

## **Wetland and Stream Investigation and Delineation Memorandum**

**To:** City of Sumner  
**From:** Widener & Associates, (425) 332-3961  
**Date:** October 26, 2015, Updated May 6, 2020  
**Subject:** Stewart Road Bridge Replacement Project

### **Authorizing Agency / Reason for the Investigation**

On behalf of the City of Sumner, Widener & Associates performed a wetland and stream investigation and delineation within a 13.8 acre study area associated with the proposed Stewart Road Bridge Replacement Project in order to locate any wetlands, streams, or regulated buffers that could potentially be impacted by the proposed project.

### **Project Location**

The proposed project is located in the cities of Sumner and Pacific as well as unincorporated Pierce County, WA. The project will involve replacement of the existing functionally obsolete two-lane bridge that conveys Stewart Road (8<sup>th</sup> Street) over the White (Stuck) River (Figures 1 and 2). The project is located at approximately river mile 4.9 of the White River, 0.53 miles east of the interchange with SR-167 in Section 1 of Township 20N and Range 04E. *Refer to Figure 1 – Vicinity Map and Figure 2 – Study Area.*

### **Project Description**

The City of Sumner is proposing to replace the bridge carrying Stewart Road over the White River. The existing bridge is a two-lane 232-foot long concrete tee beam bridge consisting of three man spans with a deck width of 27.6 feet. This bridge was built in 1952 and is currently considered functionally obsolete. The proposed replacement bridge will accommodate four lanes of traffic, a 6.5-foot sidewalk on the south side, and a 10.5-foot sidewalk/multiuse path on the north side of the roadway. This proposed bridge will be 77.875 to 87.552 feet wide and 327 feet long. The project aims to create a crossing with a higher capacity in order to accommodate current and projected population growth. The approach road to the west will include left and right turn lanes as well as a thru-traffic lane. A companion project with the City of Pacific west of Butte Ave has been proposed as well. This project is to be completed before the Stewart Road Bridge Project and it will continue the four lanes of traffic west of the Stewart Road Bridge Project limits. The approach road to the east of the bridge will be widened to accommodate the 2 through-traffic lanes and center turn lane from a previous project on Stewart Road

### **Site Description**

The White River and one Category II palustrine forested wetland were identified and delineated within the study area (Figure 3). Both of these features are considered “Waters of the United States” and are thus regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act<sup>1</sup>.

### **Date of Visit**

Widener & Associates conducted this investigation and delineation on February 4<sup>th</sup> of 2015.

### **Methods**

---

<sup>1</sup> 33 CFR 328.3(a)

A routine determination with onsite inspection was used to determine if any wetlands were present within the project footprint.<sup>2</sup> Prior to the field investigation, wetland maps and hydrology data were reviewed. Site conditions (vegetation, hydrology, and soils) were recorded throughout the site. *Refer to Appendix A – Wetland Determination Data Forms.*

### **Vegetative Communities**

The study area is located within the *Tsuga heterophylla* major vegetation area (Franklin and Dyrness 1973).<sup>3</sup> Wetland A is characterized by a riparian plant community with an overstory of black cottonwood (*Populus balsamifera* - FAC), Pacific willow (*Salix lucida* - FACW), Scouler's willow (*Salix scouleriana* – FAC) and red alder (*Alnus rubra* - FAC), all of which are representative of hydrophytic vegetation. The shrub stratum is dominated by red-osier dogwood (*Cornus sericea* - FACW), Himalayan blackberry (*Rubus armeniacus* – FAC), Indian plum (*Oemleria cerasiformis* - FACU), Pacific willow (*Salix lucida* – FACW), and Scouler's willow (*Salix scouleriana* – FAC), all of which are representative of hydrophytic vegetation with the exception of Himalayan blackberry and Indian plum. The herbaceous stratum was sparse due to the delineation being conducted during the winter and due to regular flooding from the White River. The sparse herbaceous stratum included giant horsetail (*Equisetum telmateia* – FACW) and reed canarygrass (*Phalaris arundinacea* - FACW), both of which are representative of hydrophytic vegetation.

Vegetation in the narrow upland buffer between Wetland A and the gravel lot owned by Pierce County is dominated by black cottonwood and Himalayan blackberry. There is also a mound of fill between the southern end of the wetland that is dominated by Himalayan blackberry. There is a drainage ditch that was dug through this mound of fill that is dominated by reed canarygrass.

### **Soils**

According to the Pierce County Area Soil Survey, the project area is mapped as Pilchuck fine sand, Puyallup fine sandy loam, and Aquic Xerofluvents. Much of the proposed project area is characterized by existing gravel fill, including much of the wetland buffer that will be temporarily impacted by the proposed project. The hillslope adjacent to the delineated portion of Wetland A is gravelly sandy loam, while areas closer to the roadway have a higher percentage of gravel. This gravel was restrictive in several attempted test pits. Within Wetland A, soils were found to be primarily dark organic muck over a layer of gleyed sand starting at approximately 1 ft. deep. Soils in Wetland A test pits satisfied hydric soil indicators A2 (histic epipedon) and A4 (hydrogen sulfide).

### **Hydrology**

The growing season in Sumner, WA is 234 days in length, from March 22 to November 11 (using the 5 years in 10 criteria and 28°F).<sup>4</sup> Therefore, the area must be inundated or saturated to the surface for a minimum of 12 consecutive days in order to have wetland hydrology 5 percent of the growing season (29 days to have wetland hydrology 12.5 percent of the growing season). 3.83 inches of rain were recorded during the month prior to the site visit, with no precipitation recorded the day of the delineation. *Refer to Appendix B – Hydrologic Data.*

The primary source of hydrology to the wetland was determined to be seasonal flooding from the White River. The test pits were excavated to a depth of 20 inches where possible. The saturation

---

<sup>2</sup> Army Corps of Engineers. 1987. Wetland Delineation Manual. Part 4, section D, subsection 2.

