# CRITICAL AREAS REPORT

# SR 9/SR 204 Interchange Improvements – Stage III

**City of Lake Stevens**

**Snohomish County, WA**

XL-4989

WIN: A00910K

**Prepared by**

**WSDOT Northwest Region**

**November 2021**

Washington State Department of Transportation

# CRITICAL AREAS REPORT

# SR 9/SR 204 Interchange Improvements – Stage III

**November 2021**


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# Executive Summary

WSDOT proposes to improve the level of service (LOS) in the vicinity of the existing State Route (SR) 9 and SR 204 intersections. The limits of the third stage of this project (Stage III project) occurs along SR 9 from mile post (MP) 15.48 to 16.05 and SR 204 from MP 2.16 to 2.35 and lies entirely within the city limits of Lake Stevens, Snohomish County. Construction has been scheduled from April 2022 to December 2022.

The Stage III project will provide the following transportation features:

1. Construct a two-lane roundabout at the intersection of SR 9 and SR 204
2. Construct a two-lane roundabout at the intersection of SR 9 and Vernon Rd
3. Construct two mini roundabouts, one at the at the intersection of 91st Ave NE and Vernon Rd and one at the intersection of N. Davies Rd and Vernon Rd
4. Roadway widening, curb and gutter and sidewalk work extending beyond the existing pavement
5. Stormwater treatment and conveyance facilities, including a new graded pond and new walled detention pond
6. New sidewalks along SR 9

Additional work includes landscaping, traffic control, and construction of water pollution and erosion control Best Management Practices (BMP).

A traffic management plan will be developed, including roadway closures and detours. Night work will be employed to minimize impacts to the travelling public.

Environmental studies, completed in 2018 by Confluence Environmental Company (Confluence), includes an evaluation of the Stage III project vicinity for the potential presence of critical areas and sensitive plants, fish, and wildlife. The 2018 study identified two wetlands (W4 and W5) in the Stage III project vicinity. No streams, sensitive plants, fish, or wildlife species were documented. In 2021 WSDOT biologists and Otak Consultants delineated four additional regulated depressional wetlands (W3, W3a, W4A, and W8) within the Stage III project footprint. For W4, WSDOT biologists revised the previously delineated boundaries to include a drainage ditch that is hydrologically connected, W4A and W4 were combined and referred to as W4. These wetlands support palustrine forested, palustrine shrub scrub, and palustrine emergent plant communities; in addition to providing moderate hydrologic/water quality functions and low habitat functions. Each of the wetlands are either Category IV or Category III.

Due to surrounding development, vegetated buffer areas around the wetland are limited to mowed grasses or otherwise landscaped areas adjacent to SR 9 in WSDOT/City of Lake Stevens right-of-way (ROW) and fragmented landscape islands surrounded by pavement.

Temporary disturbance will be compensated by on-site restoration, where practicable.

The project will incur unavoidable, permanent impacts to wetlands: W3,W3A, W4, W8 and the W4 associated wetland buffer. Permanent impacts will be mitigated via purchase of available credits from an authorized wetland mitigation bank (WMB), (Snohomish Basin Mitigation Banking Service), this is detailed in the Bank Use Plan **(Appendix 3)**.

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# Acronyms and Abbreviations

| | |
|---|---|
| BMP | Best Management Practice(s) |
| Confluence | Confluence Environmental Company |
| Corps | U.S. Army Corps of Engineers |
| DNR | Washington State Department of Natural Resources |
| Ecology | Washington State Department of Ecology |
| LOS | Level of Service |
| MP | Mile Post |
| Otak | Otak Consulting Company |
| PEM | palustrine emergent |
| PFO | palustrine forested |
| ROW | right-of-way |
| SR | State Route |
| USFWS | U.S. Fish and Wildlife Service |
| WDFW | Washington State Department of Fish and Wildlife |
| WMB | Wetland Mitigation Bank |
| WSDOT | Washington State Department of Transportation |
| WRIA | Water Resource Inventory Area |

# Chapter 1. Project Description

WSDOT proposes to improve the level of service (LOS) in the vicinity of the existing State Route (SR) 9 and SR 204 intersections. The limits of the third Stage of this project (project) occurs along SR 9 from mile post (MP) 15.48 to 16.05 and SR 204 from MP 2.16 to 2.35, and lies entirely within the city limits of Lake Stevens, Snohomish County (**Figure 1**). Construction is scheduled from February 2022 to December 2022.

The project will provide the following transportation features:

- Construct a two-lane roundabout at the intersection of SR 9 and SR 204
- Construct a two-lane roundabout at the intersection of SR 9 and Vernon Rd
- Construct two mini roundabouts, one at the at the intersection of 91st Ave NE and Vernon Rd and one at the intersection of N. Davies Rd and Vernon Rd
- Roadway widening, curb and gutter and sidewalk work extending beyond the existing pavement
- Stormwater treatment and conveyance facilities, including a new graded pond and new walled detention pond
- New sidewalk along SR 9

Additional work includes drainage, landscaping, pavement marking, signing, traffic control, public transit stops, pedestrian safety improvements, additional sidewalks, and construction of water pollution and erosion control Best Management Practices (BMP).

A traffic management plan will be developed, including roadway closures and detours. Night work will be employed to minimize impacts to the travelling public.

The project footprint is located within Water Resource Inventory (WRIA) 7 (Snohomish), in the Little Pilchuck River (171100100102) and the Snohomish River-Frontal Possession Sound (171100110203) 6th unit Hydrologic Unit Codes. The project is within Section 13 of Township 29 N Range 5 East of the Willamette Meridian.

Land use in the project vicinity is characterized as retail and high-density residential (more than 1 unit per acre) with paved parking lots and frontage roads surrounding the project on all sides. Other than the wetlands delineated, vegetated areas are limited to narrow strips within the ROW and fragmented landscape islands surrounded by pavement.

**SR 9/SR 204 Intersection Improvements Project Stage III**

Vicinity Map

Date: 11/9/2021

**Legend**

SR 204 MP 2.16 to 2.35 — NHD Rivers & Streams

N

0 140 280 560 Feet

Washington State Department of Transportation

Document Path: J:_Projects\Design\009\A00910K SR 9 SR 204 Interchange (McGovern)-XL4989\Stage 3\5. GIS\mxd\VicMapStg3.mxd

# Chapter 2. Environmental Studies

Environmental studies for this project were authored by several sources. Confluence Environmental Company (Confluence) prepared an evaluation of the Stage III project vicinity for the presence of wetlands and streams in 2018. Results of this study are included in a draft wetland assessment report, dated April 26, 2018 (Confluence 2018) (**Appendix 1**). Other referenced studies were generated by Otak Consulting (Otak) and WSDOT, which are listed below:

- SR 9/SR 204 Intersection Improvements (Stage 3) - Addendum to Wetland and Streams Assessment Report" (WSAR), dated August 31, 2021 (**Appendix 2**)
- Wetland Mitigation Bank Use Plan (BUP), dated October 27, 2021 (**Appendix 3**)
- Stage III Joint Aquatic Resource Permit Application (JARPA) Drawings (**Appendix 4**)

## 2.1 Methods

Critical Areas, as defined in Lake Stevens Municipal Code 14.88, were identified via on-site review as well as the following resources that LSMC 14.88.280 recommends.

a) Washington Department of Fish and Wildlife Priority Habitat and Species maps.
b) Washington State Department of Natural Resources official water type reference maps, as amended.
c) Anadromous and resident salmonid distribution maps contained in the Habitat Limiting Factors reports published by the Washington Conservation Commission.
d) Washington State Department of Natural Resources State Natural Area Preserves and Natural Resource Conservation Area maps.
e) Washington State Department of Natural Resources Natural Heritage Program mapping data.
f) Lake Stevens and/or Snohomish County maps. (Ord. 984 Sec. 3 (Exh. C), 2019; Ord. 773, Sec. 2, 2008; Ord. 741, Sec. 2, 2007)

In addition to the above resources, available WSDOT GIS Workbench data layers were used to identify critical areas in the study area.

Wetlands were originally delineated by Confluence during December of 2017. Additional delineation was completed by WSDOT in April/May 2021 with an Otak produced addendum to the wetland report in August 2021. All delineations were in accordance with methods described in the U.S. Army Corps of Engineers (Corps) Wetland Delineation Manual (Corps 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010). All wetlands were rated in reference to the 2014 Wetland Rating System (Hruby 2014), and in compliance with Lake Stevens Municipal Code (LSMC 2021) 14.88.805(b) and 14.88.830(b).

The Wetland buffers were qualitatively assessed in reference to the following:

- dominant land use (e.g., agriculture, residential, commercial, industrial);
- dominant buffer vegetation type (tree, shrub, herb, vine, un-vegetated); and
- estimated percent cover of invasive plants by species.

# Chapter 3. Results

## 3.1 Wetlands

In December 2017, two wetlands (W4 and W5) were identified and delineated by Confluence within the Stage III project area.

In April/May 2021, WSDOT delineated six additional wetlands in the project area, mainly occurring within roadside ditches. These wetlands are W2, W3, W3A, W4A (later combined with W4 and identified as W4), W7 and W8.

Jurisdictional Assessment

Wetlands W2 and W7 were delineated in April/May 2021 are both PEM depressional wetlands in constructed roadside ditches, supported by surface runoff and located on road fill. These wetlands were determined to be artificially constructed features from nonwetland areas and per WAC 173-22-030 and LSMC 14.08.010 are not regulated by federal, state or local agencies. Wetlands W2 and W7 are not discussed further in this report. Please see the Addendum to the Wetland Report **(Appendix 2)** for more detailed information on the jurisdictional assessment for wetlands identified within the project area.

Regulated wetlands

In addition to W4 and W5 which were delineated by Confluence in December 2017, a total of four additional regulated wetlands identified as W3, W3A, W4A, and W8 were delineated in the Stage III project area by WSDOT in April/May 2021. W4 and W4A were later combined due to shared hydrology and called W4 throughout this document. Wetlands W3, W3A, W4 and W8 are all regulated by federal, state and local agencies.

Wetlands W4 and W5 were initially listed as having a 50-foot buffer in the 2018 WSAR generated by Confluence; though this was updated to 80 feet in the 2021 addendum **(Appendix 2)** and in the Bank Use Plan developed by Otak **(Appendix 3)**. Detailed wetland information is included in **Tables 1-5**.

**FIGURE 2**
**REGULATED WETLANDS**
**SR9/204 INTERSECTION IMPROVEMENTS**
**STAGE III**

## Table 1: Wetland W3 Summary

| WETLAND W3 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: East side of 92nd Avenue NE, south of SR 204 intersection** | | |
| June 2021 | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | IV |
| | **Lake Stevens Buffer Width** | 50 feet |
| | **Wetland Size** | 0.05-acre |
| | **Cowardin Classification** | PEM |
| | **2014 Wetland Rating Scores** | Water Quality: 6<br>Hydrologic: 6<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W3-SP1, W3-SP4, & W3-SP5 |
| | **Upland Data Sheet(s)** | None (road) |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Reed canarygrass (*Phalaris arundinacea*) | |
| **Soils** | Loam soils with roadside fill at approximately 7-8" below ground surface. Areas of depleted soils below approximately 8", some with redoximorphic concentrations. Standing water within the wetland restricted suitable shovel probing. | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W3 rated as a Category IV because it provides low water quality functions (6), moderate hydrologic functions (6), and low habitat functions (3), resulting in a total score of 15 points on the wetland rating form. Please see the wetland addendum for ratings (Appendix 2). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W3 has low opportunity to improve water quality because it does not have dense, persistent, ungrazed vegetation and it has an outlet (ditch); however, it does receive stormwater runoff from the adjacent roadways and parking lots. | |
| **Hydrologic** | Wetland W3 has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and is not capable of retaining high volumes of water, it additionally has an outlet (ditch). | |
| **Habitat** | Wetland W3 has low habitat opportunity because the area has low habitat complexity and is surrounded by high-intensity land use. | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by mowed species of grasses. | |

## Table 2: Wetland W3A Summary

| WETLAND W3A – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: East side of 92nd Avenue NE, south of SR 204 intersection** | | |
| June 2021 | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | IV |
| | **Lake Stevens Buffer Width** | 50 feet |
| | **Wetland Size** | 0.02-acre |
| | **Cowardin Classification** | PEM |
| | **2014 Wetland Rating Scores** | Water Quality: 6<br>Hydrologic: 6<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W3A-SP1 |
| | **Upland Data Sheet(s)** | None (road) |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Reed canarygrass (*Phalaris arundinacea*) and common velvet grass (*Holcus lanatus*) | |
| **Soils** | Dark black loam soils met "Loamy Mucky Mineral" (F1) hydric soil indicator. | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W3A rated as a Category IV because it provides low water quality functions (6), moderate hydrologic functions (6), and low habitat functions (3), resulting in a total score of 15 points on the wetland rating form. Please see the wetland addendum for ratings (Appendix 2). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W3A has low opportunity to improve water quality because it does not have dense, persistent, ungrazed vegetation and it has an outlet (ditch); however, it does receive stormwater runoff from the adjacent roadways and parking lots. | |
| **Hydrologic** | Wetland W3A has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and is not capable of retaining high volumes of water, it additionally has an outlet (ditch). | |
| **Habitat** | Wetland W3A has low habitat opportunity because the area has low habitat complexity and is surrounded by high-intensity land use. | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by mowed species of grasses. | |

## Table 3. W4 Information Summary

| WETLAND W4 – INFORMATION SUMMARY | |
|---|---|
| **Location: West of SR 9, south of SR 204, east of 91st Avenue NE** | |
| | |
| **Local Jurisdiction** | City of Lake Stevens |
| **WRIA** | 7 |
| **WDOE Rating (Hruby 2014)** | III (18 points) |
| **Lake Stevens Buffer Width (ft)** | 80 feet |
| **Wetland Size** | 2.43 acres |
| **Cowardin Classification** | PEM/PFO |
| **2014 Wetland Rating Scores** | Water Quality: 7<br>Hydrologic: 7<br>Habitat: 4 |
| **HGM Classification** | Depressional |
| **Wetland Data Sheet(s)** | W4A-SP1, TP-11, TP-12, and |
| **Upland Data Sheet(s)** | W4A-SP2 & W4A-SP3 |
| **Flag Color** | Pink |
| **Dominant Vegetation** | Red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*) salmonberry (*Rubus spectabilis*), and reed canarygrass (*Phalaris arundinacea*). |
| **Soils** | Loam soils met "depleted matrix" (F3) and "redox dark surface" (F6) hydric soil indicators. |
| **Hydrology** | Surface water runoff / seasonal high groundwater table |
| **Rationale for Delineation** | All three wetland criteria are met. Wetland 4 is in a Native Growth Protection Area (NGPA). See **Appendix 6** for the critical area site plan (CASP) and binding site plan (BSP). Per conversations with Lake Stevens Planning & Community Development, Lake Stevens does not differentiate mitigation ratios based on whether it's an NGPA or an easement but on the proposed mitigation type. See **Appendix 3** Bank Use Plan for proposed mitigation. |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 Ecology rating system. Wetland W4 is rated a Category III because it provides moderate water quality functions (7), moderate hydrologic functions (7), and low habitat functions (4), scoring a total of 18 points. Please see the 2018 wetland report for ratings (Appendix 1). |
| **Wetland Functions Summary** | |
| **Water Quality** | Wetland W4 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation for all of its area and it receives stormwater runoff from adjacent roadways and parking lots. |
| **Hydrologic** | Wetland W4 has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and can retain a moderate volume of water; however, it does have an outlet (highly constricted). |
| **Habitat** | Wetland W4 has low habitat opportunity because although the area has a moderate habitat complexity and dense vegetation, it is surrounded by high-intensity land use. |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by Himalayan blackberry (*Rubus armeniacus*). |

## Table 4: W5 Information Summary

| WETLAND W5 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: East of SR 9, south of SR 204, south of 4th st. NE** | | |
| | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | III (18 points) |
| | **Lake Stevens Buffer Width (ft)** | 80 feet |
| | **Wetland Size** | 2.31 acres |
| | **Cowardin Classification** | PEM/PFO |
| | **2014 Wetland Rating Scores** | Water Quality: 7<br>Hydrologic: 7<br>Habitat: 4 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | TP-2, TP-4 |
| | **Upland Data Sheet(s)** | TP-1, TP-3, TP-5 |
| | **Flag Color** | Pink |
| **Dominant Vegetation** | Red alder (*Alnus rubra*), salmonberry (*Rubus spectabilis*), and slough sedge (*Carex obnupta*). | |
| **Soils** | Loam soils met "depleted below dark surface" (A11) and "thick dark surface" (A12) hydric soil indicators. | |
| **Hydrology** | Surface water runoff (A1), high groundwater table (A2), Saturation (A3) | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 Ecology rating system. Wetland W5 is rated a Category III because it provides moderate water quality functions (7), moderate hydrologic functions (7), and low habitat functions (4), scoring a total of 18 points. Please see the 2018 wetland report for ratings (Appendix 1). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W5 has high opportunity to improve water quality because it has dense, persistent, ungrazed vegetation for all of its area and it receives stormwater runoff from adjacent roadways and parking lots. | |
| **Hydrologic** | Wetland W5 has high opportunity to reduce flooding because it occurs in the upper portion of the sub-basin, is relatively flat with no outlet, and is capable of retaining high volumes of water. | |
| **Habitat** | Wetland W5 has low/moderate habitat opportunity because the area has moderate habitat complexity and dense vegetation, but is surrounded by high-intensity land use. | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by lawn, red alder, salmonberry, and Himalayan blackberry. | |

## Table 5: Wetland W8 Summary

| WETLAND W8 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: Southwest corner of SR 9 and Vernon Road** | | |
| June 2021 | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | III |
| | **Lake Stevens Buffer Width** | 80 feet |
| | **Wetland Size** | 0.07 acres |
| | **Cowardin Classification** | PSS |
| | **2014 Wetland Rating Scores** | Water Quality: 7<br>Hydrologic: 7<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W8-SP1 |
| | **Upland Data Sheet(s)** | None |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Douglas spiraea (*Spiraea douglasii*), Sitka willow (*Salix sitchensis*), and red flowering currant (*Ribes sanguineum*). | |
| **Soils** | Loam soils met "Loamy Mucky Mineral" (F1) hydric soil indicators; clay liner below 8" depth. | |
| **Hydrology** | Saturated soils. | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W8 is rated a Category III because it provides moderate water quality functions (7), moderate hydrologic functions (7), and low habitat functions (3), resulting in a total score of 17 points on the wetland rating form. Please see the wetland addendum for ratings (Appendix 2). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W8 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation over more than half of its area and it receives stormwater runoff from adjacent roadways and parking lots, however, it has an outlet, although highly constricted. | |
| **Hydrologic** | Wetland W8 has moderate opportunity to reduce flooding because although it occurs in the upper portion of the sub-basin, it has an outlet (highly constricted), and is not capable of retaining high volumes of water. | |
| **Habitat** | Wetland W8 has low habitat opportunity because the area has a moderate habitat complexity and dense vegetation but is surrounded by high-intensity land use. | |
| **Buffer Condition** | The vegetated portions of the buffer are generally only 6-20 feet wide and dominated by Himalayan blackberry (*Rubus armeniacus*). | |

## 3.2 Streams

No streams were identified within the study area; however, Weiser Creek (Washington State Department of Natural Resources [DNR] ID# 78406), a tributary to Ebey Slough is located west of the project area (Figure 3) (DNR 2021$_a$). DNR maps indicate Weiser Creek as an unnamed, non-fish-bearing stream. Weiser Creek is known by the Tulalip Tribe to be a fish-bearing stream. SR 204 crosses Weiser Creek and conveys it as it flows northwest, beyond the project area. Local riparian conditions are similar to those upstream, with dominant vegetation including red alder (*Alnus rubra*), salmonberry (*Rubus spectabilis*), blackberry (*Rubus armeniacus*) and reed canarygrass (*Phalaris arundinacea*), amongst moderate density development.

## 3.3 Other Waterbodies

Lake Stevens is a fish-bearing, recreational use lake located approximately 0.25 miles northeast of the study area (Figure 3). The lake is a 303(d) listed waterbody for hexachlorobenzene, dieldrin, toxaphene and PCBs. Due to high density residential development around the lake, the shoreline is highly degraded with mostly ornamental, non-native vegetation. Lake Stevens and its shorelands are regulated as shorelines of the state under the Lake Stevens Shoreline Master Program (SMP) (City of Lake Stevens 2019).

Figure 3: Waterbodies in the Project Vicinity

## 3.4 Sensitive Plants, Fish, and Wildlife

The project vicinity does not offer terrestrial or aquatic habitats suitable for sensitive fish and wildlife. No state- or federally-listed plant species were identified in the project area, nor are any rare plants or high quality ecosystems documented within the project area (IpaC 2021). There is rare vascular plant habitat approximately 0.5 miles south of the southern project limits (WADNR 2019).

A separate Biological Assessment report (BA) was prepared to address the potential for the project to affect listed species protected under the federal Endangered Species Act (ESA).

## 3.5 Other Critical Areas

Lake Stevens code, LSMC 14.08.010 defines critical areas as areas of the City that are subject to natural hazards or any landform feature that carries, holds, or purifies water and/or supports unique, fragile or valuable natural resources including fish, wildlife, and other organisms and their habitat. Critical areas include the following features: geologically hazardous areas, wetlands, streams, frequently flooded hazard areas, fish and wildlife conservation areas, aquifer recharge areas, and groundwater discharge areas.

A desktop review of the following resources was performed in November 2021. No critical areas are documented in the project area other than the wetlands noted in Chapter 3.1.

Resources used (Please see **Appendix 5** for maps)

- Snohomish County PDS Map Portal (Snohomish County 2021)
- Lake Stevens City Maps
  - Comprehensive Plan Land Use Map (City of Lake Stevens 2021)
  - Flood Hazard Areas Map (City of Lake Stevens 2011)
  - Shorelines Map (City of Lake Stevens 2013)
- WDFW PHS on the Web (WDFW 2021)
- DNR Natural Heritage – High Conservation Value Wetlands Mapper (DNR $2021_a$)
- DNR Stream Type Map (DNR $2021_b$)
- WSDOT GIS Work Bench - Snohomish County GIS Data (Snohomish County 2008)

# Chapter 4. Wetland Impacts

The project will result in unavoidable impacts to wetlands W3, W3A, W4, W8, and the wetland buffer for W4. A map showing these impact areas and proposed mitigation are included in the BUP **(Appendix 3).** The Joint Aquatic Resource Permit Application (JARPA) Drawings in **Appendix 4.**

# Chapter 5. Proposed Mitigation

## 5.1 Avoidance and Minimization

Mitigation was considered in sequential order of avoidance, minimization, and compensatory mitigation per LSMC 14.88.010(a) to ensure no net loss of ecological functions, wildlife, fish, and aquatic resources.

WSDOT has avoided and minimized impacts to wetlands and buffers to the greatest extent practicable. Total avoidance was not possible due to site constraints associated with topography, safety, design guidelines, and project constructability.

The following are some examples of measures that are included in the project for avoiding and minimizing impacts to the onsite wetlands and associated buffers:

- Traffic will be detoured using existing roads, instead of constructing a temporary bypass road, to avoid and reduce impacts to wetlands and buffers.
- Clearing and grubbing has been limited to the minimum amount needed for construction the project.
- Temporary high-visibility fencing will be installed around the limits of project clearing to protect wetlands and buffers from unnecessary clearing.
- BMPs will be implemented to reduce sedimentation and control erosion control during construction, as indicated in the Temporary Erosion and Sediment Control (TESC) Plan. Some of the BMPs may include but are not limited to, the installation of check dams, silt fencing, inlet protection, straw wattles, and erosion control blankets.
- The footprint of the new stormwater facilities was minimized to avoid additional impact to the onsite wetlands and trees.
- All areas temporarily impacted by the project will be restored through the installation of trees and shrubs suitable for the project location.
- The project will include the adaptive management of BMPs, and the regular monitoring and reporting of discharges, according to the requirements of the NPDES Section 402 Construction Stormwater General Permit that will be issued for the project.
- The Contractor will be required to maintain an approved onsite Spill Prevention Control and Countermeasures (SPCC) Plan throughout the duration of construction, for implementation in the case of an accidental spill.

Total avoidance is not possible due to constraints associated with topography, safety, design guidelines, and project constructability.

See the Bank Use Plan **(Appendix 3)** for further discussion of proposed mitigation.

# References


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# Appendix 1: DRAFT Wetland and Stream Assessment Report (2018)

# REVIEW DRAFT WETLAND ASSESSMENT REPORT

# SR 9/SR 204 Intersection Improvements

**Lake Stevens, WA**

XL-4989

**A00910K**

**Prepared by**

**WSDOT NORTHWEST REGION**

**April 26, 2018**

Washington State Department of Transportation

SR9_SR204 Wetland Assessment 042618.doc

# REVIEW DRAFT WETLAND ASSESSMENT REPORT

# SR 9/SR 204 Intersection Improvements

**April 26, 2018**


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**Commented [KM1]:** WSDOT to confirm

# Executive Summary

The Washington State Department of Transportation is proposing improve the intersection of State Route (SR) 9 and SR 204, in Lake Stevens, Washington.

A total of three wetlands covering 8.04 acres were identified within the project area. The U.S. Army Corps of Engineers and the Washington State Department of Ecology (Ecology) would regulate 8.04 acres because of the stormwater connections from the wetlands to Q Weiser creek. Ecology and Lake Stevens would regulate 8.04 acres. In general, the wetlands are palustrine emergent/forested, Category II or III, depressional wetlands that are dominated by red alder with an understory of salmonberry and reed canarygrass and slough sedge. These wetlands provide high to moderate levels of hydrologic and water quality functions, but low levels of habitat functions due to their isolated nature and surrounding land uses. Vegetated buffers around the wetlands are narrow and non-functional, and typically dominated by Himalayan blackberry or impervious surface.

No suitable habitat for sensitive plant, fish, or wildlife species are currently known to occur within the project corridor. A separate Biological Assessment will be prepared for the project to address federally listed threatened or endangered species.

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# Appendices


Appendix A — Methods and Tools

Appendix B — Background Information

Appendix C — Wetland Delineation Data Sheets

Appendix D — Wetland Rating Forms

Appendix E — Wetland Functions BPJ Forms

Appendix F — Site Photographs

# Acronyms and Abbreviations

| | |
|---|---|
| BPJ | Best Professional Judgment |
| Confluence | Confluence Environmental Company |
| CWA | Clean Water Act |
| Ecology | Washington State Department of Ecology |
| ESA | Endangered Species Act |
| LLID | Longitude Latitude Identifier Number |
| LSMC | Lake Stevens Municipal Code |
| PEM | palustrine emergent |
| PFO | palustrine forested |
| SEPA | State Environmental Policy Act |
| SR | State Route |
| TP | test plot |
| USACE | U.S. Army Corps of Engineers |
| USDA NRCS | U.S. Department of Agriculture Natural Resources Conservation Service |
| USFWS | U.S. Fish and Wildlife Service |
| WDFW | Washington State Department of Fish and Wildlife |
| WDNR | Washington State Department of Natural Resources |
| WETS | Wetlands Climate Tables |
| WRIA | Water Resource Inventory Area |
| WSDOT | Washington State Department of Transportation |

# 1 Introduction

The Washington State Department of Transportation (WSDOT) proposes to improve the intersection of State Route (SR) 9 and SR 204. The purpose of this report is to identify and describe wetlands and to identify possible sensitive plant, fish, and wildlife species in the project corridor. This report facilitates WSDOT efforts to:

1. Avoid or minimize impacts to wetlands and streams during the design process.
2. Document wetland and stream boundary determinations for review by regulatory authorities.
3. Provide early indications to project engineers of sensitive species within the project corridor.
4. Provide background information for wetland mitigation reports.

The following permits are anticipated for this project[1]:

- Clean Water Act (CWA) Section 404
- National Historic Preservation Act Section 106
- CWA Section 401
- Coastal Zone Management Act Certification
- National Pollutant Discharge Elimination System Construction Stormwater General Permit
- HPA[2]
- State Environmental Policy Act (SEPA) Determination
- Clearing and Grading

[1] Permit requirements may change pending final design. For example, if nighttime constriction is proposed a noise variance may be required.
[2] the HPA may be required due to potential diversion of stream flows.

# 2 Proposed Project

This chapter describes the key elements of the proposed project.

## 2.1 Location

The project is located along SR 9 and SR 204, in City of Lake Stevens, Snohomish County, Washington (Township 29 North, Range 5 East, Section 13) (Figure 1). The project is primarily along the SR 9 corridor. The northern boundary of the project is along SR 9, approximately 0.4 mile north of the SR 9 and SR 204 intersection. The southern boundary is along SR 9, approximately 0.24 mile south of Market Place NE (0.6 mile south of SR 9 and SR 204 intersection). Improvements to the intersections of SR 9 and Market Place NE, SR 9 and 4th Street NE, and along Vernon Road (between 7th Place NE and Davies Road) would also occur (Figure 2).

## 2.2 Purpose and Description

**Commented [KM2]:** The project description will need to be updated as the project develops.

The SR 9 and SR 204 Intersection Improvements project will replace the current signalized intersection with a grade-separated interchange to relieve congestion for commuters and freight traffic. This project will include excavation, structural work for a new bridge and retaining walls, storm drainage conveyance and treatment, traffic signals, and, possibly, noise walls.

**Figure 1. Project Vicinity Map**

**Figure 2. Proposed Improvements**

# 3 Methods

This chapter summarizes the methods used to comply with WSDOT, federal, state, and local guidance. Please see Appendix A for further details of methods used in this report.

## 3.1 Background Information

Confluence Environmental Company (Confluence) evaluated the parcel for the presence of critical areas and sensitive plants, fish, and wildlife using available GIS databases and datasets. The following databases were reviewed:

- Recorded weather data (NOAA 20188)
- Wetlands (WETS) Climate Tables (USDA NRCS 2018a)
- Snohomish County GIS (Snohomish County 2017),
- National Wetland Inventory (USFWS 2017),
- Soil Survey (USDA NRCS 2017),
- Department of Natural Resources Water Type GIS (WDNR 2017),
- Endangered Species Act (ESA) species lists (NOAA Fisheries 2018, USFWS 2018),
- SalmonScape (WDFW 2017a), and
- Priority Habitat and Species (WDFW 2017b).

Results of the searches are in Appendix B.

## 3.2 Wetlands

### 3.2.1 Wetland Identification and Delineation

Confluence conducted a site reconnaissance on November 7, 2016. The reconnaissance consisted of a windshield survey of the areas that were identified as wetland by the NWI database and any areas with obvious wetland vegetation as could be seen from the SR 9 or SR 204 roadways. Wetlands and other natural habitats, within 200 feet of the current roadway edge from project beginning to project end, were assessed while walking both sides of the highway. For the areas identified as potential wetland with questionable surface water features, further investigation included walking the perimeter of the area to look for standing water, surface water connections, or other obvious indications of potential wetlands or signage indicating a critical area or critical

area buffer. GPS points were collected in areas where photos were taken, or other features were noted.

Following the site reconnaissance, Confluence conducted a wetland delineation on December 14 and 18, 2017. Confluence used the methods described by the U.S. Army Corps of Engineers (USACE) in the Corps of Engineers Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Regional Supplement; USACE 2010) to delineate wetland boundaries. These methods comply with WSDOT, federal, state, and City of Lake Stevens guidance.

The USACE usually requires that the following three characteristics be present for an area to be identified as a wetland: (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology. Each criterion has a number of indicators by which it can be determined to satisfy the standard. The indicators were established so that if an area was wetland, sufficient indicators would be observed at any time of the year, including the driest months. WETS data (USDA NRCS 2018a) and 10-day and 3-month precipitation data (NOAA 2018) was reviewed to determine if "normal circumstances" existed at the site. Since "normal circumstances," as defined by the USACE (1987), exist on the site, all three criteria must be present for an area to be determined a wetland. Wetland delineation data sheets are in Appendix C. The boundaries of jurisdictional wetlands occurring within the right-of-way were delineated by sequentially numbered flags and subsequently surveyed.

The PLANTS Database (USDA NRCS 2018b) was used for scientific names and the 2016 National Wetland Plant List (Lichvar et al. 2016) was used to determine the wetland indicator status of plants.

### 3.2.2 Wetland Rating

Confluence determined wetland ratings using both the 2004 and 2014 Washington State Wetland Rating Systems for Western Washington (Ecology Rating System) (Hruby 2004, 2014) to assess the resource value of the wetlands identified on the site. Wetlands were rated using the 2004 Ecology Rating System rating system to comply with Lake Stevens Municipal Code (LSMC) 14.88.800 and 14.88.830. Wetlands were rated using the 2014 Ecology Rating System to comply with Washington State Department of Ecology (Ecology) and USACE requirements. 2004 and 2014 Ecology Rating System forms are in Appendix D.

### 3.2.3 Wetland Functions

Wetland functions were evaluated using Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000), also known as the Wetland Functions Best Professional Judgment (BPJ) Tool. BPJ forms are in Appendix E.

### 3.2.4 Wetland Buffers

The condition of wetland buffers between the wetland edge and the current roadway edge was qualitatively assessed using the following criteria:

- Dominant land use (e.g., agriculture, residential, commercial, industrial)
- Dominant buffer vegetation type (tree, shrub, herb, vine, un-vegetated)
- Estimated percent cover of invasive plants by species

## 3.3 Sensitive Plants, Fish and Wildlife

Results of the desktop analysis were used to determine the potential presence for federal or state listed species to occur in the area.

# 4 Existing Conditions

## 4.1 Landscape Setting

The SR 9 and SR 204 Interchange Improvements project is located within the Sunnyside sub-basin of the Snohomish Watershed. The surrounding land use is retail and high-density residential (more than 1 unit per acre).

Lake Stevens is located east of the project site, although surface water within the project site does not flow into the lake. Within the project area, topography along SR 9, south of SR 204, is sloping towards the north (i.e., towards SR 209). North of SR 204, the topography along SR 9 slopes towards the south (i.e., towards SR 204). Topography along SR 204 slopes towards the west into an unnamed, non-fish-bearing stream (LLID 1221375480038) (Snohomish County 2017, DNR 2017). This unnamed stream eventually discharges into the Snohomish River.

## 4.2 Wetlands

### 4.2.1 Overview

Appendix B includes the results of online databases searched for critical areas in the vicinity of the project. According to USDA NRCS (2017), the site is mapped as having Tokul gravelly medial loam soils, a moderately well drained soil. Tokul gravelly medial loam soils are not classified as a hydric soil. Minor components classified as hydric soils include Norma and Mckenna soils. USDA NRC (2017) describes the depth to the restrictive layer being20 to 39 inches below the surface with the depth to the water table t 18 to 36 inches. Three wetlands, W4, W5, and W9, were delineated within the project boundary (Table 1, Figure 3). Appendices C and D document the delineation of each wetland, including wetland delineation data sheets and wetland rating forms. Typically, soils within the wetlands met the USDA NRCS (2017) descriptions for the Mckenna soil series. Soils in the first layer of the wetlands were typically dark brown or black (10YR 3/2 or darker) with a depleted matrix in the second layer. Redox concentrations in the matrix were common in the soils.

Wetland W4 is a depressional wetland located in the southwest corner of the SR 9 and SR 204 intersection and is 2.33 acres in size. According to the Cowardin classification (FGDC 2013), Wetland W4 is an emergent and forested wetland. The boundary of Wetland W4 was determined by (1) a distinct topographic break associated with the toe of SR 204 and 91st Avenue NE road prism slopes, (2) the toe of slope associated with a large berm separating the wetland and SR 9

ditch, (3) the distinct topographic break associated with the toe of slope of a large retaining wall and building footpads, and (4) the presence of standing water/saturated surface soils. According to both the 2004 and 2014 Wetland Rating System (Hruby 2004, 2014), Wetland W4 was rated as a Category III wetland. Under the 2004 rating system, the habitat score was 14. Table 2 summarizes the characteristics of Wetland W4.

Wetland W5 is a depressional wetland located in the northeast corner of the SR 9 and Market Place NE intersection and is 2.31 acres in size. According to the Cowardin classification (FGDC 2013), Wetland W5 is an emergent and forested wetland. The boundary of Wetland W5 as determined by (1) a distinct topographic break associated with the toe of SR 9 and 4th Street NE road prism slopes, (2) the toe of slope associated with a large berm separating the wetland from existing stormwater ponds, (3) the toe of slope associated with the retaining wall footpad of the transit station, (4) standing water, and (5) the presence of hydric soils and wetland hydrology. According to both the 2004 and 2014 Wetland Rating System (Hruby 2004, 2014), Wetland W5 was rated as a Category III wetland. Under the 2004 rating system, the habitat score was 14. Table 3 summarizes the characteristics of Wetland W5.

Wetland W9 is a depressional wetland located in the southeast corner of the SR 9 and Market Place NE intersection and is 3.4 acres in size. According to the Cowardin classification (FGDC 2013), Wetland W9 is an emergent and forested wetland. The boundary of Wetland W9 was determined by (1) a distinct topographic break associated with the toe of market Place NE and 95th Drive NE road prism slopes, (2) the toe of slope associated with a development footpad at 22 95th Drive NE (3) standing water, and (4) the vegetative shift to non-hydrophytic vegetation. According to both the 2004 and 2014 Wetland Rating System (Hruby 2004, 2014), Wetland W9 was rated as a Category III wetland. Under the 2004 rating system, the habitat score was 14. Table 4 summarizes the characteristics of Wetland W9.

**Table 1. Wetlands within the Project Corridor**

| Wetland[A] | Wetland Classification | | | | Wetland Size (acre) | Buffer Width (feet)[E] |
|---|---|---|---|---|---|---|
| | Cowardin[B] | HGM | Ecology[C] | Local Jurisdiction[D] | | |
| **W4** | PEM/PFO | Depressional | III | III | 2.33 | 50 |
| **W5** | PEM/PFO | Depressional | III | III | 2.31 | 50 |
| **W9** | PEM/PFO | Depressional | III | III | 3.4 | 50 |
| **Total** | | | | | **8.04** | |

Notes:

A. Wetland locations from beginning to end

B. FGDC (2013): PEM = Palustrine Unconsolidated Shore; PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested.

C. Ecology rating according to Hruby (2014).

D. Wetlands rated according to LSMC 14.88.800.

E. Wetland buffer width according to LSMC 14.88.830.

**Figure 3. Wetland Boundaries and Test Plot (TP) Locations**

**Table 2. Wetland W4 Summary.**

| WETLAND W4 – INFORMATION SUMMARY | | | |
|---|---|---|---|
| **Location:** | **West of SR 9, south of SR 204, east of 91st Avenue NE** | | |
| | | **Local Jurisdiction** | City of Lake Stevens |
| | | **WRIA** | 7 |
| | | **Ecology Rating (Hruby 2014)** | III |
| | | **Lake Stevens Rating (Hruby 2004)** | III |
| | | **Lake Stevens Buffer Width** | 50 feet |
| | | **Wetland Size** | 2.33 acres |
| | | **Cowardin Classification** | PEM/PFO |
| | | **HGM Classification** | Depressional |
| | | **Wetland Data Sheet(s)** | TP-11, TP-12, TP-13 |
| | | **Upland Data Sheet (s)** | None; upland is road prism |
| | | **Flag color** | Pink |
| **Dominant Vegetation** | Red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*) salmonberry (*Rubus spectabilis*), and reed canarygrass (*Phalaris arundinacea*) | | |
| **Soils** | Loam soils met “depleted matrix” (F3) and “redox dark surface” (F6) hydric soil indicators. | | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | | |
| **Rationale for Delineation** | All three wetland criteria are met. | | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2004 Ecology rating system. Wetland W4 is rated a Category III using the 2004 Ecology rating system because it provides moderate water quality functions (18), moderate hydrologic functions (16), and moderate habitat functions (14), scoring 48 points on the wetland rating form (Appendix E). | | |
| **Wetland Functions Summary** | | | |
| **Water Quality** | Wetland W4 has high opportunity to improve water quality because it has dense, persistent, ungrazed vegetation for all of its area and it receives stormwater runoff from adjacent roadways and parking lots. | | |
| **Hydrologic** | Wetland W4 has high opportunity to reduce flooding because it occurs in the upper portion of the sub-basin, is relatively flat with no outlet, and is capable of retaining high volumes of water. | | |
| **Habitat** | Wetland W4 has moderate habitat opportunity because the area has moderate habitat complexity and dense vegetation, but is surrounded by high-intensity land use. | | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by Himalayan blackberry (*Rubus armeniacus*). | | |

**Table 3. Wetland W5 Summary.**

| WETLAND W5 – INFORMATION SUMMARY | | | |
|---|---|---|---|
| **Location:** | **East of SR 9, north of Market Place NE** | | |
| Dec 14, 2018 | | **Local Jurisdiction** | City of Lake Stevens |
| | | **WRIA** | 7 |
| | | **Ecology Rating (Hruby, 2014)** | III |
| | | **Lake Stevens Rating (Hruby 2004)** | III |
| | | **Lake Stevens Buffer Width** | 50 feet |
| | | **Wetland Size** | 2.31 acres |
| | | **Cowardin Classification** | PEM/PFO |
| | | **HGM Classification** | Depressional |
| | | **Wetland Data Sheet(s)** | TP-2, TP-4 |
| | | **Upland Data Sheet (s)** | TP-1, TP-3, TP-5 |
| | | **Flag color** | Pink |
| **Dominant Vegetation** | Red alder, salmonberry, slough sedge (*Carex obnupta*) | | |
| **Soils** | Loam soils met "depleted below dark surface" (A11) and "thick dark surface" (A12) hydric soil indicators. | | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | | |
| **Rationale for Delineation** | All three wetland criteria are met. | | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2004 Ecology rating system. Wetland W5 is rated a Category III using the 2004 Ecology rating system because it provides high water quality functions (18), moderate hydrologic functions (16), and moderate habitat functions (14), scoring 48 points on the wetland rating form (Appendix E). | | |
| **Wetland Functions Summary** | | | |
| **Water Quality** | Wetland W5 has high opportunity to improve water quality because it has dense, persistent, ungrazed vegetation for all of its area and it receives stormwater runoff from adjacent roadways and parking lots. | | |
| **Hydrologic** | Wetland W5 has high opportunity to reduce flooding because it occurs in the upper portion of the sub-basin, is relatively flat with no outlet, and is capable of retaining high volumes of water. | | |
| **Habitat** | Wetland W5 has low/moderate habitat opportunity because the area has moderate habitat complexity and dense vegetation, but is surrounded by high-intensity land use. | | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by lawn, red alder, salmonberry, and Himalayan blackberry. | | |

1 **Table 4. Wetland W9 Summary.**

| WETLAND W9 – INFORMATION SUMMARY | | | |
|---|---|---|---|
| **Location:** | **East of SR 9, south of Market Place NE, west of 95th Drive NE** | | |
| Dec 18, 2018 | | **Local Jurisdiction** | City of Lake Stevens |
| | | **WRIA** | 7 |
| | | **Ecology Rating (Hruby, 2014)** | III |
| | | **Lake Stevens Rating (Hruby 2004)** | III |
| | | **Lake Stevens Buffer Width** | 50 feet |
| | | **Wetland Size** | 3.4 acres |
| | | **Cowardin Classification** | PEM/PFO |
| | | **HGM Classification** | Depressional |
| | | **Wetland Data Sheet(s)** | TP-7, TP-9 |
| | | **Upland Data Sheet (s)** | TP-8, TP-10 |
| | | **Flag color** | Pink |
| **Dominant Vegetation** | Red alder and salmonberry | | |
| **Soils** | Loam soils met "depleted below dark surface" (A11) and "depleted matrix" (F3) hydric soil indicators. | | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | | |
| **Rationale for Delineation** | All three wetland criteria are met. | | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2004 Ecology rating system. Wetland W9 is rated a Category III using the 2004 Ecology rating system because it provides moderate water quality functions (18), moderate hydrologic functions (16), and moderate habitat functions (14), scoring 48 points on the wetland rating form (Appendix E). | | |
| **Wetland Functions Summary** | | | |
| **Water Quality** | Wetland W9 has high opportunity to improve water quality because it has dense, persistent, ungrazed vegetation for all of its area and it receives stormwater runoff from adjacent roadways and parking lots. | | |
| **Hydrologic** | Wetland W9 has high opportunity to reduce flooding because it occurs in the upper portion of the sub-basin, is relatively flat with no outlet, and is capable of retaining high volumes of water. | | |
| **Habitat** | Wetland W9 has moderate habitat opportunity because the area has moderate habitat complexity and dense vegetation, but is surrounded by high-intensity land use. | | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by lawn, red alder, salmonberry, and Himalayan blackberry. | | |

### 4.2.2 Wetland Buffers

Buffers associated with wetlands W4, W5, and W9 are all similar. All wetlands are completely surrounded by development and roads. The vegetational portions of the buffer are typically less than 20 feet wide and extend from the wetland boundary to the edge of pavement or the edge of retaining walls. Buffers are dominated by Himalayan blackberry. The exception to this is the western buffer of Wetland W9, which is a large lawn area between the wetland boundary and SR 9. A large sign, associated with Target and other nearby stores, is located in the buffer. According to LSMC 14.88.830, wetlands W4, W5, and W9 have a buffer width of 50 feet (Figure 4).

### 4.2.3 Wetland Functions

As stated above, wetland functions were evaluated using the Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000). Wetlands W4, W5, and W9 are all Depressional wetlands that provide high levels of water quality and hydrologic functions, because of their ability to store large volumes of water and they have either no outlet or highly constricted outlets. However, all three wetlands exhibit a low level of habitat functions because of their isolated nature and minimal vegetated buffer (Table 5 and Appendix E).

**Figure 4. Wetland Buffers**

**Table 5. Functions and Values of the Existing Wetlands.**

| Function/Value | Wetland | | |
|---|---|---|---|
| | W4 | W5 | W9 |
| **Water Quality Functions** | | | |
| Sediment Removal | x | x | x |
| Nutrient and Toxicant Removal | x | x | x |
| **Hydrologic Functions** | | | |
| Flood Flow Alteration | + | + | + |
| Erosion Control & Shoreline Stabilization | - | - | - |
| **Habitat Functions** | | | |
| Production & Export of Organic Matter | - | - | - |
| General Habitat Suitability | x | x | x |
| Habitat for Aquatic Invertebrates | x | x | x |
| Habitat for Amphibians | - | - | - |
| Habitat for Wetland-Associated Mammals | x | x | x |
| Habitat for Wetland-Associated Birds | x | x | x |
| General Fish Habitat | - | - | - |
| Native Plant Richness | x | x | x |
| **Special Characteristics** | | | |
| Educational or Scientific Value | - | - | - |
| Uniqueness and Heritage | - | - | - |

NOTES:

"-" means that the function is not present; "x" means that the function is present but is of lower quality; and "+" means the function is present and is of higher quality.

## 4.3 Sensitive Plants, Fish, and Wildlife

A separate Biological Assessment will be prepared to address species listed as threatened or endangered under the federal ESA. The project site does not have suitable habitat for state-listed threatened and endangered species.

# 5 References


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# Appendix A — Methods and Tools

Table A-1. Methods and tools used to prepare the report.

| Parameter | Method or Tool | Website | Reference |
|---|---|---|---|
| Wetland Delineation | WSDOT Delineation Guidance Documents | http://www.wsdot.wa.gov/Environment/Wetlands/DelineationToolbox.htm | Website, December 10, 2017. |
| | Western Mountains Supplement | http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/ | Website, December 14, 2017 |
| Wetland Classification | USFWS Wetland / Deepwater Habitat Classification System | https://www.fws.gov/wetlands/documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf | **Federal Geographic Data Committee**. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC |
| | Hydrogeomorphic Classification (HGM) System | https://wetlands.el.erdc.dren.mil/pdfs/wrpde4.pdf#view=fit&pagemode=none | **Brinson**, M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. |
| Wetland Rating | Washington State Wetland Rating System | **2014 Rating System:** https://wetlands.el.erdc.dren.mil/pdfs/wrpde4.pdf#view=fit&pagemode=none | **Hruby**. 2014. Washington State wetland rating system for eastern Washington – Revised. Publication # 14-06-029. |
| | City of Lake Stevens | http://www.codepublishing.com/WA/LakeStevens/ | LSMC 14.88.800 uses Washington State Department of Ecology's Wetland Rating System for Western Washington, Publication No. 04-06-025, or as amended hereafter. Buffer widths determined by 2004 rating system point scale. |
| | | **2004 Rating System:** 2014 Rating System: | **Hruby**. 2004. Washington State wetland rating system for western Washington –Revised. Publication # 04-06-025. |
| Wetland Indicator Status | 2016 Western Mountains Valleys & Coasts Regional List | http://wetland-plants.usace.army.mil/nwpl_static/index.html | **Lichvar**, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30:1–17 |
| Plant Names | USDA Plant Database | http://plants.usda.gov/ | Website (see Appendix A) |
| Soils Data | Soil Survey | http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx | Website, December 7, 2017 |
| Hydric Soils Data | Washington Hydric Soils Lists by Country | https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html | Website, December 7, 2017 |
| Threatened and Endangered Species | Washington Natural Heritage Program | https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html | Website, December 7, 2017 |
| | Washington Priority Habitats and Species | http://wdfw.wa.gov/hab/phspage.htm | Website, December 7, 2017 |
| | Washington SalmonScape | http://apps.wdfw.wa.gov/salmonscape/map.html | Website, December 7, 2017 |
| | NOAA fisheries species list and maps | http://www.westcoast.fisheries.noaa.gov/publications/gis_maps/maps/salmon_steelhead/critical_habitat/wcr_salmonid_ch_esa_july2016.pdf | Website, January 2, 2018 |

| Parameter | Method or Tool | Website | Reference |
|---|---|---|---|
| | USFWS Information for Planning and Consultation (IPaC) | https://ecos.fws.gov/ipac/ | Website, January 2, 2018 |
| Report Preparation | City of Lake Stevens | http://www.codepublishing.com/WA/LakeStevens/ | LSMC 14.88.270 |

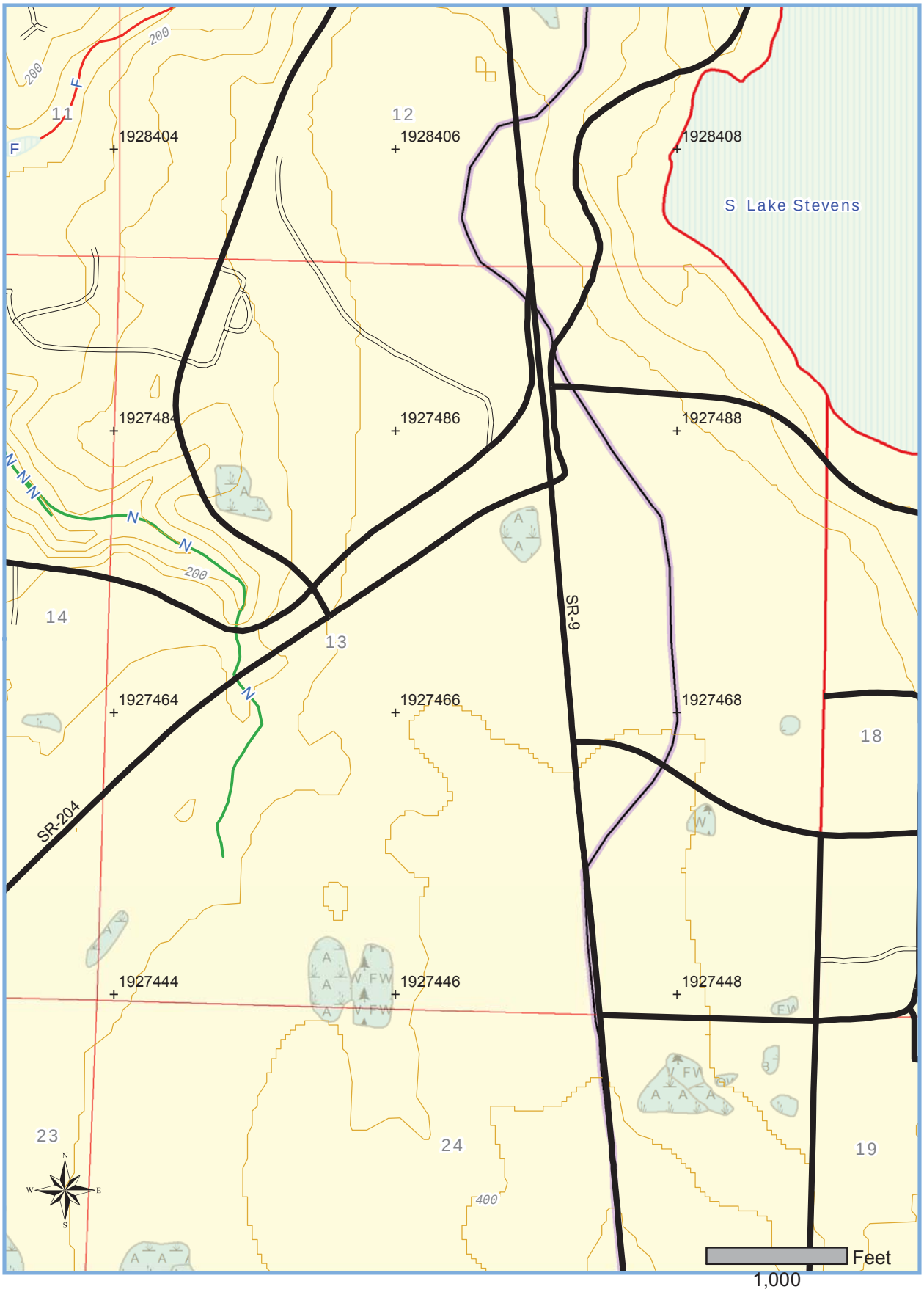
# Appendix B — Background Information

This Appendix includes information obtained from online data resources.

