b></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><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</li> </ul> <p>Site has 1 or 2 priority habitats (listed on next page) with in 100m <span style="float: right;">points = 1</span></p>	

Wetland name or number

Site does not meet any of the criteria above	points = 0
--	------------

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

*Record the rating on the first page*

## 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



Wetland name or number  
addressed elsewhere.

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine Wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 1.1</b>      <input checked="" type="checkbox"/> No = <b>Not an estuarine wetland</b></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 style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No - Go to <b>SC 1.2</b></p>	
<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> <p><input type="checkbox"/> 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)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></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 style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to <b>SC 2.2</b>      <input type="checkbox"/> No - Go to <b>SC 2.3</b></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input checked="" type="checkbox"/> No = <b>Not WHCV</b></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a></p> <p style="text-align: right;"><input type="checkbox"/> Yes - <b>Contact WNHP/WDNR and to SC 2.4</b>      <input type="checkbox"/> No = <b>Not WHCV</b></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 style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>      <input type="checkbox"/> No = <b>Not WHCV</b></p>	
<p><b>SC 3.0. Bogs</b></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 style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 3.3</b>      <input checked="" type="checkbox"/> No - Go to <b>SC 3.2</b></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 style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 3.3</b>      <input checked="" type="checkbox"/> No = <b>Is not a bog</b></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 style="text-align: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>      <input type="checkbox"/> No - Go to <b>SC 3.4</b></p> <p><b>NOTE:</b> 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 (&gt; 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</p>	