<sup>3</sup> Franklin JF and Dyrness CT. 1973. Natural Vegetation of Oregon and Washington. Oregon State University Press, Corvallis, OR.

<sup>4</sup> Natural Resource Conservation Service. 2000. WETS Table Documentation. WETS Station 5224. National Water and Climate Center. Portland, Oregon. Accessed May 28, 2015.

point of Wetland A ranged from 4 to 10 inches below the surface. The water table was not intercepted in any test pits.

### **Findings/Conclusion**

The National Wetlands Inventory (NWI) map for the area was referenced for information on known wetlands within the study area. Wetland A corresponds to an area indicated as palustrine forested/shrub-scrub wetland. *Refer to Appendix C – NWI Map.*

Wetland A is within the city limits of the City of Pacific. As such, it has a standard regulated buffer width of 50 feet. Wetland A was rated as a Category II wetland according to the Washington State Wetland Rating System for Western Washington.<sup>5</sup> *Refer to Appendix D – Wetland Rating Forms.*

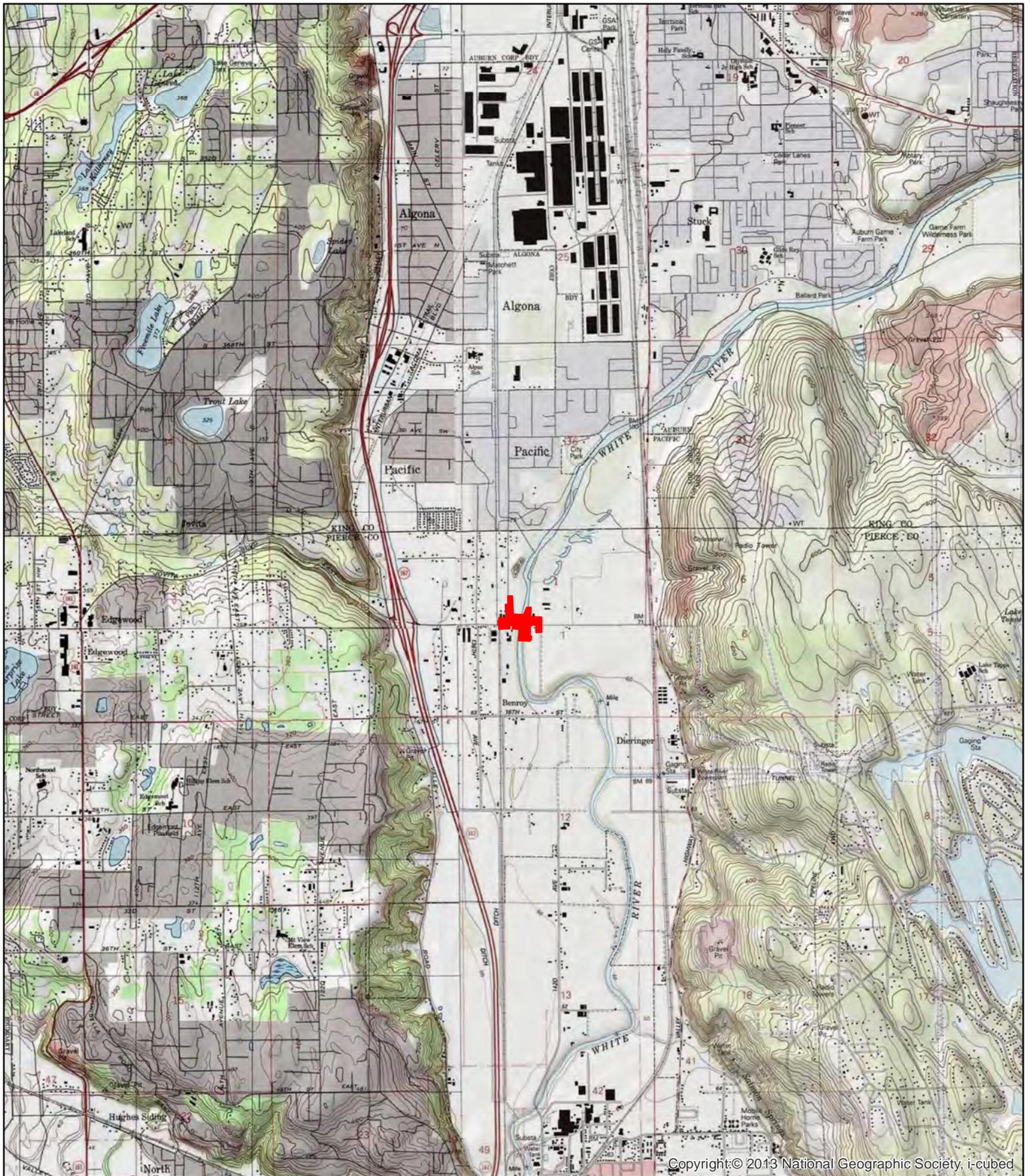
13 tree removals covering approximately 0.09 acres of Wetland A will be needed for overhead utility relocations. No fill or excavation will occur within Wetland A as part of the proposed project. Felled trees will be replaced at a minimum 3:1 replacement ratio with a minimum of three native tree species along the White River corridor.