# FOREST PRACTICE WATER TYPE MAP

TOWNSHIP 29 NORTH HALF 0, RANGE 05 EAST (W.M.) HALF 0, SECTION 13

Application #: _____




Date: 12/7/2017 Time: 1:37:06 PM
NAD 83
Contour Interval: 40 Feet

# FPARS MAPS LEGEND

## BOUNDARIES

- County Boundary
- Townships
- Section Survey Lines

## WATER BODIES

- Open Water
- Flats/Gravel Bars
- Ice
- Man Made Feature
- Wet Area
- ? ? ? ? Unknown/Unclassified

## ELEVATION

- 200 Contours, 40' interval

## STREAMS

- F Stream Water Type S, F, N
- U U, unknown
- X X, non-typed per WAC 222-16
- * Water Type Change

## TRANSPORTATION

- Paved Road
- Unpaved Road / Surface Unknown
- Abandoned Road (not on Activity map)
- Orphaned Road (not on Activity map)
- Trail
- Railroad

## SITE CLASS – On Site Class Map only

- Site Class I
- Site Class II
- Site Class III
- Site Class IV
- Site Class V

## SITE INDEX – On Site Class Map only

- Non-Commercial or Marginally Commercial
- No Data
- Red Alder

## SLOPE– On Resource Map only

- Medium Slope Instability
- High Slope Instability

## SOILS – On Resource Map only

- Hydric Soils
- Highly Unstable
- Highly Erodible
- Highly Unstable & Highly Erodible
- No Data or Gravel Pits

## RAIN ON SNOW – On Resource Map only

- RS Rain on Snow
- SD Snow Dominant

## WETLANDS – Resource & Water Type Maps only

- A A A A A A A A A A A A Type A
- B B B B B B B B B B B B Type B
- FW FW FW FW Forested
- OW OW OW OW other

## OTHER

- WAU (Activity, Base & Water Type maps)
- WRIA (Activity, Base & Water Type maps)
- Fire Shutdown Zones (Activity & Base maps only)
- + Map Registration Tics (All map types)

## Notes to Applicant or other user:

See the FPA/N instructions for Activity Map standards.

Site indices are based on the WA-DNR State Soil Survey. If the site index does not exist or indicates red alder, noncommercial, or marginally commercial species, the following apply:

a) If red alder is indicated and the whole RMZ width is within that site index, then use site class V. If red alder is indicated for only a portion of the RMZ width, or there is on-site evidence that the site has historically supported conifer, then use the site class for conifer in the most physiographically similar adjacent soil polygon.

b) In Western Washington, if there is no site index information, use the site class for conifer in the most physiographically similar adjacent soil polygon.

c) In Eastern Washington, if there is no site index information, assume site class III, unless site specific information indicates otherwise.

d) If the soil polygon indicates noncommercial or marginally commercial, then use site class V.

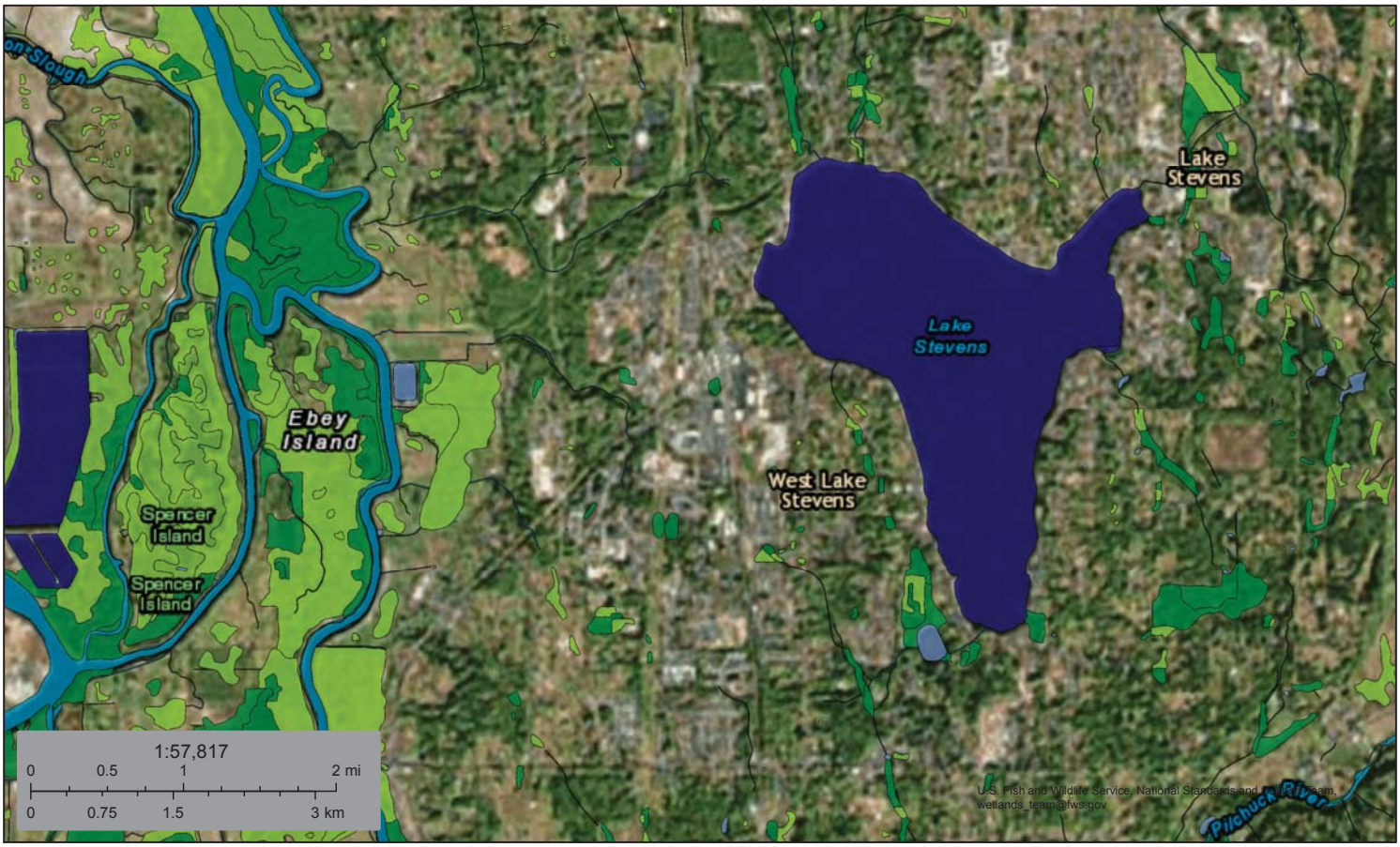
See Forest Practices Rules WAC 222-16-010 for a more complete definition of site class.

**Disclaimer:** Features shown on Forest Practices Application Review System (FPARS) maps represent data stored in the Washington State Department of Natural Resources (DNR) Geographic Information Systems database. As some of the data sets rely on outside sources of information, the DNR cannot accept responsibility for errors or omissions, and therefore there are no warranties that accompany this material.

U.S. Fish and Wildlife Service

National Wetlands Inventory

# Wetlands




December 7, 2017

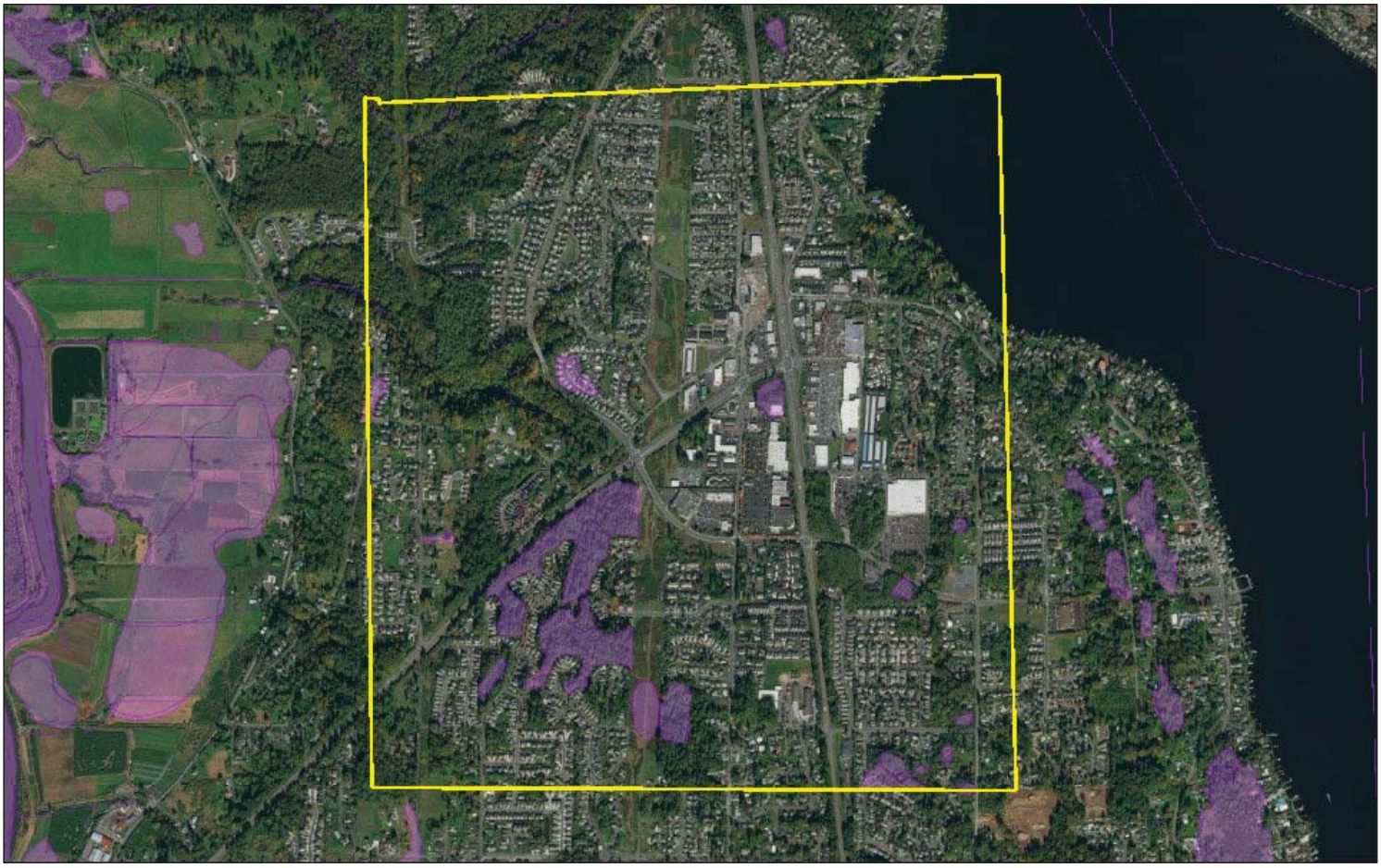
**Wetlands**

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

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

# WDFW Test Map



December 7, 2017

PHS Report Clip Area

PT

LN

**POLY**

AS MAPPED

SECTION

QTR-TWP

TOWNSHIP

1:25,386

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
# PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPlusPublic
REPORT DATE: 12/07/2017 1.24

Query ID: P171207132419

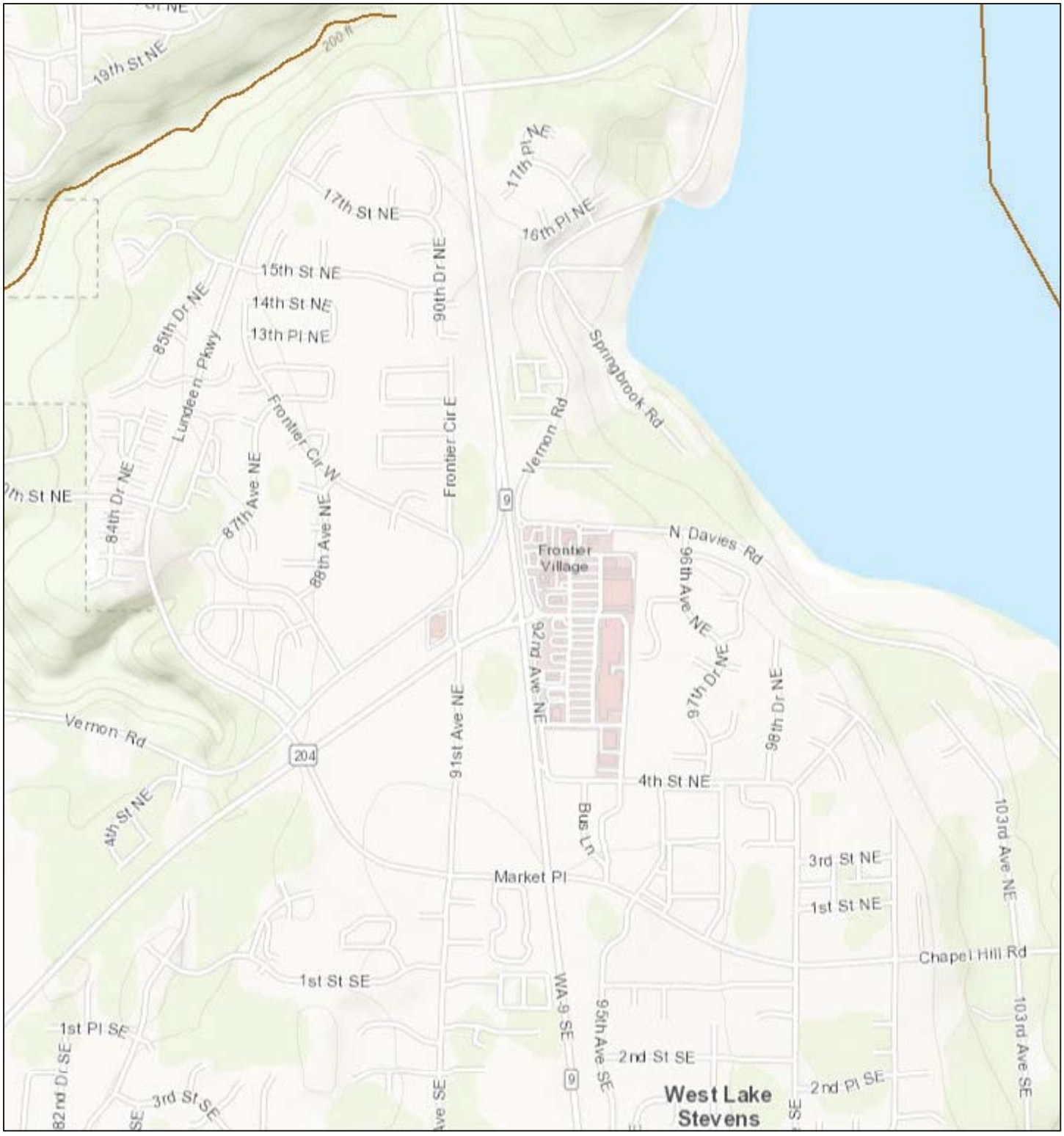
| Common Name / Scientific Name | Site Name / Source Dataset / Source Record | Priority Area / Occurrence Type / More Information (URL) / Mgmt Recommendations | Accuracy | Federal Status / State Status / PHS Listing Status | Sensitive Data / Resolution | Source Entity / Geometry Type |
|---|---|---|---|---|---|---|
| Biodiversity Areas And | WEST SNOHOMISH COUNTY PHSREGION 902644 | Terrestrial Habitat<br>N/A<br>http://wdfw.wa.gov/publications/pub.php? | 1/4 mile (Quarter | N/A<br>N/A<br>PHS LISTED | N<br>AS MAPPED | WA Dept. of Fish and Wildlife<br>Polygons |
| Coho<br>Oncorhynchus kisutch | SWIFD 32412 | Occurrence/Migration<br>Occurrence/migration<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | N/A<br>N/A<br>PHS LISTED | N<br>AS MAPPED | Lines |
| Coho<br>Oncorhynchus kisutch | SWIFD 33419 | Occurrence/Migration<br>Occurrence/migration<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | N/A<br>N/A<br>PHS LISTED | N<br>AS MAPPED | Lines |
| Coho<br>Oncorhynchus kisutch | SASI 3080 | Occurrence<br>Occurrence<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | Candidate<br>N/A<br>PHS Listed | N<br>AS MAPPED | WDFW Fish Program<br>Lines |
| Coho<br>Oncorhynchus kisutch | SASI 3080 | Occurrence<br>Occurrence<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | Candidate<br>N/A<br>PHS Listed | N<br>AS MAPPED | WDFW Fish Program<br>Lines |
| Dolly Varden/ Bull Trout<br>Salvelinus malma | SWIFD 32414 | Occurrence/Migration<br>Occurrence/migration<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | N/A<br>N/A<br>PHS LISTED | N<br>AS MAPPED | Lines |
| Dolly Varden/ Bull Trout<br>Salvelinus malma | SWIFD 33422 | Occurrence/Migration<br>Occurrence/migration<br>http://wdfw.wa.gov/wlm/diversty/soc/soc.htm<br>http://wdfw.wa.gov/publications/pub.php? | NA | N/A<br>N/A<br>PHS LISTED | N<br>AS MAPPED | Lines |

| Common Name<br>Scientific Name<br><br>Notes | Site Name<br>Source Dataset<br>Source Record<br>Source Date | Priority Area<br>Occurrence Type<br>More Information (URL)<br>Mgmt Recommendations | Accuracy | Federal Status<br>State Status<br>PHS Listing Status | Sensitive Data<br>Resolution | Source Entity<br>Geometry Type |
|---|---|---|---|---|---|---|
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Emergent | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |

| Common Name<br>Scientific Name<br><br>Notes | Site Name<br>Source Dataset<br>Source Record<br>Source Date | Priority Area<br>Occurrence Type<br>More Information (URL)<br>Mgmt Recommendations | Accuracy | Federal Status<br>State Status<br>PHS Listing Status | Sensitive Data<br>Resolution | Source Entity<br>Geometry Type |
|---|---|---|---|---|---|---|
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |

| Common Name<br>Scientific Name<br><br>Notes | Site Name<br>Source Dataset<br>Source Record<br>Source Date | Priority Area<br>Occurrence Type<br>More Information (URL)<br>Mgmt Recommendations | Accuracy | Federal Status<br>State Status<br>PHS Listing Status | Sensitive Data<br>Resolution | Source Entity<br>Geometry Type |
|---|---|---|---|---|---|---|
| Freshwater Forested/Shrub | N/A<br>NWIWetlands | Aquatic Habitat<br>Aquatic habitat<br><br>http://www.ecy.wa. | NA | N/A<br>N/A<br><br>PHS Listed | N<br>AS MAPPED | US Fish and Wildlife Service<br>Polygons |

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to vraition caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.




December 7, 2017

1:18,056

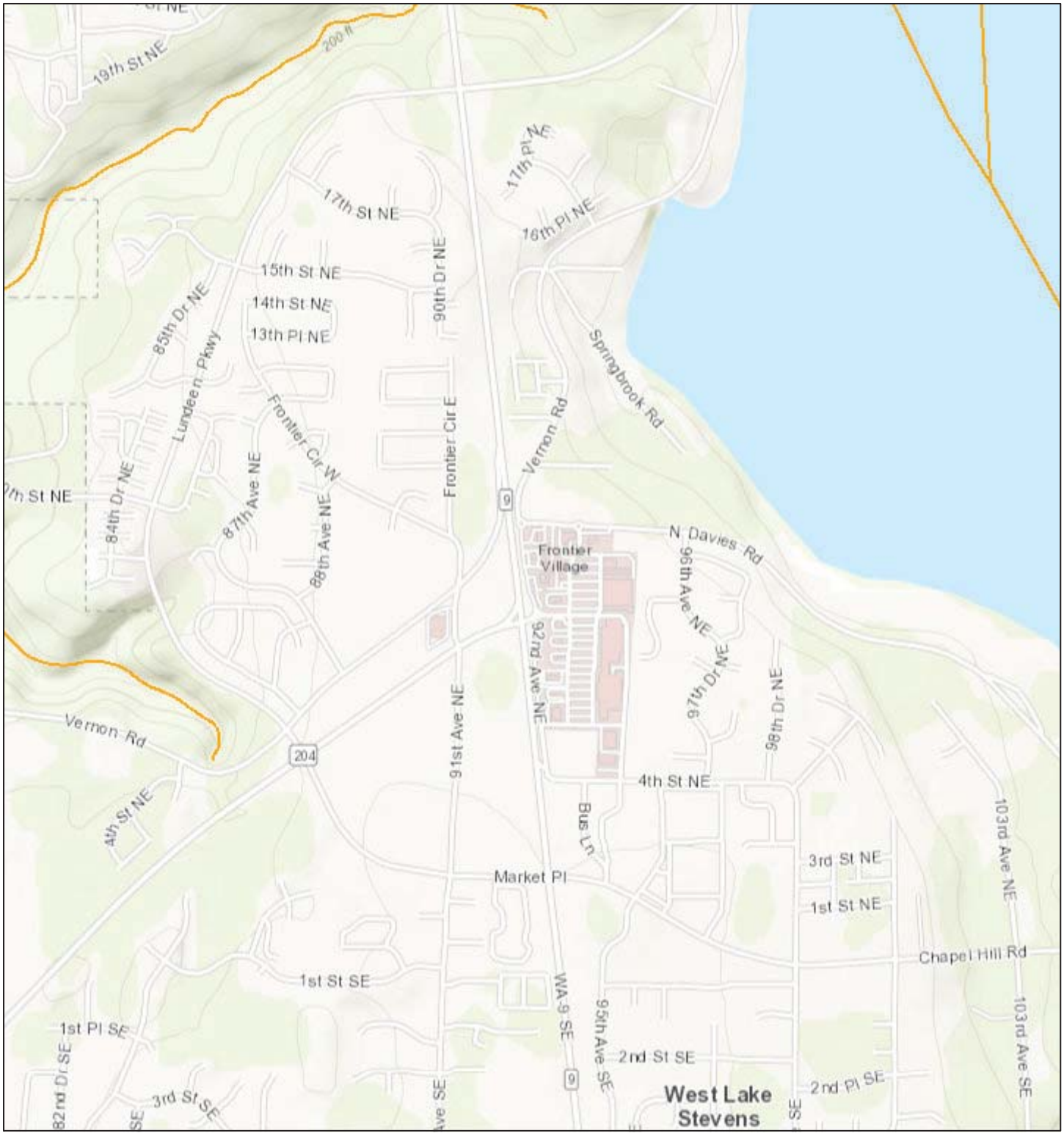
0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

**Bull Trout**

- Documented Presence
- Documented Spawning
- Documented Rearing
- Modeled Presence
- Presumed Presence
- Potential: Blocked
- Documented Historic Presence
- Transported Presence
- Transported Spawning
- Transported Rearing
- Documented-Artificial, Presence
- Documented-Artificial, Spawning
- Documented-Artificial, Rearing

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
WDFW




December 7, 2017

1:18,056

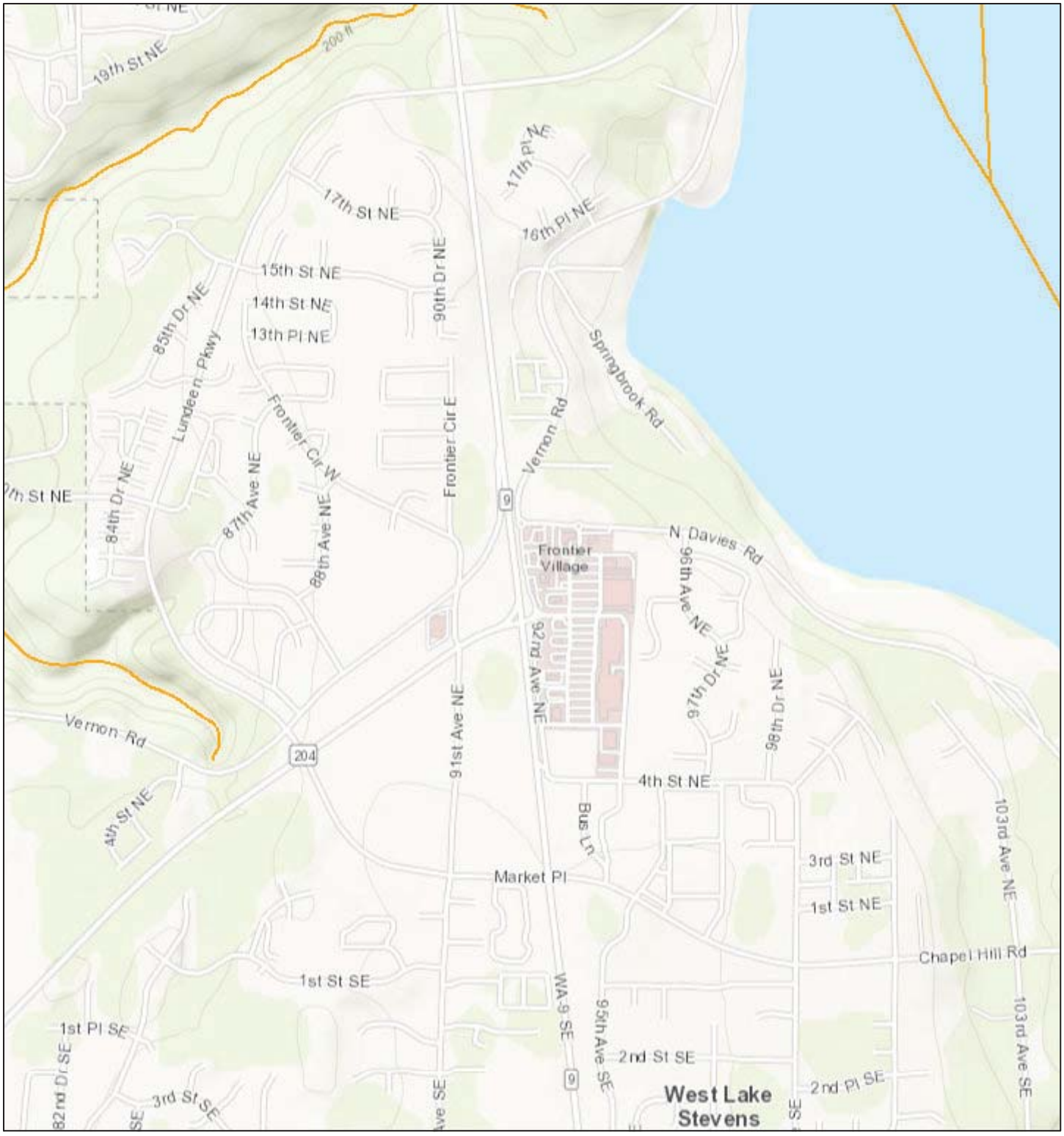
0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

**Fall Chinook Streams**

- Documented Presence
- Documented Spawning
- Documented Rearing
- Modeled Presence
- Presumed Presence
- Potential: Blocked
- Documented Historic Presence
- Transported Presence
- Transported Spawning
- Transported Rearing
- Documented-Artificial, Presence
- Documented-Artificial, Spawning
- Documented-Artificial, Rearing

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
WDFW




December 7, 2017

1:18,056

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

**Winter Steelhead Streams**

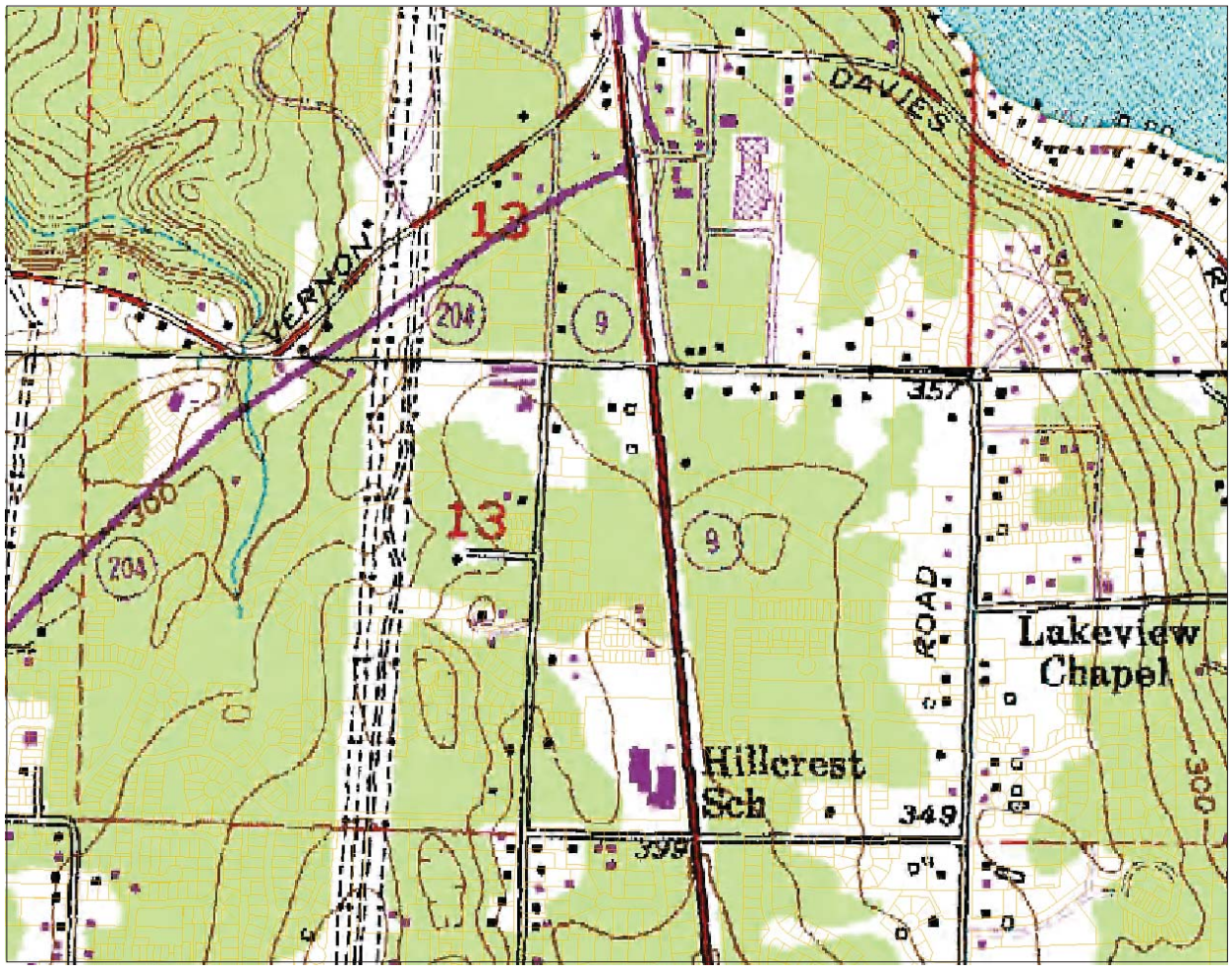
- Documented Presence
- Documented Spawning
- Documented Rearing
- Modeled Presence
- Presumed Presence
- Potential: Blocked
- Documented Historic Presence
- Transported Presence
- Transported Spawning
- Transported Rearing
- Documented-Artificial, Presence
- Documented-Artificial, Spawning
- Documented-Artificial, Rearing

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
WDFW

Snohomish County, Washington
PDS MAP PORTAL

# Map Title

12/7/2017



## Legend

- Snohomish County Tax Parcels
- USGS 7.5 minute Topographic Maps
  - Red: Band_1
  - Green: Band_2
  - Blue: Band_3

1: 10,000

0.3 0 0.16 0.3 Miles

Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

All maps, data, and information set forth herein ("Data"), are for illustrative purposes only and are not to be considered an official citation to, or representation of, the Snohomish County Code. Amendments and updates to the Data, together with other applicable County Code provisions, may apply which are not depicted herein. Snohomish County makes no representation or warranty concerning the content, accuracy, currency, completeness or quality of the Data contained herein and expressly disclaims any warranty of merchantability or fitness for any particular purpose. All persons accessing or otherwise using this Data assume all responsibility for use thereof and agree to hold Snohomish County harmless from and against any damages, loss, claim or liability arising out of any error, defect or omission contained within said Data. Washington State Law, Ch. 42.56 RCW, prohibits state and local agencies from providing access to lists of individuals intended for use for commercial purposes and, thus, no commercial use may be made of any Data comprising lists of individuals contained herein.

**Notes**

This map was automatically generated using Geocortex Essentials.

Snohomish County, Washington
PDS MAP PORTAL

# Map Title

12/7/2017

## Legend

- Snohomish County Tax Parcels
- Ortho2001_full.sid
  - High : 255
  - Low : 0

1: 10,000

0.3 0 0.16 0.3 Miles

Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

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**Notes**

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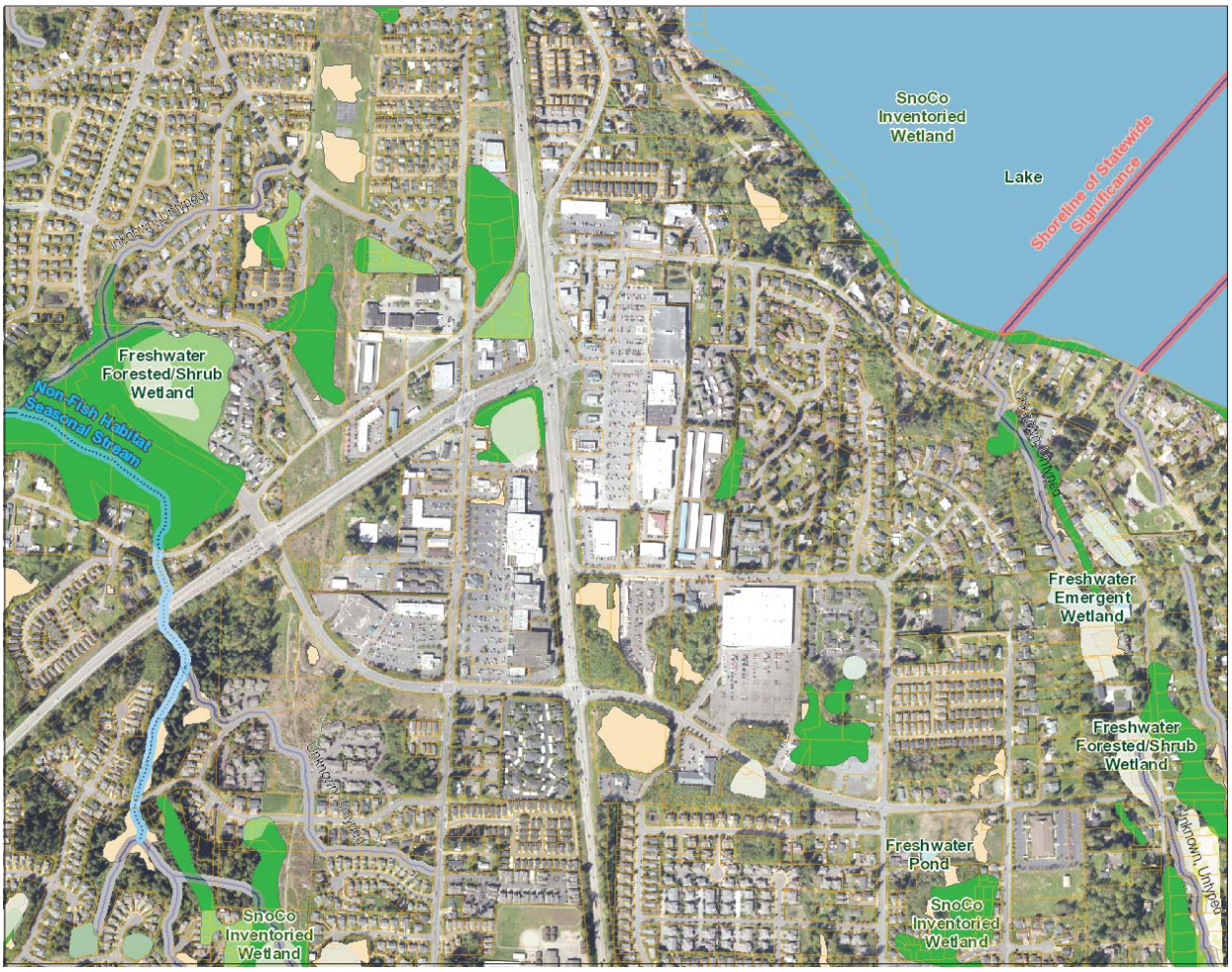
Snohomish County, Washington
PDS MAP PORTAL

# Map Title

12/7/2017



## Legend

- Snohomish County Tax Parcels
- Bulltrout Distribution
  - Known
  - Presumed
- Chinook Distribution
  - Known
  - Presumed
- Snohomish County Streams
  - Shoreline of Statewide Significance
  - Fish Habitat
  - Non-fish Habitat Perennial
  - Non-fish Habitat Seasonal
  - Unknown, Untyped
- Snohomish County Water Bodies
  - Shoreline of Statewide Significance
  - Fish Habitat
  - Non-fish Habitat Perennial
  - Non-fish Habitat Seasonal
  - Unknown, Untyped
- Hydric Soils
- National Wetland Inventory
  - No Data
  - Estuarine and Marine Deepwater

1: 10,000

0.3 0 0.16 0.3 Miles

Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

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**Notes**

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Snohomish County, Washington
PDS MAP PORTAL

# Map Title

12/7/2017

## Legend

- Snohomish County Tax Parcels
- Bulltrout Distribution
  - Known
  - Presumed
- Chinook Distribution
  - Known
  - Presumed
- Hydric Soils
- National Wetland Inventory
  - No Data
  - Estuarine and Marine Deepwater
  - Estuarine and Marine Wetland
  - Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Lake
  - Other
  - Riverine
- Snohomish County Wetland Inventory
- Tulalip Wetlands
  - Tulalip Wetland Class 1
  - Tulalip Wetland Class 2
  - Tulalip Wetland Class 3
- Planning Development

1: 4,800

0.2 0 0.08 0.2 Miles

Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

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**Notes**

This map was automatically generated using Geocortex Essentials.

Soil Map—Snohomish County Area, Washington

Map Scale: 1:11,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

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

## MAP LEGEND

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

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

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

**Water Features**
- Streams and Canals

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

**Background**
- Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 17, Nov 22, 2017

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

Date(s) aerial images were photographed: Jul 9, 2010—Jul 8, 2014

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

# Snohomish County Area, Washington

## 72—Tokul gravelly medial loam, 0 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t61k
*Elevation:* 160 to 1,150 feet
*Mean annual precipitation:* 45 to 70 inches
*Mean annual air temperature:* 46 to 52 degrees F
*Frost-free period:* 140 to 200 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Tokul and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Tokul

#### Setting

*Landform:* Till plains, hillslopes
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Side slope, tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Volcanic ash mixed with loess over glacial till

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material
*Oa - 1 to 2 inches:* highly decomposed plant material
*A - 2 to 6 inches:* gravelly medial loam
*Bs1 - 6 to 9 inches:* gravelly medial loam
*Bs2 - 9 to 17 inches:* gravelly medial loam
*Bs3 - 17 to 24 inches:* gravelly medial loam
*BC - 24 to 33 inches:* gravelly medial fine sandy loam
*2Bsm - 33 to 62 inches:* cemented material

#### Properties and qualities

*Slope:* 0 to 8 percent
*Depth to restrictive feature:* 20 to 39 inches to cemented horizon; 20 to 39 inches to densic material
*Natural drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* About 18 to 36 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s
*Hydrologic Soil Group:* B
*Other vegetative classification:* Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA)
*Hydric soil rating:* No

**Minor Components**

**Pastik**
*Percent of map unit:* 5 percent
*Landform:* Terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Barneston**
*Percent of map unit:* 5 percent
*Landform:* Kames, eskers, moraines
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Crest, interfluve
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Hydric soil rating:* No

**Norma**
*Percent of map unit:* 3 percent
*Landform:* Depressions, drainageways
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

**Mckenna**
*Percent of map unit:* 2 percent
*Landform:* Depressions, drainageways
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

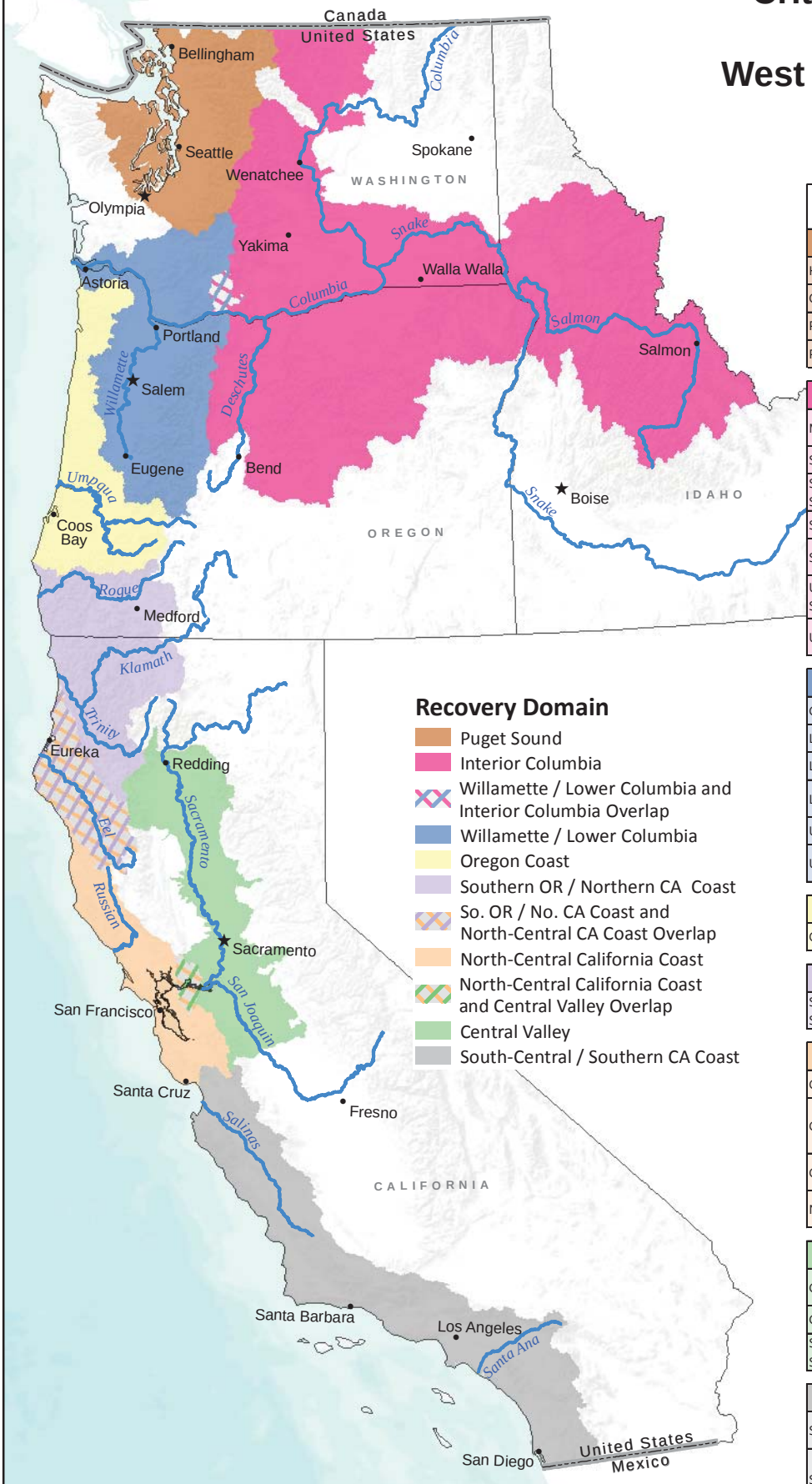
# Data Source Information

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 17, Nov 22, 2017

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 7 | Bellingham silty clay loam | 1.8 | 0.3% |
| 38 | Nargar variant sandy loam, 3 to 30 percent slopes | 9.2 | 1.4% |
| 47 | Pastik silt loam, 0 to 8 percent slopes | 3.1 | 0.5% |
| 49 | Pastik silt loam, 25 to 50 percent slopes | 17.2 | 2.7% |
| 50 | Pilchuck loamy sand | 3.9 | 0.6% |
| 72 | Tokul gravelly medial loam, 0 to 8 percent slopes | 472.8 | 73.9% |
| 73 | Tokul gravelly medial loam, 8 to 15 percent slopes | 42.0 | 6.6% |
| 74 | Tokul gravelly medial loam, 15 to 30 percent slopes | 19.3 | 3.0% |
| 77 | Tokul-Winston gravelly loams, 25 to 65 percent slopes | 70.5 | 11.0% |
| 83 | Water | 0.1 | 0.0% |
| **Totals for Area of Interest** | | **639.9** | **100.0%** |

# Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead




Updated July 2016

| Evolutionarily Significant Unit / Distinct Population Segment | ESA Status | Date of ESA Listing | Date of CH Designation |
|---|---|---|---|
| **Puget Sound Recovery Domain** | | | |
| Hood Canal Summer-run Chum Salmon | T | 3/25/1999 | 9/2/2005 |
| Ozette Lake Sockeye Salmon | T | 3/25/1999 | 9/2/2005 |
| Puget Sound Chinook Salmon | T | 3/24/1999 | 9/2/2005 |
| Puget Sound Steelhead | T | 5/11/2007 | 2/24/2016 |
| **Interior Columbia Recovery Domain** | | | |
| Middle Columbia River Steelhead | T | 3/25/1999<br>1/5/2006 | 9/2/2005 |
| Snake River Fall-run Chinook Salmon | T | 4/22/1992 | 12/28/1993 |
| Snake River Spring / Summer-run Chinook Salmon | T | 4/22/1992 | 10/25/1999 |
| Snake River Sockeye Salmon | E | 11/20/1991 | 12/28/1993 |
| Snake River Steelhead | T | 8/18/1997<br>1/5/2006 | 9/2/2005 |
| Upper Columbia River Spring-run Chinook Salmon | E | 3/24/1999 | 9/2/2005 |
| Upper Columbia River Steelhead | T | 8/18/1997<br>1/5/2006 | 9/2/2005 |
| **Willamette / Lower Columbia Recovery Domain** | | | |
| Columbia River Chum Salmon | T | 3/25/1999 | 9/2/2005 |
| Lower Columbia River Chinook Salmon | T | 3/24/1999 | 9/2/2005 |
| Lower Columbia River Coho Salmon | T | 6/28/2005 | 2/24/2016 |
| Lower Columbia River Steelhead | T | 3/19/1998<br>1/5/2006 | 9/2/2005 |
| Upper Willamette River Chinook Salmon | T | 3/24/1999 | 9/2/2005 |
| Upper Willamette River Steelhead | T | 3/25/1999<br>1/5/2006 | 9/2/2005 |
| **Oregon Coast Recovery Domain** | | | |
| Oregon Coast Coho Salmon | T | 2/11/2008 | 2/11/2008 |
| **Southern Oregon / Northern California Coast Recovery Domain** | | | |
| Southern OR / Northern CA Coasts Coho Salmon | T | 5/6/1997 | 5/5/1999 |
| **North-Central California Coast Recovery Domain** | | | |
| California Coastal Chinook Salmon | T | 9/16/1999 | 9/2/2005 |
| Central California Coast Coho Salmon | E | 10/31/1996 (T)<br>6/28/2005 (E)<br>4/2/2012 (RE) | 5/5/1999 |
| Central California Coast Steelhead | T | 8/18/1997<br>1/5/2006 | 9/2/2005 |
| Northern California Steelhead | T | 6/7/2000<br>1/5/2006 | 9/2/2005 |
| **Central Valley Recovery Domain** | | | |
| California Central Valley Steelhead | T | 3/19/1998<br>1/5/2006 | 9/2/2005 |
| Central Valley Spring-run Chinook Salmon | T | 9/16/1999 | 9/2/2005 |
| Sacramento River Winter-run Chinook Salmon | E | 11/5/1990 (T)<br>1/4/1994 (E) | 6/16/1993 |
| **South-Central / Southern California Coast Recovery Domain** | | | |
| South-Central California Coast Steelhead | T | 8/18/1997<br>1/5/2006 | 9/2/2005 |
| Southern California Steelhead | E | 8/18/1997<br>5/1/2002 (RE)<br>1/5/2006 | 9/2/2005 |