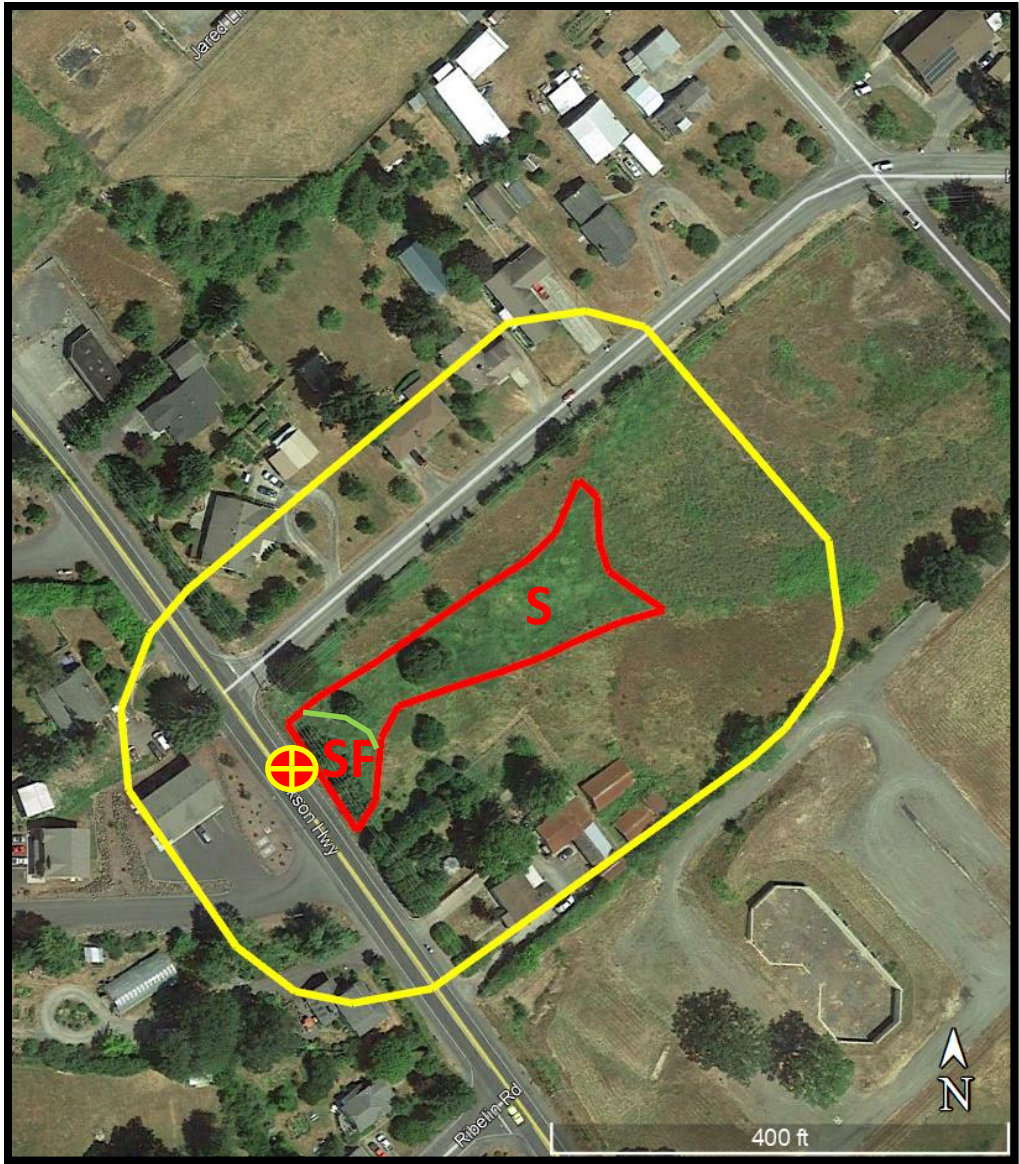
Wetland name or number

in Table 4 provide more than 30% of the cover under the canopy?

Yes = **Is a Category I bog**

No = **Is not a bog**

<p><b>SC 4.0. Forested Wetlands</b></p> <p>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? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <p><input type="checkbox"/> <b>Old-growth forests</b> (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.</p> <p><input type="checkbox"/> <b>Mature forests</b> (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).</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 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>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 5.1</b>    <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1.</b> Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to <b>SC 6.1</b>    <input checked="" type="checkbox"/> No = <b>Not an interdunal wetland for rating</b></p> <p><b>SC 6.1.</b> 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)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No - Go to <b>SC 6.2</b></p> <p><b>SC 6.2.</b> Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category II</b>    <input type="checkbox"/> No - Go to <b>SC 6.3</b></p> <p><b>SC 6.3.</b> 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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category IV</b></p>	
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	