The ordinary high-water mark (OHWM) of the White River was also delineated as there will be work below the OHWM and within the designated shoreline of the river for construction of the proposed project. The project is within the shoreline jurisdictions of both the City of Sumner as well as the City of Pacific. Both cities designate the area of shoreline within the project vicinity as Urban Conservancy which encompasses all undeveloped areas within 100 feet of the delineated OHWM of the river.<sup>6</sup>

---

<sup>5</sup> Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. Publication #14-06-029. Olympia, WA: Washington Department of Ecology.

This page intentionally left blank for printing purposes.

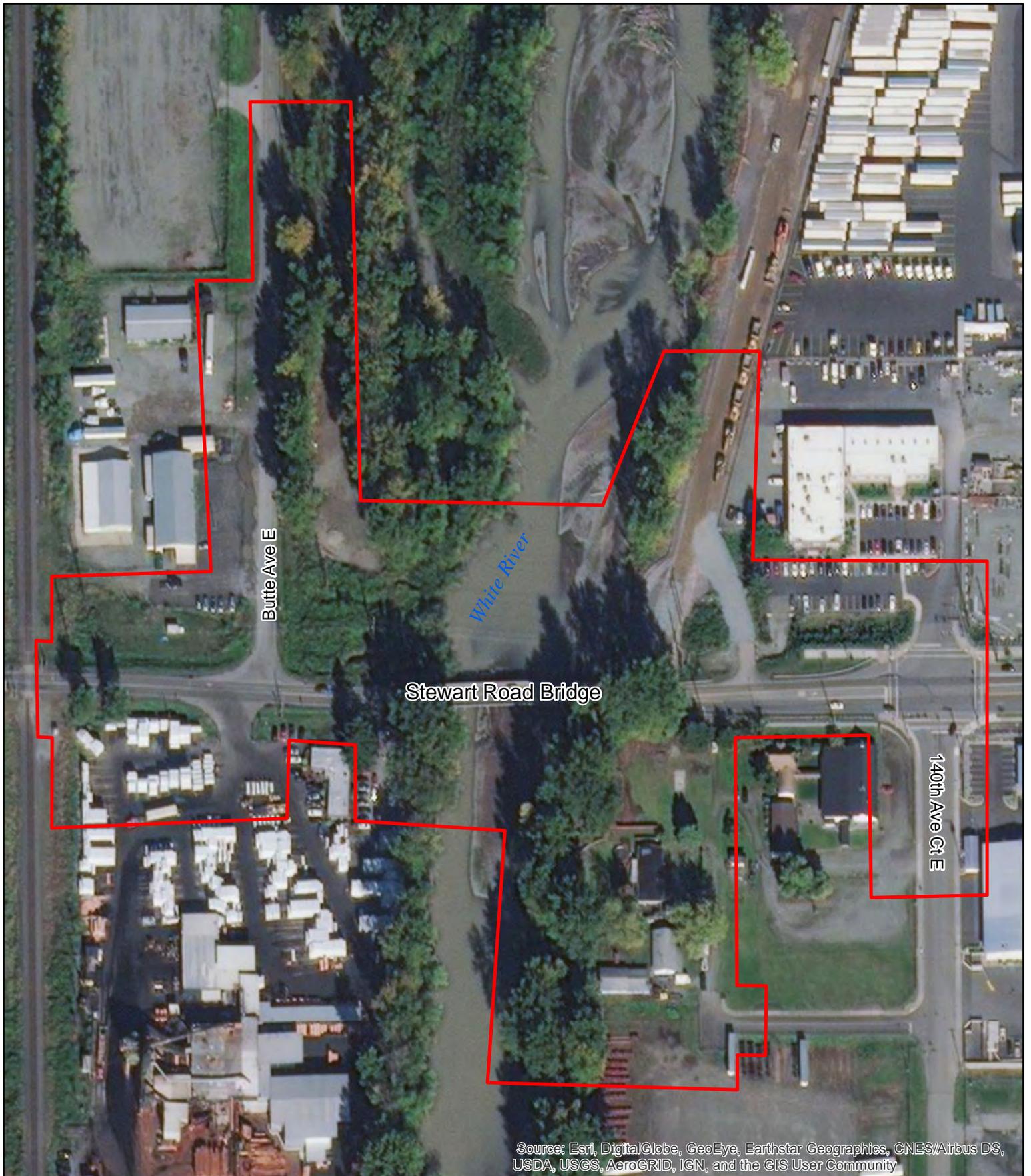


**Figure 1. Vicinity Map**  
Stewart Road Bridge Replacement  
City of Sumner

 Project Area



This page intentionally left blank for printing purposes.