ESA = Endangered Species Act, CH = Critical Habitat, RE = Range Extension
E = Endangered, T = Threatened,

Critical Habitat Rules Cited

- 2/24/2016 (81 FR 9252) Final Critical Habitat Designation for Puget Sound Steelhead and Lower Columbia River Coho Salmon
- 2/11/2008 (73 FR 7816) Final Critical Habitat Designation for Oregon Coast Coho Salmon
- 9/2/2005 (70 FR 52630) Final Critical Habitat Designation for 12 ESU's of Salmon and Steelhead in WA, OR, and ID
- 9/2/2005 (70 FR 52488) Final Critical Habitat Designation for 7 ESU's of Salmon and Steelhead in CA
- 10/25/1999 (64 FR 57399) Revised Critical Habitat Designation for Snake River Spring/Summer-run Chinook Salmon
- 5/5/1999 (64 FR 24049) Final Critical Habitat Designation for Central CA Coast and Southern OR/Northern CA Coast Coho Salmon
- 12/28/1993 (58 FR 68543) Final Critical Habitat Designation for Snake River Chinook and Sockeye Salmon
- 6/16/1993 (58 FR 33212) Final Critical Habitat Designation for Sacramento River Winter-run Chinook Salmon

ESA Listing Rules Cited

- 4/2/2012 (77 FR 19552) Final Range Extension for Endangered Central California Coast Coho Salmon
- 2/11/2008 (73 FR 7816) Final ESA Listing for Oregon Coast Coho Salmon
- 5/11/2007 (72 FR 26722) Final ESA Listing for Puget Sound Steelhead
- 1/5/2006 (71 FR 5248) Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead
- 6/28/2005 (70 FR 37160) Final ESA Listing for 16 ESU's of West Coast Salmon
- 5/1/2002 (67 FR 21586) Range Extension for Endangered Steelhead in Southern California
- 6/7/2000 (65 FR 36074) Final ESA Listing for Northern California Steelhead
- 9/16/1999 (64 FR 50394) Final ESA Listing for Two Chinook Salmon ESUs in California
- 3/25/1999 (64 FR 14508) Final ESA Listing for Hood River Canal Summer-run and Columbia River Chum Salmon
- 3/25/1999 (64 FR 14517) Final ESA Listing for Middle Columbia River and Upper Willamette River Steelhead
- 3/25/1999 (64 FR 14528) Final ESA Listing for Ozette Lake Sockeye Salmon
- 3/24/1999 (64 FR 14308) Final ESA Listing for 4 ESU's of Chinook Salmon
- 3/19/1998 (63 FR 13347) Final ESA Listing for Lower Columbia River and Central Valley Steelhead
- 8/18/1997 (62 FR 43937) Final ESA Listing for 5 ESU's of Steelhead
- 5/6/1997 (62 FR 24588) Final ESA Listing for Southern Oregon / Northern California Coast Coho Salmon
- 10/31/1996 (61 FR 56138) Final ESA Listing for Central California Coast Coho Salmon
- 1/4/1994 (59 FR 222) Final ESA Listing for Sacramento River Winter-run Chinook Salmon
- 4/22/1992 (57 FR 14653) Final ESA Listing for Snake River Spring/summer-run and Snake River Fall Chinook Salmon
- 11/20/1991 (56 FR 58619) Final ESA Listing for Snake River Sockeye Salmon
- 11/5/1990 (55 FR 46515) Final ESA Listing for Sacramento River Winter-run Chinook Salmon

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405
http://www.fws.gov/wafwo/

In Reply Refer To: January 02, 2018
Consultation Code: 01EWFW00-2018-SLI-0427
Event Code: 01EWFW00-2018-E-00736
Project Name: SR9/SR204 Interchange Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website: http://wdfw.wa.gov/mapping/phs/ or at our office website: http://www.fws.gov/wafwo/species_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at http://www.fws.gov/pacific/eagle/for information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: http://www.nmfs.noaa.gov/pr/laws/mmpa/.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:
National Marine Fisheries Service:
http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

Attachment(s):

- Official Species List

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Washington Fish And Wildlife Office**
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

# Project Summary

Consultation Code: 01EWFW00-2018-SLI-0427

Event Code: 01EWFW00-2018-E-00736

Project Name: SR9/SR204 Interchange Improvements

Project Type: TRANSPORTATION

Project Description: intersection improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/48.001279575142874N122.10990209051494W

Counties: Snohomish, WA

# Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

## Mammals

| NAME | STATUS |
|---|---|
| North American Wolverine *Gulo gulo luscus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/5123 | Proposed Threatened |

## Birds

| NAME | STATUS |
|---|---|
| Marbled Murrelet *Brachyramphus marmoratus*<br>Population: U.S.A. (CA, OR, WA)<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/4467 | Threatened |
| Streaked Horned Lark *Eremophila alpestris strigata*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/7268 | Threatened |
| Yellow-billed Cuckoo *Coccyzus americanus*<br>Population: Western U.S. DPS<br>There is **proposed** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/3911 | Threatened |

## Amphibians

| NAME | STATUS |
|---|---|
| Oregon Spotted Frog *Rana pretiosa*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/6633 | Threatened |

## Fishes

| NAME | STATUS |
| --- | --- |
| Bull Trout *Salvelinus confluentus*<br>Population: U.S.A., conterminous, lower 48 states<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/8212 | Threatened |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

WETS Table

WETS Station: EVERETT, WA

Requested years: 1971 - 2017

| Month | Avg Max Temp | Avg Min Temp | Avg Mean Temp | Avg Precip | 30% chance precip less than | 30% chance precip more than | Avg number days precip 0.10 or more | Avg Snowfall |
|---|---|---|---|---|---|---|---|---|
| Jan | 46.4 | 33.9 | 40.2 | 4.51 | 3.29 | 5.31 | 11 | 0.9 |
| Feb | 49.7 | 34.8 | 42.2 | 3.31 | 2.34 | 3.92 | 9 | 0.4 |
| Mar | 53.6 | 37.6 | 45.6 | 4.04 | 3.07 | 4.70 | 11 | 0.0 |
| Apr | 58.7 | 41.2 | 49.9 | 3.06 | 2.40 | 3.53 | 9 | 0.1 |
| May | 64.4 | 46.4 | 55.4 | 2.60 | 1.93 | 3.05 | 7 | 0.0 |
| Jun | 68.9 | 51.4 | 60.2 | 2.23 | 1.41 | 2.69 | 6 | 0.0 |
| Jul | 73.9 | 54.5 | 64.2 | 1.10 | 0.46 | 1.32 | 3 | 0.0 |
| Aug | 74.7 | 54.5 | 64.6 | 1.24 | 0.46 | 1.50 | 3 | 0.0 |
| Sep | 69.2 | 49.1 | 59.2 | 1.98 | 1.13 | 2.41 | 5 | 0.0 |
| Oct | 60.1 | 43.0 | 51.6 | 3.54 | 2.13 | 4.29 | 9 | 0.0 |
| Nov | 51.1 | 37.6 | 44.4 | 5.34 | 3.97 | 6.25 | 12 | 0.2 |
| Dec | 45.7 | 34.0 | 39.8 | 4.98 | 3.61 | 5.87 | 12 | 0.4 |
| Annual: | | | | | 34.91 | 41.07 | | |
| Average | 59.7 | 43.2 | 51.4 | - | - | - | - | - |
| Total | - | - | - | 37.92 | | | 98 | 1.9 |

GROWING SEASON DATES

| | | | |
|---|---|---|---|
| Years with missing data: | 24 deg = 13 | 28 deg = 6 | 32 deg = 5 |
| Years with no occurrence: | 24 deg = 0 | 28 deg = 0 | 32 deg = 0 |
| Data years used: | 24 deg = 34 | 28 deg = 41 | 32 deg = 42 |
| Probability | 24 F or higher | 28 F or higher | 32 F or higher |
| 50 percent * | 1/31 to 12/13: 316 days | 2/27 to 11/21: 267 days | 4/2 to 10/27: 208 days |
| 70 percent * | 1/23 to 12/22: 333 days | 2/20 to 11/28: 281 days | 3/27 to 11/3: 221 days |

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

STATS TABLE - total precipitation (inches)

| Yr | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1894 | | | | | | | | | 3.65 | 4.02 | 5.45 | 4.05 | 17.17 |
| 1895 | 4.48 | | | | | | | | | | | | 4.48 |
| 1896 | | | | | | | | | | | | | |
| 1897 | | | | | | | | | | | | | |
| 1898 | | | | | | | | | | | | | |
| 1899 | | | | | | | | | | | | | |
| 1900 | | | | | | | | | | | | | |
| 1901 | | | | | | | | | | | | | |
| 1902 | | | | | | | | | | | | | |
| 1903 | | | | | | | | | | | | | |
| 1904 | | | | | | | | | | | | | |
| 1905 | | | | | | | | | | | | | |
| 1906 | | | | | | | | | | | | | |
| 1907 | | | | | | | | | | | | | |
| 1908 | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1909 | | | | | | | | | | | | | |
| 1910 | | | | | | | | | | | | | |
| 1911 | | | | | | | | | | | | | |
| 1912 | | | | | | | | | | | | | |
| 1913 | | | | | | | | | | | | | |
| 1914 | | | | | | | | | | | M3.73 | 1.32 | 5.05 |
| 1915 | 5.64 | 0.82 | 2.12 | M2.01 | 2.02 | 0.72 | 1.74 | T | M0.57 | 2.90 | 4.83 | M5.45 | 28.82 |
| 1916 | M4.33 | M6.25 | M5.58 | 1.17 | M2.94 | 2.34 | 3.12 | 0.24 | 2.02 | 1.44 | 3.44 | M5.82 | 38.69 |
| 1917 | 5.51 | 2.13 | 5.25 | 5.76 | 1.36 | 5.20 | 0.36 | 0.11 | 1.35 | 0.97 | 2.52 | 8.29 | 38.81 |
| 1918 | 6.05 | 5.44 | 3.70 | 1.43 | 3.24 | 0.53 | 1.33 | 1.79 | 0.27 | 3.31 | 5.09 | M4.29 | 36.47 |
| 1919 | 6.47 | 3.87 | 3.14 | 3.26 | 1.68 | 0.63 | 0.29 | 0.46 | 2.32 | 4.21 | 3.73 | 2.85 | 32.91 |
| 1920 | 3.83 | 0.83 | 2.56 | 4.53 | 1.23 | 1.49 | 0.94 | 1.54 | 2.95 | 4.93 | 4.47 | 6.36 | 35.66 |
| 1921 | 6.79 | 3.16 | 4.08 | 3.20 | 1.76 | 1.83 | 0.15 | 0.74 | 3.23 | M3.12 | 7.37 | 3.90 | 39.33 |
| 1922 | 3.09 | 2.66 | 4.43 | 2.49 | 1.97 | 0.02 | 0.00 | 1.58 | 1.37 | 3.86 | 2.15 | 6.24 | 29.86 |
| 1923 | 4.77 | 1.83 | 2.06 | 1.40 | 2.23 | 2.17 | 0.57 | 1.60 | 1.57 | 2.27 | 1.85 | 6.40 | 28.72 |
| 1924 | 3.71 | 4.77 | 2.36 | 2.24 | 0.28 | 2.11 | 1.09 | 0.82 | 2.56 | 4.72 | 4.11 | 5.05 | 33.82 |
| 1925 | 4.53 | 3.94 | 3.17 | 2.10 | 1.56 | 0.76 | 0.22 | 1.40 | 0.58 | 2.25 | 3.21 | 4.62 | 28.34 |
| 1926 | 4.51 | 4.79 | 1.50 | 1.50 | 2.90 | 0.18 | 0.50 | 2.74 | 5.29 | 2.87 | 3.64 | 3.63 | 34.05 |
| 1927 | 3.59 | 3.96 | 2.52 | 1.15 | 1.99 | 0.39 | 0.22 | 2.23 | 3.06 | 5.63 | 5.03 | 4.38 | 34.15 |
| 1928 | 2.43 | 1.48 | 4.54 | 3.51 | 0.34 | 1.23 | M0.13 | M0.04 | 0.81 | 3.94 | 2.59 | 3.19 | 24.23 |
| 1929 | 3.96 | M2.91 | 4.06 | 2.77 | 2.67 | 2.09 | 0.41 | 1.68 | 0.56 | M1.27 | 1.50 | 5.53 | 29.41 |
| 1930 | 2.35 | 2.90 | M2.13 | 1.87 | 2.70 | 2.10 | 0.21 | 0.03 | 1.68 | 3.06 | 1.99 | M2.78 | 23.80 |
| 1931 | M5.13 | 3.78 | 3.51 | 1.79 | 0.88 | 3.92 | 0.32 | 0.56 | 3.93 | 2.81 | M3.00 | 6.53 | 36.16 |
| 1932 | 4.22 | 2.26 | 4.43 | M3.23 | 0.64 | 0.33 | 1.86 | 0.87 | 1.16 | 3.27 | 8.51 | 5.35 | 36.13 |
| 1933 | 5.30 | 2.07 | 6.01 | 0.77 | 3.30 | 1.65 | 1.20 | 1.72 | 2.32 | 3.24 | 2.45 | 10.81 | 40.84 |
| 1934 | 4.62 | 1.46 | 3.34 | 2.04 | 3.03 | 0.24 | 0.76 | 0.31 | 1.73 | 2.28 | 6.06 | 4.74 | 30.61 |
| 1935 | 5.22 | 2.41 | 4.78 | 1.65 | 1.15 | 1.85 | 1.50 | 0.72 | 1.38 | 2.85 | 1.88 | 3.02 | 28.41 |
| 1936 | 6.04 | M5.17 | 2.62 | 1.61 | 3.78 | 2.81 | M0.78 | 0.41 | 1.86 | 0.64 | 1.20 | 3.57 | 30.49 |
| 1937 | 3.46 | 5.43 | 2.42 | 4.34 | 2.12 | 3.97 | 0.49 | 1.87 | 2.09 | 2.28 | 5.92 | 6.38 | 40.77 |
| 1938 | 3.50 | 2.74 | 2.96 | M3.04 | M1.90 | 0.45 | 0.35 | 0.50 | 0.85 | 3.02 | 4.26 | 3.13 | 26.70 |
| 1939 | 6.20 | 3.11 | M1.85 | 0.99 | 1.96 | 2.95 | 1.22 | 1.39 | 2.09 | 3.89 | 2.91 | 6.62 | 35.18 |
| 1940 | 3.32 | 4.71 | 5.15 | 4.57 | 1.83 | 0.55 | 0.87 | 0.22 | 2.04 | 3.37 | 3.62 | 3.09 | 33.34 |
| 1941 | M3.22 | 1.14 | 0.99 | 1.47 | 4.34 | 1.08 | 0.14 | 2.01 | 3.27 | 2.28 | 3.45 | 4.84 | 28.23 |
| 1942 | 2.38 | 1.66 | 1.74 | 3.00 | 4.02 | 2.88 | 0.89 | 0.39 | 0.46 | 2.89 | 6.33 | 4.11 | 30.75 |
| 1943 | M2.16 | 1.74 | 2.98 | 2.23 | 2.76 | 1.32 | 0.63 | 1.11 | 0.21 | 5.09 | 1.43 | 2.46 | 24.12 |
| 1944 | 3.33 | 2.45 | 1.47 | 2.70 | 2.48 | 2.65 | 0.36 | 0.75 | 4.07 | 1.92 | 4.19 | 1.27 | 27.64 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1945 | 2.66 | 4.31 | 5.47 | 2.46 | 2.18 | 1.07 | 0.22 | 0.61 | 4.10 | 4.68 | 5.59 | 3.27 | 36.62 |
| 1946 | 4.21 | 4.57 | 3.53 | 1.57 | 0.74 | 4.83 | 0.84 | 0.73 | 1.03 | 3.11 | 4.78 | 4.49 | 34.43 |
| 1947 | 4.68 | 2.88 | 1.85 | 2.49 | 0.35 | 3.58 | 0.49 | 0.86 | 1.45 | 8.01 | 5.73 | 7.07 | 39.44 |
| 1948 | 4.53 | 5.37 | 2.99 | 4.12 | 6.37 | 3.19 | 2.58 | 2.43 | 2.99 | 3.13 | 4.43 | 5.05 | 47.18 |
| 1949 | 1.96 | 5.02 | 2.81 | 1.92 | 1.35 | 0.78 | 2.61 | 0.96 | 3.72 | 3.17 | 5.49 | 5.79 | 35.58 |
| 1950 | 3.85 | 5.50 | 6.01 | 2.14 | 1.16 | 1.53 | 1.06 | 0.67 | 1.24 | 5.16 | 6.85 | 4.51 | 39.68 |
| 1951 | 4.62 | 3.88 | M3.94 | 0.65 | 1.81 | 0.69 | 0.17 | 0.84 | 2.74 | 5.97 | 3.82 | 5.10 | 34.23 |
| 1952 | M3.24 | 2.94 | 4.01 | 1.26 | 1.96 | 1.47 | 0.96 | 0.64 | 0.35 | 1.10 | 0.56 | 3.73 | 22.22 |
| 1953 | M7.07 | 2.97 | 3.05 | 3.40 | 1.96 | 2.98 | 0.64 | 1.30 | 1.77 | 4.47 | M5.93 | 4.81 | 40.35 |
| 1954 | 7.97 | 4.56 | 2.37 | M2.92 | 2.71 | 4.93 | 2.36 | 3.65 | 2.78 | 1.59 | 8.15 | 6.14 | 50.13 |
| 1955 | 2.72 | 3.61 | 1.69 | 3.94 | 3.24 | 3.05 | 2.24 | 0.08 | 0.91 | 4.98 | 5.56 | 8.53 | 40.55 |
| 1956 | 7.82 | 3.97 | 3.44 | 1.12 | 1.26 | 5.52 | 0.13 | 0.99 | 3.06 | 5.70 | 2.70 | 4.12 | 39.83 |
| 1957 | 3.71 | 5.68 | 6.03 | 2.69 | 1.73 | 1.33 | 0.65 | | 0.65 | 3.71 | 3.34 | 5.50 | 35.02 |
| 1958 | 4.83 | 6.75 | 2.24 | 4.22 | 0.75 | 2.24 | 0.00 | 0.15 | 1.00 | 3.52 | 5.59 | 4.01 | 35.30 |
| 1959 | 7.17 | 3.54 | 4.24 | 1.09 | 3.17 | 2.06 | 1.23 | 1.18 | 2.97 | 4.09 | 4.84 | 5.12 | 40.70 |
| 1960 | 3.89 | 2.77 | 1.92 | 2.23 | 2.81 | 1.48 | 0.00 | 4.23 | 1.06 | 4.00 | 7.23 | 2.53 | 34.15 |
| 1961 | 3.81 | 6.32 | 3.38 | 2.79 | 3.14 | 0.25 | 1.50 | 1.07 | 0.87 | 4.32 | 3.26 | 5.20 | 35.91 |
| 1962 | 3.13 | 1.46 | 3.49 | 1.67 | 3.18 | 2.86 | 0.76 | 2.01 | 2.21 | 1.95 | 5.39 | 2.79 | 30.90 |
| 1963 | 1.34 | 3.16 | 2.59 | 2.28 | 0.63 | 2.53 | 1.03 | 1.29 | 1.14 | 3.42 | 5.73 | 4.84 | 29.98 |
| 1964 | 5.75 | 2.36 | 4.94 | 3.77 | 1.70 | 3.04 | 0.69 | 1.77 | 2.02 | 1.11 | 5.28 | 5.46 | 37.89 |
| 1965 | 8.25 | 4.68 | 0.55 | 2.49 | 1.66 | 0.53 | 1.30 | 2.51 | 0.87 | 1.52 | 3.91 | 5.98 | 34.25 |
| 1966 | 3.58 | 3.07 | 4.12 | 1.12 | 2.49 | 1.95 | 2.66 | 0.21 | 1.41 | 2.95 | 4.59 | 6.44 | 34.59 |
| 1967 | 7.18 | 2.75 | 3.58 | 2.27 | 1.64 | 1.00 | 0.23 | 0.00 | 1.62 | 5.50 | 2.35 | 6.67 | 34.79 |
| 1968 | 4.44 | 1.90 | 3.87 | 2.94 | 2.14 | 2.07 | 0.66 | 3.89 | | 4.40 | 4.44 | 6.10 | 36.85 |
| 1969 | 3.96 | 1.63 | 1.64 | 3.10 | 1.89 | 2.08 | 1.06 | 0.25 | 5.42 | 1.67 | 3.16 | 6.19 | 32.05 |
| 1970 | 5.47 | 1.75 | 2.41 | 3.11 | 1.91 | 0.74 | 1.23 | 0.22 | 2.36 | 4.31 | 4.21 | 6.18 | 33.90 |
| 1971 | 9.77 | 4.10 | 5.68 | 1.55 | 1.34 | 2.77 | 0.94 | 0.49 | 3.50 | 1.73 | 4.13 | 5.47 | 41.47 |
| 1972 | 3.56 | 2.70 | 5.27 | 5.30 | 1.34 | 3.33 | 2.24 | 2.03 | 5.20 | 1.37 | 3.48 | 7.23 | 43.05 |
| 1973 | 3.38 | 1.46 | 2.96 | 1.32 | 2.41 | 2.22 | 0.13 | 1.11 | 2.13 | 3.18 | 7.52 | 6.84 | 34.66 |
| 1974 | 7.10 | 4.69 | 5.80 | 2.00 | 3.77 | 0.81 | 2.24 | 0.32 | 1.50 | 1.61 | 4.64 | 5.57 | 40.05 |
| 1975 | 4.22 | 4.01 | 5.05 | 2.24 | 2.39 | 1.96 | 0.20 | 3.12 | 0.27 | 8.53 | 6.29 | 4.37 | 42.65 |
| 1976 | 3.83 | 3.07 | 4.36 | 3.48 | 1.94 | 2.08 | M0.10 | 3.58 | 1.24 | 1.73 | 0.95 | 2.34 | 28.70 |
| 1977 | 1.63 | 1.90 | 4.92 | 1.86 | 6.03 | 0.94 | 1.79 | 3.25 | 3.55 | 2.17 | 3.33 | 5.73 | 37.10 |
| 1978 | 4.39 | 2.99 | 2.51 | 3.52 | 2.03 | 1.18 | 2.40 | 2.14 | 4.13 | 1.20 | 4.78 | 2.88 | 34.15 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 | 1.84 | 5.35 | 2.20 | 3.72 | 1.61 | 0.48 | 1.49 | 0.67 | 1.41 | 3.24 | 1.68 | 5.78 | 29.47 |
| 1980 | 3.04 | 4.23 | 3.27 | 3.07 | 2.54 | 3.15 | 0.68 | 1.98 | 1.88 | | | M3.98 | 27.82 |
| 1981 | 3.25 | 3.11 | 2.60 | 3.80 | 2.44 | 3.86 | 2.21 | 0.07 | 3.06 | 5.91 | 4.70 | 6.99 | 42.00 |
| 1982 | 6.43 | 4.44 | 3.94 | 2.92 | 0.88 | 1.71 | 2.80 | M1.12 | 2.32 | 4.85 | 5.19 | 6.79 | 43.39 |
| 1983 | 5.14 | 4.51 | 3.02 | 1.98 | 2.35 | 5.35 | 2.02 | 2.15 | 2.44 | 1.52 | 9.30 | 4.23 | 44.01 |
| 1984 | 3.74 | 4.13 | 4.09 | 2.68 | 4.25 | 2.92 | 0.72 | 1.96 | 3.61 | 2.67 | 7.51 | 5.89 | 44.17 |
| 1985 | 0.54 | M2.97 | 2.19 | 2.57 | 2.24 | 2.73 | 0.09 | 1.81 | 2.63 | 6.46 | 3.52 | M0.76 | 28.51 |
| 1986 | 6.48 | 3.34 | 1.75 | 3.67 | 3.56 | 0.91 | 2.03 | 0.06 | 2.40 | 2.93 | 7.29 | 4.02 | 38.44 |
| 1987 | 5.67 | 1.95 | 4.51 | 2.82 | 1.89 | 0.81 | 0.87 | 1.28 | 0.81 | 0.08 | 3.18 | 7.70 | 31.57 |
| 1988 | 3.24 | 1.02 | 5.28 | 3.70 | 3.61 | 2.61 | 0.92 | 0.39 | 2.07 | 2.05 | 7.31 | 3.87 | 36.07 |
| 1989 | 4.60 | M2.44 | 5.41 | 1.21 | 2.83 | 1.43 | 0.59 | 1.82 | 0.31 | 3.66 | 5.27 | 3.07 | 32.64 |
| 1990 | M5.80 | 5.11 | 3.32 | 3.63 | 2.52 | 3.46 | 0.98 | 0.63 | 0.42 | 5.83 | 7.84 | M3.58 | 43.12 |
| 1991 | 3.14 | 4.65 | 3.59 | M3.75 | 2.90 | 1.82 | 0.34 | 1.69 | 1.38 | 1.50 | 6.06 | 2.45 | 33.27 |
| 1992 | M5.20 | 3.46 | 1.77 | 2.85 | 1.17 | 2.61 | 2.11 | 0.35 | 2.18 | 1.05 | 5.60 | 4.34 | 32.69 |
| 1993 | 1.52 | 0.40 | 3.05 | 4.48 | M2.50 | 2.92 | 3.57 | 1.01 | 1.10 | 1.22 | 2.15 | 6.51 | 30.43 |
| 1994 | 3.53 | 3.90 | 3.47 | 3.35 | 1.33 | 1.30 | 0.39 | 0.08 | 1.54 | 3.29 | 6.38 | 6.94 | 35.50 |
| 1995 | 3.42 | 1.30 | 4.99 | 2.22 | 1.56 | 1.07 | 1.67 | 3.15 | 0.96 | 5.45 | 5.24 | 6.94 | 37.97 |
| 1996 | 4.73 | 5.26 | 0.87 | 4.84 | 4.31 | 1.18 | 0.52 | 0.47 | 4.78 | 6.47 | M3.09 | 7.48 | 44.00 |
| 1997 | M4.24 | 2.99 | 6.08 | 2.75 | M2.26 | 4.42 | 1.55 | 0.73 | 3.15 | 5.30 | 2.94 | 4.05 | 40.46 |
| 1998 | 7.12 | 2.65 | 4.53 | 2.45 | 3.27 | 1.33 | 0.48 | 0.38 | 0.57 | 5.21 | 6.13 | 5.82 | 39.94 |
| 1999 | M5.74 | 6.57 | 3.83 | 2.29 | M2.87 | M4.38 | 2.10 | 2.12 | 0.33 | 3.23 | 8.72 | 4.57 | 46.75 |
| 2000 | 4.33 | 3.37 | 4.82 | 2.70 | M3.06 | 1.61 | 0.72 | 0.46 | M1.82 | 3.46 | M1.92 | M2.62 | 30.89 |
| 2001 | M3.50 | M2.12 | 2.47 | 2.98 | M2.78 | M3.93 | 1.71 | 1.44 | 1.03 | 5.33 | M6.30 | 5.65 | 39.24 |
| 2002 | M5.31 | M2.78 | M3.36 | 1.91 | M2.72 | 1.25 | 1.34 | 0.11 | M0.85 | 1.25 | 2.15 | M5.11 | 28.14 |
| 2003 | M4.55 | M1.62 | 4.29 | 2.85 | M1.38 | 0.66 | M0.03 | 0.35 | M0.80 | 5.12 | M4.59 | 3.66 | 29.90 |
| 2004 | M5.46 | 2.97 | 2.63 | 0.80 | M3.90 | 0.96 | 0.46 | 2.94 | M2.43 | 2.73 | M4.41 | 4.68 | 34.37 |
| 2005 | M1.89 | 1.50 | 2.64 | 5.69 | M2.38 | 3.51 | 0.87 | 0.67 | M1.27 | 3.52 | M4.85 | M3.33 | 32.12 |
| 2006 | M7.30 | 4.03 | 2.42 | 3.06 | 2.85 | 1.56 | 0.25 | 0.08 | 2.01 | 2.53 | M8.11 | 6.79 | 40.99 |
| 2007 | 3.43 | 2.57 | 4.63 | 2.81 | 1.43 | 2.07 | 1.37 | 1.84 | 2.00 | 3.81 | 3.39 | 8.97 | 38.32 |
| 2008 | 3.72 | M1.71 | 4.91 | 3.07 | M2.17 | M2.69 | 0.62 | M2.11 | M0.98 | 2.73 | M5.61 | M3.63 | 33.95 |
| 2009 | 3.36 | 1.20 | 3.97 | 2.98 | M3.00 | 0.51 | M0.32 | 0.95 | M1.62 | 5.81 | M5.95 | M2.75 | 32.42 |
| 2010 | M4.70 | M2.39 | M2.46 | M3.96 | 3.94 | 5.24 | 0.10 | 1.44 | M4.45 | 2.37 | M3.37 | M4.73 | 39.15 |
| 2011 | M5.90 | 3.47 | 7.58 | 5.15 | M3.42 | 3.34 | 1.64 | 0.18 | M0.63 | 2.26 | 6.78 | 0.96 | 41.31 |
| 2012 | 5.55 | 5.13 | M5.88 | M3.47 | M3.70 | 4.37 | 2.13 | M0.02 | 0.29 | 6.31 | M6.39 | M8.93 | 52.17 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2013 | 6.22 | M2.40 | 3.67 | 3.94 | M2.31 | 2.02 | M0.04 | M1.77 | M3.78 | 1.43 | M3.46 | M2.31 | 33.35 |
| 2014 | M4.08 | M5.04 | 7.29 | 3.77 | 3.06 | 1.81 | M1.18 | M1.59 | M3.52 | 6.29 | 5.54 | 6.08 | 49.25 |
| 2015 | 7.15 | 5.40 | 3.37 | 2.43 | 0.52 | 0.62 | 0.32 | 2.11 | 2.49 | 3.63 | 6.60 | 8.82 | 43.46 |
| 2016 | M6.89 | M3.26 | 6.11 | M2.23 | M1.31 | 1.87 | M0.55 | M0.09 | 2.80 | 7.36 | 8.33 | M3.23 | 44.03 |
| 2017 | M2.29 | 5.76 | 7.01 | 4.02 | 4.19 | M0.93 | 0.00 | 0.13 | M1.11 | M3.43 | 8.20 | M3.89 | 40.96 |
| 2018 | M6.45 | M3.35 | M0.57 | | | | | | | | | | 10.37 |

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 419 ft. Lat: 47.9636° N Lon: -122.0984° W
Station: **WEST LAKE STEVENS 2.1 S, WA US US1WASN0094**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 10 | 01 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 02 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 03 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 04 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 05 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 06 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 07 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 08 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 09 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 10 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 11 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 12 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 13 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 14 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 15 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 16 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 17 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 18 | | | | 0.50 | | | | | | | | | | | | |
| 2017 | 10 | 19 | | | | 1.00 | | | | | | | | | | | | |
| 2017 | 10 | 20 | | | | 0.45 | | | | | | | | | | | | |
| 2017 | 10 | 21 | | | | 0.81 | | | | | | | | | | | | |
| 2017 | 10 | 22 | | | | 0.57 | | | | | | | | | | | | |
| 2017 | 10 | 23 | | | | 0.01 | | | | | | | | | | | | |
| 2017 | 10 | 24 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 25 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 26 | | | | 0.02 | | | | | | | | | | | | |
| 2017 | 10 | 27 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 28 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 29 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 30 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 10 | 31 | | | | | | | | | | | | | | | | |
| Summary | | | | | | 3.36 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 419 ft. Lat: 47.9636° N Lon: -122.0984° W

Station: **WEST LAKE STEVENS 2.1 S, WA US US1WASN0094**

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 11 | 01 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 11 | 02 | | | | 0.05 | | | | | | | | | | | | |
| 2017 | 11 | 03 | | | | 0.62 | | | | | | | | | | | | |
| 2017 | 11 | 04 | | | | 0.06 | | | | | | | | | | | | |
| 2017 | 11 | 05 | | | | 0.42 | | | | | | | | | | | | |
| 2017 | 11 | 06 | | | | 0.06 | | | | | | | | | | | | |
| 2017 | 11 | 07 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 11 | 08 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 11 | 09 | | | | 0.03 | | | | | | | | | | | | |
| 2017 | 11 | 10 | | | | 0.09 | | | | | | | | | | | | |
| 2017 | 11 | 11 | | | | 0.01 | | | | | | | | | | | | |
| 2017 | 11 | 12 | | | | 0.30 | | | | | | | | | | | | |
| 2017 | 11 | 13 | | | | 0.55 | | | | | | | | | | | | |
| 2017 | 11 | 14 | | | | 0.36 | | | | | | | | | | | | |
| 2017 | 11 | 15 | | | | 0.96 | | | | | | | | | | | | |
| 2017 | 11 | 16 | | | | 0.07 | | | | | | | | | | | | |
| 2017 | 11 | 17 | | | | 0.04 | | | | | | | | | | | | |
| 2017 | 11 | 18 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 11 | 19 | | | | T | | | | | | | | | | | | |
| 2017 | 11 | 20 | | | | 0.27 | | | | | | | | | | | | |
| 2017 | 11 | 21 | | | | 0.71 | | | | | | | | | | | | |
| 2017 | 11 | 22 | | | | 0.87 | | | | | | | | | | | | |
| 2017 | 11 | 23 | | | | 0.81 | | | | | | | | | | | | |
| 2017 | 11 | 24 | | | | 0.35 | | | | | | | | | | | | |
| 2017 | 11 | 25 | | | | 0.05 | | | | | | | | | | | | |
| 2017 | 11 | 26 | | | | 0.43 | | | | | | | | | | | | |
| 2017 | 11 | 27 | | | | 0.59 | | | | | | | | | | | | |
| 2017 | 11 | 28 | | | | 0.01 | | | | | | | | | | | | |
| 2017 | 11 | 29 | | | | 0.59 | | | | | | | | | | | | |
| 2017 | 11 | 30 | | | | 0.03 | | | | | | | | | | | | |
| Summary | | | | | | 8.33 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 419 ft. Lat: 47.9636° N Lon: -122.0984° W
Station: **WEST LAKE STEVENS 2.1 S, WA US US1WASN0094**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 12 | 01 | | | | 0.40 | | | | | | | | | | | | |
| 2017 | 12 | 02 | | | | 0.16 | | | | | | | | | | | | |
| 2017 | 12 | 03 | | | | 0.55 | | | | | | | | | | | | |
| 2017 | 12 | 04 | | | | 0.05 | | | | | | | | | | | | |
| 2017 | 12 | 05 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 06 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 07 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 08 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 09 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 10 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 11 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 12 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 13 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 14 | | | | 0.00 | | 0.0 | | | | | | | | | | |
| 2017 | 12 | 15 | | | | 0.04 | | | | | | | | | | | | |
| 2017 | 12 | 16 | | | | 0.54 | | | | | | | | | | | | |
| 2017 | 12 | 17 | | | | 0.33 | | | | | | | | | | | | |
| 2017 | 12 | 18 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 19 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 20 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 21 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 22 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 23 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 24 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 25 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 26 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 27 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 28 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 29 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 30 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 31 | | | | | | | | | | | | | | | | |
| Summary | | | | | | 2.07 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 60 ft. Lat: 47.9752° N Lon: -122.1950° W
Station: **EVERETT, WA US USC00452675**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 10 | 01 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 02 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 03 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 04 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 05 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 06 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 07 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 08 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 09 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 10 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 11 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 12 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 13 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 14 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 15 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 16 | 62 | 37 | 40 | 0.13 | | | | | | | | | | | | |
| 2017 | 10 | 17 | 64 | 40 | 54 | 0.02 | | | | | | | | | | | | |
| 2017 | 10 | 18 | 62 | 45 | 47 | 0.22 | | | | | | | | | | | | |
| 2017 | 10 | 19 | 64 | 47 | 53 | 0.85 | | | | | | | | | | | | |
| 2017 | 10 | 20 | 56 | 47 | 47 | 0.27 | | | | | | | | | | | | |
| 2017 | 10 | 21 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 22 | 59 | 43 | 53 | 0.70 | | | | | | | | | | | | |
| 2017 | 10 | 23 | 64 | 43 | 50 | 0.01 | | | | | | | | | | | | |
| 2017 | 10 | 24 | 68 | 42 | 42 | 0.00 | | | | | | | | | | | | |
| 2017 | 10 | 25 | 60 | 41 | 43 | 0.01 | | | | | | | | | | | | |
| 2017 | 10 | 26 | 57 | 43 | 51 | 0.00 | | | | | | | | | | | | |
| 2017 | 10 | 27 | 59 | 43 | 43 | 0.01 | | | | | | | | | | | | |
| 2017 | 10 | 28 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 29 | | | | | | | | | | | | | | | | |
| 2017 | 10 | 30 | 64 | 38 | 39 | 0.04 | | | | | | | | | | | | |
| 2017 | 10 | 31 | 59 | 34 | 34 | 0.01 | | | | | | | | | | | | |
| | | Summary | 61 | 42 | | 2.27 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 60 ft. Lat: 47.9752° N Lon: -122.1950° W
Station: **EVERETT, WA US USC00452675**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 11 | 01 | 60 | 34 | 51 | 0.00 | | | | | | | | | | | | |
| 2017 | 11 | 02 | 54 | 48 | 48 | 0.04 | | | | | | | | | | | | |
| 2017 | 11 | 03 | 51 | 36 | 37 | 0.72 | | | | | | | | | | | | |
| 2017 | 11 | 04 | | | | | | | | | | | | | | | | |
| 2017 | 11 | 05 | 40 | 32 | 34 | 0.58 | | | | | | | | | | | | |
| 2017 | 11 | 06 | 40 | 32 | 33 | 0.15 | | | | | | | | | | | | |
| 2017 | 11 | 07 | 49 | 31 | 36 | 0.01 | | | | | | | | | | | | |
| 2017 | 11 | 08 | 46 | 36 | 46 | 0.00 | | | | | | | | | | | | |
| 2017 | 11 | 09 | 57 | 45 | 46 | 0.06 | | | | | | | | | | | | |
| 2017 | 11 | 10 | | | | | | | | | | | | | | | | |
| 2017 | 11 | 11 | 55 | 37 | 39 | 0.12 | | | | | | | | | | | | |
| 2017 | 11 | 12 | 50 | 37 | 46 | 0.32 | | | | | | | | | | | | |
| 2017 | 11 | 13 | 56 | 37 | 50 | 0.68 | | | | | | | | | | | | |
| 2017 | 11 | 14 | 55 | 45 | 47 | 0.33 | | | | | | | | | | | | |
| 2017 | 11 | 15 | 55 | 45 | 46 | 0.95 | | | | | | | | | | | | |
| 2017 | 11 | 16 | 49 | 42 | 44 | 0.06 | | | | | | | | | | | | |
| 2017 | 11 | 17 | 46 | 44 | 44 | 0.02 | | | | | | | | | | | | |
| 2017 | 11 | 18 | 53 | 42 | 44 | 0.00 | | | | | | | | | | | | |
| 2017 | 11 | 19 | 55 | 42 | 43 | 0.00 | | | | | | | | | | | | |
| 2017 | 11 | 20 | 53 | 41 | 48 | 0.60 | | | | | | | | | | | | |
| 2017 | 11 | 21 | 52 | 37 | 39 | 0.25 | | | | | | | | | | | | |
| 2017 | 11 | 22 | 56 | 39 | 55 | 0.78 | | | | | | | | | | | | |
| 2017 | 11 | 23 | | | | | | | | | | | | | | | | |
| 2017 | 11 | 24 | | | | | | | | | | | | | | | | |
| 2017 | 11 | 25 | | | | 0.85 | | | | | | | | | | | | |
| 2017 | 11 | 26 | | | | 1.00 | | | | | | | | | | | | |
| 2017 | 11 | 27 | | | 44 | 0.09 | | | | | | | | | | | | |
| 2017 | 11 | 28 | 51 | 43 | 45 | 0.02 | | | | | | | | | | | | |
| 2017 | 11 | 29 | 45 | 39 | 40 | 0.50 | | | | | | | | | | | | |
| 2017 | 11 | 30 | 49 | 40 | 43 | 0.07 | | | | | | | | | | | | |
| | | Summary | 51 | 39 | | 8.20 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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U.S. Department of Commerce
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Current Location: Elev: 60 ft. Lat: 47.9752° N Lon: -122.1950° W
Station: **EVERETT, WA US USC00452675**

# Record of Climatological Observations

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Generated on 03/08/2018

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

| Year | Month | Day | Temperature (F) | | | Precipitation | | | | | Evaporation | | Soil Temperature (F) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 24 Hrs. Ending at Observation Time | | At Observation | 24 Hour Amounts Ending at Observation Time | | | | At Obs. Time | | | 4 in. Depth | | | 8 in. Depth | | |
| | | | Max. | Min. | | Rain, Melted Snow, Etc. (in) | Flag | Snow, Ice Pellets, Hail (in) | Flag | Snow, Ice Pellets, Hail, Ice on Ground (in) | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2017 | 12 | 01 | 46 | 42 | 44 | 0.36 | | | | | | | | | | | | |
| 2017 | 12 | 02 | 47 | 42 | 42 | 0.04 | | | | | | | | | | | | |
| 2017 | 12 | 03 | 44 | 40 | 40 | 0.53 | | | | | | | | | | | | |
| 2017 | 12 | 04 | 46 | 34 | 35 | 0.04 | | | | | | | | | | | | |
| 2017 | 12 | 05 | 45 | 30 | 30 | 0.01 | | | | | | | | | | | | |
| 2017 | 12 | 06 | 46 | 29 | 30 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 07 | 49 | 28 | 29 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 08 | 49 | 27 | 27 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 09 | 47 | 27 | 28 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 10 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 11 | 47 | 22 | 27 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 12 | 50 | 27 | 34 | 0.03 | | | | | | | | | | | | |
| 2017 | 12 | 13 | 48 | 32 | 33 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 14 | 51 | 32 | 35 | 0.00 | | | | | | | | | | | | |
| 2017 | 12 | 15 | 49 | 33 | 37 | 0.02 | | | | | | | | | | | | |
| 2017 | 12 | 16 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 17 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 18 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 19 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 20 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 21 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 22 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 23 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 24 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 25 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 26 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 27 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 28 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 29 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 30 | | | | | | | | | | | | | | | | |
| 2017 | 12 | 31 | | | | | | | | | | | | | | | | |
| Summary | | | 47 | 32 | | 1.03 | | 0.0 | | | | | | | | | | |

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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# Appendix C — Wetland Delineation Data Sheets

Appendix C removed due to document size.
A2 - Addendum to Wetland & Streams Report includes all data sheets.

# Appendix D — Wetland Rating Forms

Appendix D removed due to document size.
A2 - Addendum to Wetland & Stream report includes all rating forms.

# Appendix E — Wetland Functions BPJ Forms

This Appendix includes the wetland functional assessment form of each wetland delineated. Wetland functions were determined using the Wetland Functions Best Professional Judgment (BPJ) Tool.

## Wetland Functions Field Data Form – WSDOT's BPJ Characterization *

Project: SR 9/204 Interchange Date: 12/20/17

Wetland Name: W4 Biologist: KAM

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**A. Flood Flow Alteration**
(Storage and Desynchronization)

1. Wetland occurs in the upper portion of its watershed. yes
2. Wetland is in a relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall conditions. – yes
3. Wetland is a closed (depressional) system. – yes
4. If flowthrough, wetland has constricted outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.
5. Wetland has dense woody vegetation. – ≈ 3/4 of area
6. Wetland receives floodwater from an adjacent water course. – No
7. Floodwaters come as sheet flow rather than channel flow. – road sheetflow into wetland

Likely or not likely to provide.
(State your rationale.)

Wetland can store significant amount of water, including road runoff, SR9 runoff goes to ditch, not W/L. But shallow, subsurface hydrologic connection btwn ditch & W/L exists.
Runoff from market goes to W/L.

**B. Sediment Removal**

1. Sources of excess sediment (from tillage or construction) are present upgradient of the wetland. – road runoff
2. Slow-moving water and/or a deepwater habitat are present in the wetland. No
3. Dense herbaceous vegetation is present. yes
4. Interspersion of vegetation and water is high in wetland. yes
5. Ponding of water occurs in the wetland. yes
6. Sediment deposits are present in wetland. No

Likely or not likely to provide.
(State your rationale.)

Yes. – W/L collects SR 204 road runoff (this was observed).

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**C. Nutrient and Toxicant Removal**

1. Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Yes - woods + retail
2. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Yes
3. Wetland provides long duration for water detention. Yes
4. Wetland has at least 30% areal cover of live dense herbaceous vegetation. No <30%
5. Fine-grained mineral or organic soils are present in the wetland. No - loam w/ gravel

Likely or not likely to provide.
(State your rationale.)
see rationale for B

**D. Erosion Control and Shoreline Stabilization**

*If associated with water course or shoreline.*

1. Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.
2. A herbaceous layer is part of this dense vegetation.
3. Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.

Likely or not likely to provide.
(State your rationale.)
Not associated w/ shoreline or $H_2O$ course

**E. Production of Organic Matter and its Export**

1. Wetland has at least 30% areal cover of dense herbaceous vegetation. No
2. Woody plants in wetland are mostly deciduous. Yes
3. High degree of plant community structure, vegetation density, and species richness present. Not high
4. Interspersion of vegetation and water is high in wetland. Yes
5. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Yes
6. Wetland has outlet from which organic matter is flushed. No

Likely or not likely to provide.
(State your rationale.)
No organic matter does not leave wetland (or at least not easily leaving wetland)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**F. General Habitat Suitability**

1. Wetland is not fragmented by development. No
2. Upland surrounding wetland is undeveloped. No
3. Wetland has connectivity with other habitat types. No
4. Diversity of plant species is high. No
5. Wetland has more than one Cowardin Class, i.e., (PFO, PSS, PEM, PAB, POW, etc.) Yes PFO/PEM
6. Has high degree of Cowardin Class interspersion. NO
7. Evidence of wildlife use, e.g., tracks, scat, gnawed stumps, etc., is present Yes - rabbit scat

Likely or not likely to provide.
(State your rationale.)

limited to small mammal & birds. Fragmented / disconnected habitat.

**G. Habitat for Aquatic Invertebrates**

1. Wetland must have permanent or evidence of seasonal inundation for this function to be provided. Yes
2. Various water depths present in wetland Yes
3. Aquatic bed vegetation present. NO
4. Emergent vegetation present within ponded area. Yes
5. Cover (i.e., woody debris, rocks, and leaf litter) present within in the standing water area. Yes
6. A stream or another wetland within 2 km (1.2 mi) of wetland. yes but bisected by developmental roads

Likely or not likely to provide.
(State your rationale.)

Some questions answer = yes but low quality b/c structural elements are few

**H. Habitat for Amphibians**

1. Wetland contains areas of seasonal and/or permanent standing water in most years. (Must be present for this function to be provided) Yes
2. Thin-stemmed emergent and/or floating aquatic vegetation present within areas of seasonal and/or perennial standing water. No emergent is reed canary grass
3. Wetland buffer < 40% developed, i.e., by pavement and/or buildings. No

Likely or not likely to provide.
(State your rationale.)

most questions answer no

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

4. Woody debris present within wetland. Yes
5. Lands within 1 km (0.6 mi) of wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural). No
6. Other wetlands and/or an intermittent or perennial stream within 1 km (0.6 mi) of wetland. Yes

Likely or not likely to provide.
(State your rationale.)

**I. Habitat for Wetland-Associated Mammals**

1. Permanent water present within the wetland. (Must be present for this function to be provided.) No
2. Presence of emergent vegetation in areas of permanent water. No
3. Areas containing dense shrubs and/or trees are present within wetland or its buffer. Yes
4. Interspersion between different strata of vegetation. No
5. Interspersion between permanent open water (without vegetation) and permanent water with vegetation. No
6. Presence of banks suitable for denning. No
7. Evidence of wildlife use, e.g., dens, tracks, scat, gnawed stumps, etc., is present. Scat observed

Likely or not likely to provide.
(State your rationale.)
low quality but rabbit scat observed in wetland

**J. Habitat for Wetland-Associated Birds**

1. Wetland has 30 to 50% shallow open water and/or aquatic bed classes present within the wetland. No
2. Emergent vegetation class present within the wetland. Yes
3. Forested and scrub-shrub classes present within the wetland or its buffer. yes
4. Snags present in wetland or its buffer. Yes
5. Sand bars and/or mud flats present within the wetland. No

Likely or not likely to provide.
(State your rationale.)
low quality but birds observed in wetland

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

6. Wetland contains invertebrates, amphibians, and/or fish. ? some

7. Buffer contains relatively undisturbed grassland shrub and/or forest habitats. No - buffer = 100% developed

8. Lands within 1 km (0.6 mi) of the wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural). No

Likely or not likely to provide.
(State your rationale.)

**K. General Fish Habitat**
(*Must be associated with a fish-bearing water.*)

1. Wetland has a perennial or intermittent surface-water connection to a fish-bearing water body No

2. Wetland has sufficient size and depth of open water so as not to freeze completely during winter. No

3. Observation of fish. No

4. Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. Yes

5. Spawning areas are present (aquatic vegetation and/or gravel beds). No

Likely or not likely to provide.
(State your rationale.)
no access to wtr from nearby stream

**L. Native Plant Richness**

1. Dominant and codominant plants are native. In areas

2. Wetland contains two or more Cowardin Classes. Yes

3. Wetland has three or more strata of vegetation. Yes

4. Wetland has mature trees. Yes

Likely or not likely to provide.
(State your rationale.)
Invasives are encroaching

**M. Educational or Scientific Value**

1. Site has documented scientific or educational use. No

2. Wetland is in public ownership. No

3. Parking at site is suitable for a school bus. No

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**N. Uniqueness and Heritage**

1. Wetland contains documented occurrence of a state– or federally listed threatened or endangered species. No
2. Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the U.S. Fish and Wildlife Service, the WDNR's Natural Heritage Program, or WDFW's Priority Habitats and Species Program. No
3. Wetland is part of a National Natural Landmark designated by the National Park Service or a Natural Heritage Site designated by WDNR. No
4. Wetland has biological, geological, or other features that are determined rare by the local jurisdiction. No
5. Wetland has been determined significant by the local jurisdiction because it provides functions scarce for the area. No
6. Wetland is part of … No
   - an estuary,
   - a bog,
   - a mature forest.

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

## Wetland Functions Field Data Form – WSDOT's BPJ Characterization *

Project: SR9/204 Interchange Date: 12/21/17

Wetland Name: WS Biologist: KAM

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**A. Flood Flow Alteration**
(Storage and Desynchronization)

1. Wetland occurs in the upper portion of its watershed.
   - yes
2. Wetland is in a relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall conditions.
   - yes
3. Wetland is a closed (depressional) system.
   - yes
4. If flowthrough, wetland has constricted outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.
   - yes
5. Wetland has dense woody vegetation.
   - yes
6. Wetland receives floodwater from an adjacent water course.
   No
7. Floodwaters come as sheet flow rather than channel flow.
   - yes

Likely or not likely to provide.
(State your rationale.)

wetland can store significant amount of water.