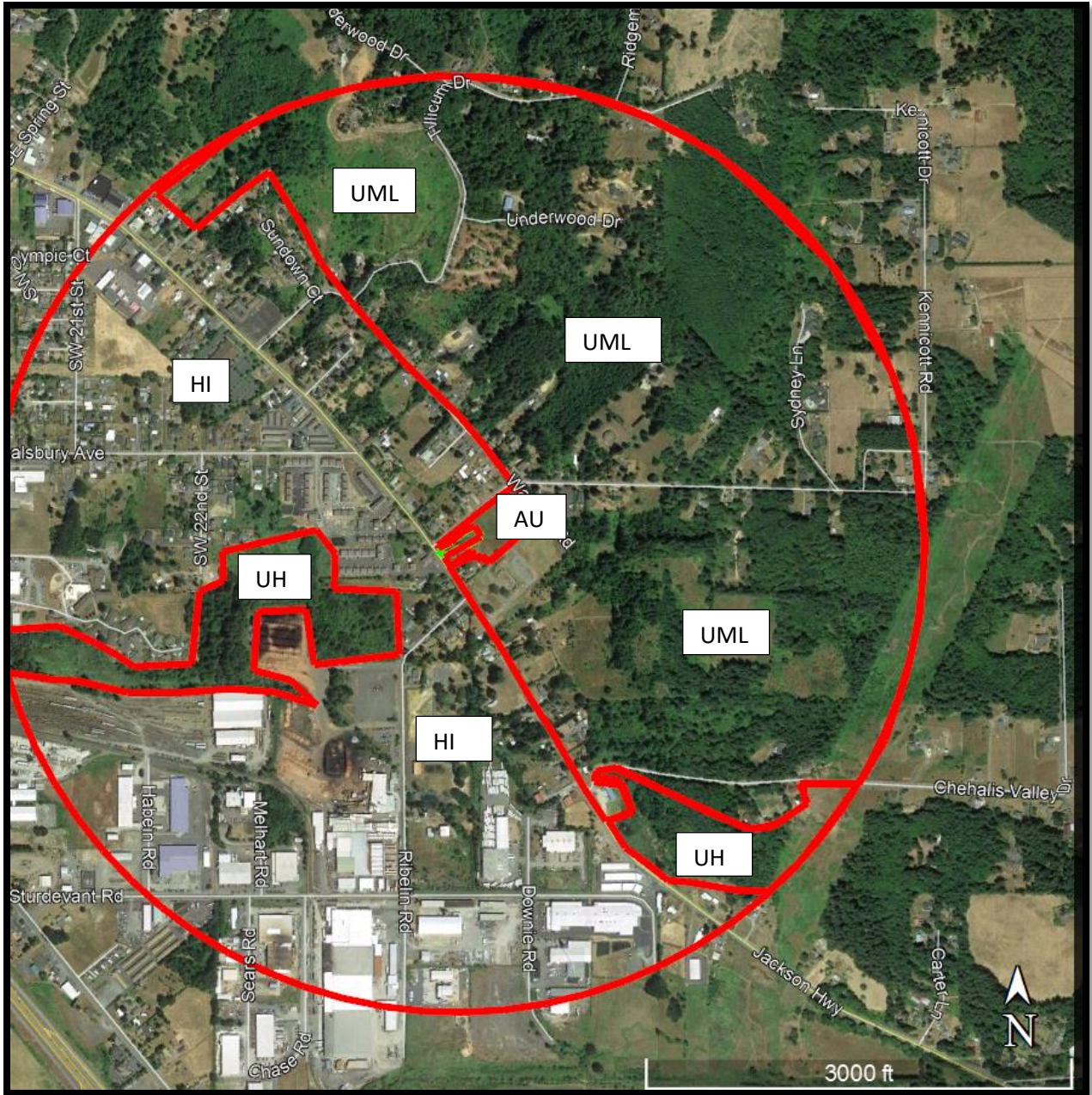
SF = Seasonally Flooded  
 S = Saturated

150-offset

Outlet 

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Figure A1  
 Hydroperiods  
 Jackson Villa 4



Accessible Habitat

- 1% Undisturbed (AU)
- 0% Moderate & Low Intensity Land Use/2 = (AML)