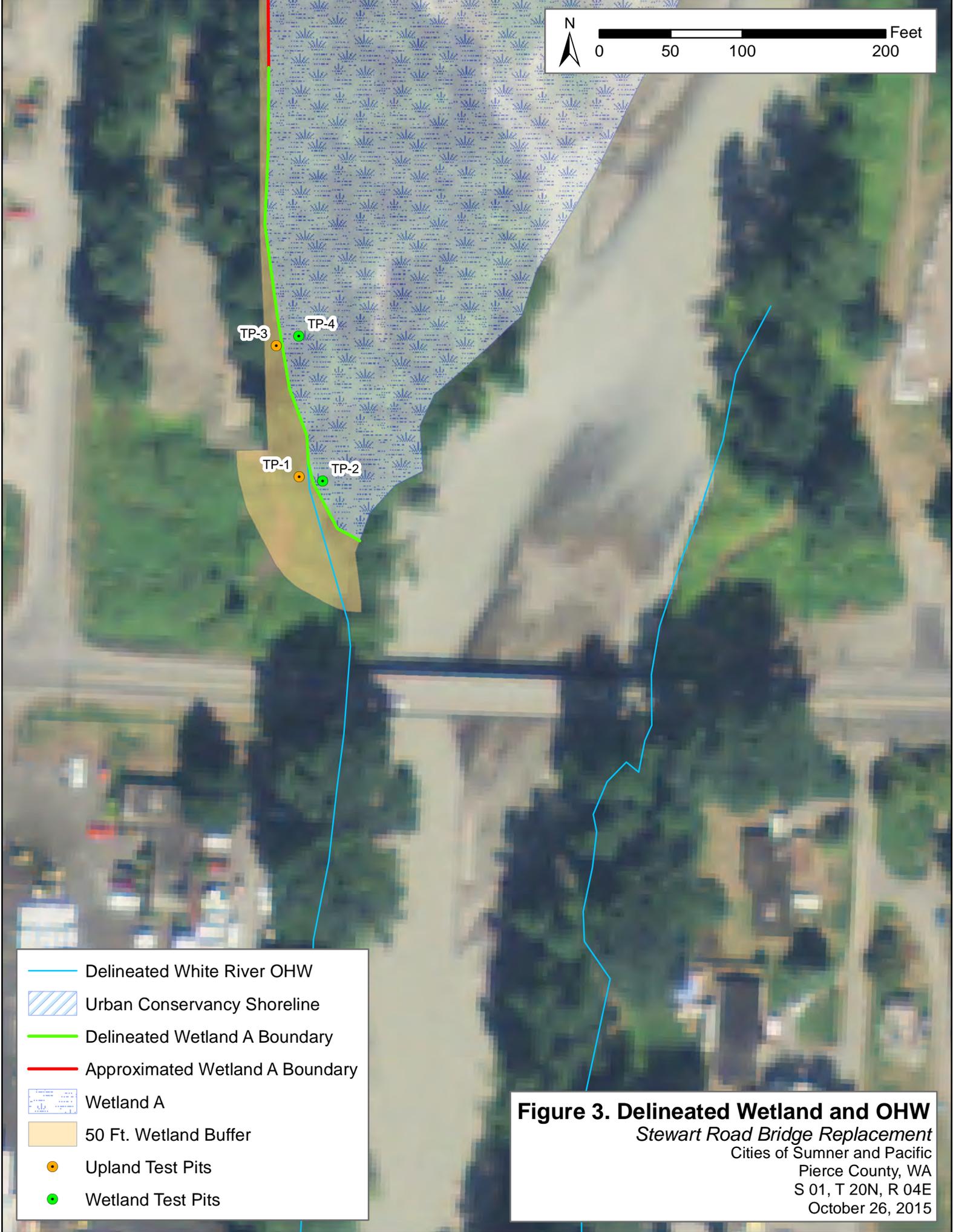
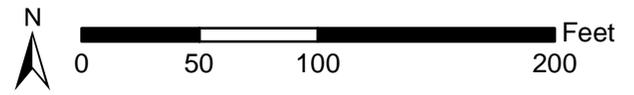
**Figure 2. Project Area**  
Stewart Road Bridge Replacement  
City of Sumner

 Project Area



0 100 200 400 Feet

This page intentionally left blank for printing purposes.



-  Delineated White River OHW
-  Urban Conservancy Shoreline
-  Delineated Wetland A Boundary
-  Approximated Wetland A Boundary
-  Wetland A
-  50 Ft. Wetland Buffer
-  Upland Test Pits
-  Wetland Test Pits

**Figure 3. Delineated Wetland and OHW**  
*Stewart Road Bridge Replacement*  
 Cities of Sumner and Pacific  
 Pierce County, WA  
 S 01, T 20N, R 04E  
 October 26, 2015

This page intentionally left blank for printing purposes.

## **Appendix A – Wetland Determination Data Forms**

This page intentionally left blank for printing purposes.





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

Project Site: Stewart Rd. Bridge Replacement City/County:       /Pierce Sampling Date: 2/4/15  
 Applicant/Owner: City of Sumner State: WA Sampling Point: TP-2  
 Investigator(s): Jason Cade, Widener & Associates Section, Township, Range: 1/20N/04E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): A Lat: 47.250501 N Long: -122.244411 W Datum: NAD83  
 Soil Map Unit Name: Aquic Xerofluvents, Level NWI classification: Palustrine Forested  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <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"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: <u>Vegetation is naturally problematic as there is no herbaceous stratum due to regular flooding from the White River</u>					

**VEGETATION – Use scientific names of plants**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b>																
1. <u>Populus balsamifera</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	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. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>10</u>	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><u>Total % Cover of:</u></td> <td style="width: 50%;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )																				
1. <u>Rubus armeniacus</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>																	
2. <u>Salix lucida</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>80</u>	= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5'</u> )																				
1. <u>none</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>0</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: _____)																				
1. <u>none</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>0</u>	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				
<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> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - 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.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: Vegetation is naturally problematic as there is no herbaceous stratum due to regular flooding from the White River  
Rubus armeniacus FAC status updated on May 5, 2020 as per latest National Wetland Plant List

**SOIL**

**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>		
0-20	10YR 3/2	95	10YR 4/4	5	C	M, PL	silt	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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 Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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, unless disturbed or problematic.

**Restrictive Layer (if present):**

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

**Hydric Soils Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- (except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 4

**Wetland Hydrology Present?** Yes  No

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

Remarks:



**SOIL**

**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>		
0-20	_____	_____	_____	_____	_____	_____	fine gravel	pea gravel fill
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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 Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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, unless disturbed or problematic.