**B. Sediment Removal**

1. Sources of excess sediment (from tillage or construction) are present upgradient of the wetland.
   - road runoff
2. Slow-moving water and/or a deepwater habitat are present in the wetland. - No
3. Dense herbaceous vegetation is present.
   - yes in a portion of wetland
4. Interspersion of vegetation and water is high in wetland.
   yes
5. Ponding of water occurs in the wetland.
   yes
6. Sediment deposits are present in wetland.
   No

Likely or not likely to provide.
(State your rationale.)

wetland collects road runoff which contains sediment

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**C. Nutrient and Toxicant Removal**

1. Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. - Yes from roads
2. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. - Yes
3. Wetland provides long duration for water detention. - Yes
4. Wetland has at least 30% areal cover of live dense herbaceous vegetation. - No
5. Fine-grained mineral or organic soils are present in the wetland. - No loam w/ gravel

Likely or not likely to provide. (State your rationale.)

road runoff enters wetland

**D. Erosion Control and Shoreline Stabilization**

*If associated with water course or shoreline.*

1. Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.
2. A herbaceous layer is part of this dense vegetation.
3. Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.

Likely or not likely to provide. (State your rationale.)

wetland not associated with a shoreline or watercourse

**E. Production of Organic Matter and its Export**

1. Wetland has at least 30% areal cover of dense herbaceous vegetation. No
2. Woody plants in wetland are mostly deciduous. Yes
3. High degree of plant community structure, vegetation density, and species richness present. Not high
4. Interspersion of vegetation and water is high in wetland. Yes
5. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Yes
6. Wetland has outlet from which organic matter is flushed. No

Likely or not likely to provide. (State your rationale.)

Organic matter does not leave wetland

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**F. General Habitat Suitability**

1. Wetland is not fragmented by development.
No - IS fragmented
2. Upland surrounding wetland is undeveloped.
No
3. Wetland has connectivity with other habitat types.
bisected by roads
4. Diversity of plant species is high.
No
5. Wetland has more than one Cowardin Class, i.e., (PFO, PSS, PEM, PAB, POW, etc.)
No
6. Has high degree of Cowardin Class interspersion.
No
7. Evidence of wildlife use, e.g., tracks, scat, gnawed stumps, etc., is present
Yes - deer scat

Likely or not likely to provide.
(State your rationale.)
use is limited

**G. Habitat for Aquatic Invertebrates**

1. Wetland must have permanent or evidence of seasonal inundation for this function to be provided.
Yes
2. Various water depths present in wetland
Yes
3. Aquatic bed vegetation present.
No
4. Emergent vegetation present within ponded area.
Yes
5. Cover (i.e., woody debris, rocks, and leaf litter) present within in the standing water area.
Yes
6. A stream or another wetland within 2 km (1.2 mi) of wetland. Yes but bisected by roads / development

Likely or not likely to provide.
(State your rationale.)
use is limited

**H. Habitat for Amphibians**

1. Wetland contains areas of seasonal and/or permanent standing water in most years. (Must be present for this function to be provided)
Yes
2. Thin-stemmed emergent and/or floating aquatic vegetation present within areas of seasonal and/or perennial standing water.
No
3. Wetland buffer < 40% developed, i.e., by pavement and/or buildings. No

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

4. Woody debris present within wetland.
   Yes
5. Lands within 1 km (0.6 mi) of wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural).
   No
6. Other wetlands and/or an intermittent or perennial stream within 1 km (0.6 mi) of wetland.
   yes but bisected by development/roads

Likely or not likely to provide.
(State your rationale.)

**I. Habitat for Wetland-Associated Mammals**

1. Permanent water present within the wetland. (Must be present for this function to be provided.)
   No
2. Presence of emergent vegetation in areas of permanent water.
   No
3. Areas containing dense shrubs and/or trees are present within wetland or its buffer.
   Yes
4. Interspersion between different strata of vegetation.
   No
5. Interspersion between permanent open water (without vegetation) and permanent water with vegetation. No
6. Presence of banks suitable for denning.
   No
7. Evidence of wildlife use, e.g., dens, tracks, scat, gnawed stumps, etc., is present.
   yes

Likely or not likely to provide.
(State your rationale.)

limited

**J. Habitat for Wetland-Associated Birds**

1. Wetland has 30 to 50% shallow open water and/or aquatic bed classes present within the wetland.
   No
2. Emergent vegetation class present within the wetland.
   yes
3. Forested and scrub-shrub classes present within the wetland or its buffer.
   yes
4. Snags present in wetland or its buffer.
   yes
5. Sand bars and/or mud flats present within the wetland. No

Likely or not likely to provide.
(State your rationale.)

low quality but birds observed.

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

6. Wetland contains invertebrates, amphibians, and/or fish. Yes - based on funct. assessment
7. Buffer contains relatively undisturbed grassland shrub and/or forest habitats.
   No
8. Lands within 1 km (0.6 mi) of the wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural).
   No

Likely or not likely to provide.
(State your rationale.)

**K. General Fish Habitat**
(*Must be associated with a fish-bearing water.*)

1. Wetland has a perennial or intermittent surface-water connection to a fish-bearing water body
   No
2. Wetland has sufficient size and depth of open water so as not to freeze completely during winter.
   No
3. Observation of fish.
   No
4. Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter.
   No
5. Spawning areas are present (aquatic vegetation and/or gravel beds).
   No

Likely or not likely to provide.
(State your rationale.)

**L. Native Plant Richness**

1. Dominant and codominant plants are native.
   in areas
2. Wetland contains two or more Cowardin Classes.
   No
3. Wetland has three or more strata of vegetation.
   Yes
4. Wetland has mature trees.
   Yes

Likely or not likely to provide.
(State your rationale.)
invasives are not dominant but are encroaching

**M. Educational or Scientific Value**

1. Site has documented scientific or educational use.
   No
2. Wetland is in public ownership.
   No
3. Parking at site is suitable for a school bus.
   No

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**N. Uniqueness and Heritage**

1. Wetland contains documented occurrence of a state– or federally listed threatened or endangered species. No
2. Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the U.S. Fish and Wildlife Service, the WDNR's Natural Heritage Program, or WDFW's Priority Habitats and Species Program. No
3. Wetland is part of a National Natural Landmark designated by the National Park Service or a Natural Heritage Site designated by WDNR. No
4. Wetland has biological, geological, or other features that are determined rare by the local jurisdiction. No
5. Wetland has been determined significant by the local jurisdiction because it provides functions scarce for the area. No
6. Wetland is part of …
   - an estuary,
   - a bog, No
   - a mature forest.

Likely or not likely to provide.
(State your rationale.)

---

* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

## Wetland Functions Field Data Form – WSDOT's BPJ Characterization *

Project: SR 9/204 Interchange Date: 12/21/17

Wetland Name: W9 Biologist: KAM

---

**A. Flood Flow Alteration**
(Storage and Desynchronization)

1. Wetland occurs in the upper portion of its watershed.
   Yes
2. Wetland is in a relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall conditions.
   Yes
3. Wetland is a closed (depressional) system.
   Yes
4. If flowthrough, wetland has constricted outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.
   Yes
5. Wetland has dense woody vegetation.
   Yes
6. Wetland receives floodwater from an adjacent water course.
   No
7. Floodwaters come as sheet flow rather than channel flow.
   Yes

Likely or not likely to provide.
(State your rationale.)

Wetland can store significant amount of water

**B. Sediment Removal**

1. Sources of excess sediment (from tillage or construction) are present upgradient of the wetland.
   - road runoff
2. Slow-moving water and/or a deepwater habitat are present in the wetland.
   No
3. Dense herbaceous vegetation is present.
   yes in portions
4. Interspersion of vegetation and water is high in wetland.
   Yes
5. Ponding of water occurs in the wetland.
   Yes
6. Sediment deposits are present in wetland.
   No

Likely or not likely to provide.
(State your rationale.)

wetland collects road runoff

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**C. Nutrient and Toxicant Removal**

1. Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Yes - from roads
2. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Yes
3. Wetland provides long duration for water detention. Yes
4. Wetland has at least 30% areal cover of live dense herbaceous vegetation. No
5. Fine-grained mineral or organic soils are present in the wetland. No

Likely or not likely to provide.
(State your rationale.)

road runoff enters wetland

**D. Erosion Control and Shoreline Stabilization**

*If associated with water course or shoreline.*

1. Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.
2. A herbaceous layer is part of this dense vegetation.
3. Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.

Likely or not likely to provide.
(State your rationale.)

Not associated with a shoreline

**E. Production of Organic Matter and its Export**

1. Wetland has at least 30% areal cover of dense herbaceous vegetation. No
2. Woody plants in wetland are mostly deciduous. Yes
3. High degree of plant community structure, vegetation density, and species richness present. Present — but not high
4. Interspersion of vegetation and water is high in wetland. Yes
5. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Yes
6. Wetland has outlet from which organic matter is flushed. No

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**F. General Habitat Suitability**

1. Wetland is not fragmented by development. No
2. Upland surrounding wetland is undeveloped. No
3. Wetland has connectivity with other habitat types. No - bisected by roads/development
4. Diversity of plant species is high. No
5. Wetland has more than one Cowardin Class, i.e., (PFO, PSS, PEM, PAB, POW, etc.) No
6. Has high degree of Cowardin Class interspersion. Yes
7. Evidence of wildlife use, e.g., tracks, scat, gnawed stumps, etc., is present Yes deer scat

Likely or not likely to provide.
(State your rationale.)

**G. Habitat for Aquatic Invertebrates**

1. Wetland must have permanent or evidence of seasonal inundation for this function to be provided. Yes
2. Various water depths present in wetland Yes
3. Aquatic bed vegetation present. No
4. Emergent vegetation present within ponded area. Yes
5. Cover (i.e., woody debris, rocks, and leaf litter) present within in the standing water area. Yes
6. A stream or another wetland within 2 km (1.2 mi) of wetland. Yes but bisected by road

Likely or not likely to provide.
(State your rationale.)
function is limited

**H. Habitat for Amphibians**

1. Wetland contains areas of seasonal and/or permanent standing water in most years. (Must be present for this function to be provided) Yes
2. Thin-stemmed emergent and/or floating aquatic vegetation present within areas of seasonal and/or perennial standing water. No
3. Wetland buffer < 40% developed, i.e., by pavement and/or buildings. No

Likely or not likely to provide.
(State your rationale.)

---

* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

4. Woody debris present within wetland. Yes
5. Lands within 1 km (0.6 mi) of wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural). No
6. Other wetlands and/or an intermittent or perennial stream within 1 km (0.6 mi) of wetland. Yes - but bisected by roads

Likely or not likely to provide. (State your rationale.)

**I. Habitat for Wetland-Associated Mammals**

1. Permanent water present within the wetland. (Must be present for this function to be provided.) No
2. Presence of emergent vegetation in areas of permanent water. No
3. Areas containing dense shrubs and/or trees are present within wetland or its buffer. Yes
4. Interspersion between different strata of vegetation. No
5. Interspersion between permanent open water (without vegetation) and permanent water with vegetation. No
6. Presence of banks suitable for denning. No
7. Evidence of wildlife use, e.g., dens, tracks, scat, gnawed stumps, etc., is present. Yes

Likely or not likely to provide. (State your rationale.) limited

**J. Habitat for Wetland-Associated Birds**

1. Wetland has 30 to 50% shallow open water and/or aquatic bed classes present within the wetland. No
2. Emergent vegetation class present within the wetland. Yes
3. Forested and scrub-shrub classes present within the wetland or its buffer. Yes
4. Snags present in wetland or its buffer. Yes
5. Sand bars and/or mud flats present within the wetland. No

Likely or not likely to provide. (State your rationale.)

---

* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

6. Wetland contains invertebrates, amphibians, and/or fish. Yes

7. Buffer contains relatively undisturbed grassland shrub and/or forest habitats. No

8. Lands within 1 km (0.6 mi) of the wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural). No

Likely or not likely to provide. (State your rationale.)

**K. General Fish Habitat**
(*Must be associated with a fish-bearing water.*)

1. Wetland has a perennial or intermittent surface-water connection to a fish-bearing water body No
2. Wetland has sufficient size and depth of open water so as not to freeze completely during winter. No
3. Observation of fish. No
4. Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. No
5. Spawning areas are present (aquatic vegetation and/or gravel beds). No

Likely or not likely to provide. (State your rationale.)

**L. Native Plant Richness**

1. Dominant and codominant plants are native. Yes
2. Wetland contains two or more Cowardin Classes. No
3. Wetland has three or more strata of vegetation. Yes
4. Wetland has mature trees. Yes

Likely or not likely to provide. (State your rationale.)

**M. Educational or Scientific Value**

1. Site has documented scientific or educational use. No
2. Wetland is in public ownership. No
3. Parking at site is suitable for a school bus. No

Likely or not likely to provide. (State your rationale.)

---

* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

**N. Uniqueness and Heritage**

1. Wetland contains documented occurrence of a state– or federally listed threatened or endangered species. No
2. Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the U.S. Fish and Wildlife Service, the WDNR's Natural Heritage Program, or WDFW's Priority Habitats and Species Program. No
3. Wetland is part of a National Natural Landmark designated by the National Park Service or a Natural Heritage Site designated by WDNR. No
4. Wetland has biological, geological, or other features that are determined rare by the local jurisdiction. No
5. Wetland has been determined significant by the local jurisdiction because it provides functions scarce for the area. No
6. Wetland is part of …
   - an estuary,
   - a bog,
   - a mature forest.

Likely or not likely to provide.
(State your rationale.)

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* Adapted from the Highway Methodology Workbook Supplement for Wetland Functions and Values (COE, 1995).

# Appendix F — Site Photographs

This Appendix includes photographs of the site used to document site conditions.

# Appendix F — Site Photographs

Photo 1. Soil Profile at TP-1 (upland near Wetland W5).

Photo 2. View to west at TP-1 (typical Himalayan blackberry buffer).

Photo 3. View to east at TP-1 (towards Wetland W5).

Photo 4. Soil profile at TP-2 (Wetland W5).

Photo 5. View to west at TP-2 (flag TP-1 in background).

Photo 6. View to east at TP-2 (view of Wetland W5).

Photo 7. Soil profile at TP-3 (upland near Wetland W5).

Photo 8. View to north at TP-3 (upland buffer of Wetland W5).

Photo 9. View to east at TP-3 (view towards Wetland W5).

Photo 10. Soil profile at TP-4 (Wetland W5).

Photo 11. View to west at TP-4 (TP-3 in background).

Photo 12. View to east at TP-4 (view towards Wetland W5).

Photo 13. Soil profile at TP-5 (upland near Wetland W5).

Photo 14. View to south at TP-5 (view of upland buffer).

Photo 15. Soil profile at TP-6.

Photo 16. View to south at TP-6 (upland).

Photo 17. Soil profile at TP-7 (Wetland W9).

Photo 18. View to west at TP-7 (Wetland W9 in right of image; upland buffer in left of image).

Photo 19. View to north at TP-7 (view of Wetland W9).

Photo 20. Soil profile at TP-8 (upland near Wetland W9).

Photo 21. View to northeast at TP-8 (Wetland W9 in left of image).

Photo 22. View to northwest at TP-8 (TP-7 in image; upland buffer in left of image; Wetland W9 in right of image).

Photo 23. Soil profile at TP-9.

Photo 24. View to east at TP-9 (Wetland W9).

Photo 25. View to south at TP-9 (SR 9 in right of image, Wetland W9 in left of image).

Photo 26. Soil profile at TP-10 (upland).

Photo 27. View to south at TP-10 (SR 9 in right of image, Wetland W9 in left of image).

Photo 28. View to east at TP-10 (Wetland W9 in background).

Photo 29. Soil profile at TP-11 (Wetland W4).

Photo 30. View to northeast at TP-11 (view of Wetland W4).

Photo 31. View to southwest at TP-11 (upland Himalayan blackberry in image).

Photo 32. Soil profile at TP-12 (Wetland W4).

Photo 33. View to north at TP-12 (SR 9 in right of image).

Photo 34. View to west at TP-12.

Photo 35. Soil profile at TP-13 (Wetland W4).

Photo 36. View to south at TP-13 (view of upland buffer and retaining wall).

Photo 37. View to north at TP-13 (view towards Wetland W4).

# Appendix 2: SR 9/SR 204 Intersection Improvements (Stage 3) - Addendum to Wetland and Streams Assessment Report (WSAR) (August 2021)

Washington State Department of Transportation

Northwest Region
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October 11, 2021

**To:** Sarah Tchang
**Thru:** Maki Dalzell
**From**: Hillary Pope

**Subject:** SR 9/ SR 204 Intersection Improvements Project Stage 3 – Supplemental Ditch Memorandum to WASAR

As of August 2021, the Washington State Department of Transportation (WSDOT) updated the WSDOT policy from using the 2020 Navigable Waters Protection Rule (NWPR) to the pre-2015 Waters of the US (WOTUS) regulatory requirements. Pre-2015 Waters of the US (WOTUS) regulatory requirements are the 1986 WOTUS regulation as informed by the 2003 SWANCC and 2008 Rapanos court decisions (Rapanos). The policy update is required as a result of U.S. District Court for the District of Arizona's August 30, 2021, order vacating and remanding the Navigable Waters Protection Rule in the case of *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency*. The Rapanos guidance will be retroactively applied to the project in order to document jurisdictional ditches under the Clean Water Act (CWA) because the original ditch documentation for this project was completed under the 2020 NWPR.

Under Rapanos, a ditch is considered a WOTUS if it meets jurisdictional criteria for tributaries and carries a relatively permanent flow of water. Under new WSDOT policy, all ditches to be impacted within the project area are assumed to be jurisdictional. There may be some cases where this assumption is too broad, and the impacted ditches would not meet jurisdictional criteria and those situations can be discussed on a case-by-case basis as needed.

All ditches in the in the SR9/SR204 Intersection Improvements project area are constructed stormwater ditches and are consistent dimensions throughout.

If you would like any additional information, please contact Hillary Pope at Hillary.pope@WSDOT.WA.GOV or 206-858-3855.

Thank you,
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# SR 9/SR 204 Intersection Improvements (Stage 3) - Addendum to Wetland and Streams Assessment Report

| | |
|---|---|
| **To:** | Hilary Pope, WSDOT |
| **From:** | Jeff Gray, PWS |
| **Copies:** | |
| **Date:** | August 31, 2021 |
| **Subject:** | SR 9 / SR 204 Intersection Improvements (Stage 3) – *Addendum* to Wetland and Streams Assessment Report |
| **Project No.:** | 33178.C (Otak) |

## Introduction

Washington State Department of Transportation (WSDOT) is proposing Stage 3 of the State Route (SR) 204 and SR 9 Intersection Improvements project. This addendum has been prepared to supplement the previously prepared critical area report for the project [Wetland Assessment Report (WSDOT 2018)]. Additional field work was completed by WSDOT biologists on April 19 and 25, 2021 to review and assess wetland boundaries. Otak, Inc. (Otak) biologists conducted field work on July 2, 2021 at WSDOT's request to complete a jurisdictional assessment of delineated wetlands and roadside ditches within the project area per the new 2020 Navigable Waters Protection Rule and state and local wetland definitions. Wetland buffer widths have also been updated per the current Lake Stevens Municipal Code (LSMC) Chapter 14.88 (Critical Areas). This addendum synthesizes the recent field work and background review completed in 2021 with the 2018 Wetland Assessment Report, including additional wetland determination data forms, 2014 functions rating forms, and jurisdictional assessments of recently delineated roadside ditches and wetlands.

The project is located near the intersection of SR 9 and SR 204 in the City of Lake Stevens, Snohomish County, Washington (Township 29 North, Range 5 East, Section 13) (Figure 1). The project is primarily along the SR 9 corridor. The study area for this report generally included the SR 9 and SR 204 right of way (ROW) from 4th Street NE to approximately 650 feet north of North Davies Road, and included Vernon Road and 92nd Avenue NE (Figure 1).

## Existing Conditions

The SR 9 and SR 204 Intersection Improvements (Stage 3) project is located within the Sunnyside subbasin of the Snohomish River Watershed. The surrounding land use is retail and high-density residential (more than 1 unit per acre). Lake Stevens is located approximately 1,500-2,000 feet east of the project area. Topography along SR 9 generally slopes toward the SR 9/204 intersection and west toward an unnamed, non-fish-bearing stream located outside of the project area (WDNR ID 78406) (Snohomish County 2021, DNR 2021). Stormwater runoff in the project area is generally conveyed through a series of roadside pipes and ditches west toward the offsite stream, which discharges into Ebey Slough in the Snohomish River Estuary.

Two wetlands, identified as W4 and W5, were identified by WSDOT in 2018 within the Stage 3 project area (WSDOT 2018). Five additional wetland areas, identified as W2, W3, W3A, W4A, and W8, were identified in the Stage 3 project area by WSDOT in April 2021. Wetland summaries are provided below, and wetland areas are

shown on Figure 2 included with this Addendum. A summary of wetland classifications, categories, and buffer widths are provided in Table 1 on Page 4.

## Summary of Wetland Characteristics from 2018

Wetland W4 is a depressional wetland located in the southwest corner of the SR 9 and SR 204 intersection and is 2.33 acres in size. Wetland W4 has palustrine emergent (PEM) and forested (PFO) habitat classes (FGDC 2013). Dominant vegetation includes red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera* spp*. trichocarpa*), salmonberry (*Rubus spectabilis*), and reed canarygrass (*Phalaris arundinacea*). Soils have a dark surface underlain by a depleted matrix. Wetland hydrology was indicated by surface water and high groundwater (Data Points TP-11, TP-12, TP13). The boundary of Wetland W4 was determined by a distinct topographic break associated with the toe of SR 204 and 91st Avenue NE road prism slopes, the toe of slope associated with a berm that partially separates the wetland and SR 9 ditch section (Wetland 4A), the distinct topographic break associated with the toe of slope of a large retaining wall and building footpads, and the presence of standing water/saturated surface soils. Wetland 4 is rated as a Category III with a habitat score of 4 per the 2014 Wetland Rating System (Hruby 2014). Wetland 4 is hydrologically connected to the unnamed stream (WDNR ID 78406) west of the project area through a series of roadside ditches and underground drainage pipes.

Wetland W5 is a depressional wetland located in the southeast corner of SR 9 and 4$^{th}$ Street NE and is 2.31 acres in size. Wetland W5 consists of PEM and PFO habitat classes. Dominant vegetation in W5 includes red alder, salmonberry and slough sedge (*Carex obnupta*). Soils are a sandy loam with a depleted matrix below a thick dark surface. Hydrologic indicators included soil saturation to the surface, surface ponding, and groundwater at 4 inches below the surface (Data Points TP-2, TP-4). The boundary of Wetland W5 was determined by a distinct topographic break associated with the toe of SR 9 and 4th Street NE road prism slopes, the toe of slope associated with a large berm separating the wetland from existing stormwater ponds, the toe of slope associated with the retaining wall footpad of the adjacent transit station, standing water, and the presence of hydric soils and wetland hydrology. Wetland W5 was rated as a Category III wetland with a habitat score of 4 per the 2014 Wetland Rating System (Hruby 2014).

Buffers associated with wetlands W4 and W5 are impacted by surrounding development and roads. The vegetated portions of the buffers are typically less than 20 feet wide and extend from the wetland boundary to the edge of pavement or development footprints. Buffers are dominated by Himalayan blackberry (*Rubus armeniacus*). Both wetlands were previously assigned a 50-foot wide buffer per the LSMC at the time of the report (2018). Per the current 2021 LSMC (Chapter 14.88.830(b)), Wetlands W4 and W5 have an 80-foot wide buffer based on category, habitat score, and limited vegetation (Table 1).

## Summary of Wetland Characteristics from 2021

In April 2021, WSDOT biologists identified six additional wetlands (W2, W3, W3A, W4A, W7, and W8) within the Stage 3 project area, mainly occurring as roadside ditches. Wetland data point locations are shown on Figure 2.

Wetland W2 is a constructed roadside bioswale located west of SR 9 between SR 204 and Vernon Road. The wetland is 0.04 acres in size and has a PEM habitat class. Dominant vegetation within W2 includes dandelion (*Taraxacum officinale*) and reed canarygrass. Soils are a very dark silty loam with redoximorphic concentrations. Fill material is present at nine inches below ground surface. No primary hydrology indicators were present at the time of the field investigation in April 2021; however, secondary hydrology indicators, including water stained leaves with sediment deposits, drainage patterns, and depressional geomorphic position, were present (Data Point W2-SP1).

Wetlands W3 and W3A are roadside ditch sections with wetland characteristics located east of 92nd Avenue NE between 7th Place NE and 4th Street NE, east of SR 9. W3 is the northern ditch section and W3A is the southern ditch section. Ditch sections are separated by a private driveway and have PEM habitat. W3 is 0.05 acres in size and W3A is 0.02 acres in size. W3 is dominated by reed canarygrass, and soils have a gravelly silty loam texture with a depleted matrix. Fill material is present at 9 inches below ground surface. Soil saturation and groundwater was present at 6 inches below the surface. Drainage patterns and a depressional geomorphic position were also present within the wetland. Surface water was present within the wetland but outside of the sampled points (Data Points W3-SP1, W3-SP4, W3-SP5).

Wetland W3 is dominated by reed canarygrass and velvet grass (*Holcus lanatus*). The upper layer of soil is very dark and is underlain by a gravel and asphalt layer. Beneath the gravel and asphalt layer, soils are a very dark mucky mineral with redoximorphic concentrations. Groundwater and soil saturation was present at 8 inches below the soil surface at the time of the field survey. Drainage patterns were also observed (Data Point W3A-SP1).

Surface water was observed in both Wetland 3 and Wetland 3A during the July 2, 2021 field assessment following below normal precipitation in the preceding month. Wetland 5 outlets to the north through a culvert under 4th Street NE and discharges to Wetland 3A and then to Wetland 3. A culvert underneath SR 9 conveys surface water from Wetlands 3 and 3A on the east side of the road to Wetland 4 on the west side of the road.

Wetland W4A is a constructed roadside bioswale that flows north to Wetland 4, and is located west of SR 9 and south of the SR 9/SR 204 intersection. W4A has PEM habitat and is an extension of Wetland 4. Vegetation includes Himalayan blackberry, reed canarygrass, and cattail (*Typha latifolia*). Soils are a very dark gravelly silt loam and angular gravels with a restrictive layer at 6 to 9 inches below the surface. Soils were saturated to the surface and groundwater was present near the surface at the time of the field survey in April 2021 (Data Point W4A-SP1).

Wetland 7 is a constructed roadside ditch located east of SR 9 and north of Vernon Road. W7 has a PEM habitat and is 0.02 acres in size. The wetland is dominated by reed canarygrass and bird's-foot trefoil (*Lotus corniculatus*). Soils are a sandy gravelly loam with a depleted matrix. A gravel layer was observed 3-6 inches below the ground surface. Indicators of hydrology include drainage patterns and a depressional geomorphic position (Data Point W7-SP1). Hydrology in Wetland 7 is supported by surface runoff from adjacent impervious road surfaces.

Wetland W8 is a small depressional wetland located west of SR 9 and south of Vernon Road. W8 has a PSS habitat and is 0.07 acres in size. Dominant vegetation in Wetland W8 includes Sitka willow (*Salix sitchensis*), spiraea (*Spiraea douglasii*), red currant (*Ribes sanguineum*), and Himalayan blackberry. Soils are a dark mucky mineral underlain by a clay layer with redoximorphic concentrations in the matrix. Soils were saturated to the surface at the time of the field survey and groundwater was present at 8 inches below the surface in May 2021 (Data Point W8-SP1). Groundwater was observed at approximately 24 inches below the surface in July 2021.

**Table 1. Summary of Wetlands in the Project Area**

| Wetland ID[1] | Wetland Classification | | Ecology Rating[3] Category (Habitat Score) | Wetland Size (Acre) | Buffer Width[4] (Feet) |
|---|---|---|---|---|---|
| | Cowardin2 | HGM | | | |
| **Wetlands Identified by WSDOT (2018)** | | | | | |
| W4 | PEM/PFO | Depressional | III (4) | 2.33 | 80 |
| W5 | PEM/PFO | Depressional | III (4) | 2.31 | 80 |
| **Wetlands Identified by WSDOT (2021)** | | | | | |
| W2 | PEM | Depressional | -- | 0.04 | -- |
| W3 | PEM | Depressional | IV (3) | 0.05 | 50 |
| W3A | PEM | Depressional | IV (3) | 0.02 | 50 |
| W4A | PEM | Depressional | -- | 0.15 | -- |
| W7 | PEM | Depressional | -- | 0.02 | -- |
| W8 | PSS | Depressional | III (3) | 0.07 | 80 |

1. Wetlands shown on Figure 2.
2. Cowardin et al. (1979). Class based on vegetation: PFO = palustrine Forested, PEM = Palustrine Emergent.
3. Wetlands rated according to Hruby 2014 (LSMC 14.88.805). Only the wetlands with jurisdictional status were rated for this addendum.
4. Wetland buffer width per LSMC 14.88.830(b). Category III wetlands with a habitat score between 3 and 5 and have limited vegetated buffers receive an 80-foot wide buffer. Wetland buffers may be reduced to preexisting public roads with approval from the Planning and Community Development Director. Wetlands W2, W4A, and W7 do not have buffers associated with them because they do not meet the definition of a regulated wetland per the LSMC 14.08 and the RCW 36.70A.030.

# Jurisdictional Assessment

## Approach and Regulatory Context

Otak biologists reviewed background information and conducted a field investigation on July 2nd, 2021 to review wetlands as documented by WSDOT in 2018 and 2021. Wetlands were investigated in accordance with the *U.S Army Corps of Engineers (USACE) Wetland Delineation Manual* (USACE 1987) as amended, and the *USACE Regional Supplement to the Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). The general approach to assessing regulatory jurisdiction of the new wetlands and ditches mapped in 2021 was to confirm the areas met the biological definition of wetlands, evaluate hydrological connectivity to other regulated aquatic habitats, and then review background information to determine if they were artificially created or potential remnants of wetlands that existed prior to land and road development.

*Wetlands,* as regulated by the United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (USEPA) under the Clean Water Act, are defined at 33 Code of Federal Regulations (CFR) 328.3(c) – Definitions as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The definition of Waters of the United States (WOTUS) was recently updated on June 22, 2020 under the Navigable Waters Protection Rule (NWPR). The NWPR excludes certain waters or water features from the definition of WOTUS, including:

- Ditches that are not territorial seas or tributaries, and those portions of ditches constructed in wetlands that do not meet the definition of adjacency [CFR 328.3(b)5]

- stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate or store stormwater run-off [CFR 328.3(b)(10)]; and,

- groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters [CFR 328.3(b)11)].

Per the Revised Code of Washington (RCW) 36.70A.030, *wetlands* means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

Per LSMC 14.08.010 (Definitions), *wetlands* are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, marshes, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including but not limited to irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands include those artificial wetlands intentionally created to mitigate conversion of wetlands.

## Background Information Review

Available published information was reviewed prior to the field investigation to identify any previously documented wetlands, streams, or other pertinent site characteristics (e.g., vegetation community patterns, topography, soils, or water courses) that would indicate the presence of wetlands within the study area. These maps are typically used as guidance, and do not supersede conditions in the field. The general approach to distinguishing wetlands between artificial or naturally occurring is to identify them currently in the field and to complete a review of historical records to evaluate whether they were created artificially or pre-existed the site disturbance. As part of this effort Otak biologists reviewed the following sources:

- National Wetlands Inventory (NWI) map (USFWS 2021);
- Soil survey from the United States Natural Resources Conservation Service (NRCS) (NRCS 2021);
- Snohomish County PDS Map Portal (Snohomish County 2021);
- Priority Habitats and Species Map (WDFW 2021);
- Forest Practices Application Mapping Tool (WDNR 2021);
- Historic Aerials (Historic Aerials 2021);
- USGS TopoView - topographic maps (USGS 2021).

Per the 2018 Wetland Assessment Report (Appendix B – Background Information), PSS wetland habitat is shown on the NWI map in the southwest corner of the SR 9/204 intersection where Wetland 4 was delineated in the Stage 3 project area. The NRCS maps a single soil unit (Tokul gravelly medial loam, 0 to 8 percent slopes) in the project area, which is not hydric. Snohomish County Wetland Inventory maps show the same NWI-mapped wetland southwest of the SR 9/204 intersection, as well as two wetland areas north of SR 204 and west of SR 9. The Snohomish County Wetland Inventory is a historic data set from before the project area was annexed by the

City of Lake Stevens in 2006. USGS Topographic maps from 1911, 1941, 1943, and 1956 do not show any wetlands or streams in the project area prior to land and road development that primarily occurred after 1956. Historical aerial photos (Years 1952, 1954, 1969, 1980, 1981, and 1990) show the footprints of SR 9 and SR 204 surrounded by forest until no later than 1969 when the roads are paved and associated development is occurring. Wet signatures, such as wet areas in farm fields, were not observed in the aerial photographs.

Additional WSDOT as-built drawings were reviewed for past and ongoing site activities that could indicate or document excavation or site management actions that could lead to the artificial development of aquatic habitats (e.g., wetlands). As built drawings reviewed included:

- SR 9-SR 204 to Lundeen Parkway Project As-built Plans (WSDOT 1992)
  - Results: *Drainage/existing utility as-built plans are shown on Sheets D1-D3. Existing and new ditches are shown along both sides of SR 9 where the biological wetlands have developed and were delineated in 2021. Sheets D1-D3 are included with this Addendum and have been annotated with wetland labels.*
- SR 9 Frontier Village Channelization As-built Plans (Washington State Highway Commission 1973)
  - Results*: Project plans focus mainly on improvements in the immediate vicinity of SR 204 and SR 9, and do not indicate the presence of pre-existing or constructed ditches or wetlands in the project area.*
- 4th Street SE Intersection Channelization and Illumination Plan (Alpha Engineers Inc. 1971)
  - Results: *Plans do not show presence of ditches or wetlands in the project area.*

## Jurisdictional Recommendations

Recommendations regarding federal, state, and local jurisdiction of the biological wetlands delineated in the Stage 3 project area are provided below. Recommended jurisdictional wetlands are shown on Figure 3 in Attachment A.

**Wetland W2**
Wetland W2 is an artificially constructed drainage ditch. Drainage pipes outlet at the south and north ends of the ditch, and the ditch conveys stormwater north towards Wetland 8. Wetland W2 is identified on the SR 9-SR 204 to Lundeen Parkway As-Built Plans (Appendix E) as a constructed new special ditch parallel to the road. Due to the lack of mapped hydric soils or other historical information that would support the presence of wetlands prior to construction, this ditch with wetland characteristics is considered to be artificially created. Wetland W2 is therefore assumed to be not regulated by federal, state, or local agencies. Federal, state, and local jurisdictional wetland definitions exclude drainage ditches constructed in nonwetland sites for stormwater treatment and that do not convey other regulated tributaries.

**Wetlands W3 and W3A**
Wetlands 3 and 3A function as roadside ditches but it is not clear if they were artificially created from uplands, and are therefore assumed to be jurisdictional by federal, state, and local agencies. Wetlands 3 and 3A are identified on the SR 9 - SR 204 to Lundeen Parkway As-Built Plans (Appendix E) as an existing ditch feature that was present prior to construction in 1992. Wetlands W3 and W3A convey surface water from Wetland 5 to Wetland 4 through a culvert underneath SR 9. Several inlet pipes discharge to Wetlands W3 and W3A from the commercial parking areas to the east. Either flowing water, ponded surface water, or soil saturation was present in both wetlands at the time of the field surveys in 2021, which indicates the presence of a shallow groundwater table. Additionally, the three months preceding the June 2021 site visit had dryer than normal climatic conditions as measured at the Everett Climate Station (NRCS 2021), and surface water was still observed. Wetlands W3 and

W3A are considered not to meet the artificial criteria for non-regulated wetlands and ditches, and are assumed to be regulated by federal, state, and local agencies.

**Wetland W4**
Wetland W4 is assumed to be regulated by federal, state, and local agencies. Wetland W4 is a naturally occurring wetland supported by precipitation and shallow groundwater, and is hydrological connected through a series of ditches and pipes to the unnamed tributary (WDNR ID 78406) west of the project area that flows to Ebey Slough. Wetland 4 has been revised to include Wetland 4A (see below).

**Wetland W4A**
Wetland W4A is a drainage ditch that is assumed to be regulated by federal, state, and local agencies due to its hydrological connectivity with Wetland 4 and similar landscape position. It is not evident that Wetland 4A is artificial in nature due to its proximity to Wetland 4. The SR 9 - SR 204 to Lundeen Parkway As-Built Plans identify Wetland W4A as a constructed new ditch between the west side of SR 9 and the eastern edge of Wetland 4 (Appendix B). Ponded water was observed in Wetland 4A during the 2021 site visits within deeply excavated portions of the ditch. Soil profiles in Wetland W4A were shallow and underlain by angular fill material from construction. The linear Wetland 4A is separated from Wetland 4 by a narrow upland berm before discharging to Wetland 4. Wetland 4 on Figure 3 has been revised to include Wetland 4A as an extension of the wetland boundaries that were delineated in 2018.

**Wetland W5**
Wetland W5 is considered to be a naturally occurring wetland and is assumed to be regulated by federal, state, and local agencies. Wetland 5 meets the definition of adjacency per the 2020 NWPR because it is hydrologically connected to the unnamed tributary (WDNR ID 78406) to Ebey Slough via Wetlands 3, 3A, 4, and the network of roadside ditches and pipes. Two pipes are located at the northwest corner of Wetland 5, and saturated soils, algal mats, and drainage patterns were observed at the time of the field survey in 2021.

**Wetland W7**
Wetland W7 is considered to be an artificial ditch created in uplands. Hydrology within Wetland W7 is driven solely by precipitation and stormwater runoff. No evidence of hydrology was observed during the field survey in 2021. Two of the four plant species identified in Data Point W7-SP1 are upland species. A gavel layer is present 3-6 inches below ground surface, consisting of angular rock that is characteristic of roadside fill material (Data Point W7-SP1). Primary indicators of hydrology were not observed during the wet season. The SR 9 - SR 204 to Lundeen Parkway As-Built Plans show an existing ditch in 1992. However, based on field observations and hydrology solely from adjacent impervious surfaces, Wetland W7 is assumed to be an artificially constructed feature from a nonwetland area. Ditches created from nonwetland sites that convey or treat stormwater are not regulated by federal, state, or local agencies.

**Wetland W8**
Wetland W8 is considered to be regulated by federal, state, and local agencies because it could not be determined if it was constructed in uplands or it is a remnant of a previously existing wetland. Two linear ditch lines are shown on the SR 9 - SR 204 to Lundeen Parkway As-Built Plans at the location of Wetland W8, but Wetland W8 as delineated in 2021 has a circular shape. Wetland 8 outlets through a culvert underneath Vernon Road. Wetland 8 could be an excavated stormwater pond evidenced by the deep excavation and side slopes with riprap. However, the Snohomish County Wetland Inventory previously mapped a larger wetland in this vicinity (Appendix B of the 2018 Wetland Assessment Report). Because the artificial constructed criteria cannot be verified, Wetland W8 is considered to be a jurisdictional wetland per federal, state, and local agencies. Wetland W8 is hydrologically connected to the unnamed tributary (WDNR ID 78406) to Ebey Slough via the network of roadside ditches and pipes along Vernon Road.

# Results Summary

Biological wetlands have formed in roadside ditch features in the SR 9/204 Interchange Improvements (Stage 3) project area. Wetlands W3, W3A, W4, W5, and W8 are assumed to meet the definition of regulated wetlands per USACE, WDOE, and City of Lake Stevens regulations. Wetlands W2 and W7 are artificial wetland ditches constructed in uplands and therefore are not regulated. As such, Wetlands W3, W3A, and W8 were rated by Otak biologists using the 2014 Wetland Rating System (Hruby 2014) to supplement the 2018 Wetlands Assessment Report prepared for the project. Functions and values of wetlands W3/3A, W4, and W8 were also assessed using WSDOT's Wetland Functions Characterization Tool for Linear Projects (WSDOT 2000). A summary of the results is provided in Table 2, and Figure 3 in Appendix A depicts regulated wetlands within the study area.

**Table 2. Summary of Jurisdictional and Non-Jurisdictional Wetlands**

| Wetland ID | Ecology Rating | Regulated by USACE | Regulated by Department of Ecology | Regulated by City of Lake Stevens | Buffer Width per Lake Stevens Municipal Code (feet) |
|---|---|---|---|---|---|
| | Category (Habitat Score) | | | | |
| W2 | -- | No | No | No | -- |
| W3 | IV (3) | Yes | Yes | Yes | 50 |
| W3A | IV (3) | Yes | Yes | Yes | 50 |
| W4[1] | III (4) | Yes | Yes | Yes | 80 |
| W5 | III (4) | Yes | Yes | Yes | 80 |
| W7 | -- | No | No | No | -- |
| W8 | III (3) | No | Yes | Yes | 80 |

1. Wetland W4A included with Wetland W4 as shown on Figure 3.

# Attachments

A – Figures
- Figure 1 – Study Area
- Figure 2 – Delineated Wetlands
- Figure 3 – Regulated Wetlands

B – Wetland Determination Data Forms
C – Wetland Rating Forms (2014 Rating System)
D – Wetland Functions and Values for Linear Projects (BPJ) Forms
E – SR9-SR204 Lundeen Parkway Project As-Builts (1992) – Annotated

# References

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# Attachment A

## -Figures

Figure 1 – Study Area
Figure 2 – Delineated Wetlands
Figure 3 – Regulated Wetlands

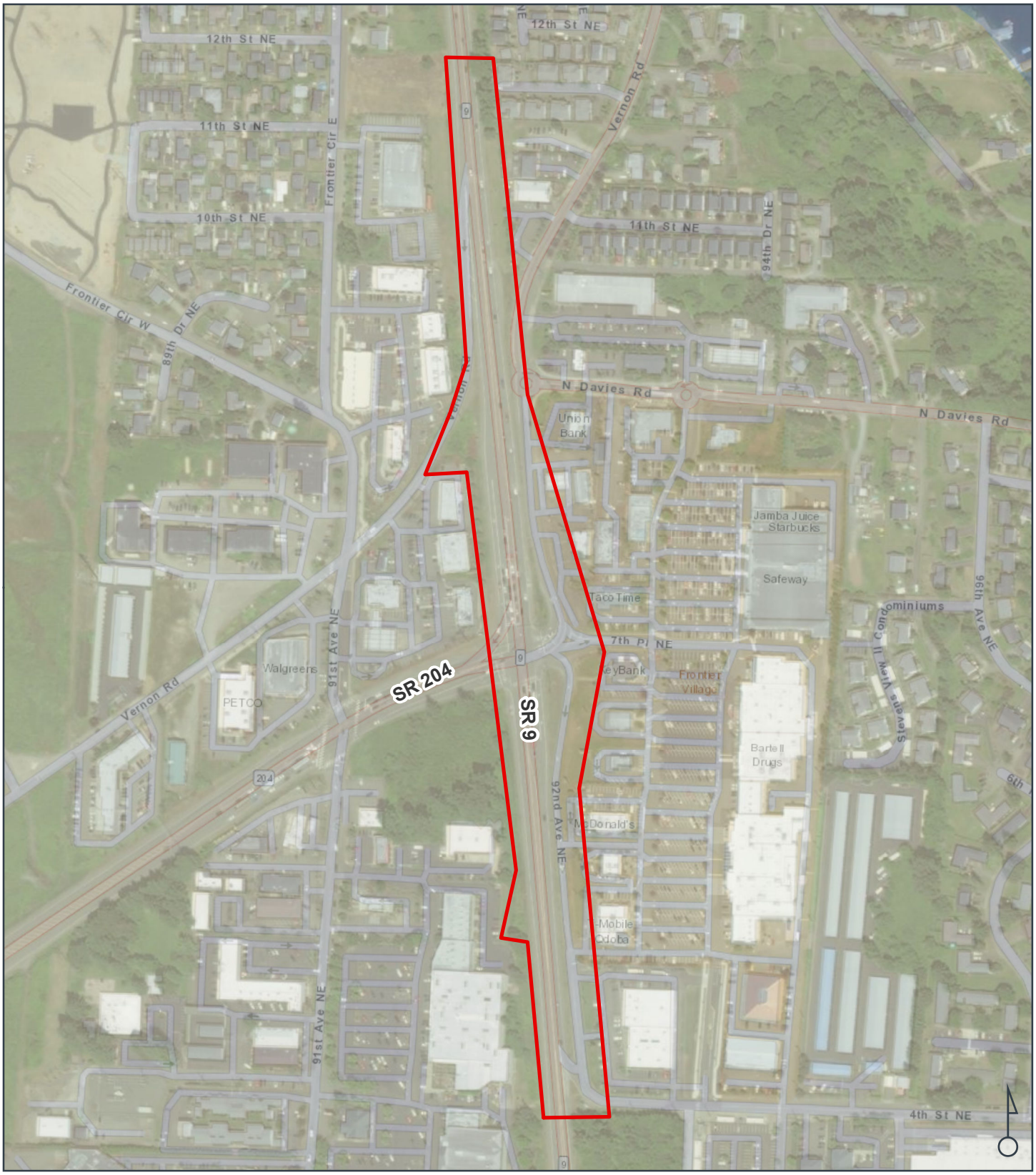



**FIGURE 1**
**STUDY AREA**

**LEGEND**

Study Area

0 500 1,000 ft

**SR 9 SR 204 INTERSECTION IMPROVEMENTS - STAGE 3**
**LAKE STEVENS, WASHINGTON**

Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.

Otak

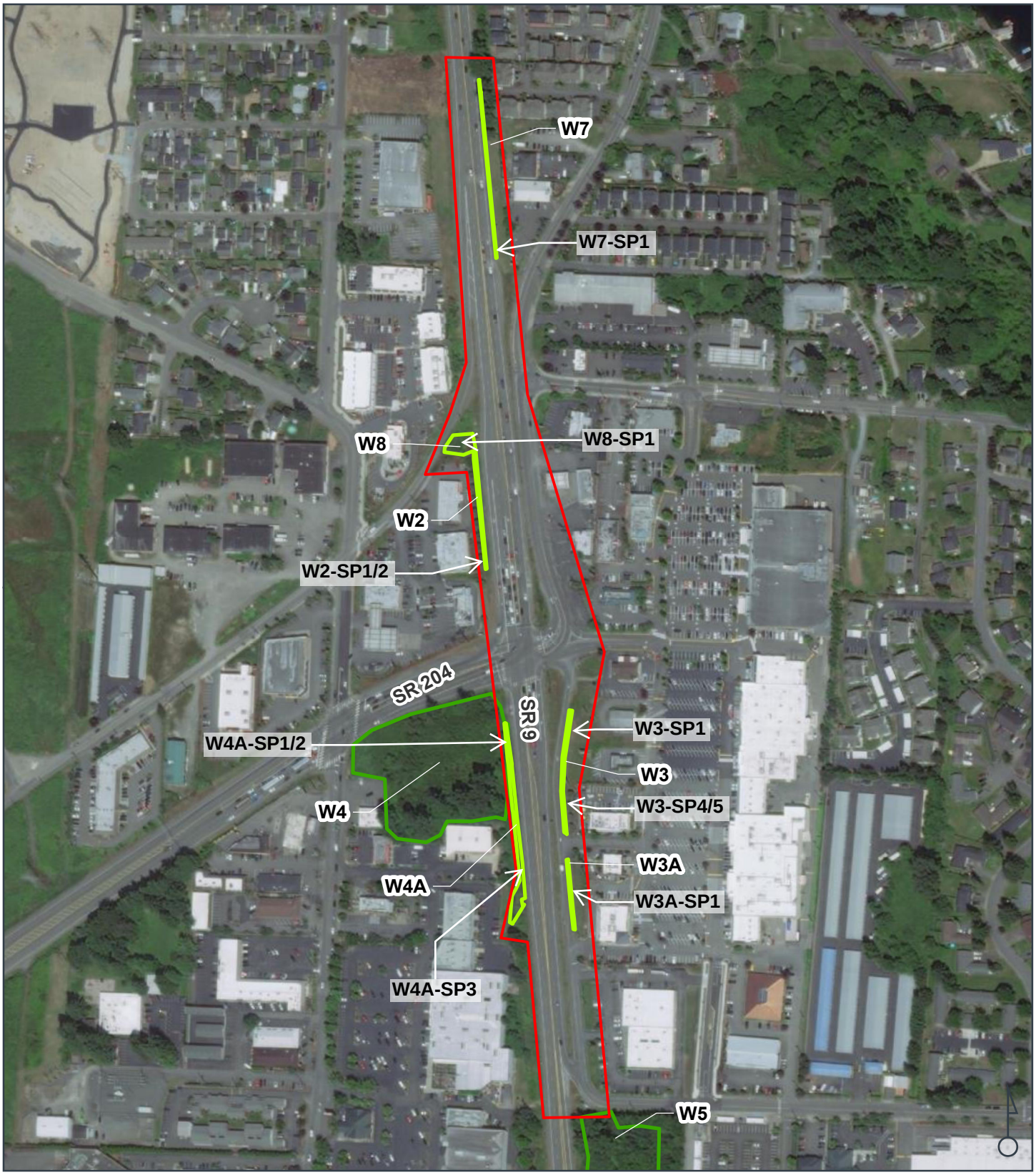



**FIGURE 2**
**DELINEATED WETLANDS**

## Legend

Study Area

**Delineated Wetlands Sources**

WSDOT 2018

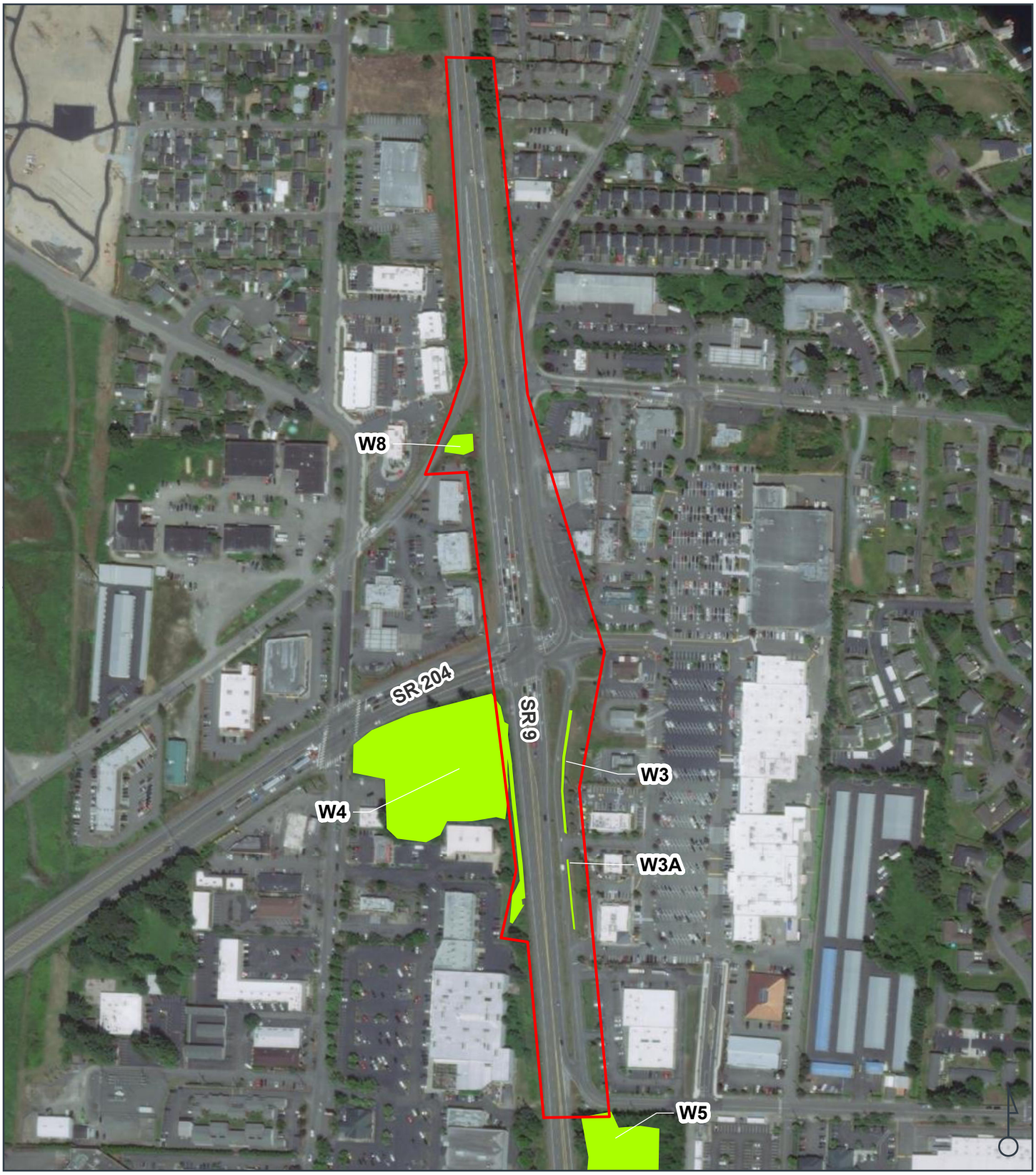
WSDOT 2021

0 500 ft

**SR 9 SR 204 INTERSECTION IMPROVEMENTS - STAGE 3**
**LAKE STEVENS, WASHINGTON**

Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.