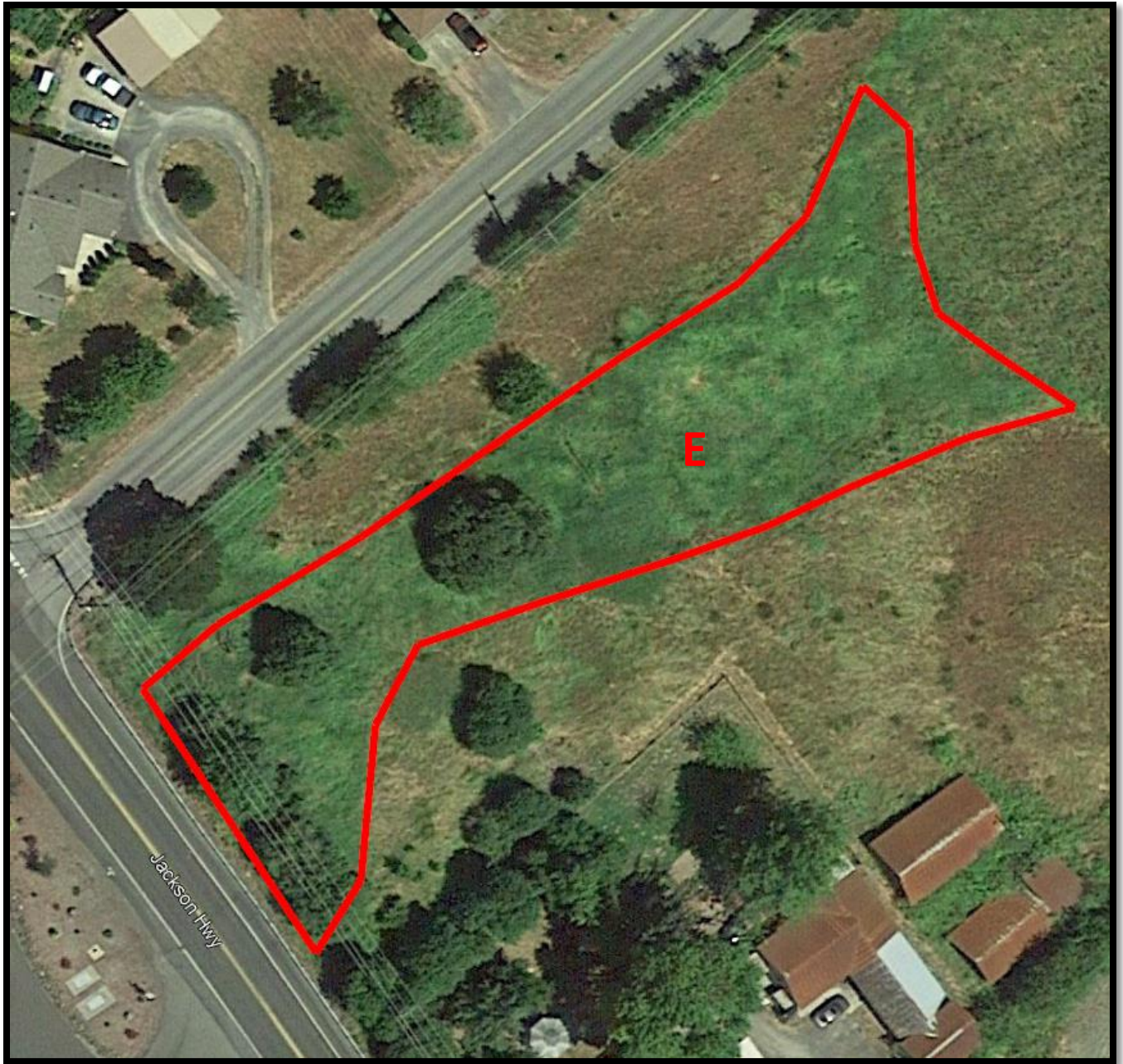
Undisturbed Habitat

- 6% Undisturbed (UH)
- 45% Moderate & Low Intensity Land Use/2 = (UML)

High Intensity = HI (48%)

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**Figure A2**  
**1km Polygon**  
**Jackson Villa 4**



**E = Emergent**

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**Figure A3  
Cowardin Plant Classes  
Jackson Villa 4**

# Water Quality Atlas



### Assessed Water/Sediment

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

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Figure A4  
303(d) Listed Waters  
Jackson Villa 4



Listing ID: 6670	
<b>Main Listing Information</b>	
<b>Listing ID:</b> 6670 <b>Waterbody Name:</b> DILLENBAUGH CREEK <b>Medium:</b> Water <b>Parameter:</b> Bacteria <b>WQI Project:</b> Upper Chehalis River Bacteria TMDL ⓘ <b>Designated Use:</b> None	<b>Current Category:</b> 4A <span style="background-color: #f4a460; border: 1px solid black; padding: 2px;">4A</span> <a href="#">View Category History</a>
<b>Assessment Unit</b>	
<b>Assessment Unit ID:</b> 17100103006316 <b>County:</b> Lewis <b>WRIA:</b> 23 - Upper Chehalis	
<b>Basis Statement</b>	
Crawford, 1987. 2 excursions beyond the criterion between 5/86 and 6/86 at RM 1.7.	
<b>Remarks</b>	
Part of the Upper Chehalis Fecal Coliform Bacteria TMDL approved by EPA 07/22/04. -kk	
<b>Data Sources</b>	
No Source Records	
<b>Map Link</b>	
<a href="#">Map Link</a>	