**Restrictive Layer (if present):**

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

**Hydric Soils Present?**      Yes       No

Remarks: TP-3 located within bank of pea gravel fill for the adjacent Pierce County lot

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present?    Yes     No     Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes     No     Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes     No     Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**      Yes       No

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

Remarks:

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

Project Site: Stewart Rd. Bridge Replacement City/County:       /Pierce Sampling Date: 2/4/15  
 Applicant/Owner: City of Sumner State: WA Sampling Point: TP-4  
 Investigator(s): Jason Cade, Widener & Associates Section, Township, Range: 1/20N/04E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): A Lat: 47.250778 N Long: -122.244487 W Datum: NAD83  
 Soil Map Unit Name: Aquic Xerofluvents, Level NWI classification: Palustrine Forested  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <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"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Populus balsamifera</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = <u>1</u>	<u>30</u>	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 15')</u>				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
1. <u>Rubus armeniacus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																	
2. <u>Salix lucida</u>	<u>5</u>	<u>no</u>	<u>FACW</u>																	
3. <u>Cornus sericea</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = <u>1</u>	<u>30</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 5')</u>																				
1. <u>Phalaris arundinacea</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>																	
2. <u>Equisetum telmateia</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = <u>2</u>	<u>60</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: _____)</u>																				
1. <u>none</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>0</u>	= Total Cover																		
% Bare Ground in Herb Stratum <u>40</u>																				
<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> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - 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.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: Rubus armeniacus FAC status updated on May 5, 2020 as per latest National Wetland Plant List

**SOIL**

**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>		
0-8	10YR 2/1	100	_____	_____	_____	_____	sa si	fine sandy silt
8-20	10YR 3/1	100	_____	_____	_____	_____	silt	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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 Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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, unless disturbed or problematic.

**Restrictive Layer (if present):**

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

**Hydric Soils Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 10

**Wetland Hydrology Present?** Yes  No

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

Remarks:

## **Appendix B – Hydrologic Data**

This page intentionally left blank for printing purposes.

## USDA Field Office Climate Data

WETS Station : MC MILLIN RSVR, WA5224                      Creation Date: 02/16/2015  
 Latitude: 4708                      Longitude: 12215                      Elevation: 00579  
 State FIPS/County(FIPS): 53053                      County Name: Pierce  
 Start yr. - 1971                      End yr. - 2000

Month	Temperature (Degrees F.)			Precipitation (Inches)					
	avg daily max	avg daily min	avg	avg	30% chance will have		avg	snow fall	
					less than	more than	# of days w/.1 or more		total
January	44.5	31.7	38.1	5.54	3.67	6.65	13	1.8	
February	48.0	33.2	40.6	4.68	3.06	5.63	11	1.1	
March	52.3	35.4	43.9	4.38	3.49	5.02	13	0.9	
April	57.4	38.3	47.9	3.45	2.47	4.08	10	0.0	
May	63.6	43.5	53.6	2.64	1.76	3.16	8	0.0	
June	68.7	47.9	58.3	2.19	1.50	2.61	6	0.0	
July	74.5	51.2	62.9	1.16	0.45	1.40	3	0.0	
August	75.3	51.4	63.4	1.23	0.48	1.49	3	0.0	
September	69.5	46.9	58.2	2.00	0.70	2.42	6	0.0	
October	59.3	40.7	50.0	3.40	1.97	4.14	9	0.1	
November	49.4	36.0	42.7	6.53	4.53	7.77	14	1.0	
December	44.1	32.0	38.1	5.92	4.23	6.99	13	2.0	
Annual	-----	-----	-----	-----	38.98	46.65	--	-----	
Average	58.9	40.7	49.8	-----	-----	-----	--	-----	
Average	-----	-----	-----	43.12	-----	-----	109	6.6	

### GROWING SEASON DATES

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates		
	Growing Season Length		
50 percent *	2/ 8 to 12/ 3 297 days	3/22 to 11/11 234 days	4/20 to 10/17 179 days
70 percent *	1/30 to 12/12 315 days	3/13 to 11/20 251 days	4/14 to 10/23 192 days

-----  
 \* Percent chance of the growing season occurring between the Beginning  
 and Ending dates.