Otak




## FIGURE 3
## REGULATED WETLANDS

**Legend**

Study Area

**JDWetlands**

USACE, Ecology, Lake Stevens

0 500 ft

**SR 9 SR 204 INTERSECTION IMPROVEMENTS - STAGE 3**

**LAKE STEVENS, WASHINGTON**

Disclaimer: This data is not to survey accuracy and is meant for planning purposes only.

Otak

# Attachment B
## –Wetland Determination Data Forms

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

Project/Site: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/19/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W2-SP1

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: S13 T29N R5E

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

Subregion (LRR): A | Lat: 48.00373306107277 | Long: -122.10674151653431 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification:

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Depressional feature West of Auto parts store and tire shop. Parralell to, and immediately West of the SB lanes of SR 9 - at the interection of SR 9/204. Feature is North of Wetland 1.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Taraxacum officinale* | 20 | **Y** | 20.0 | FACU |
| 2. *Phalaris arundinacea* | 60 | **Y** | 60.0 | FACW |
| 3. *Poa pratensis* | 15 | N | 15.0 | FAC |
| 4. *Trifolium microcephalum* | 5 | N | 5.0 | FAC |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 60 | x 2 = | 120 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 260 (B) |

Prevalence Index = B/A = 2.600

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [ ] 2 - Dominance Test is >50%
- [x] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:
Area is Northwest of the SR 9/204 intersection, and Wetland 1 (formerly 4A)

## SOIL

Sampling Point: W2-SP1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR | 2/1 | 98 | 10YR | 5/6 | 2 | C | M | Silt Loam | |
| 6-9 | 10YR | 2/1 | 100 | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill

Depth (inches): 9

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

Root Bound - upper 6 inches

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

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:

Water stained leaves, sediment covered vegetation, depressional topography.

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

Project/Site: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/19/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W2-SP2

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: S13 T29N R5E

Landform (hillslope, terrace, etc.): ditch feature | Local relief (concave, convex, none): concave | Slope (%): 3

Subregion (LRR): A | Lat: 48.00375756990666 | Long: -122.10669851744402 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification:

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 | (●) No | **Is the Sampled Area within a Wetland?** ( ) Yes (●) No |
| Hydric Soil Present? | (●) Yes | ( ) No | |
| Wetland Hydrology Present? | ( ) Yes | (●) No | |

Remarks:
Upland pit for W2-SP1. Feature is North of Wetland 1.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Agrostis oregonensis* | 10 | N | 11.1 | FAC |
| 2. *Plantago lanceolata* | 20 | **Y** | 22.2 | FACU |
| 3. *Hypochaeris radicata* | 20 | **Y** | 22.2 | FACU |
| 4. *Festuca trachyphylla* | 40 | **Y** | 44.4 | FACU |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 90 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 2

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 80 | x 4 = | 320 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 90 (A) | | 350 (B) |

Prevalence Index = B/A = 3.889

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [ ] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** ( ) Yes (●) No

Remarks:
Mowed/landscaped roadside area. Large angular fill material at surface (roughly tennis-ball sized). Area is North of the SR 9/204 intersection, and Wetland 1 (formerly 4A)

## SOIL

Sampling Point: W2-SP2

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 7.5YR 3/2 | 93 | 7.5YR 4/6 | 7 | C | M | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: angular fill

Depth (inches): 3

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:
Large fill @ 3

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

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:
No vegetative or Hydrologic indicators

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

Project/Site: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/25/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W3A-SP1

Investigator(s): Kapantais | Section, Township, Range: S12 T29N R5E

Landform (hillslope, terrace, etc.): ditch | Local relief (concave, convex, none): flat | Slope (%): 1

Subregion (LRR): A | Lat: 48.00173638036522 | Long: -122.10582199680775 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification: PEM

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Ditch wetland. Soil is above fill material. Hydrology is from storm water runoff and precipitation only. Meets state waters criteria, bu ti snot Federal under 2020 ruling. Vegetation is subject to annual (?) mowing,

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| Tree Stratum (Plot size: 20ft x 20ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| Herb Stratum (Plot size: 10ft x 10ft) | | | | |
| 1. *Phalaris arundinacea* | 75 | **Y** | 75.0 | FACW |
| 2. *Trifolium resupinatum* | 5 | N | 5.0 | UPL |
| 3. *Holcus lanatus* | 20 | **Y** | 20.0 | FAC |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| Woody Vine Stratum (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 100 (A) | | 235 (B) |

Prevalence Index = B/A = 2.350

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:

## SOIL

Sampling Point: W3A-SP1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR | 2/1 | 100 | | | | | | | |
| 7-8 | | | | | | | | | | gravel/asphalt layer |
| 8-14 | 5Y | 2/1 | 90 | 2.5Y | 5/6 | 10 | C | M | MuMi | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: refusal/road fill

Depth (inches): 14

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

0-7 is dark black soil, no redox above an old gravel and asphalt layer from 7-8". Chunks of asphalt present. 8-14" is a very mucky saturated gray fill material soil w/ redox concentrations throughout.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

Water Table Present? ◉ Yes ○ No Depth (inches): 8

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 8

**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: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/25/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W3-SP1

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: S12 T29N R5E

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): 1

Subregion (LRR): A | Lat: 48.0025563796319 | Long: -122.10575384425513 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification: PEM

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
W3 is a narrow 1-2' wide PHAR dominant terrace on a ditch slope. W3 is on the West side of ditch 2' and 1' on east side of ditch. The ditch itself has refusal fill at <1' and is 1.5' wide. Feature is immediately East of and parallel to 92nd Ave NE, and is Southeast of the intersection of SR 9 and SR 204. Due to the fill material and the wetlands being confined within a roadside ditch, significantly disturbed conditions selected on the delineation form.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Phalaris arundinacea* | 100 | **Y** | 100.0 | FACW |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 200 (B) |

Prevalence Index = B/A = 2.000

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:
100% RCG

## SOIL

Sampling Point: W3-SP1

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 2/1 | | | | | | Silt Loam | |
| 4-8 | 10YR 4/1 | | 7.5YR 4/6 | 7 | D | M | GrSiLo | |
| | | | | | | | | road fill liner material below |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: refusal

Depth (inches): 9

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

SP1 dug on road shoulder which is also a terrace for a ditch (non-federal tributary) and wetland. Ditch + Wetland are state waters per ECY. There was a distinct transition line between the upland and wetland, and lower elevation areas in the wetland had standing water which restricted suitable shovel probe areas. Upland areas fill material refusal a few inches to <1 inch below the surface.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

Water Table Present? ◉ Yes ○ No Depth (inches): 6

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 6

**Wetland Hydrology Present?** ◉ Yes ○ No

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

Remarks:

Hydrology is from precipitation and runoff from roads and shopping center to the east. No evidence of groundwater seeps during the spring visit.

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

Project/Site: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/25/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W3-SP4

Investigator(s): Kapantais | Section, Township, Range: S12 T29N R5E

Landform (hillslope, terrace, etc.): road ditch/ shoulder bank | Local relief (concave, convex, none): shoulder/bank | Slope (%): 1

Subregion (LRR): A | Lat: 48.00219271333326 | Long: -122.10582674070908 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification: PEM

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Sp4 dug on terrace of ditch coming off of road shoulder. SP4 is next to tch. Fill ,aterial in ditch >14'' below surface, water 3'' beneath surface soil. Feature is immediately East of and parallel to 92nd Ave NE, and is Southeast of the intersection of SR 9 and SR 204. Due to the fill material and the wetlands being confined within a roadside ditch, significantly disturbed conditions selected on the delineation form.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Phalaris arundinacea* | 85 | **Y** | 85.0 | FACW |
| 2. *Juncus effusus* | 5 | N | 5.0 | FACW |
| 3. *Poa pratensis* | 5 | N | 5.0 | FAC |
| 4. *Trifolium resupinatum* | 5 | N | 5.0 | UPL |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 100 (A) | | 220 (B) |

Prevalence Index = B/A = 2.200

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:

## SOIL

Sampling Point: W3-SP4

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR | 2/1 | 100 | | | 0 | | | SiLo | |
| 8-13 | 10YR | 5/1 | 50 | 10YR | 6/2 | 40 | | | GrSiLo | Fill w/ redox present |
| | | | | 7.5YR | 5/8 | 10 | D | M | | pea to large gravel |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: refusal

Depth (inches): 13

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

There was a distinct transition line between the upland and wetland, and lower elevation areas in the wetland had standing water which restricted suitable shovel probe areas. Upland areas fill material refusal a few inches to <1 inch below the surface.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

Water Table Present? ◉ Yes ○ No Depth (inches): 6

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 6

**Wetland Hydrology Present?** ◉ Yes ○ No

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

Remarks:

surface water present in ditch ~1 foot to East and 4" lower in elevation

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

Project/Site: SR 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/25/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W3-SP5

Investigator(s): Kapantais | Section, Township, Range: S12 T29N R5E

Landform (hillslope, terrace, etc.): ditch | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 48.00189172664834 | Long: -122.1058606917311 | Datum: NAD83HARN

Soil Map Unit Name: Tokul Gravelly loam | NWI Classification: PEM

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
veg is subject to frequent mowing due to location adjacent to SR 9 and frontage rd. Wetland confined to a ditch feature that receives storm water runoff as primary hydrology. Due to the fill material and the wetlands being confined within a roadside ditch significantly disturbed conditions were checked on the delineation form.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 15ft x 15ft)** | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum (Plot size: 10ft x 10ft)** | | | | |
| 1. *Phalaris arundinacea* | 90 | **Y** | 90.0 | FACW |
| 2. *Trifolium resupinatum* | 10 | N | 10.0 | UPL |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| **Woody Vine Stratum (Plot size: 10ft x 10ft)** | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 10 | x 5 = | 50 |
| Column Totals: | 100 (A) | | 230 (B) |

Prevalence Index = B/A = 2.300

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:
90% RCG

## SOIL

Sampling Point: W3-SP5

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR | 2/1 | 100 | | | | | | SiLo | |
| 3-7 | 7.5YR | 5/1 | 95 | 7.5YR | 6/6 | 5 | D | M | GrSiLo | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill

Depth (inches): 7

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

wetland soil characteristics have developed in the soil deposition layer that is locatedon top of fill. Fill placed when ditch was constructed. There was a distinct transition line between the upland and wetland, and lower elevation areas in the wetland had standing water which restricted suitable shovel probe areas. Upland areas fill material refusal a few inches to <1 inch below the surface.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

Water Table Present? ◉ Yes ○ No Depth (inches): 6

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 6

**Wetland Hydrology Present?** ◉ Yes ○ No

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

Remarks:

Hydrology is either precipitation or runoff from roads and developed parking lot. No evidence of groundwater seeps during spring site visit. State water jurisdiction. Due to stormwater inputs + precip as only hydrology sources.

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

Project/Site: 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/19/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W4A-SP1

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: Sec. 13, T 29 N, R 5E

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): concave | Slope (%): 2

Subregion (LRR): A | Lat: 48.00224794670218 | Long: -122.10642953372665 | Datum: NAD83HARN

Soil Map Unit Name: Tokul grvelly medial loam, 0-8% slopes | NWI Classification: PSS

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Near NGPA - South bound roadshoulder of SR 9. Immediately South of 9/204 intersection.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. *Alnus rubra* | 10 | Y | 50.0 | FAC |
| 2. *Prunus emarginata* | 10 | Y | 50.0 | FACU |
| 3. | | | | |
| 4. | | | | |
| | 20 | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. *Rubus armeniacus* | 80 | Y | 100.0 | FAC |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | 80 | = Total Cover | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Lotus uliginosus* | 10 | N | 11.8 | FAC |
| 2. *Typha angustifolia* | 50 | Y | 58.8 | OBL |
| 3. *Phalaris arundinacea* | 10 | N | 11.8 | FACW |
| 4. *Veronica wormskjoldii* | 10 | N | 11.8 | FACW |
| 5. *Juncus effusus* | 5 | N | 5.9 | FACW |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 85 | = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | | = Total Cover | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 50 | x 1 = | 50 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 100 | x 3 = | 300 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 185 (A) | | 440 (B) |

Prevalence Index = B/A = 2.378

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:

## SOIL

Sampling Point: W4A-SP1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR | 2/1 | 90 | | | | | | gravelly silt-loam | |
| | 2.5Y | 3/2 | 10 | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill

Depth (inches): 6

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

Root bound soils with angular fill. Saturated. Hydric soils assumed present due to saturation during dry season.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ◉ Yes ○ No Depth (inches): 0

Water Table Present? ◉ Yes ○ No Depth (inches): 0

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 0

**Wetland Hydrology Present?** ◉ Yes ○ No

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

Remarks:

Saturated at surface. Standing water in adjacent ditch.

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

Project/Site: 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/19/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W4A-SP2

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: Sec. 13, T 29 N, R 5E

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): concave | Slope (%): 2

Subregion (LRR): A | Lat: 48.002219774409376 | Long: -122.10646507262341 | Datum: NAD83HARN

Soil Map Unit Name: Tokul grvelly medial loam, 0-8% slopes | NWI Classification: upland

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 | ( ) No | **Is the Sampled Area within a Wetland?** | ( ) Yes (●) No |
| Hydric Soil Present? | ( ) Yes | (●) No | | |
| Wetland Hydrology Present? | ( ) Yes | (●) No | | |

Remarks:
Near NGPA - South bound roadshoulder of SR 9. Immediately South of 9/204 intersection.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Phalaris arundinacea* | 90 | **Y** | 94.7 | FACW |
| 2. *Hypochaeris radicata* | 5 | N | 5.3 | FACU |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 95 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Rubus armeniacus* | 5 | **Y** | 100.0 | FAC |
| 2. | | | | |
| | 5 = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 215 (B) |

Prevalence Index = B/A = 2.150

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:
Upland pit

## SOIL

Sampling Point: W4A-SP2

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 2/2 | 100 | | | | | gravelly silt loam | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill

Depth (inches): 3

**Hydric Soil Present?** ○ Yes ◉ No

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

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: 9/204 Stage III | City/County: Lake Stevens/Snohomish | Sampling Date: 4/19/2021

Applicant/Owner: WSDOT NW Region | State: WA | Sampling Point: W4A-SP3

Investigator(s): Bowlsby/Kapantais | Section, Township, Range: Sec. 13, T 29 N, R 5E

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): concave | Slope (%): 2

Subregion (LRR): A | Lat: 48.00167044731242 | Long: -122.10632072317627 | Datum: NAD83HARN

Soil Map Unit Name: Tokul grvelly medial loam, 0-8% slopes | NWI Classification: upland

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 | ( ) No | **Is the Sampled Area within a Wetland?** | ( ) Yes (●) No |
| Hydric Soil Present? | ( ) Yes | (●) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Near NGPA - South bound roadshoulder of SR 9. Immediately South of 9/204 intersection. This pit was used in the rating of W-4A.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20ft x 20ft) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 15ft x 15ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. *Rubus armeniacus* | 20 | Y | 22.2 | FAC |
| 2. *Typha angustifolia* | 30 | Y | 33.3 | OBL |
| 3. *Phalaris arundinacea* | 20 | Y | 22.2 | FACW |
| 4. *Poa pratensis* | 20 | Y | 22.2 | FAC |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 90 = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 10ft x 10ft) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 5

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 30 | x 1 = | 30 |
| FACW species | 20 | x 2 = | 40 |
| FAC species | 40 | x 3 = | 120 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 90 (A) | | 190 (B) |

Prevalence Index = B/A = 2.111

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:

## SOIL

Sampling Point: W4A-SP3

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-9 | 10YR 2/1 | 100 | | | | | gravelly sandy loa | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill

Depth (inches): 9

**Hydric Soil Present?** ○ Yes ◉ No

Remarks:

No redox observed. Redox possibly masked due to saturation. Dense root mass throughout pit.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches):

Water Table Present? ◉ Yes ○ No Depth (inches): 9

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: 9/204 Stg 3 City/County: Lake Stevens Sampling Date: 5/4/2021

Applicant/Owner: WSDOT State: WA Sampling Point: W7-SP1

Investigator(s): Pope, Kapantais Section, Township, Range:

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Tokul Gravelly Loam (0-8% slopes) NWI Classification: PEM

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 | ( ) No | **Is the Sampled Area within a Wetland?** | (●) Yes ( ) No |
| Hydric Soil Present? | (●) Yes | ( ) No | | |
| Wetland Hydrology Present? | (●) Yes | ( ) No | | |

Remarks:
Roadside ditch between SR 9 and Vernon Rd. East side of SR 9. Wetland hydrology is supplied by stormwater. Wetland on road prism/fill material within the ditch.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20x20) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 15x15)** | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| | = Total Cover | | | |
| **Herb Stratum (Plot size: 5x5)** | | | | |
| 1. *Plantago Lanceolata* | 10 | N | 10.0 | FACU |
| 2. *Acmispon americanus* | 20 | **Y** | 20.0 | FACU |
| 3. *Phalaris arundinacea* | 40 | **Y** | 40.0 | FACW |
| 4. *Triglochin maritima* | 30 | **Y** | 30.0 | OBL |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | 100 = Total Cover | | | |
| **Woody Vine Stratum (Plot size: 5x5)** | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 30

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 30 | x 1 = | 30 |
| FACW species | 40 | x 2 = | 80 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 30 | x 4 = | 120 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 230 (B) |

Prevalence Index = B/A = 2.300

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is >50%
- [✓] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** (●) Yes ( ) No

Remarks:
Triglochin maritima was initially called an unknown#1 grass but was later determined in the office.

## SOIL

Sampling Point: W7-SP1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR | 2/1 | 100 | | | | | | Sandy Loam | |
| 2-6 | 10YR | 4/1 | 70 | 7.5YR | 5/6 | 20 | C | M | sandy Gravelly loa | road fill materials |
| | | | | 7.5YR | 2.5/1 | 10 | D | M | silt loam | fill material, ashy color |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: road fill

Depth (inches): 6"

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

ditch between sr 9 and vernon rd. Hit roadfill restrive layer in ditch.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

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:

recieves stormwater and precip at enough of a frequency to cause WL features.

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

Project/Site: 9/204 Stg 3 City/County: Lake Stevens/SnoCo Sampling Date: 5/4/2021

Applicant/Owner: WSDOT State: Sampling Point: W8-SP1

Investigator(s): Pope, Kapantais Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Tokul Gravelly Loam (0-8% slopes) NWI Classification: PSS

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 | ◯ No | **Is the Sampled Area within a Wetland?** | ◉ Yes ◯ No |
| Hydric Soil Present? | ◉ Yes | ◯ No | | |
| Wetland Hydrology Present? | ◉ Yes | ◯ No | | |

Remarks:
Depression on the west side of SR9 and the south side of vernon rd. Appears to be mostly in fill material on road prism. Due to dense blackberry and other vegetation, surveyed boundary needs to be moved inward approximately 4 feet for accurate wetland boundary. Wetland is likely an old stormwater pond with a clay lining.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20x20) | Absolute % Cover | Dom. Sp.? | Relative % Cover | Indicator Status |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ) | | | | |
| 1. *Spiraea douglasii* | 50 | **Y** | 31.3 | FACW |
| 2. *Ribes sanguineum* | 25 | N | 15.6 | FACU |
| 3. *Rubus armeniacus* | 30 | N | 18.8 | FAC |
| 4. *Physocarpus capitatus* | 5 | N | 3.1 | FACW |
| 5. *Salix sitchensis* | 50 | **Y** | 31.3 | FACW |
| | 160 | = Total Cover | | |
| **Herb Stratum** (Plot size: 5x5) | | | | |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| | = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: 5x5) | | | | |
| 1. | | | | |
| 2. | | | | |
| | = Total Cover | | | |

% Bare Ground in Herb Stratum 5

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 105 | x 2 = | 210 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 25 | x 4 = | 100 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 160 (A) | | 400 (B) |

Prevalence Index = B/A = 2.500

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** ◉ Yes ◯ No

Remarks:
No herbaceous plants, dominated by tall shrubs. Some sediment stained leaves.

## SOIL

Sampling Point: W8-SP1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR | 3/1 | 100 | | | | | | muck | muck/saturation covers redox |
| 8-9 | 10YR | 3/1 | 80 | 2.5Y | 6/8 | 20 | C | M | clay | clay with 3" ribbon |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: fill material

Depth (inches): 9"

**Hydric Soil Present?** ◉ Yes ○ No

Remarks:

mucky material in the top few inches. Bottom layer is a clay material. Clay is not natural to this area. Wetland appears to be an old stormwater pond with a clay/fill lining.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ◉ Yes ○ No Depth (inches): 8"

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 0"

**Wetland Hydrology Present?** ◉ Yes ○ No

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

Remarks:

algae on soil surface. Sediment staining. Sign that this area becomes ponded in the winter. Culvert outlets into this pond from the SR 9 roadway. Recieves stormwater.

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

Project/Site: SR9/204 Interchange City/County: Lk. Stevens/ Snoh. Sampling Date: 12/14/17
Applicant/Owner: WSDOT State: WA Sampling Point: TP-2
Investigator(s): KAM/AETR Section, Township, Range: T29N R5E S13
Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Tokul gravelly Medial loam NWI classification:
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 ✓ | No ____ | Wetland W5 |
| Hydric Soil Present? | Yes ✓ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✓ No ____ |
| Wetland Hydrology Present? | Yes ✓ | No ____ | |

Remarks:
Flags A-1 to A-13. A-13 connects to A-23 – A35; NO A-14 to A-22 flags
located in depression btwn SR9 & transit center. Stormwater pond to S. separated from wtl by berm

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red alder | 60 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 60 = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. Salmonberry | 40 | ✓ | FAC |
| 2. Douglas spirea | 10 | | FACW |
| 3. H. blackberry | 5 | | |
| 4. unid. sapling | 5 | | FAC* |
| 5. | | | |
| | 60 = Total Cover | | |

| Herb Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. Slough sedge | 50 | ✓ | OBL |
| 2. creeping buttercup | 50 | ✓ | FAC |
| 3. reed canarygrass | <1 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 100 = Total Cover | | |

| Woody Vine Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: | |
|---|---|---|
| OBL species | x 1 = | |
| FACW species | x 2 = | |
| FAC species | x 3 = | |
| FACU species | x 4 = | |
| UPL species | x 5 = | |
| Column Totals: (A) | | (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**
- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ✓ No ____

Remarks:
* assume fac rating can't id tree due to lack of leaves

## 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 Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/2 | 100 | | | | | Sandy loam | |
| 3-6 | 10YR 4/2 | 100 | | | | | Sandy loam w/ gravel | |
| 6-10 | 2.5Y 6/2 | 95 | 5YR 4/6 | 5 | C | M | Sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: hard pan / hard sand layer

Depth (inches): 10

**Hydric Soil Present?** Yes ✓ No ____

Remarks:

restrictive layer prevents meeting thickness criterion but restrictive layer is same color ∴ likely meets thickness criterion if we could dig into restrictive layer

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes ✓ No ____ Depth (inches): 2"

Water Table Present? Yes ✓ No ____ Depth (inches): 4"

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✓ No ____

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

Remarks:

standing $H_2O$ under fallen tree root mass

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

Project/Site: SR9/204 Interchange City/County: Lake Stevens/Snohomish Sampling Date: 12/14/17

Applicant/Owner: WSDOT State: WA Sampling Point: TP-4

Investigator(s): KAM/AER Section, Township, Range: T29N R5E S13

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

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

Soil Map Unit Name: Tokul gravelly medial loam NWI classification:

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 X No ____ | **Is the Sampled Area within a Wetland?** Yes ✓ No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks:

Wetland W5 - western boundary in PEM area

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Black cottonwood | 60 | X | FAC |
| 2. red alder | 75 | X | FAC |
| 3. | | | |
| 4. | | | |
| | 135 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 10') | | | |
| 1. H. blackberry | 15 | X | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 = Total Cover | | |
| **Herb Stratum** (Plot size: 10') | | | |
| 1. reed canarygrass | 100 | X | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 100 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 10') | | | |
| 1. | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| OBL species ____ | x 1 = ____ |
| FACW species ____ | x 2 = ____ |
| FAC species ____ | x 3 = ____ |
| FACU species ____ | x 4 = ____ |
| UPL species ____ | x 5 = ____ |
| Column Totals: ____ (A) | ____ (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:

## SOIL

Sampling Point: TP-4

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR 3/1 | 100 | | | | | | loam w/gravel |
| 7-16 | 10YR 2/1 | 100 | | | | | | loam w/gravel |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

Assume depleted matrix below dark surface due to high water table

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes X No ____ Depth (inches): 5"

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0

**Wetland Hydrology Present?** Yes X 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: SR9/204 Interchange City/County: Lk. Stevens/Sno Sampling Date: 12/18/17
Applicant/Owner: WSDOT State: WA Sampling Point: TP-11
Investigator(s): KAM/AIZR Section, Township, Range: T29N R5E S13
Landform (hillslope, terrace, etc.): — Local relief (concave, convex, none): concave Slope (%): _____
Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Tokul gravelly medial loam NWI classification: _____
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 ✓ No _____ | **Is the Sampled Area within a Wetland?** Yes ✓ No _____ |
| Hydric Soil Present? | Yes ✓ No _____ | |
| Wetland Hydrology Present? | Yes ✓ No _____ | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 10') | | | |
| 1. H. blackberry | 10 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 = Total Cover | | |
| **Herb Stratum** (Plot size: 10') | | | |
| 1. reed canary grass | 100 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 100 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 10') | | | |
| 1. | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| OBL species _____ | x 1 = _____ |
| FACW species _____ | x 2 = _____ |
| FAC species _____ | x 3 = _____ |
| FACU species _____ | x 4 = _____ |
| UPL species _____ | x 5 = _____ |
| Column Totals: _____ (A) | _____ (B) |

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ✓ No _____

Remarks:

## SOIL

Sampling Point: TP-11

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR2/1 | 100 | | | | | silty loam | |
| 8-16 | 10YR2/1 | 83 | 7.5YR4/6 | 7 | C | M | silty loam | |
| | | | 2.5Y5/2 | 10 | D | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✓ No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes ✓ No ___ Depth (inches): 34"

Water Table Present? Yes ✓ No ___ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

**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: SR9/201 Interchange City/County: Lk Stevens / Sno. Sampling Date: 12/18/17

Applicant/Owner: WSDOT State: WA Sampling Point: TP-12

Investigator(s): KAM/AER Section, Township, Range: T29N R5E S13

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

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

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: _____

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 ✓ | No _____ | **Is the Sampled Area within a Wetland?** Yes _____ No _____ |
| Hydric Soil Present? | Yes ✓ | No _____ | |
| Wetland Hydrology Present? | Yes ✓ | No _____ | |

Remarks: top of "berm" between wtlC & SR9 ditch

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 10') | | | |
| 1. Willow | 20 | ✓ | FAC |
| 2. Himalayan Blackberry | 50 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 70 | = Total Cover | |
| **Herb Stratum** (Plot size: 10') | | | |
| 1. reed canarygrass | 70 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 70 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 10') | | | |
| 1. | | | |
| 2. | | | |
| | 0 | = Total Cover | |

% Bare Ground in Herb Stratum 30

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| OBL species _____ | x 1 = _____ |
| FACW species _____ | x 2 = _____ |
| FAC species _____ | x 3 = _____ |
| FACU species _____ | x 4 = _____ |
| UPL species _____ | x 5 = _____ |
| Column Totals: _____ (A) | _____ (B) |

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ✓ No _____

Remarks:

## SOIL

Sampling Point: TP-12

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-9 | 10YR 4/1 | 100 | | | | | loam | w/gravel / cobble |
| 5-10 | ~~10YR 4/1~~ | ~~100~~ | | | | | loam | ~~w/gravel / cobble~~ |
| 9-16 | 2.5Y 5/2 | 20 | | | | | loam | w/gravel / cobble |
| | 10YR 4/1 | 80 | 10YR 4/6 | 10 | C | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✓ No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 11

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:

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

Project/Site: SR9/204 Interchange City/County: Lk Stevens / Sno Sampling Date: 12/18/17

Applicant/Owner: WSDOT State: WA Sampling Point: TP-13

Investigator(s): KAM/AER Section, Township, Range: T29N R5E S13

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): concave Slope (%): 0

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

Soil Map Unit Name: Tokul gravelly medial loam NWI classification:

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 ✓ No ____ | **Is the Sampled Area within a Wetland?** Yes ✓ No ____ |
| Hydric Soil Present? | Yes ✓ No ____ | |
| Wetland Hydrology Present? | Yes ✓ No ____ | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. red alder | 40 | ✓ | FAC |
| 2. black cottonwood | 100 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| | 100 = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. Salmonberry | 40 | ✓ | FAC |
| 2. vine maple | 25 | ✓ | FAC |
| 3. OR grape | 10 | | FACU |
| 4. Holly | 5 | | |
| 5. | | | |
| | ____ = Total Cover | | |

| Herb Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 0 = Total Cover | | |

| Woody Vine Stratum (Plot size: 10') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 90

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: | |
|---|---|---|
| OBL species | x 1 = | |
| FACW species | x 2 = | |
| FAC species | x 3 = | |
| FACU species | x 4 = | |
| UPL species | x 5 = | |
| Column Totals: (A) | | (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ✓ No ____

Remarks:

## SOIL

Sampling Point: TP-13

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR2/1 | 100 | | | | | sandy loam w/gravel | |
| 7-12 | 10YR4/1 | 93 | 5YR3/4 | 7 | C | PL/M | sandy loam w/gravel | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✓ No ___

Remarks:

assume 2nd layer is >6" - too much $H_2O$ in test pit to dig deeper

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✓ No ___

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

Remarks:

# Attachment C

## -Wetland Rating Forms (2014 Rating System)

Wetland name or number **W3**

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland W3** Date of site visit: **7/2/21**

Rated by **S. Modjeski** Trained by Ecology? **X** Yes ___No Date of training **6/27/17**

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

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

Source of base aerial photo/map **ESRI Aerial**

## OVERALL WETLAND CATEGORY **IV** (based on functions **X** or special characteristics___)

### 1. Category of wetland based on FUNCTIONS

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

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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | *Circle the appropriate ratings* | | | |
| Site Potential | H M (L) | H M (L) | H M (L) | |
| Landscape Potential | H (M) L | (H) M L | H M (L) | |
| Value | (H) M L | H (M) L | H M (L) | **TOTAL** |
| **Score Based on Ratings** | **6** | **6** | **3** | **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

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number W3

# Maps and figures required to answer questions correctly for Western Washington

Note: Rating figures were not prepared due to the highly developed landscape and abutting roads, singular PEM class, and obvious ditch outlet.

## Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet (*can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

## Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 | |

Wetland name or number W3

# 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 W3

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 W3

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

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

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

Wetland name or number **W3**

## DEPRESSIONAL AND FLATS WETLANDS

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

### D 4.0. Does the site have the potential to reduce flooding and erosion?

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

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

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

| | |
|---|---|
| D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 | **1** |
| D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 | **1** |
| D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 | **1** |
| Total for D 5 Add the points in the boxes above | **3** |

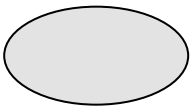
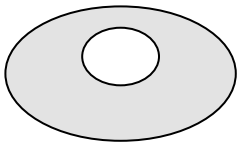
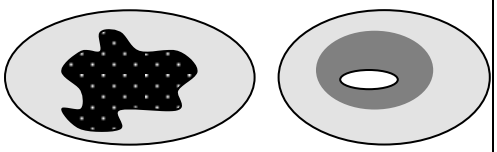
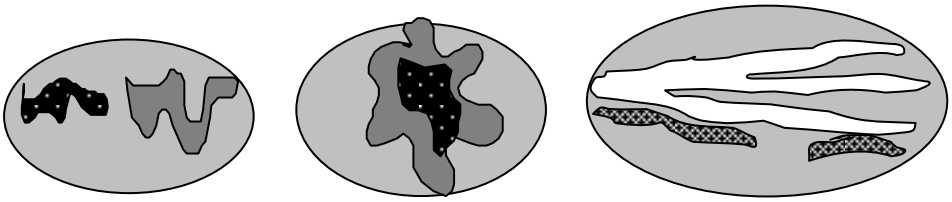
**Rating of Landscape Potential** If score is: **X** **3 = H** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

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

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

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

Wetland name or number **W3**

| **These questions apply to wetlands of all HGM classes.**<br>**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.*<br>____Aquatic bed — 4 structures or more: points = 4<br>__X__Emergent — 3 structures: points = 2<br>____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1<br>____Forested (areas where trees have > 30% cover) — 1 structure: points = 0<br>*If the unit has a Forested class, check if:*<br>____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<br>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*).<br>____Permanently flooded or inundated — 4 or more types present: points = 3<br>____Seasonally flooded or inundated — 3 types present: points = 2<br>__X__Occasionally flooded or inundated — 2 types present: points = 1<br>__X__Saturated only — 1 type present: points = 0<br>____Permanently flowing stream or river in, or adjacent to, the wetland<br>____Seasonally flowing stream in, or adjacent to, the wetland<br>____**Lake Fringe wetland** — **2 points**<br>____**Freshwater tidal wetland** — **2 points** | **1** |
| H 1.3. Richness of plant species<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$.<br>*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***<br>If you counted: > 19 species — points = 2<br>5 - 19 species — points = 1<br>< 5 species — points = 0 | **1** |
| H 1.4. Interspersion of habitats<br>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.*<br>  **None** = 0 points<br>  **Low** = 1 point<br>  **Moderate** = 2 points<br>All three diagrams in this row are **HIGH** = 3points<br>  | **0** |

Wetland name or number **W3**

| | |
|---|---|
| H 1.5. Special habitat features:<br>Check the habitat features that are present in the wetland. *The number of checks is the number of points.*<br>____Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).<br>____Standing snags (dbh > 4 in) within the wetland<br>____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)<br>____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*<br>____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*<br>____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*) | **0** |
| Total for H 1 Add the points in the boxes above | **2** |

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

## H 2.0. Does the landscape have the potential to support the habitat functions of the site?

| | |
|---|---|
| H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).<br>*Calculate:* % undisturbed habitat___ **+** [(% moderate and low intensity land uses)/2]___ **=** **0** %<br>If total accessible habitat is:<br>> 1/3 (33.3%) of 1 km Polygon points = 3<br>20-33% of 1 km Polygon points = 2<br>10-19% of 1 km Polygon points = 1<br>< 10% of 1 km Polygon points = 0 | **0** |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.<br>*Calculate:* % undisturbed habitat **14** **+** [(% moderate and low intensity land uses)/2] **5** **=** **19** %<br>Undisturbed habitat > 50% of Polygon points = 3<br>Undisturbed habitat 10-50% and in 1-3 patches points = 2<br>Undisturbed habitat 10-50% and > 3 patches points = 1<br>Undisturbed habitat < 10% of 1 km Polygon points = 0 | **1** |
| H 2.3. Land use intensity in 1 km Polygon: If<br>> 50% of 1 km Polygon is high intensity land use points = (- 2)<br>≤ 50% of 1 km Polygon is high intensity points = 0 | **-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** **X** **< 1 = L** *Record the rating on the first page*

## H 3.0. Is the habitat provided by the site valuable to society?

| | |
|---|---|
| H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*<br>Site meets ANY of the following criteria: points = 2<br>— It has 3 or more priority habitats within 100 m (see next page)<br>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)<br>— It is mapped as a location for an individual WDFW priority species<br>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources<br>— 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<br>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1<br>Site does not meet any of the criteria above points = 0 | **0** |

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

Wetland name or number W3

# 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 W3

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt  Yes –Go to **SC 1.1**  (No)= **Not an estuarine wetland** | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I**  No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— 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.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  Yes = **Category I**  No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  (Yes) – Go to **SC 2.2**  No – Go to **SC 2.3**<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes = **Category I**  (No) = **Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes **– Contact WNHP/WDNR and go to SC 2.4**  No = **Not a WHCV**<br>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?  Yes = **Category I**  No = **Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?  Yes – Go to **SC 3.3**  (No) – Go to **SC 3.2**<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?  Yes – Go to **SC 3.3**  (No) = **Is not a bog**<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  Yes = **Is a Category I bog**  No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog**  No **= Is not a bog** | **Cat. I** |

Wetland name or number **W3**

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** (No) = **Not a forested wetland for this section** | **Cat. I** |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— 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<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** (No) = **Not a wetland in a coastal lagoon**<br>SC 5.1. Does the wetland meet all of the following three conditions?<br>— 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).<br>— 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.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 ft$^2$)<br>Yes = **Category I** No = **Category II** | **Cat. I**<br><br>**Cat. II** |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating**<br>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**<br>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3**<br>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?<br>Yes = **Category III** No = **Category IV** | **Cat I**<br><br>**Cat. II**<br><br>**Cat. III**<br><br>**Cat. IV** |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | **not applicable** |

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Wetland name or number **W3A**

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland W3A** Date of site visit: **7/2/21**

Rated by **S. Modjeski** Trained by Ecology? **X** Yes ___No Date of training **6/27/17**

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

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

Source of base aerial photo/map **ESRI Aerial**

## OVERALL WETLAND CATEGORY **IV** (based on functions **X** or special characteristics___)

### 1. Category of wetland based on FUNCTIONS

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

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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | *Circle the appropriate ratings* | | | |
| Site Potential | H M (L) | H M (L) | H M (L) | |
| Landscape Potential | H (M) L | (H) M L | H M (L) | |
| Value | (H) M L | H (M) L | H M (L) | **TOTAL** |
| **Score Based on Ratings** | **6** | **6** | **3** | **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

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number **W3A**

# Maps and figures required to answer questions correctly for Western Washington

Note: Rating figures were not prepared due to the highly developed landscape and abutting roads, singular PEM class, and obvious ditch outlet.

## Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet (*can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

## Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 | |

Wetland name or number W3A

# 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 W3A

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 **W3A**

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

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

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

Wetland name or number **W3A**

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

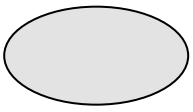
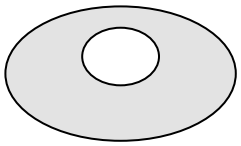
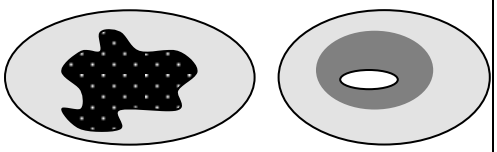
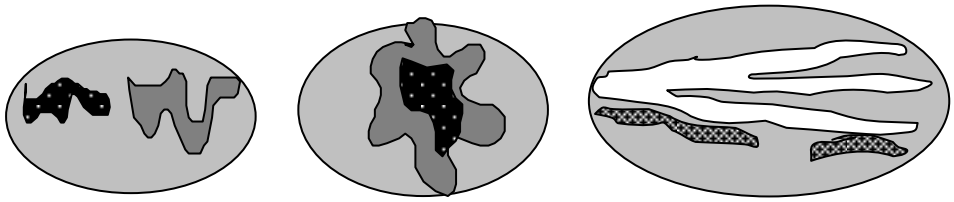
| D 5.0. Does the landscape have the potential to support hydrologic functions of the site? | |
|---|---|
| D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 | **1** |
| D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 | **1** |
| D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 | **1** |
| Total for D 5 Add the points in the boxes above | **3** |

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

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

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

Wetland name or number **W3A**

| **These questions apply to wetlands of all HGM classes.**<br>**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.*<br>____Aquatic bed — 4 structures or more: points = 4<br>__X__Emergent — 3 structures: points = 2<br>____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1<br>____Forested (areas where trees have > 30% cover) — 1 structure: points = 0<br>*If the unit has a Forested class, check if:*<br>____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<br>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*).<br>____Permanently flooded or inundated — 4 or more types present: points = 3<br>____Seasonally flooded or inundated — 3 types present: points = 2<br>__X__Occasionally flooded or inundated — 2 types present: points = 1<br>__X__Saturated only — 1 type present: points = 0<br>____Permanently flowing stream or river in, or adjacent to, the wetland<br>____Seasonally flowing stream in, or adjacent to, the wetland<br>____**Lake Fringe wetland** — **2 points**<br>____**Freshwater tidal wetland** — **2 points** | **1** |
| H 1.3. Richness of plant species<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$.<br>*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***<br>If you counted: > 19 species — points = 2<br>5 - 19 species — points = 1<br>< 5 species — points = 0 | **1** |
| H 1.4. Interspersion of habitats<br>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.*<br>  **None** = 0 points<br>  **Low** = 1 point<br>  **Moderate** = 2 points<br>All three diagrams in this row are **HIGH** = 3points<br>  | **0** |

Wetland name or number **W3A**

| | |
|---|---|
| H 1.5. Special habitat features:<br>Check the habitat features that are present in the wetland. *The number of checks is the number of points.*<br>____Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).<br>____Standing snags (dbh > 4 in) within the wetland<br>____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)<br>____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*<br>____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*<br>____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*) | **0** |
| Total for H 1 Add the points in the boxes above | **2** |

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

| H 2.0. Does the landscape have the potential to support the habitat functions of the site? | |
|---|---|
| H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).<br>*Calculate:* % undisturbed habitat___ **+** [(% moderate and low intensity land uses)/2]___ **=** **0** %<br>If total accessible habitat is:<br>> 1/3 (33.3%) of 1 km Polygon points = 3<br>20-33% of 1 km Polygon points = 2<br>10-19% of 1 km Polygon points = 1<br>< 10% of 1 km Polygon points = 0 | **0** |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.<br>*Calculate:* % undisturbed habitat **14** **+** [(% moderate and low intensity land uses)/2] **5** **=** **19** %<br>Undisturbed habitat > 50% of Polygon points = 3<br>Undisturbed habitat 10-50% and in 1-3 patches points = 2<br>Undisturbed habitat 10-50% and > 3 patches points = 1<br>Undisturbed habitat < 10% of 1 km Polygon points = 0 | **1** |
| H 2.3. Land use intensity in 1 km Polygon: If<br>> 50% of 1 km Polygon is high intensity land use points = (- 2)<br>≤ 50% of 1 km Polygon is high intensity points = 0 | **-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** **X** **< 1 = L** *Record the rating on the first page*

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

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

Wetland name or number W3A

# 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 **W3A**

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt  Yes –Go to **SC 1.1**  (No) = **Not an estuarine wetland** | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I**  No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— 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.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  Yes = **Category I**  No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  (Yes) – Go to **SC 2.2**  No – Go to **SC 2.3**<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes = **Category I**  (No) = **Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes **– Contact WNHP/WDNR and go to SC 2.4**  No = **Not a WHCV**<br>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?  Yes = **Category I**  No = **Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?  Yes – Go to **SC 3.3**  (No) – Go to **SC 3.2**<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?  Yes – Go to **SC 3.3**  (No) = **Is not a bog**<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  Yes = **Is a Category I bog**  No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog**  No **= Is not a bog** | **Cat. I** |

Wetland name or number **W3A**

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** (No) = **Not a forested wetland for this section** | **Cat. I** |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— 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<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** (No) = **Not a wetland in a coastal lagoon**<br>SC 5.1. Does the wetland meet all of the following three conditions?<br>— 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).<br>— 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.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 ft$^2$)<br>Yes = **Category I** No = **Category II** | **Cat. I**<br><br>**Cat. II** |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating**<br>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**<br>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3**<br>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?<br>Yes = **Category III** No = **Category IV** | **Cat I**<br><br>**Cat. II**<br><br>**Cat. III**<br><br>**Cat. IV** |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | **not applicable** |

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Wetland name or number **W8**

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland W8** Date of site visit: **7/2/21**

Rated by **S. Modjeski** Trained by Ecology? **X** Yes ___No Date of training **6/27/17**

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

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

Source of base aerial photo/map **ESRI Aerial**

## OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics___)

### 1. Category of wetland based on FUNCTIONS

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

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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | *Circle the appropriate ratings* | | | |
| Site Potential | H (M) L | H (M) L | H M (L) | |
| Landscape Potential | H (M) L | (H) M L | H M (L) | |
| Value | (H) M L | H (M) L | H M (L) | **TOTAL** |
| **Score Based on Ratings** | **7** | **7** | **3** | **17** |

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

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

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number **W8**

# Maps and figures required to answer questions correctly for Western Washington

Note: Rating figures were not prepared due to the highly developed landscape and abutting roads, singular PEM class, and obvious ditch outlet.

## Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet (*can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

## Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 | |

Wetland name or number W8

# 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 W8

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 **W8**

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

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

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

Wetland name or number **W8**

## DEPRESSIONAL AND FLATS WETLANDS

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

### D 4.0. Does the site have the potential to reduce flooding and erosion?

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

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

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

| | |
|---|---|
| D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 | **1** |
| D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 | **1** |
| D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 | **1** |
| Total for D 5 Add the points in the boxes above | **3** |

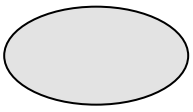
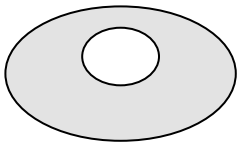
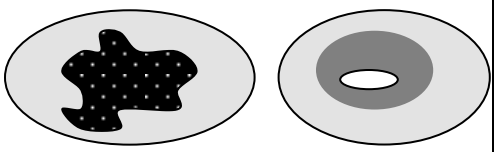
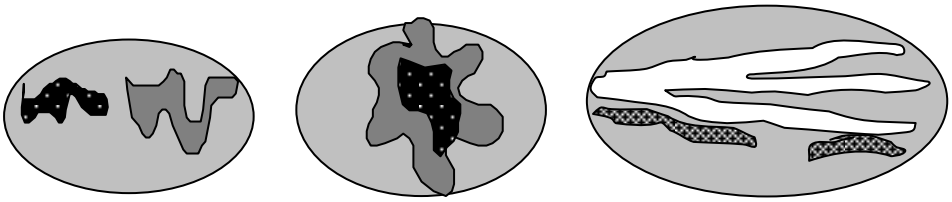
**Rating of Landscape Potential** If score is: **X** **3 = H** ___ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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

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

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

Wetland name or number **W8**

| **These questions apply to wetlands of all HGM classes.**<br>**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.*<br>____Aquatic bed — 4 structures or more: points = 4<br>____Emergent — 3 structures: points = 2<br>__X__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1<br>____Forested (areas where trees have > 30% cover) — 1 structure: points = 0<br>*If the unit has a Forested class, check if:*<br>____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<br>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*).<br>____Permanently flooded or inundated — 4 or more types present: points = 3<br>__X__Seasonally flooded or inundated — 3 types present: points = 2<br>__X__Occasionally flooded or inundated — 2 types present: points = 1<br>____Saturated only — 1 type present: points = 0<br>____Permanently flowing stream or river in, or adjacent to, the wetland<br>____Seasonally flowing stream in, or adjacent to, the wetland<br>____**Lake Fringe wetland** — **2 points**<br>____**Freshwater tidal wetland** — **2 points** | **1** |
| H 1.3. Richness of plant species<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$.<br>*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***<br>If you counted: > 19 species — points = 2<br>5 - 19 species — points = 1<br>< 5 species — points = 0 | **1** |
| H 1.4. Interspersion of habitats<br>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.*<br>  **None** = 0 points<br>  **Low** = 1 point<br>  **Moderate** = 2 points<br>All three diagrams in this row are **HIGH** = 3points<br>  | **0** |

Wetland name or number **W8**

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

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

| H 2.0. Does the landscape have the potential to support the habitat functions of the site? | |
|---|---|
| H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).<br>*Calculate:* % undisturbed habitat___ **+** [(% moderate and low intensity land uses)/2]___ **=** **0** %<br>If total accessible habitat is:<br>> 1/3 (33.3%) of 1 km Polygon points = 3<br>20-33% of 1 km Polygon points = 2<br>10-19% of 1 km Polygon points = 1<br>< 10% of 1 km Polygon points = 0 | **0** |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.<br>*Calculate:* % undisturbed habitat **14** **+** [(% moderate and low intensity land uses)/2] **5** **=** **19** %<br>Undisturbed habitat > 50% of Polygon points = 3<br>Undisturbed habitat 10-50% and in 1-3 patches points = 2<br>Undisturbed habitat 10-50% and > 3 patches points = 1<br>Undisturbed habitat < 10% of 1 km Polygon points = 0 | **1** |
| H 2.3. Land use intensity in 1 km Polygon: If<br>> 50% of 1 km Polygon is high intensity land use points = (- 2)<br>≤ 50% of 1 km Polygon is high intensity points = 0 | **-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** **X** **< 1 = L** *Record the rating on the first page*

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

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

Wetland name or number W8

# 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 **W8**

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br><br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland** | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I** No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— 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.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II** | **Cat. I**<br><br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** No **–** Go to **SC 2.3**<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes **= Category I** No **= Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes **– Contact WNHP/WDNR and go to SC 2.4** No **= Not a WHCV**<br>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? Yes **= Category I** No **= Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2**<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog**<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog** No **= Is not a bog** | **Cat. I** |

Wetland name or number **W8**

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** No = **Not a forested wetland for this section** | **Cat. I** |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— 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<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**<br>SC 5.1. Does the wetland meet all of the following three conditions?<br>— 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).<br>— 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.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 $ft^2$)<br>Yes = **Category I** No = **Category II** | **Cat. I**<br><br>**Cat. II** |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**<br>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**<br>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3**<br>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?<br>Yes = **Category III** No = **Category IV** | **Cat I**<br><br>**Cat. II**<br><br>**Cat. III**<br><br>**Cat. IV** |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | **not applicable** |

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Wetland name or number W4

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): W4 Date of site visit: 12/18/17

Rated by Kerrie McArthur Trained by Ecology? ✓ Yes ___ No Date of training 4/2014

**HGM Class used for rating** Depressional Wetland has multiple HGM classes? ___ Y ✓ N

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

Source of base aerial photo/map ESRI

## 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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | | *Circle the appropriate ratings* | | |
| Site Potential | H (M) L | H (M) L | H (M) L | |
| Landscape Potential | H (M) L | (H) M L | H M (L) | |
| Value | (H) M L | H (M) L | H M (L) | TOTAL |
| **Score Based on Ratings** | 7 | 7 | 4 | 18 |

**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 | NA |

Wetland name or number W4

# Maps and figures required to answer questions correctly for Western Washington

## Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet *(can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

## Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 | |

Wetland name or number W4

# 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 W4

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 W4

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

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

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

Wetland name or number W4

## DEPRESSIONAL AND FLATS WETLANDS

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

### D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

| | | |
|---|---|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 2 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

| | | |
|---|---|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

| | | |
|---|---|---|
| The area of the basin is less than 10 times the area of the unit w/l 2.28 | points = 5 | 3 |
| The area of the basin is 10 to 100 times the area of the unit basin 80.92 | points = 3 | |
| The area of the basin is more than 100 times the area of the unit | points = 0 | |
| Entire wetland is in the Flats class | points = 5 | |

| | | |
|---|---|---|
| Total for D 4 | Add the points in the boxes above | 8 |

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

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

| | | |
|---|---|---|
| D 5.1. Does the wetland receive stormwater discharges? | Yes = 1 No = 0 | 1 |
| D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? | Yes = 1 No = 0 | 1 |
| D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? | Yes = 1 No = 0 | 1 |
| Total for D 5 | Add the points in the boxes above | 3 |

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

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

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

| | | |
|---|---|---|
| • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | 1 |
| • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ | points = 0 | |
| There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 — 0

| | | |
|---|---|---|
| Total for D 6 | Add the points in the boxes above | 1 |

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

Wetland name or number W4

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

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

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

| | |
|---|---|
| ___ Aquatic bed | 4 structures or more: points = 4 |
| _✓_ Emergent | 3 structures: points = 2 |
| ___ Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 |
| _✓_ Forested (areas where trees have > 30% cover) | 1 structure: points = 0 |

*If the unit has a Forested class, check if:*

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

2

H 1.2. Hydroperiods

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

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

1

H 1.3. Richness of plant species

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

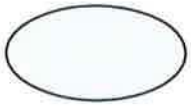
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

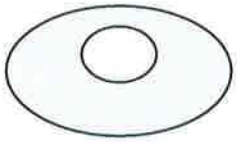
1

H 1.4. Interspersion of habitats

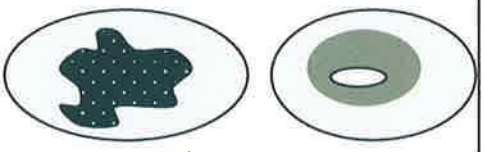
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points

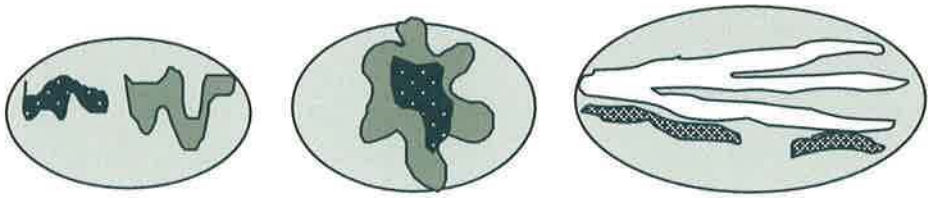


**Low** = 1 point



**Moderate** = 2 points

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



2

Wetland name or number W4

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

| H 2.0. Does the landscape have the potential to support the habitat functions of the site? | |
|---|---|
| H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).<br>*Calculate:* % undisturbed habitat___ + [(% moderate and low intensity land uses)/2]___ = _____%<br>If total accessible habitat is:<br>> 1/3 (33.3%) of 1 km Polygon points = 3<br>20-33% of 1 km Polygon points = 2<br>10-19% of 1 km Polygon points = 1<br>< 10% of 1 km Polygon points = 0 | 0 |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.<br>*Calculate:* % undisturbed habitat 14 + [(% moderate and low intensity land uses)/2] 11/2 = 19.5 %<br>Undisturbed habitat > 50% of Polygon points = 3<br>Undisturbed habitat 10-50% and in 1-3 patches points = 2<br>Undisturbed habitat 10-50% and > 3 patches points = 1<br>Undisturbed habitat < 10% of 1 km Polygon points = 0 | 1 |
| H 2.3. Land use intensity in 1 km Polygon: If<br>> 50% of 1 km Polygon is high intensity land use points = (- 2)<br>≤ 50% of 1 km Polygon is high intensity points = 0 | -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*

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

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

Wetland name or number W4

# 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 W4

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt  Yes –Go to **SC 1.1**  (No= **Not an estuarine wetland** | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I**  No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— 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.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  Yes = **Category I**  No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  (Yes – Go to **SC 2.2**  No – Go to **SC 2.3**<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes = **Category I**  (No = **Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes **– Contact WNHP/WDNR and go to SC 2.4**  No = **Not a WHCV**<br>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?  Yes = **Category I**  No = **Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?  Yes – Go to **SC 3.3**  (No – Go to **SC 3.2**<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?  Yes – Go to **SC 3.3**  (No = **Is not a bog**<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  Yes = **Is a Category I bog**  No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog**  No = **Is not a bog** | **Cat. I** |

Wetland name or number W4

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** (No) = **Not a forested wetland for this section** | **Cat. I** |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— 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<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** (No) = **Not a wetland in a coastal lagoon**<br>SC 5.1. Does the wetland meet all of the following three conditions?<br>— 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).<br>— 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.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 ft$^2$)<br>Yes = **Category I** No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating**<br>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**<br>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3**<br>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?<br>Yes = **Category III** No = **Category IV** | **Cat I**<br>**Cat. II**<br>**Cat. III**<br>**Cat. IV** |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | NA |

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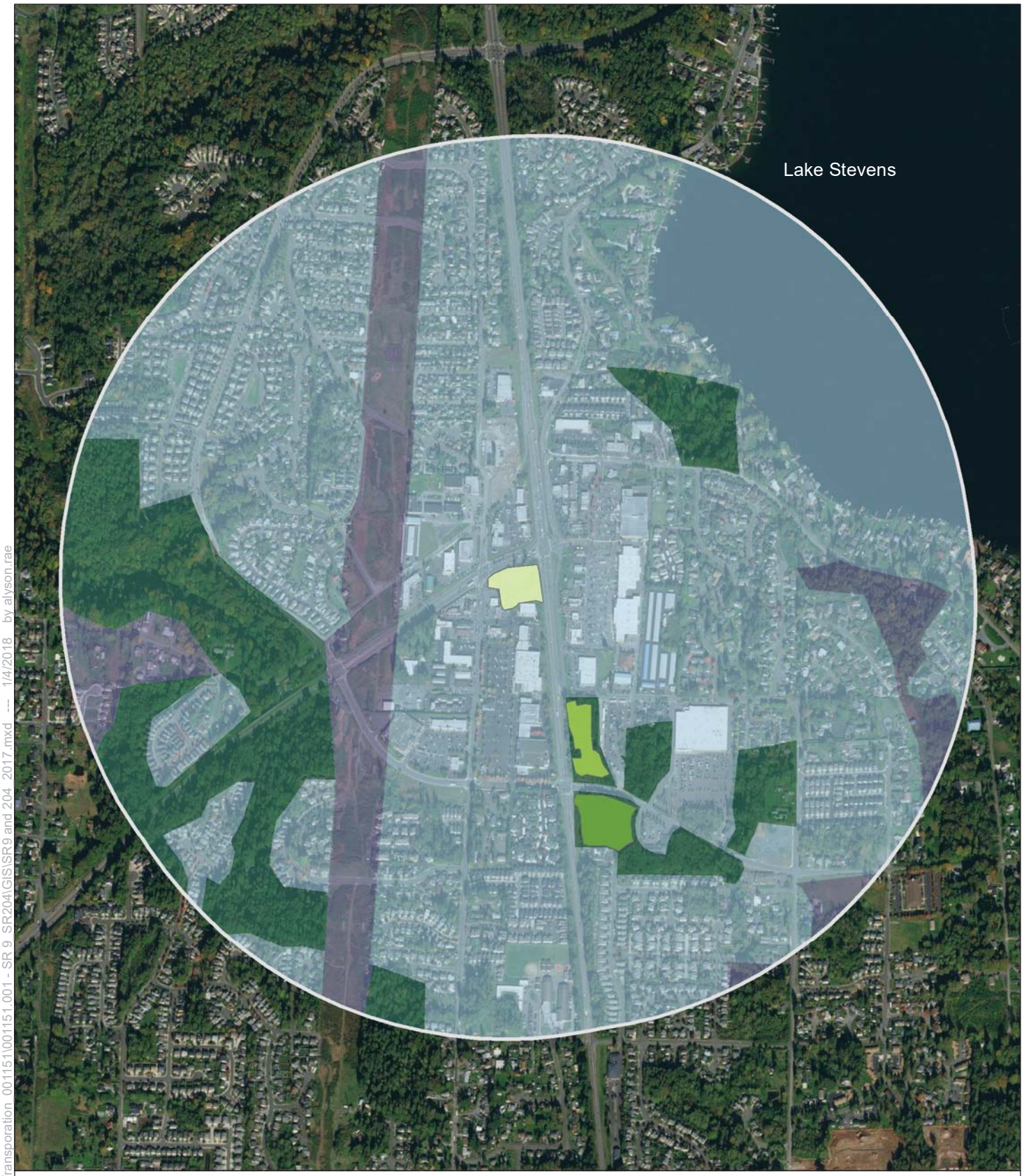


Wetland W5
Wetland W9
Wetland W4
1 km

**Land Use Intensity**

High
Low/Moderate
Undisturbed

N

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 0.5 Kilometers

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Wetland name or number WS

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): WS Date of site visit: 12/14/17

Rated by Kerrie McArthur Trained by Ecology? ✓ Yes ___ No Date of training 6/2014

**HGM Class used for rating** Depressional Wetland has multiple HGM classes? ___ Y ✓ N

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

Source of base aerial photo/map ESRI

## 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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | *Circle the appropriate ratings* | | | |
| Site Potential | H (M) L | H (M) L | H (M) L | |
| Landscape Potential | H (M) L | (H) M L | H M (L) | |
| Value | (H) M L | H (M) L | H M (L) | TOTAL |
| **Score Based on Ratings** | 7 | 7 | 4 | 18 |

**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 | NA |

Wetland name or number WS

# Maps and figures required to answer questions correctly for Western Washington

## Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet (*can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

## Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 | |

Wetland name or number WS

# 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 W5

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 425

## DEPRESSIONAL AND FLATS WETLANDS

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

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

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

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

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

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

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

Wetland name or number W-5

## DEPRESSIONAL AND FLATS WETLANDS

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

### D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland: **2**

- Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2
- Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1
- Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* **3**

- Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- The wetland is a "headwater" wetland points = 3
- Wetland is flat but has small depressions on the surface that trap water points = 1
- Marks of ponding less than 0.5 ft (6 in) points = 0

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* **3**

- The area of the basin is less than 10 times the area of the unit points = 5
- The area of the basin is 10 to 100 times the area of the unit points = 3
- The area of the basin is more than 100 times the area of the unit points = 0
- Entire wetland is in the Flats class points = 5

Total for D 4 — Add the points in the boxes above: **8**

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

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

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 **1**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 **1**

Total for D 5 — Add the points in the boxes above: **3**

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

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

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* **1**

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
- Surface flooding problems are in a sub-basin farther down-gradient. points = 1

Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0

There are no problems with flooding downstream of the wetland. points = 0

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 **0**

Total for D 6 — Add the points in the boxes above: **1**

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

Wetland name or number W5

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

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

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

| | |
|---|---|
| ___ Aquatic bed | 4 structures or more: points = 4 |
| ✓ Emergent | 3 structures: points = 2 |
| ___ Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 |
| ✓ Forested (areas where trees have > 30% cover) | 1 structure: points = 0 |

*If the unit has a Forested class, check if:*

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

2

H 1.2. Hydroperiods

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

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

1

H 1.3. Richness of plant species

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

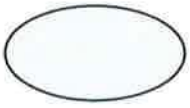
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

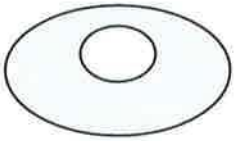
1

H 1.4. Interspersion of habitats

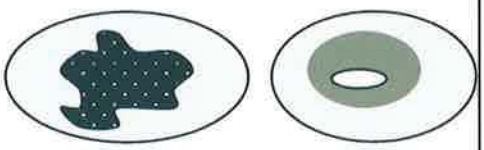
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



**None** = 0 points



**Low** = 1 point



**Moderate** = 2 points

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

2

Wetland name or number W5

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

| H 2.0. Does the landscape have the potential to support the habitat functions of the site? | |
|---|---|
| H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).<br>*Calculate:* % undisturbed habitat___ + [(% moderate and low intensity land uses)/2]___ = _____%<br>If total accessible habitat is:<br>> 1/3 (33.3%) of 1 km Polygon points = 3<br>20-33% of 1 km Polygon points = 2<br>10-19% of 1 km Polygon points = 1<br>< 10% of 1 km Polygon points = 0 | 0 |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.<br>*Calculate:* % undisturbed habitat 11 + [(% moderate and low intensity land uses)/2] 17/2 = 19.5%<br>Undisturbed habitat > 50% of Polygon points = 3<br>Undisturbed habitat 10-50% and in 1-3 patches points = 2<br>Undisturbed habitat 10-50% and > 3 patches points = 1<br>Undisturbed habitat < 10% of 1 km Polygon points = 0 | 1 |
| H 2.3. Land use intensity in 1 km Polygon: If<br>> 50% of 1 km Polygon is high intensity land use points = (- 2)<br>≤ 50% of 1 km Polygon is high intensity points = 0 | -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*

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

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

Wetland name or number W5

# 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 105

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland** | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I** No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— 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.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 2.2** No – Go to **SC 2.3**<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes = **Category I** No = **Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes – **Contact WNHP/WDNR and go to SC 2.4** No = **Not a WHCV**<br>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? Yes = **Category I** No = **Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2**<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog**<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog** No = **Is not a bog** | **Cat. I** |

Wetland name or number W25

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** (No) = **Not a forested wetland for this section** | **Cat. I** |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— 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<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** (No) = **Not a wetland in a coastal lagoon**<br>SC 5.1. Does the wetland meet all of the following three conditions?<br>— 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).<br>— 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.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 ft$^2$)<br>Yes = **Category I** No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating**<br>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**<br>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3**<br>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?<br>Yes = **Category III** No = **Category IV** | **Cat I**<br>**Cat. II**<br>**Cat. III**<br>**Cat. IV** |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | NA |

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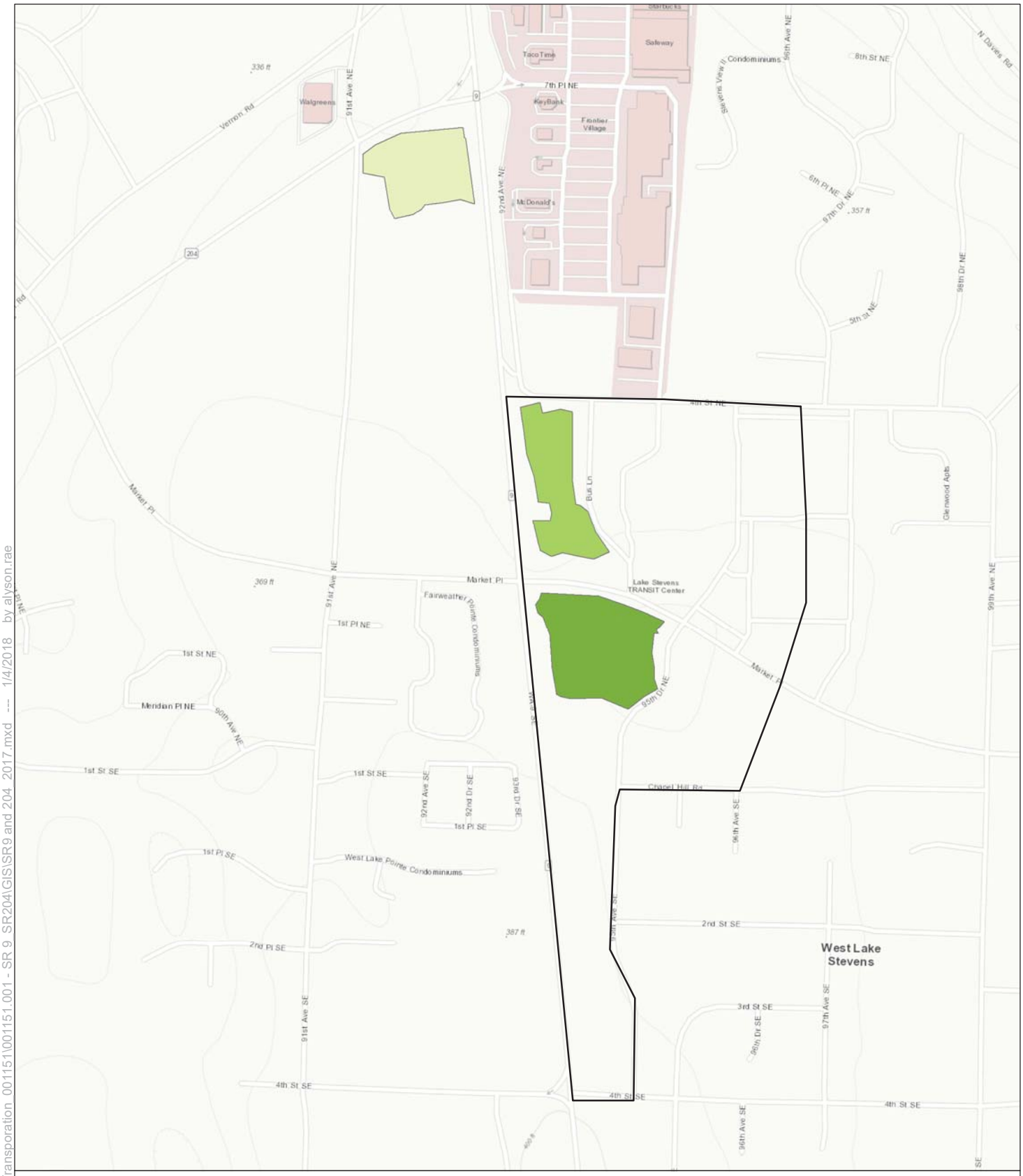
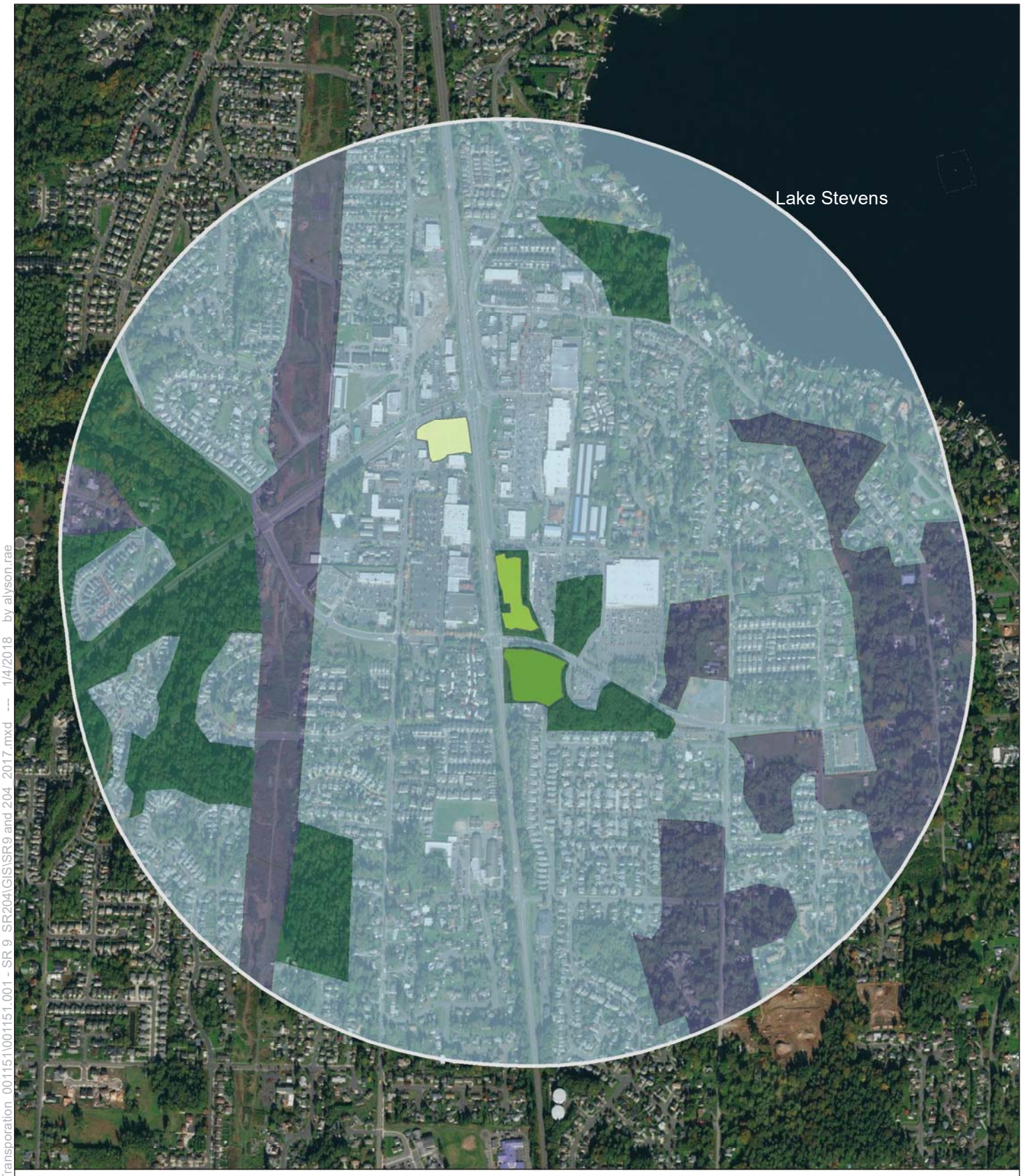



CONFLUENCE ENVIRONMENTAL COMPANY

Document Path: J:\Parsons Transporation_001151\001151.001 - SR 9 SR204\GIS\SR9 and 204_2017.mxd --- 1/4/2018 by alyson.rae




Wetland W5
Wetland W9
Wetland W4
1 km

**Land Use Intensity**

High
Low/Moderate
Undisturbed

N

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 0.5 Kilometers

CONFLUENCE
ENVIRONMENTAL COMPANY

Document Path: J:\Parsons Transporation_001151\001151.001 - SR 9_SR204\GIS\SR9 and 204_2017.mxd --- 1/4/2018 by alyson.rae

December 7, 2017

# Water Quality Atlas Map

**Assessed Waters/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

Miles
0 0.125 0.25 0.5

WA Dept. of Ecology
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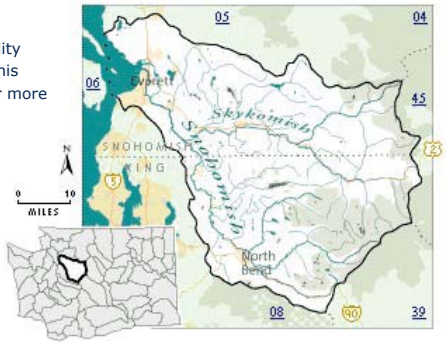
DEPARTMENT OF ECOLOGY
State of Washington

# Water Quality Improvement Projects (TMDLs)



## WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.




**Counties**

- King
- Snohomish

| Waterbody Name | Pollutant(s) | Status** | TMDL Lead |
|---|---|---|---|
| Lake Loma | Total Phosphorus | Straight to implementation project under development | Tricia Shoblom 425-649-7288 |
| Snohomish River | French Creek / Pilchuck River<br>• Dissolved Oxygen<br>• Temperature | Under development | Heather Khan 425-649-7003 |
| | Dioxin | EPA approved | Ralph Svricek 425-649-7165 |
| | Estuary<br>• Ammonia<br>• BOD | EPA approved | Ralph Svricek 425-649-7165 |
| | Tributaries<br>• Fecal Coliform<br>Tributaries:<br>• Allen Creek<br>• Quilceda Creek<br>• French Creek<br>• Woods Creek<br>• Pilchuck River<br>• Marshlands (Wood Creek) {2} | EPA approved | Ralph Svricek 425-649-7165 |
| | Snoqualmie River<br>• Ammonia-N<br>• BOD (5-day)<br>• Fecal Coliform<br>Temperature | EPA approved<br><br><br>EPA approved<br>Has an implementation plan | Ralph Svricek 425-649-7165 |

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

**For more information about WRIA 7:**

- Waterbodies in WRIA 7 - using the Water Quality Assessment Query Tool
- Watershed Information for WRIA 7

* The Department of Ecology and other state resource agencies frequently use a system of 62 "Water Resource Inventory Areas" or "WRIAs" to refer to the state's major watershed basins.

Back to top of page

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# Attachment D
## – Wetland Functions and Values for Linear Projects (BPJ) Forms

# Wetland Functions & Values Form

Wetland I.D. W3/W3A Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PEM Ecology Category: IV Local Rating: IV Wetland size: 0.07 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | | X | doesn't receive floodwater | | |
| Sediment Removal | X | | vegetated ditches | X | |
| Nutrient & Toxicant Removal | X | | vegetated ditches | X | |
| Erosion Control & Shoreline Stabilization | | X | not along a shoreline | | |
| Production of Organic Matter and its Export | X | | potential to export herbaceous material | | |
| General Habitat Suitability | | X | poor wildlife habitat | | |
| Habitat for Aquatic Invertebrates | | X | low interspersion of habitats | | |
| Habitat for Amphibians | | X | no braces for egg-laying or seasonal ponding | | |
| Habitat for Wetland-Associated Mammals | | X | SR9 adjacent | | |
| Habitat for Wetland-Associated Birds | | X | SR9 adjacent | | |
| General Fish Habitat | | X | not associated with streams | | |
| Native Plant Richness | | X | low diversity | | |
| Educational or Scientific Value | | X | roadside ditch | | |
| Uniqueness and Heritage | | X | roadside ditch | | |

# Wetland Functions & Values Form

Wetland I.D. W4 Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PFO/PEM Ecology Category: III Local Rating: III Wetland size: 2.48 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | X | | large wetland with available storage and intermittent outlet | X | |
| Sediment Removal | X | | persistent plant cover | X | |
| Nutrient & Toxicant Removal | X | | seasonal ponding and anaerobic processes | X | |
| Erosion Control & Shoreline Stabilization | | X | | | |
| Production of Organic Matter and its Export | X | | dense cover and hydrological connectivity to surface waters downstream | X | |
| General Habitat Suitability | X | | habitat refugia in developed landscape | X | |
| Habitat for Aquatic Invertebrates | x | | seasonal ponded areas | | |
| Habitat for Amphibians | X | | ponded areas with braces | | |
| Habitat for Wetland-Associated Mammals | | X | | | |
| Habitat for Wetland-Associated Birds | | X | | | |
| General Fish Habitat | | X | not associated with a stream | | |
| Native Plant Richness | X | | multi-strata PFO habitat | | |
| Educational or Scientific Value | | X | | | |
| Uniqueness and Heritage | | X | No ESA species occurrences or local significance | | |

# Wetland Functions & Values Form

Wetland I.D. W8 Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PSS Ecology Category: III Local Rating: III Wetland size: 0.07 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | X | | intermittently flowing outlet | X | |
| Sediment Removal | X | | depressional wetland traps sediment | X | W8 receives stormwater dicharges and primarily functions to maintain |
| Nutrient & Toxicant Removal | X | | traps sediment | X | water quality and attenuate discharge from impervious surfaces |
| Erosion Control & Shoreline Stabilization | | X | not on a shoreline | | |
| Production of Organic Matter and its Export | | X | dense woody vegetation | | |
| General Habitat Suitability | | X | small wetland in a developed landscape | | |
| Habitat for Aquatic Invertebrates | | X | | | |
| Habitat for Amphibians | | X | | | |
| Habitat for Wetland-Associated Mammals | | X | | | |
| Habitat for Wetland-Associated Birds | | X | | | |
| General Fish Habitat | | X | not proximal to fish habitat | | |
| Native Plant Richness | | X | low diversity | | |
| Educational or Scientific Value | | X | | | |
| Uniqueness and Heritage | | X | | | |

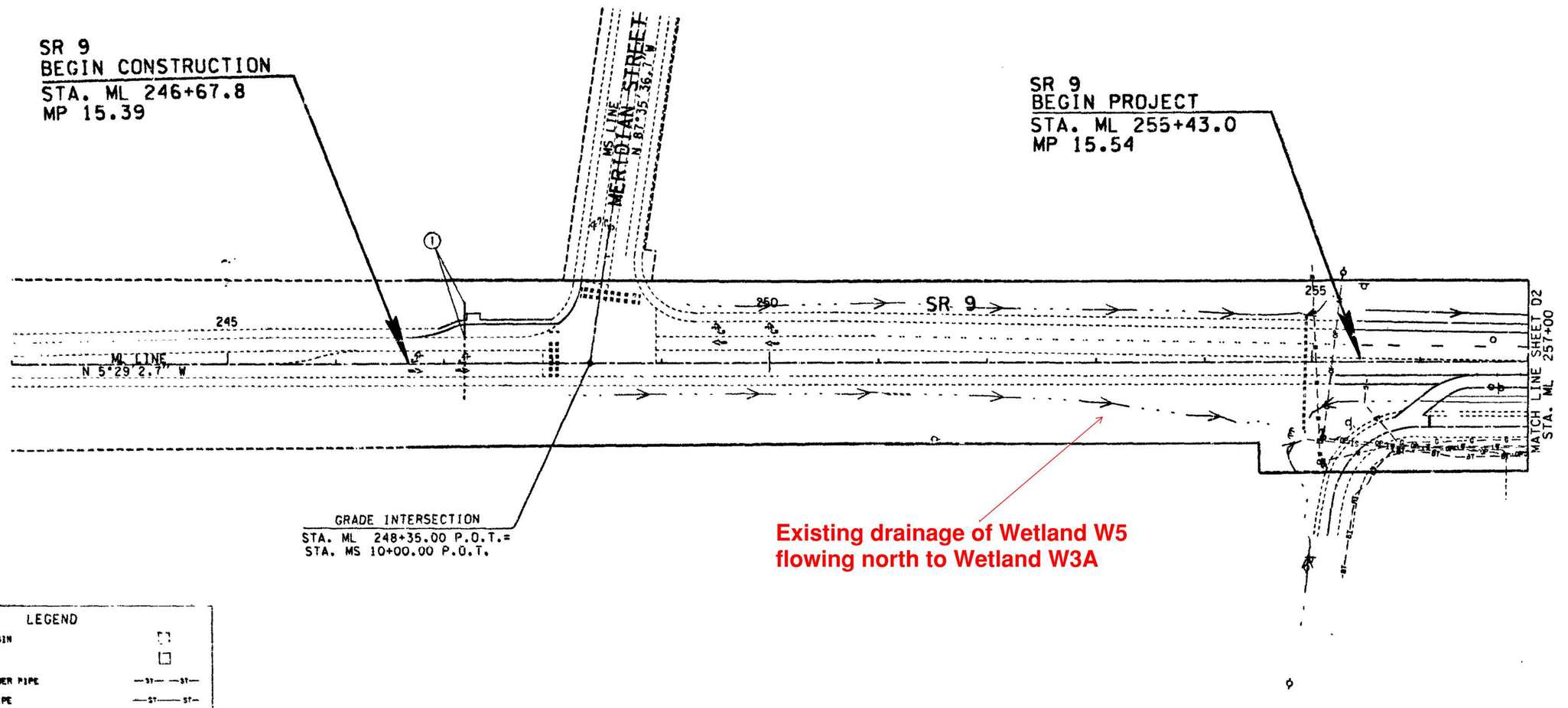
# Attachment E

## – SR9-SR204 Lundeen Parkway Project As-Builts (1992), Annotated

19-AUG-1992
ZGA2:[1100021929W067R.DGN]I
HCK

PLOT1

# T. 29 N. R. 5 E. W. M.




## LEGEND

| | |
|---|---|
| EXISTING CATCH BASIN | |
| NEW CATCH BASIN | |
| EXISTING STORM SEWER PIPE | —ST— —ST— |
| NEW STORM SEWER PIPE | —ST— ST— |
| EXISTING CULVERT | |
| NEW CULVERT | |
| EXISTING DITCH | |
| NEW DITCH | |
| EXISTING WATER PIPE | —W— —W— |
| EXISTING GAS LINE | —G— —G— |
| EXISTING OVERHEAD POWER LINE | —OP— —OP— |
| EXISTING POWER POLE | |
| EXISTING FIRE HYDRANT | |
| EXISTING BURIED TELEPHONE | —BT— —BT— |
| EXISTING ANCHOR | |

0 50 100
SCALE IN FEET

FOR "AS CONSTRUCTED PLANS" ONLY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DESIGNED BY | J. D. FUCHS | | | | REGION NO. | STATE | FED.AID PROJ.NO. | PROGRAM DEVELOPMENT DIVISION | Washington State Department of Transportation |
| ENTERED BY | G. L. KING | | | | 10 | WASH | | | |
| CHECKED BY | M. P. LETH | | | | JOB NUMBER | 92W067 | | | |
| PROJ. ENGR. | R. M. MITCHELL | | | | CONTRACT NO. | | | | |
| DIST. ADM. | R. G. ANDERSON | | | | | | | | |
| | | DATE | DATE | REVISION | BY | 4/49 | | | |

ZGA2K[1100021929W067R.DGN]I

SR 9
SR 204 TO LUNDEEN PARKWAY

DRAINAGE/EXISTING UTILITIES PLANS

D1

SHEET 45 OF 137 SHEETS

SR9/270

## LEGEND

| | |
|---|---|
| EXISTING CATCH BASIN | |
| NEW CATCH BASIN | |
| EXISTING STORM SEWER PIPE | —ST— —ST— |
| NEW STORM SEWER PIPE | —ST— —ST— |
| EXISTING CULVERT | |
| NEW CULVERT | |
| EXISTING DITCH | |
| NEW DITCH | |
| EXISTING WATER PIPE | —W— —W— |
| EXISTING GAS LINE | —G— —G— |
| EXISTING OVERHEAD POWER LINE | —OP— —OP— |
| EXISTING POWER POLE | |
| EXISTING FIRE HYDRANT | |
| NEW SPECIAL DITCH | |
| EXISTING BURIED POWER LINE | —BP— —BP— |
| EXISTING BURIED TELEPHONE LINE | —BT— —BT— |
| EXISTING VALVE | |

19-AUG-1992
Z0A2x(1100021%%0GTK.DGN)1
HCX

PLOT2

# T. 29 N. R. 5 E. W. M.

New special ditch for Wetland W4A

New ditch for Wetland W4A

New special ditch for Wetland W2

Existing Wetland W3A

Existing Wetland W3

48' MANHOLE
PLAIN CONCRETE
STORM SEWER
PIPE 24"

SR 9

92ND AVE NE

SR 204

STA. RWSL 122+00
MATCH LINE SHEET D2

STA. ML 257+00
MATCH LINE SHEET D1

MATCH LINE SHEET D3
STA. ML 270+00

260

265

N 5°29'27" W

N 5°27'22.3" W

N 89°50'27" E

RWSL LINE

SL LINE

GRADE INTERSECTION
STA. ML 266+82.80 P.O.T.=
STA. RWSL 125+01.76 P.O.T.=
STA. SL 5+36.88 P.O.T.

FOR "AS CONSTRUCTED PLANS" ONLY

0 50 100
SCALE IN FEET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DESIGNED BY J. D. FUCHS | | | | REGION NO. 10 | STATE WASH | FED. AID PROJ. NO. | PROGRAM DEVELOPMENT DIVISION |
| ENTERED BY G. L. KING | | | | JOB NUMBER 92W067 | | | Washington State Department of Transportation |
| CHECKED BY M. P. LETH | | | | CONTRACT NO. 4149 | | | Z0A2x(1100021292W06TK.DGN)1 |
| PROJ. ENGR. R. M. MITCHELL | | | | | | | |
| DIST. ADM. R. Q. ANDERSON | | | | | | | |
| | DATE | DATE | REVISION | BY | | | |

SR 9
SR 204 TO LUNDEEN PARKWAY

DRAINAGE/EXISTING UTILITIES PLANS

D2

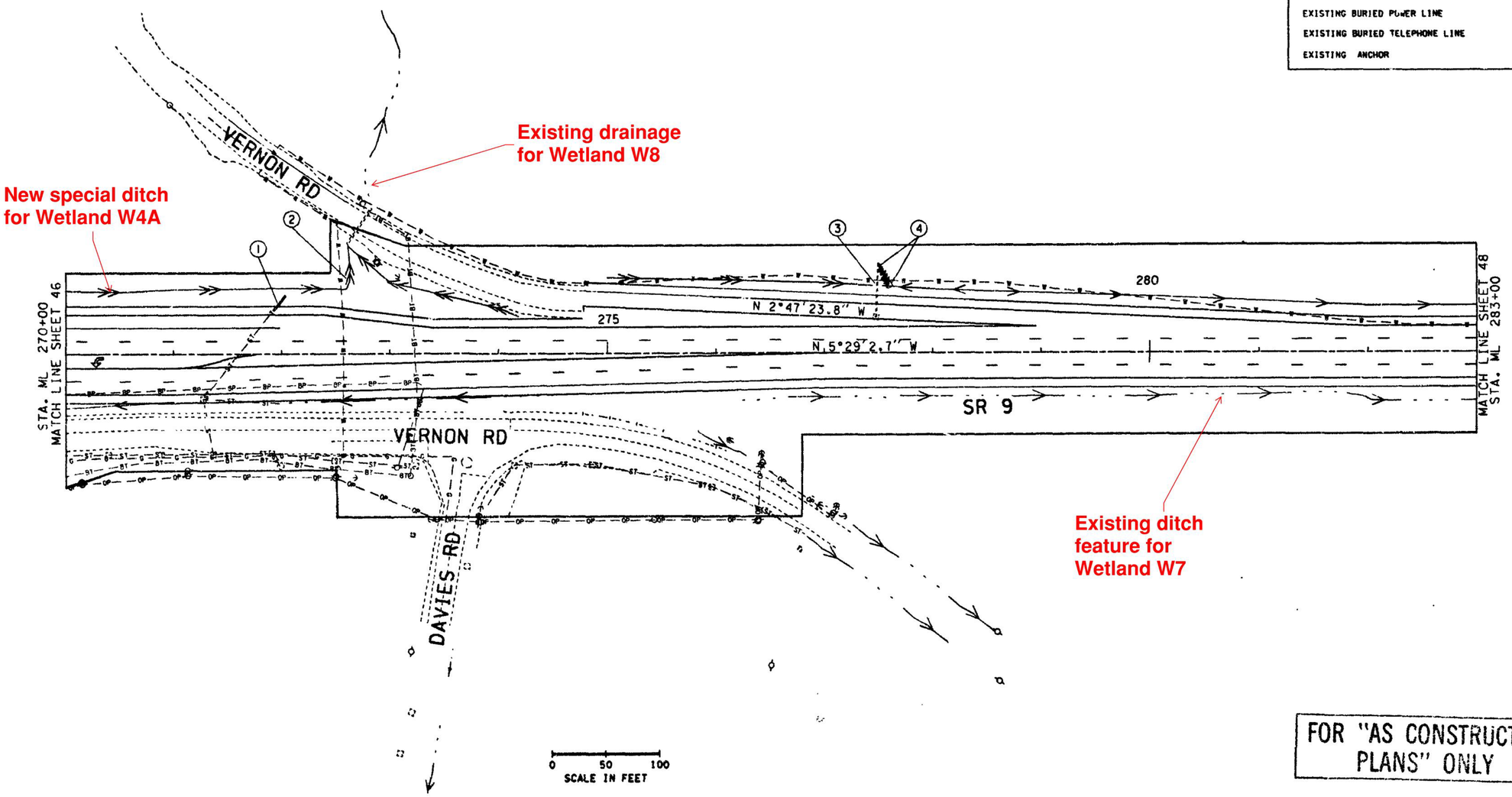
SHEET 46 OF 137 SHEETS

SL 9/270

19-AUG-1992
ZGA2:[1100021928067K.DGN]1
HCK

PLOT3

T. 29 N. R. 5 E. W. M.




LEGEND

| | |
|---|---|
| EXISTING CATCH BASIN | |
| NEW CATCH BASIN | |
| EXISTING STORM SEWER PIPE | —ST— —ST— |
| STORM SEWER PIPE | —ST— —ST— |
| EXISTING CULVERT | |
| NEW CULVERT | |
| EXISTING DITCH | |
| NEW DITCH | |
| EXISTING WATER PIPE | —W— —W— |
| EXISTING GAS LINE | —G— —G— |
| EXISTING OVERHEAD POWER LINE | —OP— —OP— |
| EXISTING POWER POLE | |
| EXISTING FIRE HYDRANT | |
| NEW SPECIAL DITCH | |
| EXISTING BURIED POWER LINE | —BP— —BP— |
| EXISTING BURIED TELEPHONE LINE | —BT— —BT— |
| EXISTING ANCHOR | |

FOR "AS CONSTRUCTED PLANS" ONLY

| | | | | | | |
|---|---|---|---|---|---|---|
| DESIGNED BY J. D. FUCHS | | | | REGION NO. 10 | STATE WASH | FED.AID PROJ.NO. |
| ENTERED BY G. L. KING | | | | JOB NUMBER 92W067 | | |
| CHECKED BY M. P. LETH | | | | CONTRACT NO. 4149 | | |
| PROJ. ENGR. R. M. MITCHELL | | | | | | |
| DIST. ADM. R. Q. ANDERSON | | | | | | |
| | DATE | DATE | REVISION | BY | | |

PROGRAM DEVELOPMENT DIVISION

Washington State Department of Transportation

ZGA2:[1100021928067K.DGN]1

SR 9
SR 204 TO LUNDEEN PARKWAY

DRAINAGE/EXISTING UTILITIES PLANS

D3

SHEET 47 OF 137 SHEETS

SR 9/270

# Appendix 3: Bank Use Plan (October 2021)

Washington State Department of Transportation

Northwest Region
15700 Dayton Avenue North
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4000
TTY: 1-800-833-6388
www.wsdot.wa.gov

**DATE: November 24, 2021**
**TO: Hillary Pope**
**FROM: Jaimee Cornwell and Jeff Gray, PWS**
**SUBJECT: SR 9/SR 204 Intersection Improvements Project Stage III, XL4989**

# Wetland Mitigation Bank Use Memorandum

This Wetland Mitigation Bank Use Memorandum has been created to support environmental documentation, permit applications, and to meet local, state, and federal requirements for mitigation for Stage III of the State Route (SR) 9/SR 204 Intersection Improvements project. This memo provides a brief project overview, an assessment of impacts to wetlands and their associated buffers, a summary of the proposed restoration of temporary impacts, and a description of compensatory mitigation for unavoidable permanent impacts to aquatic resources.

## Project Location

The SR 9 and SR 204 Intersection Improvements project (Stage III) is located between MP 15.48 and MP 16.05 in the City of Lake Stevens, Washington. The project is located in Water Resource Inventory Area (WRIA) 7 in Snohomish County, within the Little Pilchuck River (Hydrologic Unit Code [HUC] 171100110102) and the Snohomish River-Frontal Possession Sound (HUC 171100110203) basins of the Snohomish Watershed. The project is within Section 13 of Township 29 North and Range 5 East (Willamette Meridian) of the Public Land Survey System (Figure 1: Vicinity Map).

## Project Description

The Washington State Department of Transportation (WSDOT) proposes to complete Stage III of the SR 9/SR 204 Intersection Improvements project to improve traffic flow along a 0.57-mile segment of SR 9 from south of NE 4$^{th}$ Street to north of North Davies Road. The project will include improvements to the intersections at SR 9 and SR 204, SR 9 and Vernon Road, 91$^{st}$ Avenue NE and Vernon Road, and N. Davies Road and Vernon Road.

Project work will include the following:

- A two-lane roundabout at the intersection of SR 9 and SR 204.
- A two-lane roundabout at the intersection of SR 9 and Vernon Road.
- A miniature (mini) roundabout at the intersection of 91$^{st}$ Avenue NE and Vernon Road.
- A mini roundabout at the intersection of N. Davies Road and Vernon Road.
- Roadway widening, curb and gutter and sidewalk work that will extend beyond the existing pavement,
- Stormwater treatment and conveyance facilities, including a new graded pond and new walled detention pond.
- Clearing and grading, and restoration of all temporary impact areas.

The project is currently scheduled to be constructed during the summer and fall months and is expected to be completed in December 2022.

Washington State Department of Transportation

Northwest Region
15700 Dayton Avenue North
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4000
TTY: 1-800-833-6388
www.wsdot.wa.gov

**Figure 1: Vicinity Map**

Washington State Department of Transportation

Northwest Region
15700 Dayton Avenue North
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4000
TTY: 1-800-833-6388
www.wsdot.wa.gov

**Existing Conditions of Sensitive Resources**

Two wetlands, identified as W4 and W5, were identified and delineated by WSDOT in 2018 within the Stage III project area. In 2021, WSDOT identified three additional jurisdictional wetlands within Stage III of the project area, which have been identified as Wetlands W3, W3A, and W8, and included a roadside ditch as part of Wetland W4 (Figure 2: Regulated Wetlands Map). Five additional wetland areas, identified as W2, W3, W3A, W4A, and W8 were identified in the Stage III project area by WSDOT in 2021. Wetlands W4 and W4A were later combined due to shared hydrology (Figure 2: Regulated Wetlands Map). No streams were identified within the project area; however, Weiser Creek (WA Department of Natural Resources [DNR] ID# 78406), a tributary to Ebey Slough is located west of the project area (Snohomish County 2021, DNR 2021). The DNR maps Weiser Creek as an unnamed, non-fish-bearing stream, however, it is known by the Tulalip Tribe as Weiser Creek, and it is a fish-bearing stream. Baseline conditions are documented in the Wetland Assessment Report (WSDOT 2018) and Addendum (WSDOT 2021) prepared for the project.

Table 1 below outlines the jurisdictional wetlands within the project area and includes their area, Cowardin classification, hydrogeomorphic (HGM) position, wetland rating according to both the WA Department of Ecology (WDOE) and the City of Lake Stevens Municipal Code (LSMC), as well as their rating score and associated buffer width.

**Table 1: Jurisdictional Wetlands in the Project Area**

| Wetland Classification | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Wetland** | **Area (acres)** | **Cowardin[1]** | **HGM** | **WDOE Rating[2]** | **Rating Score** | **Habitat Score** | **Buffer Width[3] (feet)** |
| W3 | 0.05 | PEM | Depressional | IV | 15 | 3 | 50 |
| W3A | 0.02 | PEM | Depressional | IV | 15 | 3 | 50 |
| W4 | 2.43 | PEM/PFO | Depressional | III | 18 | 4 | 80 |
| W5 | 2.31 | PEM/PFO | Depressional | III | 18 | 4 | 80 |
| W8 | 0.07 | PSS | Depressional | III | 17 | 3 | 80 |

[1] Classes based on the following vegetation types according to Cowardin et al. (1979): PEM = Palustrine Emergent; PFO = Palustrine Forested; PSS = Palustrine Scrub-Shrub.
[2] Wetlands rated according to Hruby (2014), per LSMC 14.88.805.
[3] Wetland buffer widths according to LSMC 14.88.830(b).

Wetland 5 will not be impacted by Stage III of the project, therefore, no further discussion of it is included within the remainder of this document.