[Back To Results](#)

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**Figure A5**  
**TMDL**  
**Jackson Villa 4**

## **APPENDIX C –CLIMATOLOGICAL DATA**

# Daily Data | AgWeatherNet at Washington State University

Date	Date	Min°F	Avg°F	Max°F	Avg1.5m DP°F	Avg1.5m RH%	Avg1.5m LWu.	AvgDir	Avg Speedmph	2m MaxGustmph	2 in. °F	Min°F	Avg°F	AvgSoilVWC%	TotPrecin	TotalSolarRadMJ/m²	EToin	ETrin	Avg2m Atm.Pressi
2020/10/30	30	37.4	49.4	59.3	44.0	82.9	0.07	SW	3.9	16.0	51.4	52.5	53.1	41.9	0.16	6.51	0.04	0.05	30.14
2020/10/31	31	32.9	42.9	59.3	38.6	86.5	0.05	N	2.2	12.1	48.5	51.2	52.1	41.9	0.01	8.62	0.03	0.05	30.36
2020/11/01	1	32.2	43.4	64.8	39.8	88.9	0.06	SW	2.0	7.1	47.7	50.0	50.9	41.6	0.00	9.44	0.04	0.05	30.22
2020/11/02	2	31.0	44.8	67.2	39.8	86.1	0.06	S	2.6	9.6	47.7	49.6	50.6	41.4	0.00	9.87	0.05	0.07	30.10
2020/11/03	3	38.5	50.7	59.0	48.5	92.3	0.09	S	6.5	22.8	49.3	50.2	50.7	42.7	0.60	2.80	0.02	0.03	29.95
2020/11/04	4	58.5	60.7	64.0	57.7	89.9	0.02	S	7.6	20.0	55.1	51.4	53.0	43.1	0.33	2.64	0.04	0.05	30.07
2020/11/05	5	46.2	51.9	59.8	50.3	94.1	0.19	SW	2.8	11.0	54.5	54.4	54.9	44.1	0.78	1.10	0.01	0.02	30.05
2020/11/06	6	33.2	43.2	49.4	40.4	90.3	0.12	N	5.2	20.3	50.3	52.4	53.3	43.7	0.45	3.35	0.02	0.02	29.85
2020/11/07	7	30.3	35.3	42.2	34.2	96.0	0.10	W	2.4	12.1	46.1	49.8	50.6	42.3	0.00	3.22	0.02	0.02	29.79
2020/11/08	8	25.3	34.0	48.3	27.1	81.4	0.04	N	2.0	12.1	43.5	47.7	48.5	41.8	0.00	9.41	0.02	0.04	30.04
2020/11/09	9	25.0	34.5	41.3	30.4	87.0	0.01	S	4.1	15.0	41.0	45.7	46.4	41.5	0.13	3.49	0.02	0.03	30.20
2020/11/10	10	37.3	42.0	48.1	40.2	93.5	0.13	S	3.8	12.1	43.6	45.4	45.8	43.0	0.39	3.74	0.02	0.03	30.04
2020/11/11	11	34.2	37.9	42.2	36.8	95.9	0.11	SW	1.9	8.2	43.7	46.0	46.3	42.6	0.05	2.92	0.01	0.02	30.17
2020/11/12	12	35.0	41.2	46.3	37.3	86.6	0.06	S	6.8	25.3	43.6	45.8	46.1	42.0	0.01	3.16	0.03	0.04	29.95
2020/11/13	13	39.3	44.8	49.5	41.4	87.9	0.12	S	6.6	29.6	45.4	46.0	46.4	43.9	1.60	3.13	0.02	0.04	29.57