total 1941-2015 prcp

Station : WA5224, MC MILLIN RSVR

----- Unit = inches

yr	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	annl
41			1.79	2.07	3.87	1.45	0.00	2.45	2.88	2.67	4.04	7.19	28.41
42	2.68	2.29	1.86	1.57	2.92	3.04	1.36	0.21	0.03	2.63	8.64	4.06	31.29
43	1.85	2.18	3.98	3.88	1.76	2.15	0.27	0.67	1.08	4.24	2.08	2.65	26.79
44	3.86	3.19	1.29	2.40	1.88	0.85	0.10	0.29	2.28	1.38	3.75	1.35	22.62
45	4.59	4.91	3.80	3.67	4.14	0.14	0.37	0.76	3.91	2.98	5.43	5.24	39.94
46	5.68	5.30	4.41	1.50	0.66	5.12	2.30	0.09	2.97	3.62	5.87	7.05	44.57
47	5.04	2.98	3.09	3.01	0.29	3.91	1.24	0.26	0.86	8.37	3.77	4.39	37.21
48	4.30	5.15	3.67	3.74	3.80	2.22	2.65	1.87	3.78	2.89	6.10	6.38	46.55
49	0.89	6.51	3.10	2.18	1.61	0.87	0.50	0.73	1.61	3.95	7.20	6.18	35.33
50	7.18	5.82	7.08	3.17	1.16	1.67	0.79	1.22	1.73	7.09	7.67	7.72	52.30
51	5.81	8.48	3.78	0.44	1.74	0.10	0.05	0.68	2.42	5.24	4.30	3.77	36.81
52	3.09	3.32	3.04	2.73	1.61	1.01	0.42	0.29	0.11	1.03	1.24	4.18	22.07
53	12.97	3.11	2.95	2.91	3.26	2.41	0.32	1.47	1.36	4.16	6.94	7.11	48.97
54	8.59	4.13	2.43	3.45	1.89	3.24	1.32	2.41	2.27	2.75	5.24	4.42	42.14
55	2.28	3.23	3.92	4.69	1.59	1.40	2.50	0.15	2.16	7.02	8.16	10.37	47.47
56	7.58	2.69	5.75	0.61	1.10	3.17	0.52	1.08	1.70	5.94	2.81	6.08	39.03
57	2.32	5.32	6.29	1.86	2.14	2.44	1.00	1.94	1.85	3.38	3.35	5.99	37.88
58	6.90	5.50	1.51	4.39	1.70	1.69	0.02	0.42	1.88	3.74	9.39	6.66	43.80
59	7.55	2.69	3.20	3.20	2.35	3.16	0.53	0.73	4.75	3.94	7.88	5.14	45.12
60	5.13	4.44	4.02	3.95	4.76	1.33	0.00	4.34	1.11	4.13	11.49	3.11	47.81
61	6.05	9.49	3.86	3.04	3.01	1.08	0.51	0.54	0.47	3.49	4.00	5.30	40.84
62	2.38	2.38	4.07	3.13	3.10	0.98	0.33	2.72	2.44	3.28	8.97	5.27	39.05
63	1.76	5.19	4.05	4.32	1.61	1.65	1.84	2.03	0.79	4.82	7.61	4.43	40.10
64	10.23	1.80	3.25	2.08	1.64	3.52	1.55	1.30	1.00	2.43	7.91	7.68	44.39
65	6.69	4.00	0.59	4.51	1.76	0.44	1.32	2.83	0.56	3.45	4.52	6.10	36.77
66	5.22	2.48	5.25	2.62	1.61	3.20	1.79	0.26	2.29	3.39	5.36	7.05	40.52
67	9.51	2.91	4.71	2.97	0.84	2.31	0.10	0.00	1.08	7.10	2.85	2.89	37.27
68	5.10	6.17	4.77	1.34	2.34	3.93	0.60	5.21	2.02	5.14	5.54	6.77	48.93
69	6.81	2.27	2.35	3.93	2.76	1.94	0.35	0.46	4.96	2.30	3.09	6.15	37.37
70	8.91	2.92	2.25	3.89	1.81	0.41	0.50	0.24	2.18	3.19	4.39	7.80	38.49
71	7.34	3.39	6.21	2.75	2.06	3.13	1.06	0.43	4.48	3.15	5.53	6.00	45.53
72	8.23	7.99	6.58	4.61	1.04	2.81	1.51	1.39	4.32	0.86	3.47	8.18	50.99
73	3.65	2.23	2.63	1.77	2.30	3.35	0.07	0.27	2.52	4.16	8.51	8.24	39.70
74	7.08	4.74	5.54	4.52	3.18	2.14	2.14	0.11	0.34	1.75	7.82	7.38	46.74
75	8.34	6.06	3.36	1.78	1.92	1.17	0.51	4.65	0.01	7.01	5.59	9.18	49.58
76	5.75	4.64	3.26	3.07	2.38	1.35	1.42	4.29	1.67	1.35	1.50	2.74	33.42
77	1.35	1.60	4.45	1.32	4.07	1.65	0.18	3.82	3.97	2.91	5.68	7.32	38.32
78	5.16	2.72	2.71	4.09	2.65	1.19	1.63	2.09	5.56	0.48	6.21	3.04	37.53
79	2.62	6.68	2.32	3.05	1.66	0.67	1.88	2.05	3.91	4.22	2.22	8.81	40.09
80	5.66	5.90	3.73	4.28	1.40	2.57	0.59	0.98	2.07	0.96	8.12	8.85	45.11
81	2.63	6.54	2.84	3.91	2.24	3.98	0.97	0.46	3.11	5.22	4.59	7.11	43.60
82	5.91	8.77	3.53	3.63	0.81	1.49	1.81	0.96	2.16	4.37	4.55	6.36	44.35
83	7.50	4.40	5.61	1.44	1.94	3.33	3.94	2.48	2.46	2.12	8.83	4.79	48.84
84	5.68	3.50	5.01	3.06	4.77	4.77	0.01	0.41	1.20	3.15	8.32	5.42	45.30
85	0.47	2.23	3.20	2.06	1.67	2.35	0.03	1.22	1.78	6.85	4.37	1.60	27.83