Washington State Department of Transportation

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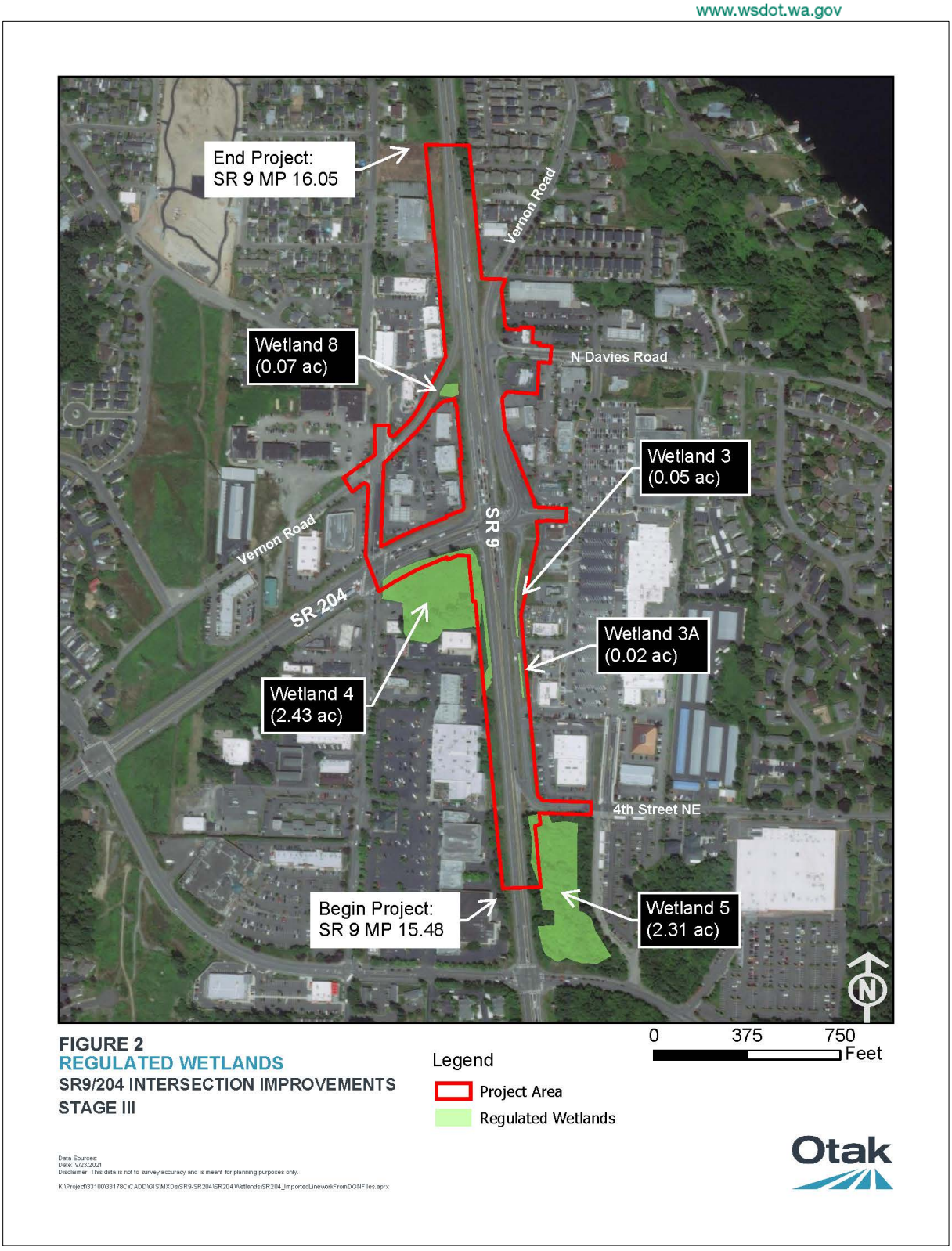


**Figure 2: Regulated Wetlands Map**

Northwest Region
15700 Dayton Avenue North
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4000
TTY: 1-800-833-6388
www.wsdot.wa.gov

### *Wetlands W3 and W3A*

Wetlands W3 and W3A are two segments of the same roadside ditch located on the east side of 92nd Avenue NE and south of the SR 204 intersection. Wetlands W3 and W3A function as depressional wetlands that are hydrologically connected but physically bisected by a private driveway. Wetland W3 is 0.05-acre and is the northern ditch section, and Wetland W3A is 0.02-acre and the southern ditch section (Tables 2 and 3, Figure 2). Wetlands W3 and W3A convey surface water from Wetland 5 to Wetland 4 through a culvert located under SR 9. Several inlet pipes from the commercial parking areas to the east discharge to Wetlands W3 and W3A.

### *Wetland W4*

Wetland W4 is a 2.43-acre depressional wetland located on the southwest corner of the SR 9/SR 204 intersection. This wetland is hydrologically supported by precipitation and a shallow groundwater table. Approximately 0.4-mile west of the project area, Wetland W4 discharges to Weiser Creek (DNR ID# 78406) through a series of ditches and pipes; Weiser Creek eventually flows to Ebey Slough. Wetland W4 includes a 0.15-acre linear drainage ditch that was previously delineated as Wetland 4A and later combined with Wetland W4 (Table 4, Figure 2).

### *Wetland W8*

Wetland W8 is a 0.07-acre depressional wetland located at the southwest corner of SR 9 and Vernon Road (Table 5, Figure 2). Wetland W8 is a small, circular topographic feature that outlets through a culvert under Vernon Road. Approximately 0.6-mile southwest of the project area, Wetland W8 hydrologically connects to Weiser Creek (DNR ID# 78406), via a network of roadside ditches and pipes on Vernon Road.

Due to its shape and rip rapped side slopes, Wetland W8 may be an excavated stormwater pond; however, it is unclear if this wetland was constructed in uplands or it is a remnant of a previously existing wetland. The as-built plans for the SR 9 – SR 204 to Lundeen Parkway project from 1992 show two linear ditch lines in the location of Wetland W8, and the Snohomish County Wetland Inventory previously mapped a larger wetland in the vicinity. As a result, Wetland W8 is considered a jurisdictional wetland for compliance with federal, state, and local regulations regarding impacts and compensatory mitigation needs.

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## Table 2: Wetland W3 Summary

| WETLAND W3 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: East side of 92nd Avenue NE, south of SR 204 intersection** | | |
| June 2021 | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | IV |
| | **Lake Stevens Buffer Width** | 50 feet |
| | **Wetland Size** | 0.05-acre |
| | **Cowardin Classification** | PEM |
| | **2014 Wetland Rating Scores** | Water Quality: 6<br>Hydrologic: 6<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W3-SP1, W3-SP4, & W3-SP5 |
| | **Upland Data Sheet(s)** | None (road) |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Reed canarygrass (*Phalaris arundinacea*) | |
| **Soils** | Loam soils with roadside fill at approximately 7-8" below ground surface. Areas of depleted soils below approximately 8", some with redoximorphic concentrations. Standing water within the wetland restricted suitable shovel probing. | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W3 rated as a Category IV because it provides low water quality functions (6), moderate hydrologic functions (6), and low habitat functions (3), resulting in a total score of 15 points on the wetland rating form (Appendix A). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W3 has low opportunity to improve water quality because it does not have dense, persistent, ungrazed vegetation and it has an outlet (ditch); however, it does receive stormwater runoff from the adjacent roadways and parking lots. | |
| **Hydrologic** | Wetland W3 has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and is not capable of retaining high volumes of water, it additionally has an outlet (ditch). | |
| **Habitat** | Wetland W3 has low habitat opportunity because the area has low habitat complexity and is surrounded by high-intensity land use. | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by mowed species of grasses. | |

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## Table 3: Wetland W3A Summary

| WETLAND W3A – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: East side of 92nd Avenue NE, south of SR 204 intersection** | | |
| | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | IV |
| | **Lake Stevens Buffer Width** | 50 feet |
| | **Wetland Size** | 0.02-acre |
| | **Cowardin Classification** | PEM |
| | **2014 Wetland Rating Scores** | Water Quality: 6<br>Hydrologic: 6<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W3A-SP1 |
| | **Upland Data Sheet(s)** | None |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Reed canarygrass (*Phalaris arundinacea*) and common velvet grass (*Holcus lanatus*) | |
| **Soils** | Dark black loam soils met "Loamy Mucky Mineral" (F1) hydric soil indicator. | |
| **Hydrology** | Surface water runoff / seasonal high groundwater table | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W3A rated as a Category IV because it provides low water quality functions (6), moderate hydrologic functions (6), and low habitat functions (3), resulting in a total score of 15 points on the wetland rating form (Appendix A). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W3A has low opportunity to improve water quality because it does not have dense, persistent, ungrazed vegetation and it has an outlet (ditch); however, it does receive stormwater runoff from the adjacent roadways and parking lots. | |
| **Hydrologic** | Wetland W3A has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and is not capable of retaining high volumes of water, it additionally has an outlet (ditch). | |
| **Habitat** | Wetland W3A has low habitat opportunity because the area has low habitat complexity and is surrounded by high-intensity land use. | |
| **Buffer Condition** | Vegetated portions of the buffer are generally only 6-20 feet wide and dominated by mowed species of grasses. | |

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## Table 4: Wetland W4 Summary

| WETLAND W4 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: Southwest corner of SR 9 and SR 204** | | |
| (June 2021) | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | III |
| | **Lake Stevens Buffer Width** | 80 feet |
| | **Wetland Size** | 2.43 acres |
| | **Cowardin Classification** | PEM/PFO |
| | **2014 Wetland Rating Scores** | Water Quality: 7<br>Hydrologic: 7<br>Habitat: 4 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W4A-SP1, TP-11, TP-12, and TP-13 |
| | **Upland Data Sheet(s)** | W4A-SP2 & W4A-SP3 |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), salmonberry (*Rubus spectabilis*), and reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry, and (*Rubus armeniacus*). | |
| **Soils** | Loam soils met "Depleted Matrix" (F3) and "Redox Dark Surface" (F6) hydric soil indicators. | |
| **Hydrology** | Surface water runoff, seasonal high groundwater table, and saturated soils. | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W4 is rated a Category III because it provides moderate water quality functions (7), moderate hydrologic functions (7), and low habitat functions (4), resulting in a total score of 18 points on the wetland rating form (Appendix A). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W4 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation over much of its area and it receives stormwater runoff from adjacent roadways and parking lots, but it has an outlet, although highly constricted. | |
| **Hydrologic** | Wetland W4 has moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and can retain a moderate volume of water; however, it does have an outlet (highly constricted). | |
| **Habitat** | Wetland W4 has low habitat opportunity because although the area has a moderate habitat complexity and dense vegetation, it is surrounded by high-intensity land use. | |
| **Buffer Condition** | The vegetated portions of the buffer are generally only 6-20 feet wide and dominated by Himalayan blackberry (*Rubus armeniacus*). | |

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## Table 5: Wetland W8 Summary

| WETLAND W8 – INFORMATION SUMMARY | | |
|---|---|---|
| **Location: Southwest corner of SR 9 and Vernon Road** | | |
| (June 2021) | **Local Jurisdiction** | City of Lake Stevens |
| | **WRIA** | 7 |
| | **WDOE Rating (Hruby 2014)** | III |
| | **Lake Stevens Buffer Width** | 80 feet |
| | **Wetland Size** | 0.07 acres |
| | **Cowardin Classification** | PSS |
| | **2014 Wetland Rating Scores** | Water Quality: 7<br>Hydrologic: 7<br>Habitat: 3 |
| | **HGM Classification** | Depressional |
| | **Wetland Data Sheet(s)** | W8-SP1 |
| | **Upland Data Sheet(s)** | None |
| | **Flag color** | Pink |
| **Dominant Vegetation** | Douglas spiraea (*Spiraea douglasii*), Sitka willow (*Salix sitchensis*), and red flowering currant (*Ribes sanguineum*). | |
| **Soils** | Loam soils met "Loamy Mucky Mineral" (F1) hydric soil indicators; clay liner below 8" depth. | |
| **Hydrology** | Saturated soils. | |
| **Rationale for Delineation** | All three wetland criteria are met. | |
| **Rationale for Local Rating** | The City of Lake Stevens uses the 2014 WDOE rating system. Wetland W8 is rated a Category III because it provides moderate water quality functions (7), moderate hydrologic functions (7), and low habitat functions (3), resulting in a total score of 17 points on the wetland rating form (Appendix A). | |
| **Wetland Functions Summary** | | |
| **Water Quality** | Wetland W8 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation over more than half of its area and it receives stormwater runoff from adjacent roadways and parking lots, however, it has an outlet, although highly constricted. | |
| **Hydrologic** | Wetland W8 has moderate opportunity to reduce flooding because although it occurs in the upper portion of the sub-basin, it has an outlet (highly constricted), and is not capable of retaining high volumes of water. | |
| **Habitat** | Wetland W8 has low habitat opportunity because the area has a moderate habitat complexity and dense vegetation but is surrounded by high-intensity land use. | |
| **Buffer Condition** | The vegetated portions of the buffer are generally only 6-20 feet wide and dominated by Himalayan blackberry (*Rubus armeniacus*). | |

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**Mitigation Sequencing**

Mitigation was considered following the sequential order of, avoidance, minimization, reduction, and compensation, to ensure no net loss of the acreage or ecological functions and values to the onsite critical areas (wetlands and buffers). LSMC 14.88.010 specifies the project proponents shall make all reasonable efforts according to the following sequence in order of descending preference:

1. Avoiding impacts altogether by not taking a certain action or parts of an action; or,
2. When avoidance is not possible, minimize impacts by limiting the degree or magnitude of the action and its implementation, using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts and mitigating for the affected functions and values of the critical area; and
3. Reducing or eliminating impacts over time by preservation and maintenance operations during the life of the action.
4. Compensating for unavoidable impacts by replacing, enhancing, or providing substitute resources or environments.

*Avoidance and Minimization*

WSDOT has avoided and minimized impacts to wetlands and buffers to the greatest extent practicable. Total avoidance was not possible due to site constraints associated with topography, safety, design guidelines, and project constructability.

The following are some examples of measures that are included in the project for avoiding and minimizing impacts to the onsite wetlands and associated buffers:

- Traffic will be detoured using existing roads, instead of constructing a temporary bypass road, to avoid and reduce impacts to wetlands and buffers.
- Clearing and grubbing has been limited to the minimum amount needed for construction the project.
- Temporary high-visibility Environmental Sensitive Area (ESA) fencing will be installed around the limits of project clearing to protect wetlands and buffers from unnecessary clearing.
- Best Management Practices (BMPs) will be implemented to reduce sedimentation and control erosion control during construction, as indicated in the Temporary Erosion and Sediment Control (TESC) Plan. Some of the BMPs may include but are not limited to, the installation of check dams, silt fencing, inlet protection, straw wattles, and erosion control blankets.
- The footprint of the new stormwater facilities was minimized to avoid additional impact to the onsite wetlands and trees.
- All areas temporarily impacted by the project will be restored through the installation of native trees and shrubs suitable for the project location.

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- The project will include the adaptive management of BMPs, and the regular monitoring and reporting of discharges, according to the requirements of the NPDES Section 402 Construction Stormwater General Permit that will be issued for the project.
- The Contractor will be required to maintain an approved onsite Spill Prevention Control and Countermeasures (SPCC) Plan throughout the duration of construction, for implementation in the case of an accidental spill.

## Unavoidable Wetland Impacts

Potential impacts to wetlands were assessed using the construction footprint, cut and fill lines, and cross-sections that depict the existing and proposed grades. The project as proposed will result in approximately 0.26-acre of permanent and 0.18-acre of temporary impacts to Category III wetlands (Wetlands W4 and W8), approximately 0.07-acre of permanent impacts to Category IV wetlands (Wetlands W3 and W3A) and mature tree removal. Table 6 below outlines the areas of permanent and temporary impacts to wetlands.

**Table 6: Summary of Wetland Impacts**

| Resource | Area (acres) | Cowardin[1] HGM | WDOE Rating[2] | Impact Area (acres) | |
|---|---|---|---|---|---|
| | | | | Permanent | Temporary |
| Wetland W3 | 0.05 | PEM Depressional | IV | 0.05 | - |
| Wetland W3A | 0.02 | PEM Depressional | IV | 0.02 | - |
| Wetland W4 | 2.43 | PEM/PFO Depressional | III | 0.19 | 0.18 |
| Wetland W8 | 0.07 | PSS Depressional | III | 0.07 | - |
| **Total** | **2.57** | | | **0.33** | **0.18** |

[1] Classes based on the following vegetation types according to Cowardin et al. (1979): PEM = Palustrine Emergent; PFO = Palustrine Forested; PSS = Palustrine Scrub-Shrub.
[2] Wetlands rated according to Hruby (2014), per LSMC 14.88.805.

## Impacted Wetland Functions

Wetlands in the project area were classified based on the Cowardin and HGM classifications, and the functions were evaluated using the Washington State Wetland Rating System for Western Washington (Hruby 2014) and the WSDOT Wetland Functions Characterization Tool for Linear Projects manual (Null et al. 2000). The impact areas were then examined to estimate functions that may be impacted or lost by construction of the project. A reduction in wetland functions can occur when the total area of the wetland is reduced to the extent that it no longer provides some or all of the functions it provided prior to the disturbance.

The affected acreage of the Category IV wetlands (Wetlands W3 and W3A) provides low water quality, moderate hydrologic, and low habitat functions. Wetlands W3 and W3A will be filled and the surface water they currently convey will be piped to accommodate new sidewalks and constructed drainage features, such as a walled stormwater detention pond and maintenance

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access road (Table 7 and Appendix B). The affected acreage of the Category III wetlands (Wetlands W4 and W8) provides moderate water quality, moderate hydrologic, and low habitat functions. Wetland W8 will be filled in to accommodate the new roundabout at SR 204 and Vernon Road. The permanent impacts to Wetland W4 are expected to be minimal and will not affect the functions of the wetland.

**Table 7: Wetland Functions Evaluated Using the Wetland Functions Characterization Tool for Linear Projects**

| BPJ Function/Value | Wetland | | |
|---|---|---|---|
| | W3/W3A | W4 | W8 |
| **Water Quality Functions** | | | |
| Sediment removal | X | X | X |
| Nutrient and Toxicant Removal | X | X | X |
| **Hydrologic Functions** | | | |
| Flood Flow Alteration | - | X | X |
| Erosion Control & Shoreline Stabilization | - | - | - |
| **Habitat Functions** | | | |
| Production & Export of Organic Matter | X | X | - |
| General Habitat Suitability | - | X | - |
| Habitat for Aquatic Invertebrates | - | X | - |
| Habitat for Amphibians | - | X | - |
| Habitat for Wetland-Associated birds | - | - | - |
| General Fish Habitat | - | - | - |
| Native Plan Richness | - | X | - |
| **Special Characteristics** | | | |
| Educational or Scientific Value | - | - | - |
| Uniqueness and Heritage | - | - | - |

"X" denotes the wetland performs this function.
" - " denotes the wetland does not perform this function.

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*Wetlands W3 and W3A*

Wetland W3 is the northern segment of a depressional palustrine emergent drainage ditch that conveys stormwater. The project will entirely fill Wetland W3 through the placement of 0.05-acre of permanent fill to construct sidewalks and drainage features, including the walled stormwater detention pond and maintenance access.

Wetland W3A is the southern segment of a depressional palustrine emergent drainage ditch that conveys stormwater. The project will entirely fill Wetland W3A through the placement of 0.02-acre of permanent fill to construct a sidewalk and drainage features, including the walled stormwater detention pond and maintenance access road. Surface hydrology that was previously conveyed through Wetlands W3 and W3A, will be conveyed via a pipe once Stage III is complete.

***Water Quality:***

Wetlands W3 and W3A have low opportunity to improve water quality because less than 1/10$^{th}$ of the wetland's surface areas have dense, persistent, ungrazed vegetation. These wetlands do, however, capture stormwater runoff from the adjacent roadways and parking lots. The project's cut/fill activities will remove these wetland's vegetation, and their native soils will be removed, compacted, and paved over throughout their extent. Therefore, the 0.07-acre portion of the site that is currently occupied by Wetlands W3 and W3A, will have a 0.07-acre loss of vegetation, including vegetative filtration, velocity reduction, and soil infiltration. The impact to a 0.07-acre portion of the project's water quality function resulting from the removal of these wetlands is expected to be relatively minor when compared with the water quality function provided by wetlands within the surrounding sub-basin; however, the water quality function at this location will be altered due the removal of these two existing features.

***Hydrologic:***

Wetlands W3 and W3A have a moderate opportunity to reduce flooding because they occur in the upper portion of the sub-basin and are not capable of retaining high volumes of water due to the presence of an outlet. Due to the cut/fill activities that will entirely impact Wetlands W3 and W3A, water storage in this location will be diminished. However, relative to the hydrologic functions provided by the wetlands located within the surrounding sub-basin, coupled with the stormwater treatment facilities that will be included in the project, any loss of hydrologic function would be minimal.

***Habitat:***

Wetlands W3 and W3A have low habitat opportunity because the area has low habitat complexity and is surrounded by high-intensity land use. The cut/fill activities will remove a 0.07-acre portion of vegetation within this area, which is not currently expected to provide habitat for many species of wildlife, such as birds, urban mammals, aquatic invertebrates, amphibians, or fish. Therefore, the permanent loss of 0.07-acre of vegetation will not result in a significant loss of habitat function in this area. Additionally, no listed species will be impacted by the wetland impacts.

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***WSDOT Wetland Functions Characterization Tool for Linear Projects:***
Wetland functions were also evaluated using the Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000). Wetland W3 and W3A are both depressional emergent wetlands that provide low levels of water quality and moderate levels of hydrologic function, based on their inability to store large volumes of water, due to their position in the landscape and the presence of an outlet. Similarly, both wetlands exhibit a low level of habitat function because of their location within the surrounding high-intensity land-use area, lack of vegetative and species diversity, and minimal vegetated buffer (Table 8 and Appendix B).

### *Wetland W4*

Wetland W4 is a large depressional palustrine forested-emergent wetland with an adjoining linear drainage ditch that borders the west shoulder of SR 9. The project will permanently fill a 0.19-acre portion and temporarily fill a 0.18-acre portion of Wetland W4 to construct a sidewalk along the southern side of SR 204 and to revise the geometry of SR 9 near the roundabout with SR 204.

***Water Quality:***
Wetland W4 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation throughout the majority of its area and it receives stormwater runoff from the adjacent roadways. As a result of the cut/fill and clearing/grubbing activities, a portion of Wetland W4 will permanently filled, resulting in a 0.19-acre loss of its vegetation and native soils. The portions of Wetland W4 that are permanently impacted will result in reduced vegetative filtration, velocity reduction, and soil infiltration. However, impacts to water quality functions resulting from the project will affect less than 1% of the total wetland area and are therefore expected to be minimal. Furthermore, the project's impacts to water quality functions will not affect the rating of Wetland W4.

***Hydrologic:***
Wetland W4 has a moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin, is a depressional feature with a constricted outlet, and is capable of retaining moderate volumes of water. As a result of the project's permanent impacts, Wetland W4 will have a diminished water storage. However, the impacted portion of Wetland W4 is less than 1% of its total area, therefore the impact to hydrologic function is expected to be minimal.

***Habitat:***
Wetland W4 has low habitat opportunity. Although the area has moderate habitat complexity and dense vegetation, it is surrounded by high-intensity land use. Permanent impacts from the project will remove 0.19-acre of the vegetation within the wetland, thus reducing the available habitat for wildlife, such as amphibians and invertebrates. However, Wetland W4 is not expected to provide habitat for many other species of wildlife, such as birds, urban mammals, or fish.

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Because Wetland W4 currently provides low habitat opportunity and the project will permanently impact 0.19-acre of that habitat, which is less than 1 percent of the total area, permanent impacts from the project are not expected to result in a significant loss of habitat function within Wetland W4. Additionally, no listed species will be impacted by the wetland impacts.

***WSDOT Wetland Functions Characterization Tool for Linear Projects:***
Wetland functions were evaluated using the Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000). Wetland W4 is a depressional wetland that provides moderate levels of water quality and hydrologic function, because of its ability to store moderate volumes of water due to its position in the landscape and its highly constricted outlet. However, Wetland W4 exhibits a low level of habitat function due to its position within the surrounding high-intensity land-use area, its reduced species diversity, and its minimal vegetated buffer (Table 8 and Appendix B).

### *Wetland W8*

Wetland W8 a palustrine scrub-shrub depressional wetland located at the southwest corner of SR 9 and Vernon Road. The project will entirely fill Wetland 8 through the placement of 0.07-acre of permanent fill to raise the grade of Vernon Road to construct its intersection with SR 9 and to include the addition of sidewalks along the south side of Vernon Road.

***Water Quality:***
Wetland W8 has moderate opportunity to improve water quality because it has dense, persistent, ungrazed vegetation over half of its area and it receives stormwater runoff from adjacent roadways and parking lots. As a result of cut/fill and clearing/grubbing activities, Wetland W8 will be entirely filled, resulting in a 0.07-acre loss of scrub-shrub vegetation and native soils. The loss Wetland W8 will result in a reduced vegetative filtration, velocity reduction, and soil infiltration in the area. The impact to a 0.07-acre portion of the project's water quality function resulting from the removal of Wetland W8 is expected to be relatively minor when compared with the water quality function provided by wetlands in the surrounding sub-basin; however, the water quality function at this location will be altered due to the removal of this feature.

***Hydrologic:***
Wetland W8 has a moderate opportunity to reduce flooding because it occurs in the upper portion of the sub-basin and is not capable of retaining high volumes of water due to the presence of an outlet. Due to the cut/fill and clearing/grubbing activities that will entirely impact Wetland W8, water storage in this location will be diminished in degree. However, relative to the hydrologic functions provided by the wetlands located within the surrounding sub-basin, coupled with the stormwater treatment facilities that will be included in the project, any loss of hydrologic function would be minimal.

***Habitat:***
Wetland W8 has low habitat opportunity because the area has moderate habitat complexity and dense vegetation but is surrounded by high-intensity land use. The clearing/grubbing activities will remove a 0.07-acre portion of vegetation within this area, which is not currently expected to provide habitat for many species of wildlife, such as birds, urban mammals, aquatic invertebrates, amphibians, or fish. Therefore, the permanent loss of 0.07-acre of vegetation will not result in a significant loss of habitat function in this area. Additionally, no listed species will be impacted by the wetland impacts.

***WSDOT Wetland Functions Characterization Tool for Linear Projects:***
Wetland functions were evaluated using the Wetland Functions Characterization Tool for Linear Projects (Null et al. 2000). Wetland W9 is a depressional wetland that provides moderate levels of water quality and hydrologic functions, because of its ability to store a moderate volume of water and it has a highly constricted outlet. However, Wetland W8 exhibits a low level of habitat function due to its low vegetative diversity and minimal vegetated buffer (Table 8 and Appendix B).

**Impacted Wetland Buffer Functions**
The buffers in the project area were defined according to LSMC 14.88.805 and only include vegetated areas outside of the developed road prism. Existing structures such as managed road embankments, buildings, and paved or impervious surfaces do not provide functions for the adjacent aquatic resources, so were excluded from buffers. Most of the wetland buffers in the project area are limited in width and function due to the presence of adjacent structures and paved surfaces. The vegetation within the buffer impact areas is mostly dominated by roadside grasses and Himalayan blackberry.

The project will result in 0.14-acre of permanent and 0.08-acre of temporary impacts to Category III wetland buffer (Wetland W4) as shown below in Table 8 and on Figure 3. The permanent and temporary buffer impacts will result from revisions to the geometry of SR 9 near the location of the proposed roundabout with SR 204.

**Table 8: Summary of Wetland Buffer Impacts**

| Resource | WDOE Rating[2] | Area of Buffer Impacts (acres) | |
|---|---|---|---|
| | | Permanent | Temporary |
| Wetland W3 | IV | - | - |
| Wetland W3A | IV | - | - |
| Wetland W4 | III | **0.14** | **0.08** |
| Wetland W8 | III | - | - |
| **Total** | | **0.14** | **0.08** |

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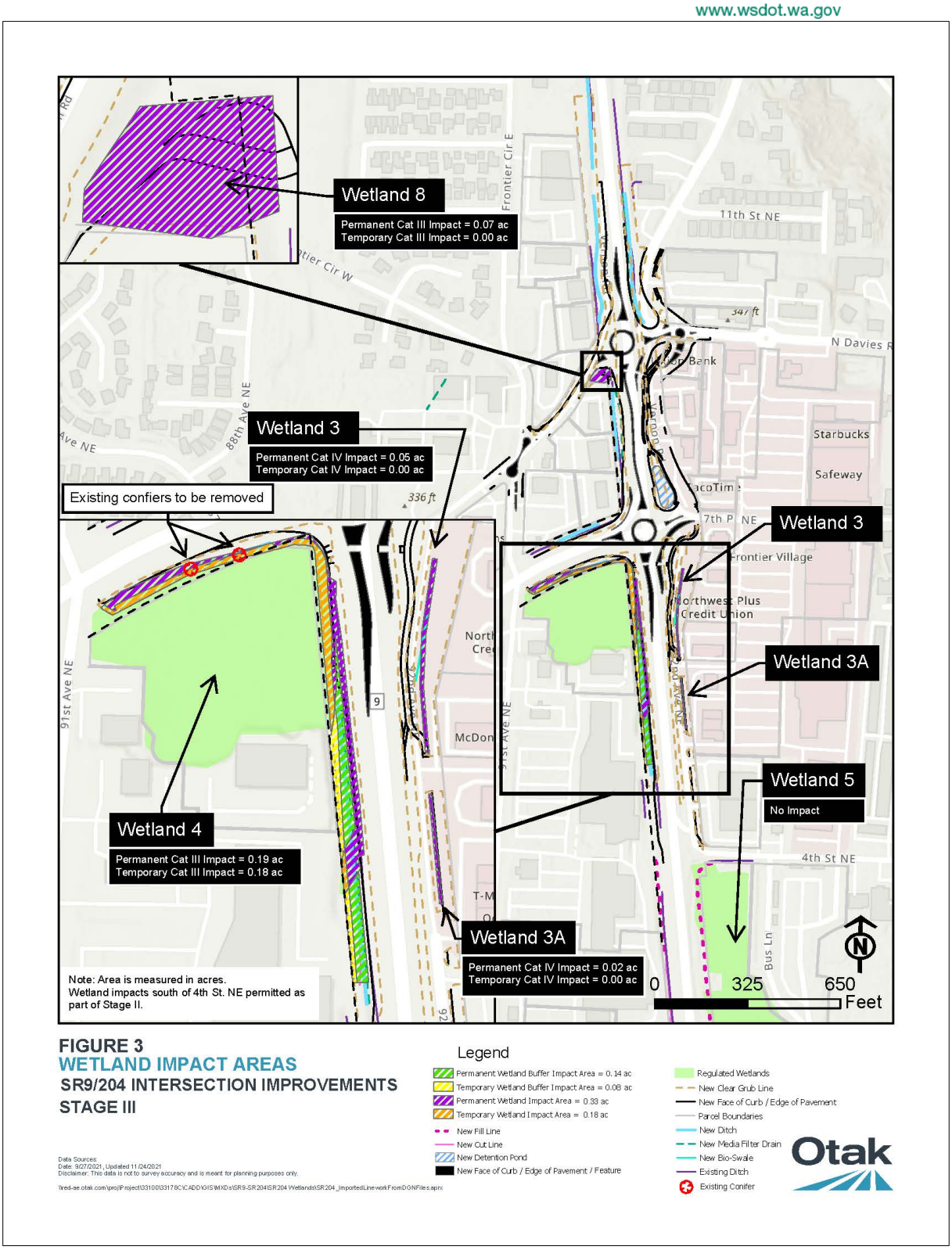


**Figure 3: Wetland Impact Areas**

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**Wetland Mitigation Site Selection Rationale**

To address the unavoidable impacts, WSDOT will replace the onsite wetland and wetland buffer areas and associated functions lost, through compensatory mitigation. The project will specifically mitigate for all permanent wetland and buffer impacts through the purchase of mitigation bank credits from the Snohomish Basin Mitigation Banking Service (SBMB), and the on-site restoration will be used to mitigate for all areas of temporary wetland and buffer impacts.

Mitigation banks must have an agency-approved mitigation plan and other assurances in place before credits can be released for purchase, therefore, the risks and uncertainties associated with compensatory mitigation have largely been addressed and effectively reduced or eliminated by the time credits are authorized for sale. Furthermore, the purchase of a wetland credit includes protection of the mitigation site through the inclusion of the appropriate buffers, which in turn compensate for any buffer impacts resulting from a project with direct wetland impacts.

The project is within the service area for the SBMB bank because it is in WRIA 7 and below the 2,500-foot elevation contour. In April 2021, WSDOT reserved a total of 3.94 credits from the SBMB to compensate for impacts from Stages II and III of the project. A total of 0.22 credits will be used to compensate for impacts to Stage II of the project and approximately 3.72 credits remain for use to compensate for Stage III impacts. At this time approximately 3.31 credits have been reserved to satisfy the mitigation that will compensate for the permanent wetland and buffer impacts resulting from construction of Stage III.

The objective of the SBMB is to reconnect and reestablish stream channels, associated riparian wetlands, depressional wetlands and forested uplands, all supporting a wide variety of plant and animal life. In addition to the habitat functions provided by the SBMB site wetland, higher value water quality and hydrologic functions are also present. The project will reduce the onsite water quality, hydrologic, and habitat functions that are currently provided by the 0.33-acre of depressional wetlands that will be permanently impacted during construction; the SBMB bank credits will provide a no net loss for those functions.

**On-Site Restoration**

The on-site restoration measures will compensate for all temporary impacts to the onsite wetlands and buffers. These measures have been included in the project to meet the regulatory requirements for wetland and buffer impacts as described below.

A mix of mostly native shrubs and trees will be used to restore the temporarily impacted wetland and buffer areas, which will be planted with site-appropriate, hydrophytic vegetation, including the following species, western red cedar (*Thuja plicata* var. *excelsa*), Sitka spruce (*Picea sitchensis*), vine maple (*Acer circinatum*), Nootka rose (*Rosa nutkana*), red-osier dogwood (*Cornus stolonifera*), Sitka willow (*Salix sitchensis*), and Thimbleberry (*Rubus parviflorus*). Specifications from the 2015 WSDOT Roadside Policy Manual were used to guide the on-site restoration plans. Specific areas of the on-site restoration planting effort are shown on Figure 4: Wetland 4 Restoration Areas.

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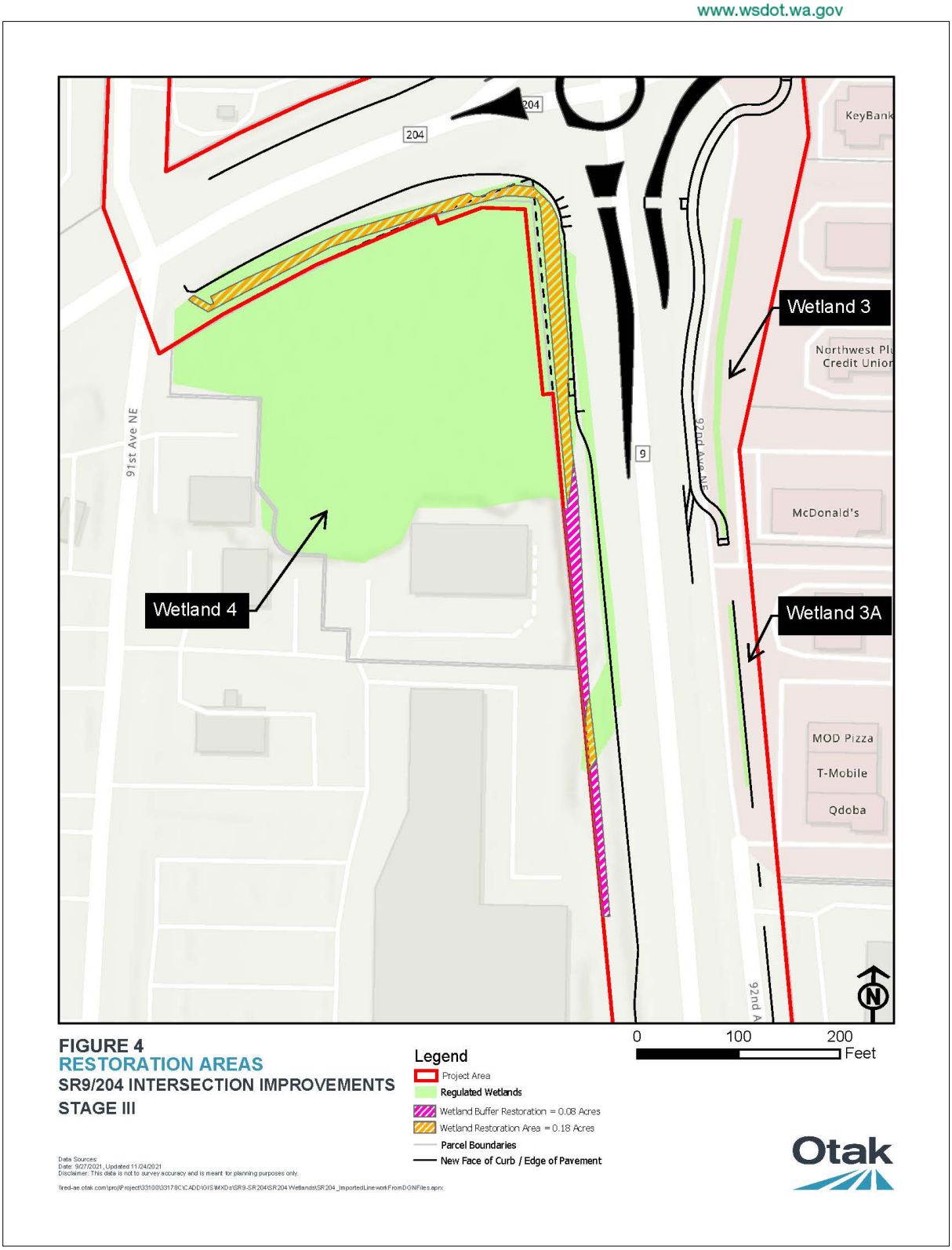


**Figure 4: Wetland 4 Restoration Areas**

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**Regulatory Requirements**

As identified in Governor Executive Order 89-10 Protection of Wetlands: "No Net Loss" (Order) and WSDOT Directive 31-12 (Protection of Wetlands Action Plan), WSDOT is required to create or restore wetland area and function at a minimum 1:1 mitigation ratio. All temporary impacts to wetlands will be short-term, as indicated by Table 3-1 in *Wetland Mitigation in Washington State-Part 1, Version 2* and will be compensated for on-site through the measures listed in Chapter 6B4.5 (WDOE 2021). Therefore, short-term temporary impacts will be mitigated for on-site by restoring pre-project elevations and hydroperiods. According to LSMC 14.88.8409a)(5), credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands. Furthermore, mitigation for impacts to wetland buffers is regulated by the City of Lake Stevens at a 1:1 minimum replacement ratio (CLS14.88.840(g).

**Wetland Functions Provided at Wetland Mitigation Bank**

The SBMB is located within the Snohomish watershed (WRIA 7) and has restored a wide range of wetland habitat types as well as adjacent uplands. The bank was created to provide compensation for unavoidable impacts to wetlands and other aquatic resources. The implementation of the SBMB is intended to increase wetland area and encourage improved hydrologic, water quality and habitat functions.

SBMB's restored features include emergent, shrub and forested wetlands as well as upland buffers. Functions critical to the watershed have been restored including flood storage, flood desynchronization and water quality improvements. Project impacts will occur within PEM/PFO, PSS, and PEM wetland habitat classes as well as portions of upland buffer associated with the PEM/PFO depressional wetland.

*Water Quality*

SBMB has protected and restored forested, scrub shrub and emergent, depressional wetlands which provide excellent water quality functions through velocity control, sediment filtration, soil infiltration and water detention. The moderate and low water quality functions impacted by the project activities will be replaced by moderate to high water quality functions provided by the SBMB wetland complex.

*Hydrologic*

SBMB has reconnected and reestablished riparian and depressional wetlands within the Snohomish watershed which provide live storage and slow water velocities during flood events. The moderate functions impacted by the project activities will be replaced by moderate to high flood storage for the surrounding area in the SBMB wetlands.

*Habitat*

The variety of habitat that SBMB provides, which includes aquatic bed, emergent, scrub-shrub, forested, upland, and riparian, supports a wide range of vegetation and hydroperiod niches for

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wildlife. The diversity of habitats provided by SBMB provides high to very high functional benefit to the surrounding habitat while the impacted wetlands all provide low habitat functions.

**Mitigation Credits**

Credits are the "currency" of the mitigation bank, and the value of each credit is equal to its net ecological benefit. The SBMB's Credit Ratios are outlined in Table 9 below.

Table 9: Snohomish Basin Mitigation Bank Credit Ratios[1]

| Resource Impact | Bank Credits Per Resource Impact |
|---|---|
| Wetland, Category I | Case by case |
| Wetland, Category II | 1.2:1 |
| Wetland, Category III | 1.0:1 |
| Wetland, Category IV | 0.85:1 |
| Critical Area Buffer | Case by case |
| Wetland Buffer, Category III (Permanent Impact) | 0.2:1 |

[1] According to the Snohomish County Mitigation Banking Instrument (Talasaea 2016).

The project as proposed will impact two Category III wetlands, two Category IV wetlands, and one Category III wetland buffer. Table 10 below outlines the permanent impact areas to wetlands and buffers, by Category, and includes the credit ratios used to obtain the total credits used for the Bank Credit Proposal.

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**Table 10: Bank Credit Proposal**

| Resource Name | Size | WDOE Rating | Permanent Impacts Area (acres) | SBMB Mitigation Credit Ratio (acres) | Credit Needed (acres)[1] |
|---|---|---|---|---|---|
| ***Wetland*** | ***Area (acres)*** | | | | |
| W3 | 0.05 | IV | 0.05 | **0.85:1** | 0.04 |
| W3A | 0.02 | IV | 0.02 | | 0.02 |
| **Total** | **0.07** | | **0.07** | | **0.06** |
| W4 | 2.43 | III | 0.19 | **1:1** | 0.19 |
| W8 | 0.07 | III | 0.07 | | 0.07 |
| **Total** | **2.55** | | **0.26** | | **0.26** |
| ***Buffer*** | ***Width (feet)*** | | | | |
| W4 | 80 | III | 0.14 | **0.20:1** | 0.03 |
| **Total** | **80** | | **0.14** | | **0.03** |
| **Grand Total** | | | | | **0.35** |

WSDOT will use a total of 0.35 credits from the SBMB to compensate for the 0.26-acre of permanent Category III wetland impact, 0.07-acre of permanent Category IV wetland impact, and 0.14-acre of permanent Category III wetland buffer impact.

**Credit Purchase or Transfer Timing**

Credits were released from the SBMB as indicated in Table 5a of the SBMB Mitigation Banking Instrument (MBI) (Talasaea 2016). The credit release process, including performance standard milestones, are outlined in Section 7.1 of the MBI. This project, as proposed, will utilize approximately 0.35 of the available credits (Appendix C: Snohomish Basin Mitigation Banking Services Credit Ledger). If impacts change as design is advanced, updated information may be provided to the regulatory agencies to serve as the basis for a request to update SBMB credit use. If regulatory agencies approve a request to update the number of SBMB credits used to compensate for project impacts, an adjustment to the ledger total will be made to reflect that approval. Credits will be purchased after all necessary permits have been issued; once the purchase is completed, proof the of credit purchase will be provided to the regulatory agencies.

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[DNR] Washington Department of Natural Resources 2021. PHS on the Web. Available at: https://fpamt.dnr.wa.gov/default.aspx.

[WDOE] Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. (2021). Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2). Washington State Department of Ecology Publication #21-06-003.

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[WSDOT]. 2015. Roadside Policy Manual. Publication No. M 3110.03.

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**Appendix A: Wetland Rating Forms (2014 Rating System):**

Appendix A removed due to document length.

A2 - Addendum to the Wetland & Stream Report Includes all rating forms

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## Appendix B: Wetland Functions and Values for Linear Projects (BPJ) Forms

# Wetland Functions & Values Form

Wetland I.D. W3/W3A Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PEM Ecology Category: IV Local Rating: IV Wetland size: 0.07 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | | X | doesn't receive floodwater | | |
| Sediment Removal | X | | vegetated ditches | X | |
| Nutrient & Toxicant Removal | X | | vegetated ditches | X | |
| Erosion Control & Shoreline Stabilization | | X | not along a shoreline | | |
| Production of Organic Matter and its Export | X | | potential to export herbaceous material | | |
| General Habitat Suitability | | X | poor wildlife habitat | | |
| Habitat for Aquatic Invertebrates | | X | low interspersion of habitats | | |
| Habitat for Amphibians | | X | no braces for egg-laying or seasonal ponding | | |
| Habitat for Wetland-Associated Mammals | | X | SR9 adjacent | | |
| Habitat for Wetland-Associated Birds | | X | SR9 adjacent | | |
| General Fish Habitat | | X | not associated with streams | | |
| Native Plant Richness | | X | low diversity | | |
| Educational or Scientific Value | | X | roadside ditch | | |
| Uniqueness and Heritage | | X | roadside ditch | | |

# Wetland Functions & Values Form

Wetland I.D. W4 Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PFO/PEM Ecology Category: III Local Rating: III Wetland size: 2.48 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | X | | large wetland with available storage and intermittent outlet | X | |
| Sediment Removal | X | | persistent plant cover | X | |
| Nutrient & Toxicant Removal | X | | seasonal ponding and anaerobic processes | X | |
| Erosion Control & Shoreline Stabilization | | X | | | |
| Production of Organic Matter and its Export | X | | dense cover and hydrological connectivity to surface waters downstream | X | |
| General Habitat Suitability | X | | habitat refugia in developed landscape | X | |
| Habitat for Aquatic Invertebrates | X | | seasonal ponded areas | | |
| Habitat for Amphibians | X | | ponded areas with braces | | |
| Habitat for Wetland-Associated Mammals | | X | | | |
| Habitat for Wetland-Associated Birds | | X | | | |
| General Fish Habitat | | X | not associated with a stream | | |
| Native Plant Richness | X | | multi-strata PFO habitat | | |
| Educational or Scientific Value | | X | | | |
| Uniqueness and Heritage | | X | No ESA species occurrences or local significance | | |

# Wetland Functions & Values Form

Wetland I.D. W8 Project: SR 204/9 Improvements (Stage 3) Assessed by: Jeff Gray

Cowardin Class: PSS Ecology Category: III Local Rating: III Wetland size: 0.07 Date: 8-31-21

| Function/Value | Occurrence Y | Occurrence N | Rationale | Principal Function(s) | Comments |
|---|---|---|---|---|---|
| Flood Flow Alteration | X | | intermittently flowing outlet | X | |
| Sediment Removal | X | | depressional wetland traps sediment | X | W8 receives stormwater dicharges and primarily functions to maintain |
| Nutrient & Toxicant Removal | X | | traps sediment | X | water quality and attenuate discharge from impervious surfaces |
| Erosion Control & Shoreline Stabilization | | X | not on a shoreline | | |
| Production of Organic Matter and its Export | | X | dense woody vegetation | | |
| General Habitat Suitability | | X | small wetland in a developed landscape | | |
| Habitat for Aquatic Invertebrates | | X | | | |
| Habitat for Amphibians | | X | | | |
| Habitat for Wetland-Associated Mammals | | X | | | |
| Habitat for Wetland-Associated Birds | | X | | | |
| General Fish Habitat | | X | not proximal to fish habitat | | |
| Native Plant Richness | | X | low diversity | | |
| Educational or Scientific Value | | X | | | |
| Uniqueness and Heritage | | X | | | |

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## Appendix C: Snohomish Basin Mitigation Banking Services Credit Ledger

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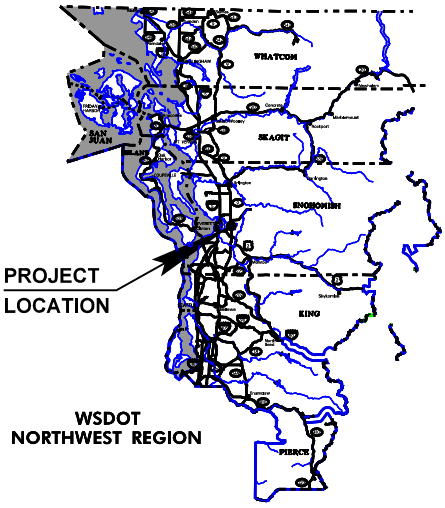
**Snohomish Basin Mitigation Bank Credits Ledger**

Contact: Victor Woodward (425) 785-8428 — Date: August 24, 2021

| Date | Credits Received | Credits Debited | Credits Reserved | Permittee, Address, Phone | Permitting Agencies and Permit Numbers | Permit Issuance Date | Project Location | Brief Description of Impact(s) Compensated for by SBMB Credits | Comments |
|---|---|---|---|---|---|---|---|---|---|
| March 25, 2021 | | 0.0623 | | Novelty Hill Development LLC.<br>Attn: Nathan Chapman<br>PO Box 816<br>Redmond, WA 98073 | King County: CAEX18-0005 | To be issued | Located on King County Parcel #142506-9089 | Impacts to Wetland and Aquatic Buffers and Wildlife Habitat Network totaling 13,563 sq./ft. of required mitigation. | |
| April 23, 2021 | | | 3.310 | WSDOT<br>Northwest Region-Environmental<br>Attn: Ruth Park<br>15700 Dayton Ave N<br>Shoreline, WA 98133 | Permitting contacts and permit numbers to be furnished when permits issued for each project. | N/A | Future projects will be within WRIA-7 and the Mitigation Bank's Service Area. | Credits will be used for future permitting requirements within WRIA-7 and within the Bank's Service Area. | WSDOT reserved credit balance: 3.935 Credits |
| April 23, 2021 | | 0.2200 | -0.220 | WSDOT<br>Northwest Region Environmental<br>Attn: Ruth Park<br>15700 Dayton Ave N<br>Shoreline, WA 98133 | USACE: NWS-2020--427-DOT<br>City of Lake Stevens: LUA2020-0002 | 10-21-2020<br>05-28-2020 | The project is located on SR 9 between Milepost 15.05 and 15.73 | CAT 3 wetland permanent impact: .06 acres, CAT 3 Wetland buffer impact: .80 acres | WSDOT reserved credit balance: 3.715 Credits |
| May 12, 2021 | | 0.0210 | | Keystone Land LLC.<br>Attn: Paul Leavitt<br>13805 Smokey Pt. Blvd. Ste 102<br>Marysville, WA 98271 | Ecology: AO # 19841<br>City of Marysville: PA20-064 | 4-16-2021<br>To be issued | The project is located at: 4205 71st Ave NE, Marysville, WA 98270 | 760 sf of direct wetland impact and 250 sf of indirect wetland impact for a total amount of 896 sf of wetland mitigation bank credits. | |
| June 9, 2021 | | 0.0670 | | Rachel Cheng<br>7001 Seaview Ave NW Suite 160-680<br>Seattle, WA 98117 | King County: CAEX18-0004 | 3/23/2020 | Located on King County Parcel # 162308-9015. | 14,564 square feet of impacts to Critical Area Buffers as a result of a SFR Project. | |
| July 28, 2021 | | 3.0440 | | Costco Wholesale<br>Attn: Peter Kahn<br>999 Lake Drive<br>Issaquah, WA 98027 | USACE: NWS-2019-175<br>Ecology: Order No. 18118<br>City of Lake Stevens: LUA2020-0029 City of Lake Stevens: LUA2020-0032 | 04-23-21<br>07-15-20<br>01-21-21<br>01-21-21 | Located on: Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, west of SR 9 in the City of Lake Stevens, Washington. | A total of 1.72 acres of Category II (46,592sf/1.07 ac) and Category III (28,311sf/0.65ac) will be impacted by the project. In addition, 2.23 acres of wetland will be impacted as "paper fill" to provide a 220' buffer as requested to mitigate for road construction impacts to Wetlands A & D | |

# Appendix 4: Joint Aquatic Resource Permit Application (JARPA) Drawings

T. 29N. R. 5E. W.M. SEC. 13
SR 9 MP 15.48 TO 16.05
SR 204 MP 2.23 TO MP 2.35




SR 9
15th St NE
Vernon Rd
Lake Stevens
End Project SR 9 MP 16.05
Frontier Cir
N Davies Rd
WETLAND #8
Frontier Village
Vernon Rd
WETLAND #3
WETLAND #3A
204
Weiser Creek
WETLAND #4
4th St NE
WETLAND #5 (NO IMPACT)
Begin Project SR 9 MP 15.48
Market Pl NE
91st Ave NE
Market Pl
WETLAND #9 (NO IMPACT)
95th Ave SE