86	8.50	4.72	3.40	2.32	3.40	1.03	2.03	0.32	3.08	2.89	9.85	3.18	44.72
87	4.62	3.95	5.55	3.62	3.33	0.54	0.54	0.44	0.71	0.35	3.16	6.86	33.67
88	4.08	1.49	5.98	4.68	4.35	2.40	1.18	0.60	2.09	2.98	9.17	3.51	42.51
89	3.74	3.30	6.95	3.57	2.81	1.40	0.69	0.82	0.29	2.15	7.52	4.51	37.75
90	10.65	6.01	3.42	3.04	2.90	4.04	0.70	1.52	0.04	5.88	10.74	4.26	53.20
91	3.61	5.75	4.86	6.66	2.71	1.55	0.28	1.38	0.59	1.87	7.17	3.57	40.00
92	6.09	3.52	2.10	4.68	0.22	1.94	1.03	0.92	1.98	2.22	6.91	3.63	35.24
93	3.57	0.33	4.77	6.60	4.00	3.23	2.20	0.31	0.00	1.74	1.63	4.75	33.13
94	3.35	M4.59	4.09	2.84	1.86	2.32	1.19	0.42	2.47	5.36	6.04	8.80	43.33
95	4.21	5.35	4.92	2.88	1.56	1.73	1.76		1.72	4.71	9.51	6.17	44.52
96	8.16	8.73	2.57	7.23	4.57	1.34	1.08	0.30	2.34	6.07	8.26	12.23	62.88
97	7.82	3.83	7.06	3.80	2.91	2.82	1.96	1.13	2.51	M6.13	4.27	3.10	47.34
98	M7.60	4.05	5.01	1.53	3.08	M1.18	0.29	0.05	0.46	3.98	11.16	9.69	48.08
99	8.63	6.53	5.06	1.28	3.26	2.28	0.97	M0.88	0.44	3.10	11.33	5.14	48.90
0	4.33	6.30	4.67	3.45	4.14	1.89	1.17	0.37	1.56	4.11	3.97	3.02	38.98
1	2.82	3.10	3.62	4.38	2.43	4.01	M0.55	1.66	0.78	M2.75	9.59	6.58	42.27
2	6.02	4.88	4.82	4.41	2.45	2.25	0.82	0.30	0.50	1.19	M2.32	M6.11	36.07
3	7.53	1.92	6.18	3.38	0.69	0.41	0.32	0.53	1.08	7.15	5.67	6.62	41.48
4	7.03	2.55	1.93	M0.99	4.24	1.01	0.06	3.73	3.02	4.01	M3.25	4.36	36.18
5	M4.36	0.69	4.68	5.59	M4.32	4.29	1.42	0.15	1.83	M3.73	6.07	6.78	43.91
6	12.01	3.51	M2.54	M4.05	2.21	2.21	0.41	M0.04	M0.77	M1.86	14.30	8.95	52.86
7	6.66	4.63	M6.54	2.06	1.11	2.89	1.61	1.08	2.14	M4.85	2.81	7.58	43.96
8	4.44	3.81	5.10	1.85	1.37	1.74	1.18	2.06	0.56	2.69	8.42	5.56	38.78
9	M7.40	1.52	5.42	3.48	M3.96	1.78	0.02	2.15	2.81	5.89	9.31	3.22	46.96
10	8.56	3.16	M2.85	3.48	5.06	4.38	0.33	0.31	3.95	3.96	7.12	7.10	50.26
11	6.19	3.52	7.09	6.13	4.97	3.29	0.76	0.25	1.37	4.12	M6.26	3.20	47.15
12	7.33	4.06	6.81	4.71	4.28	3.32	1.80	0.00	0.11	6.60	6.48	M7.76	53.26
13		M3.87	M4.03	M5.06	M4.98	M2.31	M0.00	M0.00	M4.85	M4.17	M4.11	M1.74	35.12
14	M4.52	M6.75	M9.81	M4.54	M3.46	M1.36	M1.27	M1.26	M3.07	M6.49	M5.51	M6.89	54.93
15	M0.68	M1.07											1.75

-----  
Product generated by ACIS - NOAA Regional Climate Centers.

This page intentionally left blank for printing purposes.

## **Appendix C – NWI Map**

This page intentionally left blank for printing purposes.



# U.S. Fish and Wildlife Service National Wetlands Inventory

## Stewart Road Bridge

Feb 4, 2015



### Wetlands

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

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

**User Remarks:**  
National Wetland Inventory

This page intentionally left blank for printing purposes.

## **Appendix D – Wetland Rating Forms**

This page intentionally left blank for printing purposes.

Wetland name or number A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 2/4/15  
 Rated by Jason Cade, Widener and Associates Trained by Ecology?  Yes  No Date of training \_\_\_\_\_

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

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

Source of base aerial photo/map 2013 National Agriculture Imagery Program

**OVERALL WETLAND CATEGORY II** (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  
 Category III – Total score = 16 - 19  
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
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	<b>TOTAL</b>
Score Based on Ratings	7	7	7	21

**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	

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	
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	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	3
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	4
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	5
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	6
Map of the contributing basin	R 2.2, R 2.3, R 5.2	7
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

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

### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

YES - the wetland class is **Tidal Fringe** - go to 1.1

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

NO - **Saltwater Tidal Fringe (Estuarine)**

YES - **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

YES - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

- The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,  
 The water leaves the wetland **without being impounded**.

NO - go to 5

YES - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number A

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

<b>RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover $> \frac{3}{4}$ area of wetland	points = 8	2
Depressions cover $> \frac{1}{2}$ area of wetland	points = 4	
<u>Depressions present but cover <math>&lt; \frac{1}{2}</math> area of wetland</u>	points = <del>2</del>	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with $> 90\%$ cover at person height, not Cowardin classes)		
<u>Trees or shrubs <math>&gt; \frac{2}{3}</math> area of the wetland</u>	points = <del>8</del>	8
<u>Trees or shrubs <math>&gt; \frac{1}{3}</math> area of the wetland</u>	points = 6	
Herbaceous plants ( $> 6$ in high) $> \frac{2}{3}$ area of the wetland	points = 6	
Herbaceous plants ( $> 6$ in high) $> \frac{1}{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< \frac{1}{3}$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	10

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

Record the rating on the first page

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

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

Record the rating on the first page

<b>R 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	<del>Yes = 1</del> No = 0	1
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	<del>Yes = 1</del> No = 0	1
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which the unit is found)	<del>Yes = 2</del> No = 0	2
Total for R 3	Add the points in the boxes above	4

**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

**RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**  
**Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion**

<b>R 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>R 4.1. Characteristics of the overbank storage the wetland provides:</b> <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = <u>1</u>	<b>1</b>	
<b>R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt;90% cover at person height. These are NOT Cowardin classes).</i></b> Forest or shrub for > <sup>1</sup> / <sub>3</sub> area OR emergent plants > <sup>2</sup> / <sub>3</sub> area points = <u>7</u> Forest or shrub for > <sup>1</sup> / <sub>10</sub> area OR emergent plants > <sup>1</sup> / <sub>3</sub> area points = 4 Plants do not meet above criteria points = 0	<b>7</b>	
<b>Total for R 4</b>		Add the points in the boxes above <b>8</b>

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

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

R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = <u>0</u> No = 1	<b>0</b>
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = <u>1</u> No = 0	<b>1</b>
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = <u>0</u> No = 1	<b>0</b>
<b>Total for R 5</b>		Add the points in the boxes above <b>1</b>

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

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

<b>R 6.1. Distance to the nearest areas downstream that have flooding problems?</b> <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = <u>2</u> Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>2</b>	
<b>R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b> Yes = 2 <u>No = 0</u>	<b>0</b>	
<b>Total for R 6</b>		Add the points in the boxes above <b>2</b>

**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 or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = ①         |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |
| <input checked="" type="checkbox"/> 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 |                                  |

1

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*).

- |   |                                     |
|---|-------------------------------------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                                     | 3 types present: points = ②         |
| <input type="checkbox"/> Occasionally flooded or inundated  | 2 types present: points = 1         |
| <input type="checkbox"/> Saturated only   | 1 type present: points = 0          |
| <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland |                                     |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland           |                                     |
| <input type="checkbox"/> Lake Fringe wetland  | 2 points                            |
| <input type="checkbox"/> Freshwater tidal wetland   | 2 points                            |

2

H 1.3. Richness of plant species

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

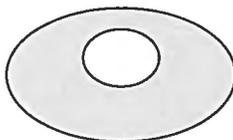
1

H 1.4. Interspersion of habitats

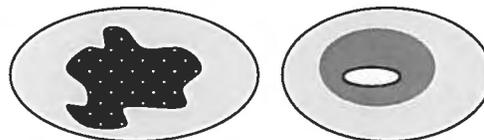
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

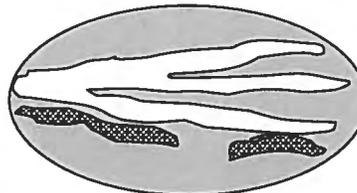
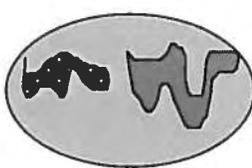


Low = 1 point



Moderate = 2 points

All three diagrams in this row are HIGH = ③ points



2

~~1~~

Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><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)</p> <p><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>)</p> <p><input checked="" type="checkbox"/> At least 1/4 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>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		3
Total for H 1	Add the points in the boxes above	9

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <math>\frac{0.16}{16} + [(\% \text{ moderate and low intensity land uses})/2]</math> <u>0</u> = <u>16</u> %</p> <p>If total accessible habitat is: <u>16</u></p> <p>&gt; 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = <u>1</u></p> <p>&lt; 10% of 1 km Polygon points = 0</p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>17</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>17</u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = <u>2</u></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches points = 1</p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon points = 0</p>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use points = <u>(-2)</u></p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>		-2
Total for H 2	Add the points in the boxes above	1

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>		2
<p><b>Rating of Value</b> If score is: <input checked="" type="checkbox"/> <u>2 = H</u> <input type="checkbox"/> <u>1 = M</u> <input type="checkbox"/> <u>0 = L</u></p>		Record the rating on the first page

Wetland name or number A

## WDFW Priority Habitats

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

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

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

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

Wetland name or number A

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p>	
<p><b>SC 1.0. Estuarine wetlands</b>            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 <b>SC 1.1</b>    <input checked="" type="radio"/> <b>No</b> – Not an estuarine wetland</p>	
<p><b>SC 1.1.</b> 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 = <b>Category I</b>    <input checked="" type="radio"/> <b>No</b> – Go to <b>SC 1.2</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 1.2.</b> 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 page 25)            — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.            — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.            Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b>  <b>Cat. II</b></p>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>  <b>SC 2.1.</b> Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?            Yes – Go to <b>SC 2.2</b>    <input checked="" type="radio"/> <b>No</b> – Go to <b>SC 2.3</b>  <b>SC 2.2.</b> Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?            Yes = <b>Category I</b>    No = <b>Not a WHCV</b>  <b>SC 2.3.</b> 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>            Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <input checked="" type="radio"/> <b>No</b> = <b>Not a WHCV</b>  <b>SC 2.4.</b> Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?            Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Bogs</b>            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>  <b>SC 3.1.</b> 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 <b>SC 3.3</b>    <input checked="" type="radio"/> <b>No</b> – Go to <b>SC 3.2</b>  <b>SC 3.2.</b> 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 <b>SC 3.3</b>    <input checked="" type="radio"/> <b>No</b> = <b>Is not a bog</b>  <b>SC 3.3.</b> 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 = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>  <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.  <b>SC 3.4.</b> 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 in Table 4 provide more than 30% of the cover under the canopy?            Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<p><b>Cat. I</b></p>

Wetland name or number A

<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? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <li>— <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.</li> <li>— <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).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <input checked="" type="radio"/> <b>No</b> = Not a forested wetland for this section</p>	<p>Cat. I</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> <ul style="list-style-type: none"> <li>— 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</li> <li>— 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>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <input checked="" type="radio"/> <b>No</b> = Not a wetland in a coastal lagoon</p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— 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).</li> <li>— 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.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p>Cat. I</p> <p>Cat. II</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)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <input checked="" type="radio"/> <b>No</b> = not an interdunal wetland for rating</p> <p><b>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)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>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?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p>Cat I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</p>
<p><b>Category of wetland based on Special Characteristics</b>          If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Wetland name or number \_\_\_\_\_

*This page left blank intentionally*