N

0 400 800
SCALE IN FEET

State Route 9
STA 252+00 to STA 282+06.53

SITE VICINITY AND PROPOSED PROJECT

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

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SHEET: 1 OF: 11

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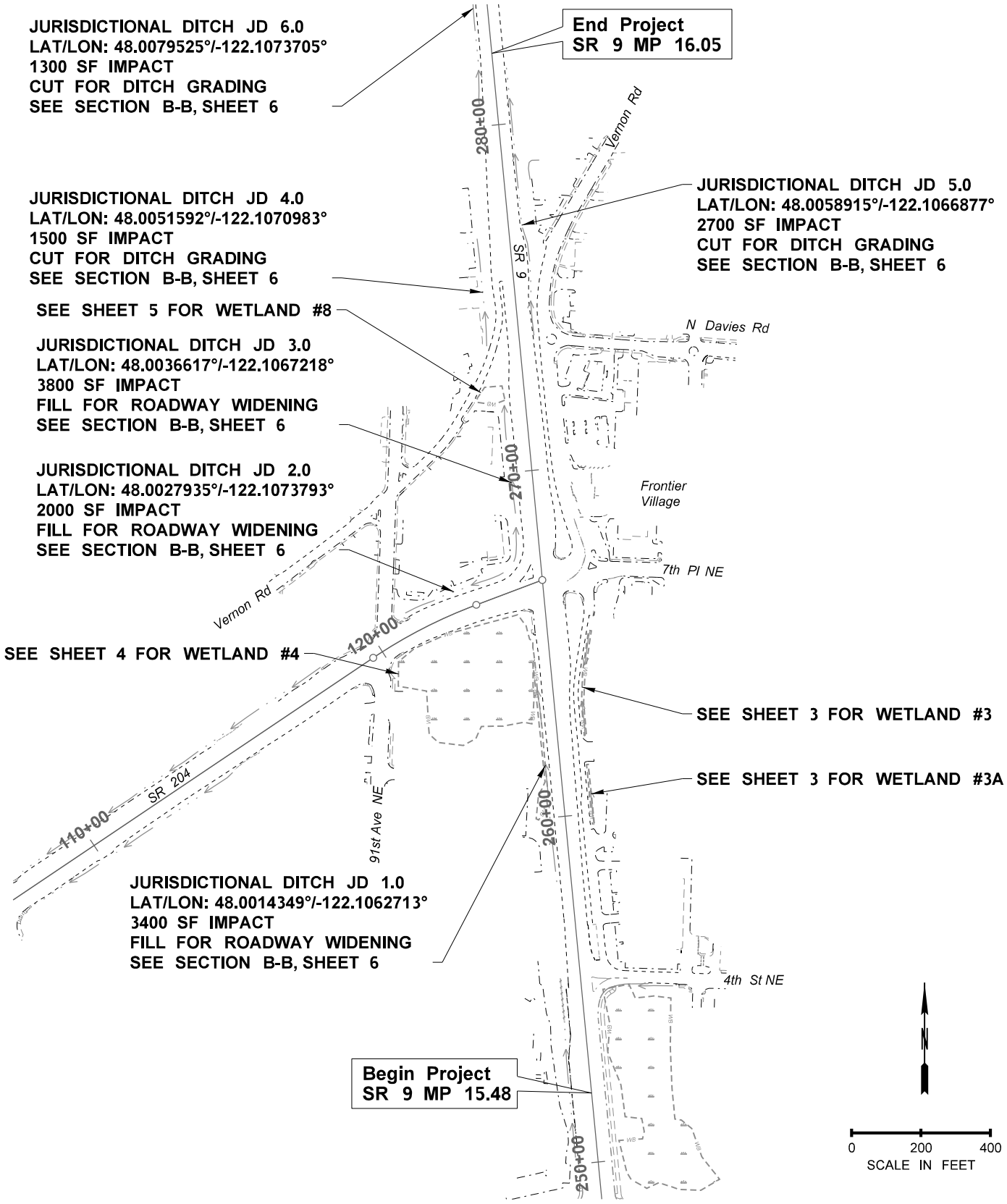


JURISDICTIONAL DITCHES

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS-2020-427-DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, -122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

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SHEET: 2 OF: 11

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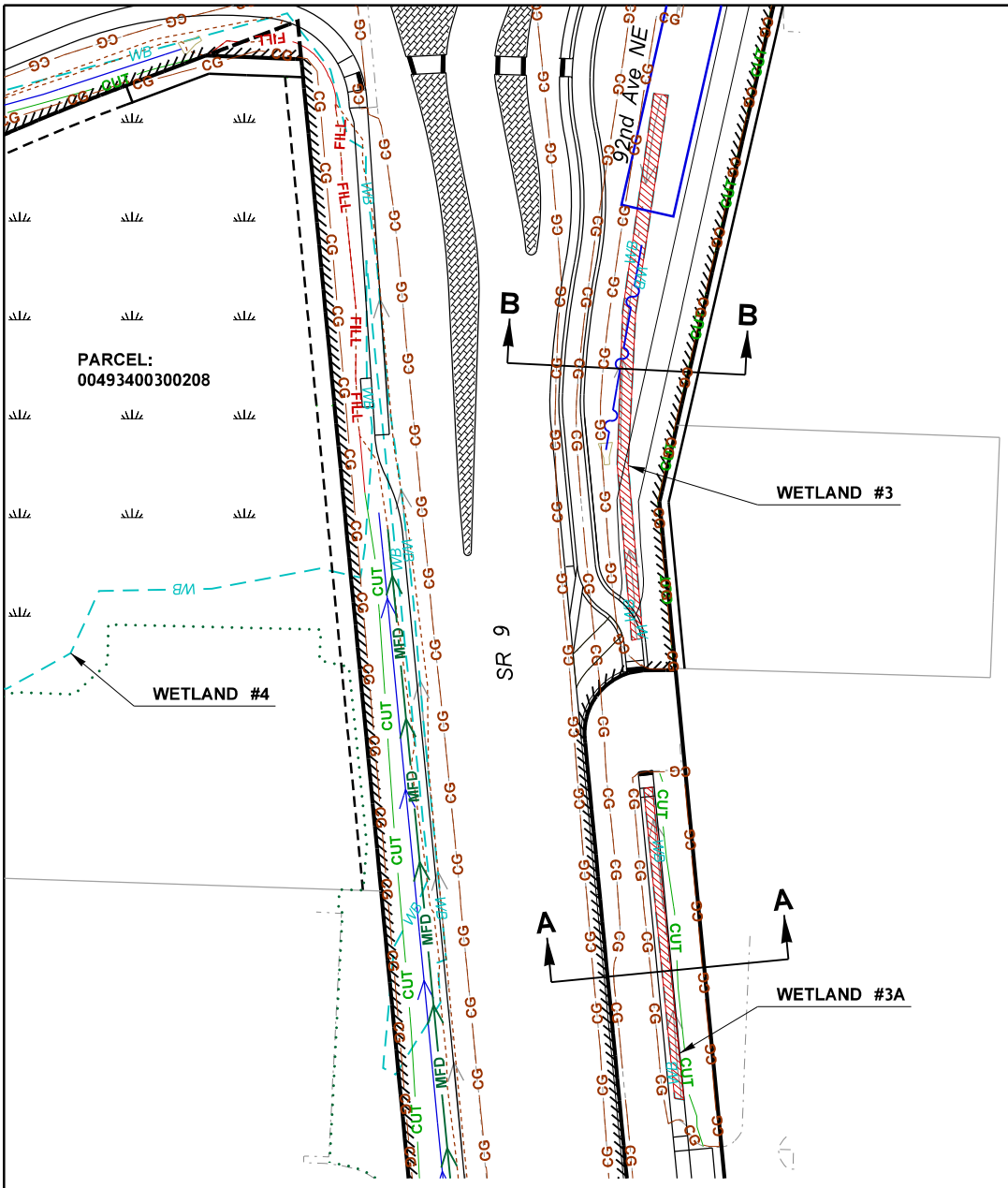


| WETLAND #3 QUANTITIES | | |
|---|---|---|
| DOE CATEGORY | ACRES | LEGEND |
| WETLAND AREA | 0.05 | |
| PERM. CAT. IV WETLAND IMPACT | 0.05 | |
| TEMP. CAT IV WETLAND IMPACT | 0.00 | |
| PERM. WETLAND BUFFER IMPACT | 0.00 | |
| TEMP. WETLAND BUFFER IMPACT | 0.00 | |

| WETLAND #3A QUANTITIES | | |
|---|---|---|
| DOE CATEGORY | ACRES | LEGEND |
| WETLAND AREA | 0.02 | |
| PERM. CAT. IV WETLAND IMPACT | 0.02 | |
| TEMP. CAT IV WETLAND IMPACT | 0.00 | |
| PERM. WETLAND BUFFER IMPACT | 0.00 | |
| TEMP. WETLAND BUFFER IMPACT | 0.00 | |

## LEGEND

- EXISTING DITCH
- NEW DITCH
- NEW BIO-SWALE
- NEW DETENTION POND
- MFD — NEW MEDIA FILTER DRAIN
- EXISTING EDGE OF PAVEMENT
- EXISTING FACE OF CURB
- NEW FACE OF CURB/ EDGE OF PAVEMENT
- CUT — FILL — CUT/FILL LINES
- CG — CG — CLEAR AND GRUB LINE
- WSDOT LIMITED ACCESS/ ROW COINCIDENT
- WSDOT HIGHWAY BOUNDARY
- CITY OF LAKE STEVENS ROW
- PARCEL BOUNDARY
- WB — WETLAND BOUNDARY
- WETLAND BUFFER
- WETLAND SYMBOL

# WETLAND #3 & #3A PLAN VIEW IMPACT AREAS

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS-2020-427-DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, -122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

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SHEET: 3 OF: 11

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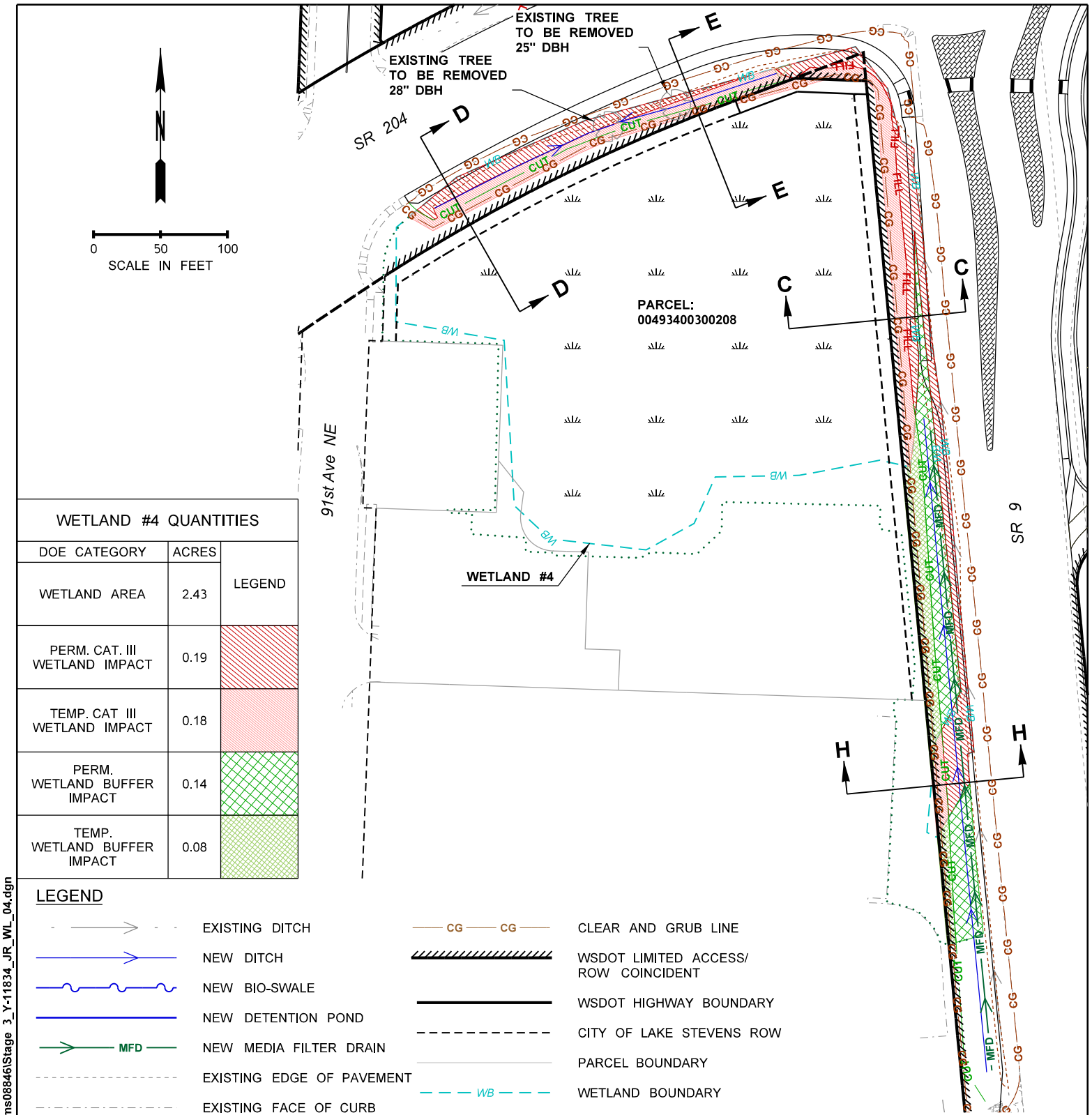


| WETLAND #4 QUANTITIES | | |
|---|---|---|
| DOE CATEGORY | ACRES | LEGEND |
| WETLAND AREA | 2.43 | |
| PERM. CAT. III WETLAND IMPACT | 0.19 | |
| TEMP. CAT III WETLAND IMPACT | 0.18 | |
| PERM. WETLAND BUFFER IMPACT | 0.14 | |
| TEMP. WETLAND BUFFER IMPACT | 0.08 | |

## LEGEND

- EXISTING DITCH
- NEW DITCH
- NEW BIO-SWALE
- NEW DETENTION POND
- NEW MEDIA FILTER DRAIN
- EXISTING EDGE OF PAVEMENT
- EXISTING FACE OF CURB
- NEW FACE OF CURB/ EDGE OF PAVEMENT
- CUT / FILL LINES
- CLEAR AND GRUB LINE
- WSDOT LIMITED ACCESS/ ROW COINCIDENT
- WSDOT HIGHWAY BOUNDARY
- CITY OF LAKE STEVENS ROW
- PARCEL BOUNDARY
- WETLAND BOUNDARY
- WETLAND BUFFER
- WETLAND SYMBOL

# WETLAND #4 PLAN VIEW IMPACT AREAS

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation



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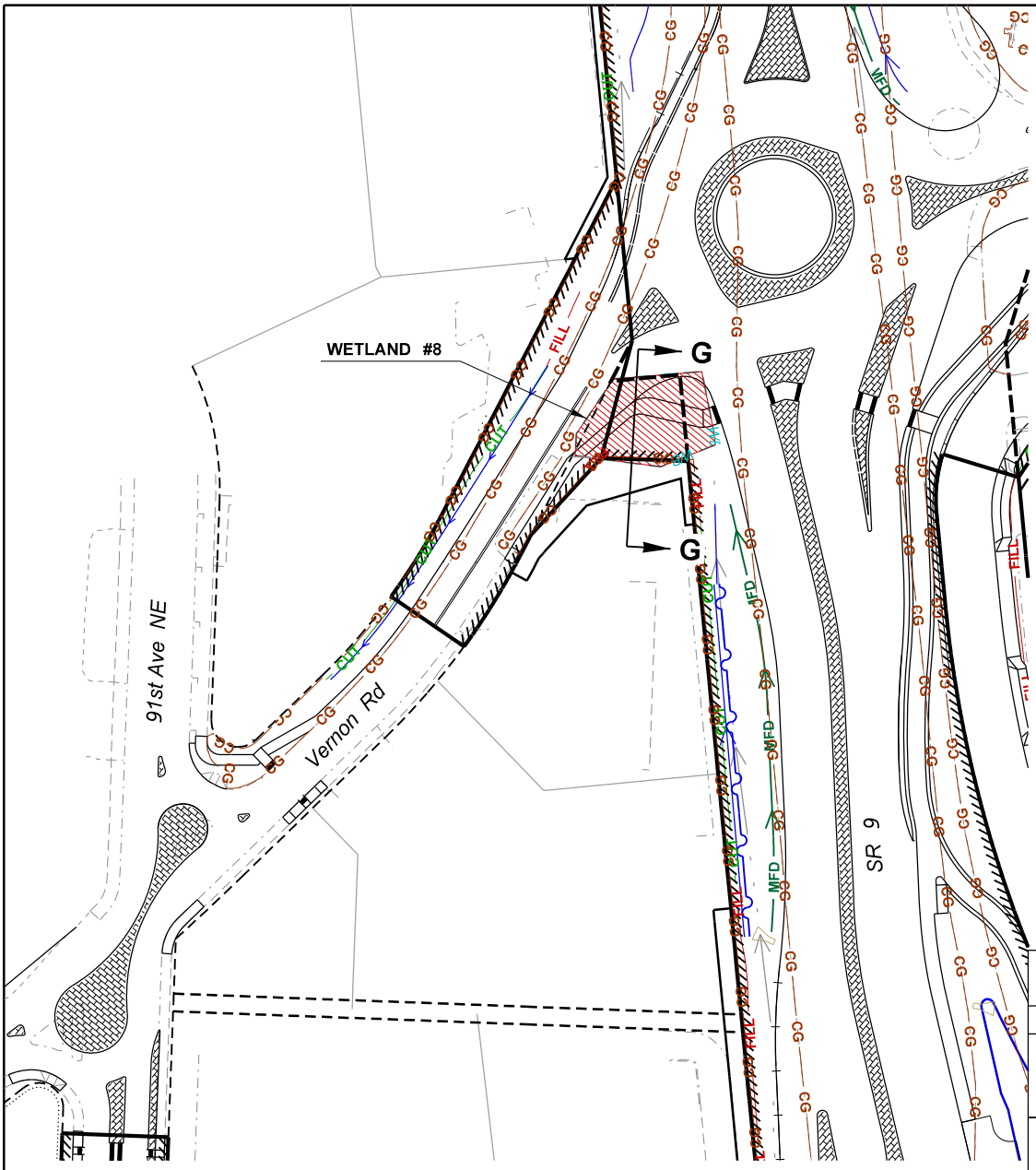


N

0 50 100
SCALE IN FEET

| WETLAND #8 QUANTITIES | | |
|---|---|---|
| DOE CATEGORY | ACRES | LEGEND |
| WETLAND AREA | 0.07 | |
| PERM. CAT. III WETLAND IMPACT | 0.07 | |
| TEMP. CAT III WETLAND IMPACT | 0.00 | |
| PERM. WETLAND BUFFER IMPACT | 0.00 | |
| TEMP. WETLAND BUFFER IMPACT | 0.00 | |

LEGEND

- EXISTING DITCH
- NEW DITCH
- NEW BIO-SWALE
- NEW DETENTION POND
- MFD — NEW MEDIA FILTER DRAIN
- EXISTING EDGE OF PAVEMENT
- EXISTING FACE OF CURB
- NEW FACE OF CURB/ EDGE OF PAVEMENT
- CUT — FILL — CUT/FILL LINES
- CG — CG — CLEAR AND GRUB LINE
- WSDOT LIMITED ACCESS/ ROW COINCIDENT
- WSDOT HIGHWAY BOUNDARY
- CITY OF LAKE STEVENS ROW
- PARCEL BOUNDARY
- WB — WETLAND BOUNDARY
- WETLAND BUFFER
- WETLAND SYMBOL

# WETLAND #8 PLAN VIEW IMPACT AREAS

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS-2020-427-DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, -122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation



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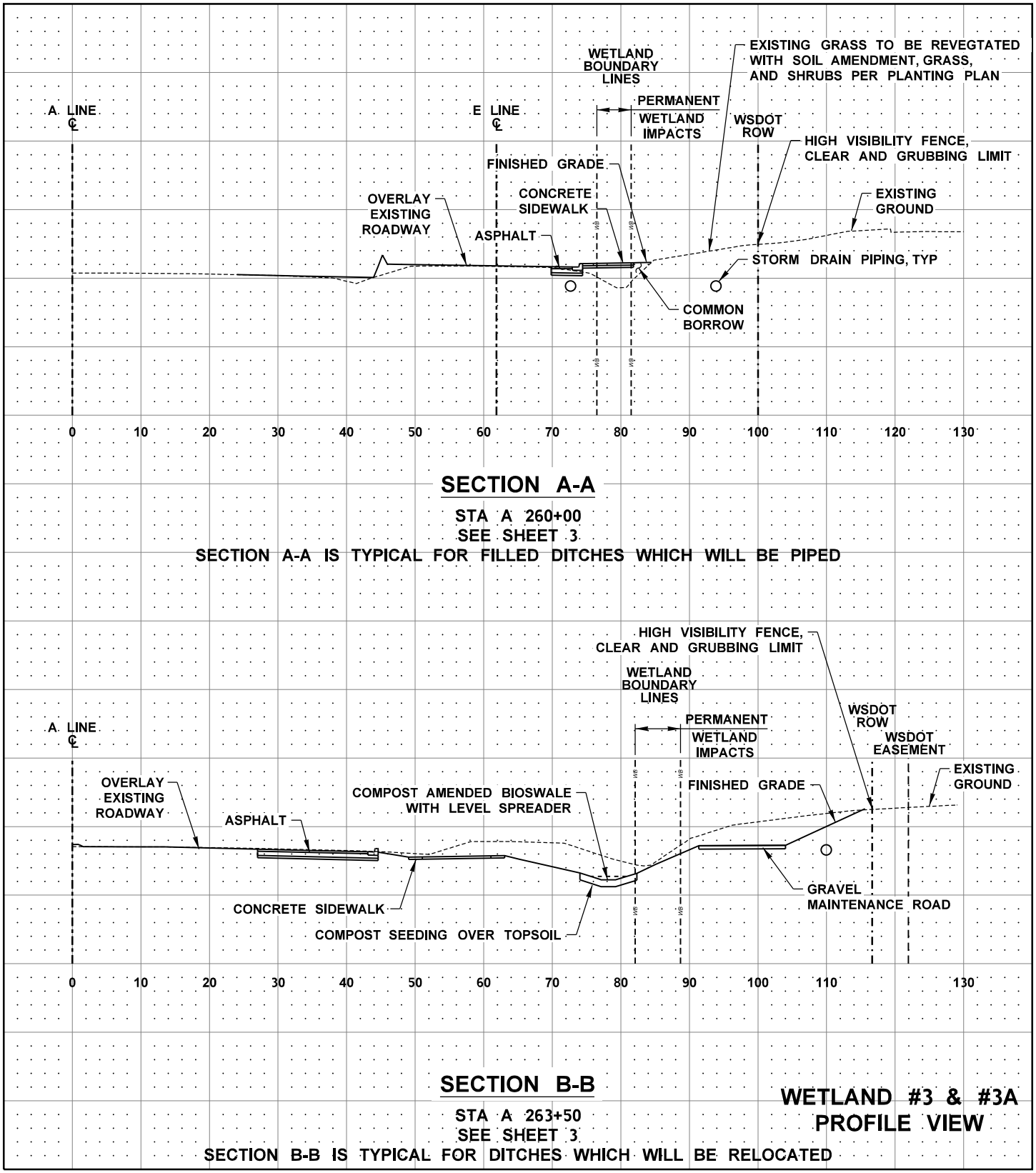


## SECTION A-A

STA A 260+00
SEE SHEET 3
SECTION A-A IS TYPICAL FOR FILLED DITCHES WHICH WILL BE PIPED




## SECTION B-B

STA A 263+50
SEE SHEET 3
SECTION B-B IS TYPICAL FOR DITCHES WHICH WILL BE RELOCATED

## WETLAND #3 & #3A PROFILE VIEW

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 6 OF: 11

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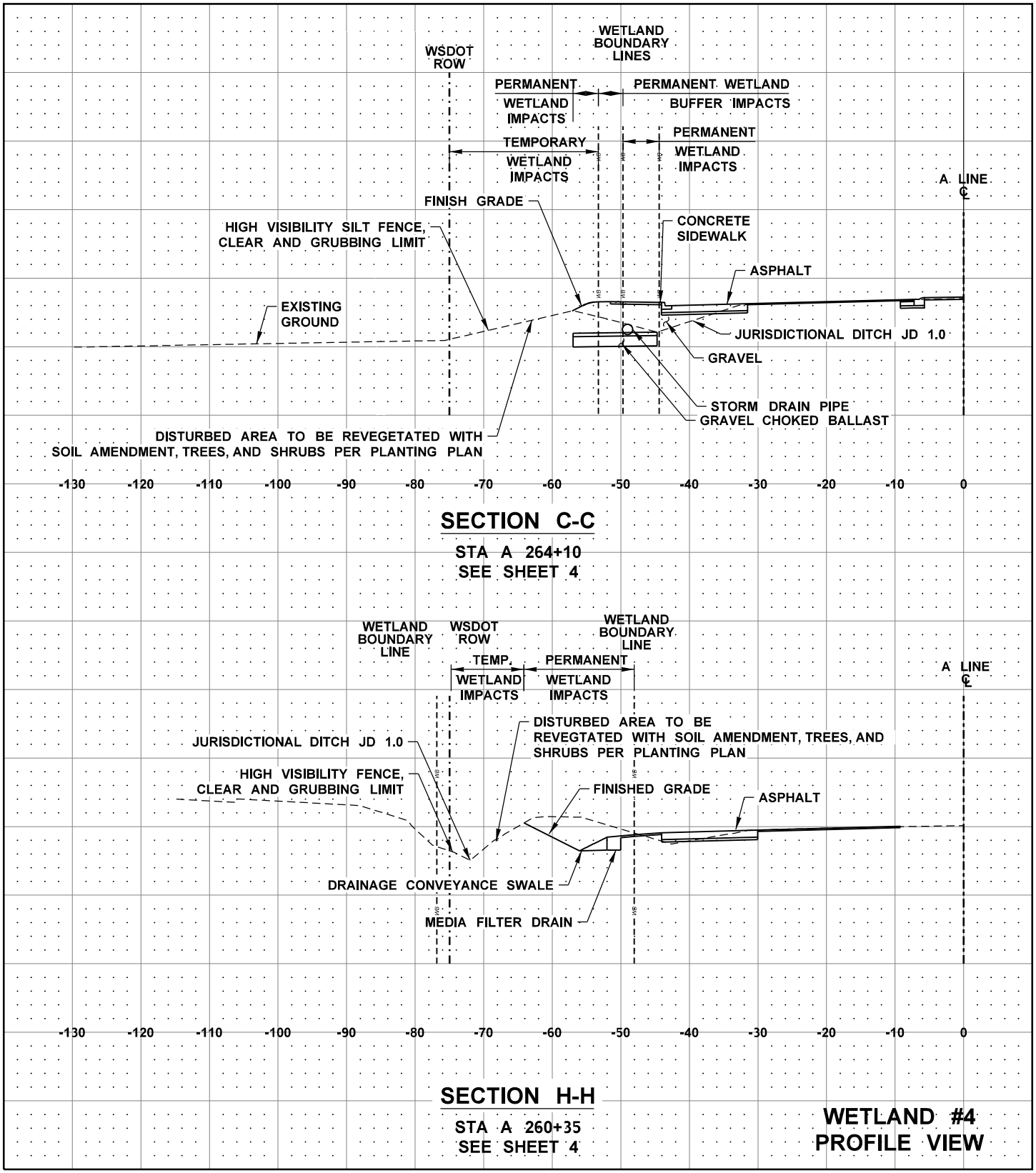


## SECTION C-C

STA A 264+10
SEE SHEET 4




## SECTION H-H

STA A 260+35
SEE SHEET 4

# WETLAND #4 PROFILE VIEW

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 7 OF: 11

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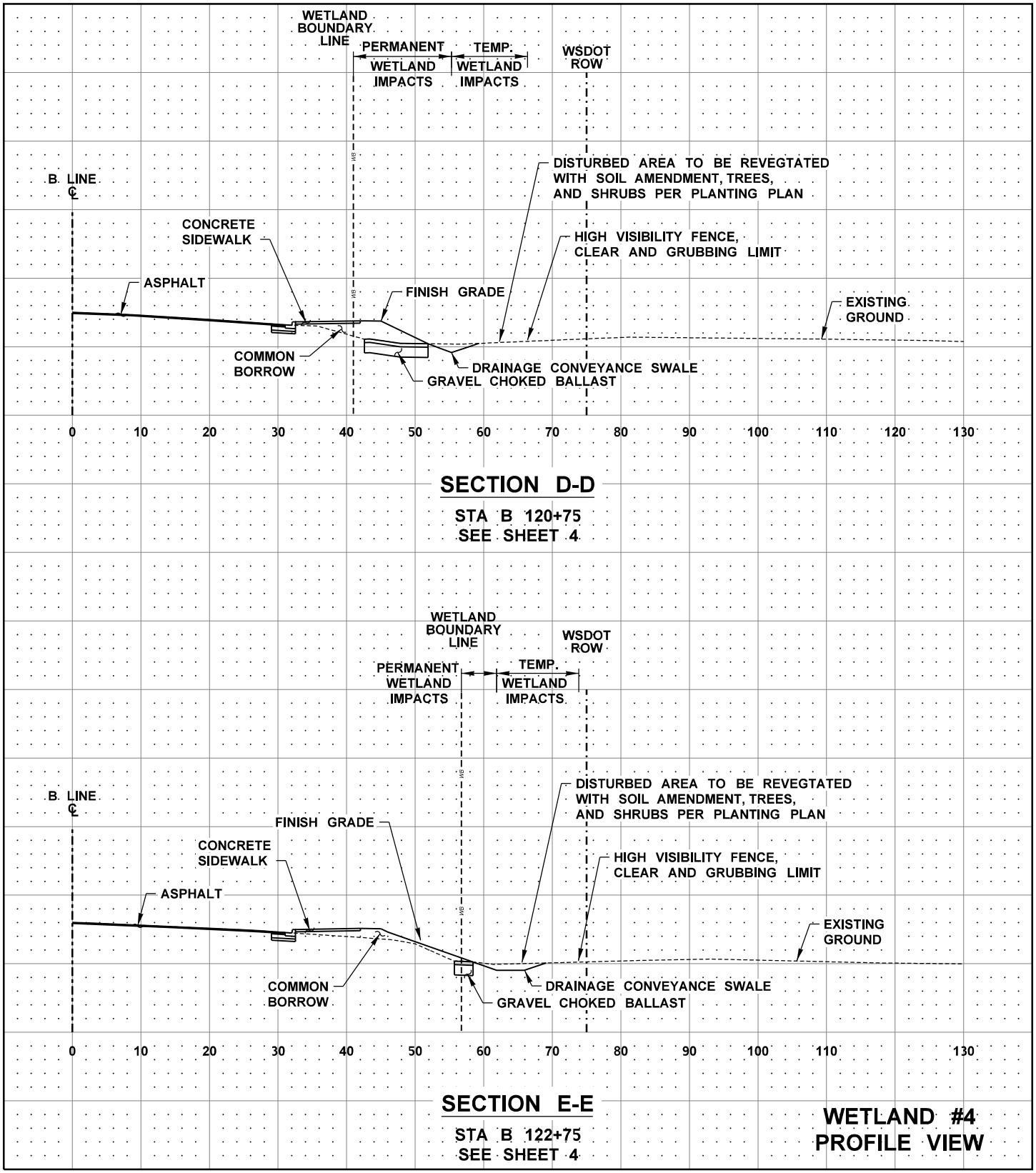


| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 8 OF: 11

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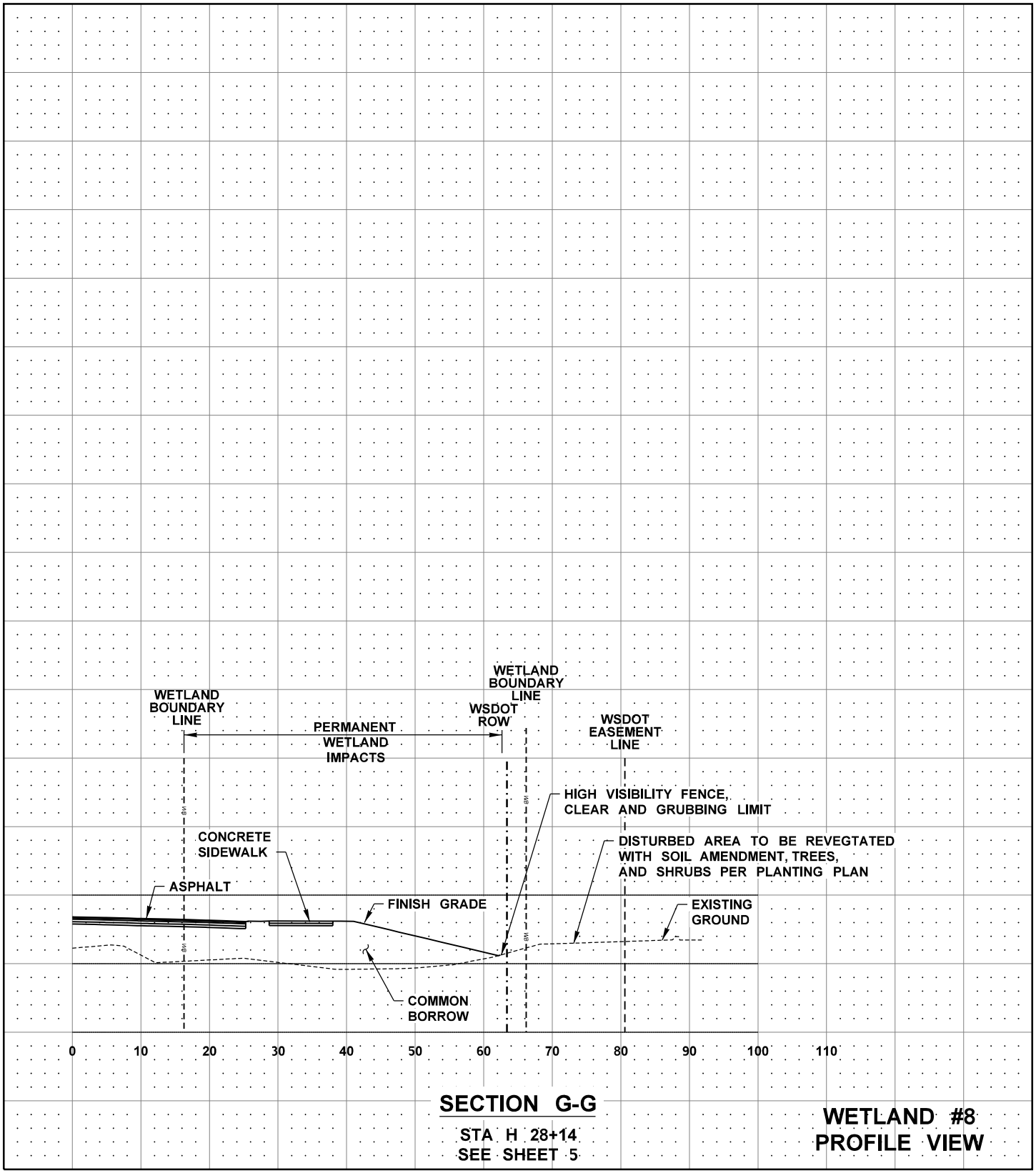


## SECTION G-G

STA H 28+14
SEE SHEET 5

## WETLAND #8 PROFILE VIEW

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 9 OF: 11

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# PLANTING QUANTITIES
## FOR WETLAND #4 RESTORATION

| COMMON NAME | BOTANICAL NAME | QUANTITY |
|---|---|---|
| DECIDUOUS TREES | | |
| VINE MAPLE*** | *Acer circinatum* | 28 |
| PARROTIA PERSICA | *Persian Ironwood* | 30 |
| EVERGREEN TREES | | |
| WESTERN RED CEDAR 'EXCELSA' | *Thuja plicata var. Excelsa* | 31 |
| SITKA SPRUCE | *Picea sitchensis* | 34 |
| SHRUBS | | |
| NOOTKA ROSE | *Rosa nutkana* | 46 |
| RED-OSIER DOGWOOD | *Cornus stolonifera* | 58 |
| SITKA WILLOW | *Rubus parviflorus* | 43 |
| THIMBLEBERRY | *Rubus parviflorus* | 8 |

* GROUNDCOVERS GROW NO TALLER THAN 1.5 FEET AT MATURITY. SEE PLANT MATERIAL LIST.

** SMALL SHRUBS GROW NO TALLER THAN 3 FEET AT MATURITY. SEE PLANT MATERIAL LIST.

*** TALL SHRUBS GROW TALLER THAN 3 FEET AT MATURITY. SEE PLANT MATERIAL LIST.

## WETLAND #4 AND WETLAND BUFFER PLANTING SCHEDULE

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
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| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 10 OF: 11

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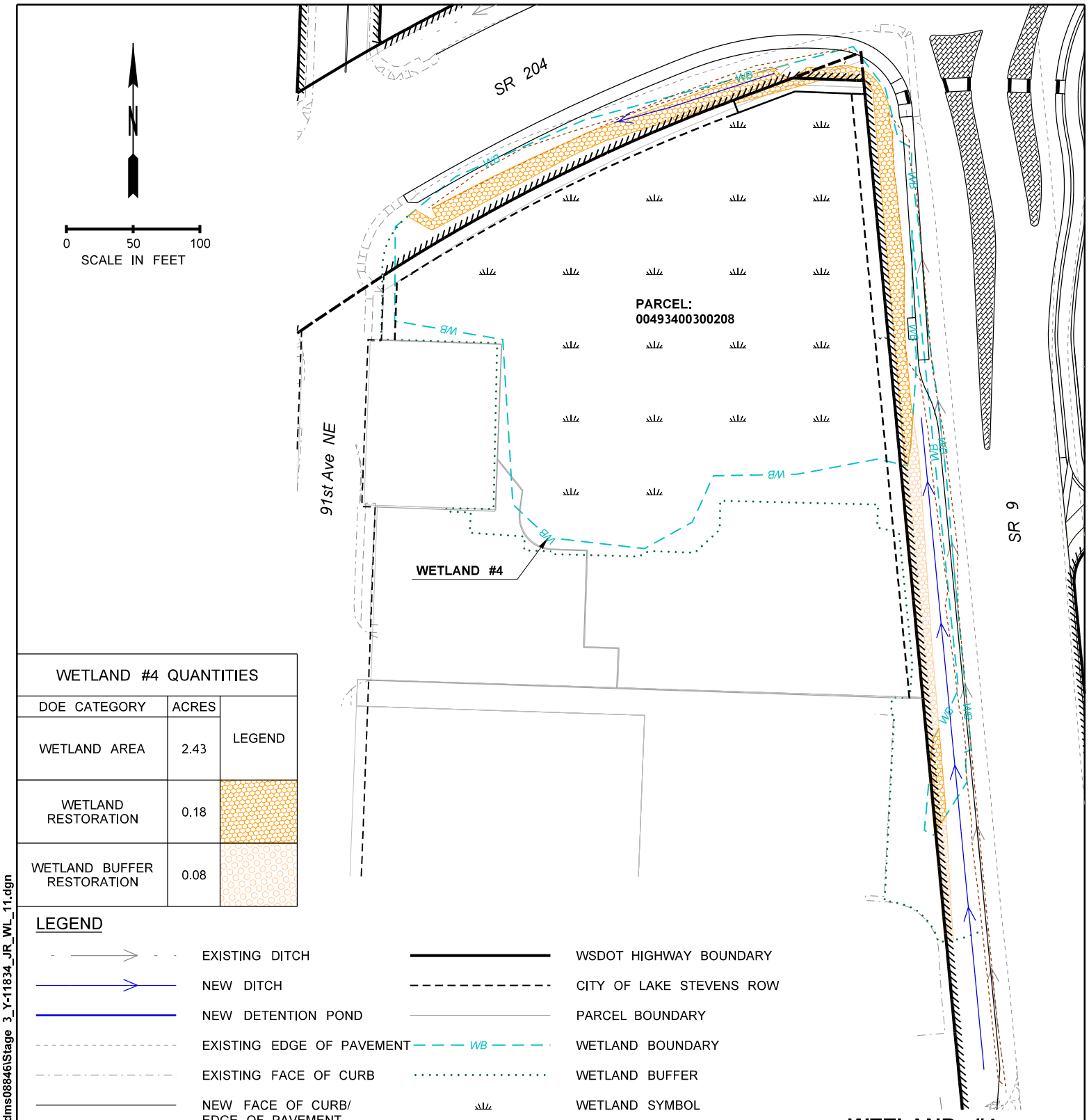


| WETLAND #4 QUANTITIES | | |
|---|---|---|
| DOE CATEGORY | ACRES | LEGEND |
| WETLAND AREA | 2.43 | |
| WETLAND RESTORATION | 0.18 | |
| WETLAND BUFFER RESTORATION | 0.08 | |

LEGEND

- EXISTING DITCH
- NEW DITCH
- NEW DETENTION POND
- EXISTING EDGE OF PAVEMENT
- EXISTING FACE OF CURB
- NEW FACE OF CURB/ EDGE OF PAVEMENT
- WSDOT LIMITED ACCESS/ ROW COINCIDENT
- WSDOT HIGHWAY BOUNDARY
- CITY OF LAKE STEVENS ROW
- PARCEL BOUNDARY
- WETLAND BOUNDARY
- WETLAND BUFFER
- WETLAND SYMBOL

# WETLAND #4 PLAN VIEW RESTORATION AREAS

| | |
|---|---|
| PROJECT NAME: SR9/SR204 INTERSECTION IMPROVEMENTS (STAGE 3) | |
| PURPOSE: RELIEVE CONGESTION, IMPROVE TRAFFIC FLOW AND SAFETY | REFERENCE: NWS–2020–427–DOT |
| PROPOSED: REPLACE AND IMPROVE SIGNALIZED INTERSECTION | APPLICANT: WSDOT |
| LOCATION: SR9 BETWEEN MP 15.48 AND MP 16.05 | COUNTY: SNOHOMISH |
| DATUM: HORIZONTAL: NAD83/91 NORTH ZONE VERTICAL: NAVD 88 | NEAR: LAKE STEVENS |
| LAT/LONG: 48.002895, –122.106306 | WATER BODY: NEAR LAKE STEVENS |
| ADJACENT PROPERTY OWNERS: SEE LIST PROVIDED IN APPLICATION | DATE: NOVEMBER 2021 |

Washington State Department of Transportation

SHEET: 11 OF: 11

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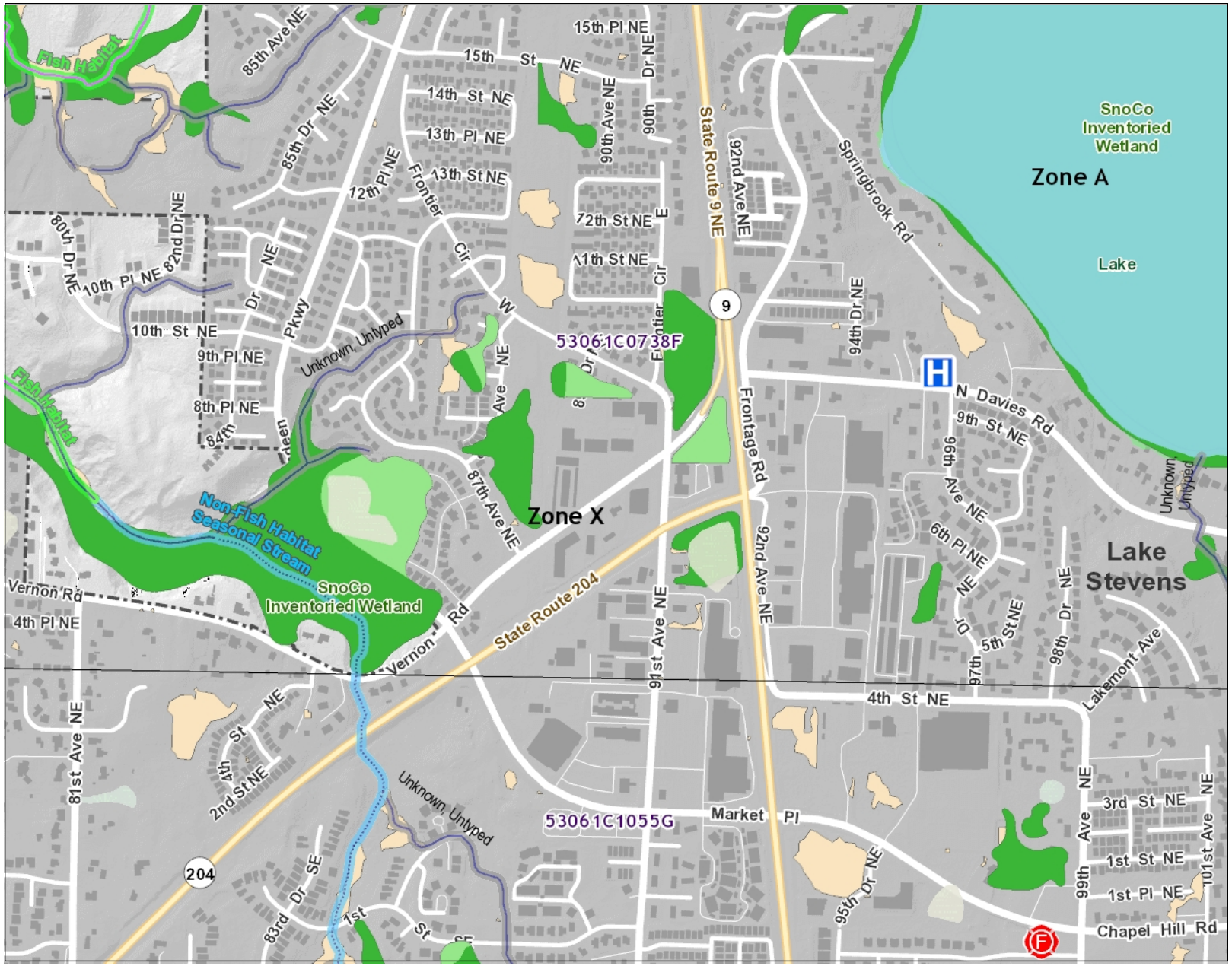
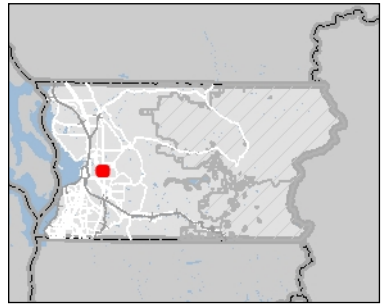
# Appendix 5: Critical Areas Review Maps

PDS Map Portal
Snohomish County Planning & Development Services

# SR9/SR 204 Intersection Improvements - Stage 3

11/23/2021



## Legend

- Bulltrout Distribution
  - Known
  - Presumed
- Chinook Distribution
  - Known
  - Presumed
- Snohomish County Streams
  - Shoreline of Statewide Significance
  - Fish Habitat
  - Non-fish Habitat Perennial
  - Non-fish Habitat Seasonal
  - Unknown, Untyped
- Snohomish County Water Bodies
  - Shoreline of Statewide Significance
  - Fish Habitat
  - Non-fish Habitat Perennial
  - Non-fish Habitat Seasonal
  - Unknown, Untyped
- WA Department of Health GPS Wellheads
- WA Department of Health Wellhead Protection Areas
- USEPA Sole Source Aquifer
- Snohomish County Well Head Protection Radius
- Snohomish County Landslide Inventory
- WA DNR Forest Practices Landslide Inventory
- WA DNR Known Landslides, 1:24,000 Scale
- WA DOE Landforms and Feeder Bluffs
  - Feeder bluff excpetional
  - Feeder bluff
  - Transport zone

1: 10,000

1,666.7 0 833.33 1,666.7 Feet

Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

All maps, data, and information set forth herein ("Data"), are for illustrative purposes only and are not to be considered an official citation to, or representation of, the Snohomish County Code. Amendments and updates to the Data, together with other applicable County Code provisions, may apply which are not depicted herein. Snohomish County makes no representation or warranty concerning the content, accuracy, currency, completeness or quality of the Data contained herein and expressly disclaims any warranty of merchantability or fitness for any particular purpose. All persons accessing or otherwise using this Data assume all responsibility for use thereof and agree to hold Snohomish County harmless from and against any damages, loss, claim or liability arising out of any error, defect or omission contained within said Data. Washington State Law, Ch. 42.56 RCW, prohibits state and local agencies from providing access to lists of individuals intended for use for commercial purposes and, thus, no commercial use may be made of any Data comprising lists of individuals contained herein.

**Notes**

This map was automatically generated using Geocortex Essentials.

CITY OF

# LAKE STEVENS
# COMPREHENSIVE PLAN - LAND USE

Lake Stevens

UGA

UGA

## 2021 Comprehensive Plan Land Use Designations and UGA Predesignations

### Land Use Designations

- Med Density Residential (MDR)
- Waterfront Residential (WR)
- High Density Residential (HDR)
- Local Commercial (LC)
- Mixed Use (MU)
- Commercial
- Downtown / Local Commerce (D/LC)
- Planned Business District (PBD)
- Light Industrial (LI)
- General Industrial (GI)
- GI Development Agreement (GIDA)
- Public / Semi-Public (P/SP)

### Boundary

- City of Lake Stevens
- Unincorporated UGA
- Parcels
- Right-of-Way

### Subarea Boundaries

- 20th Street SE Corridor
- Downtown Lake Stevens
- Lake Stevens Center

### Features

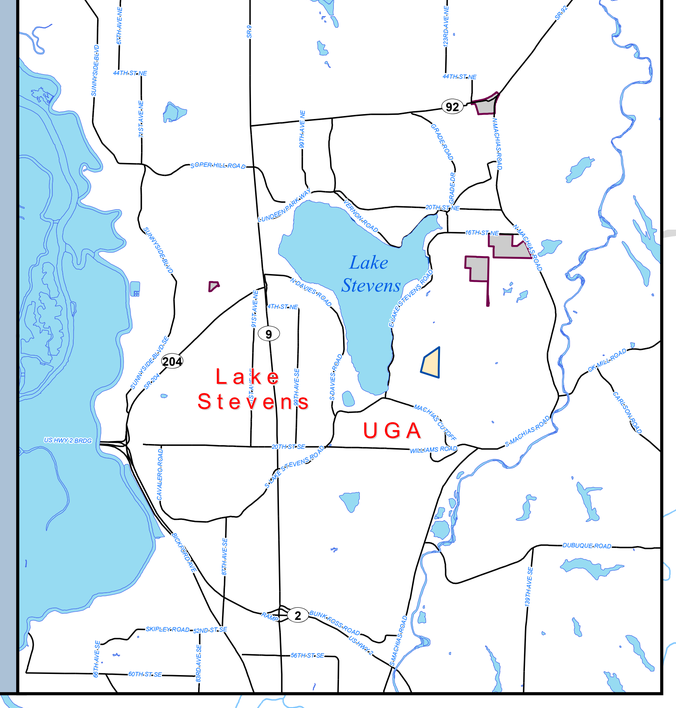
- Waterbody
- Stream

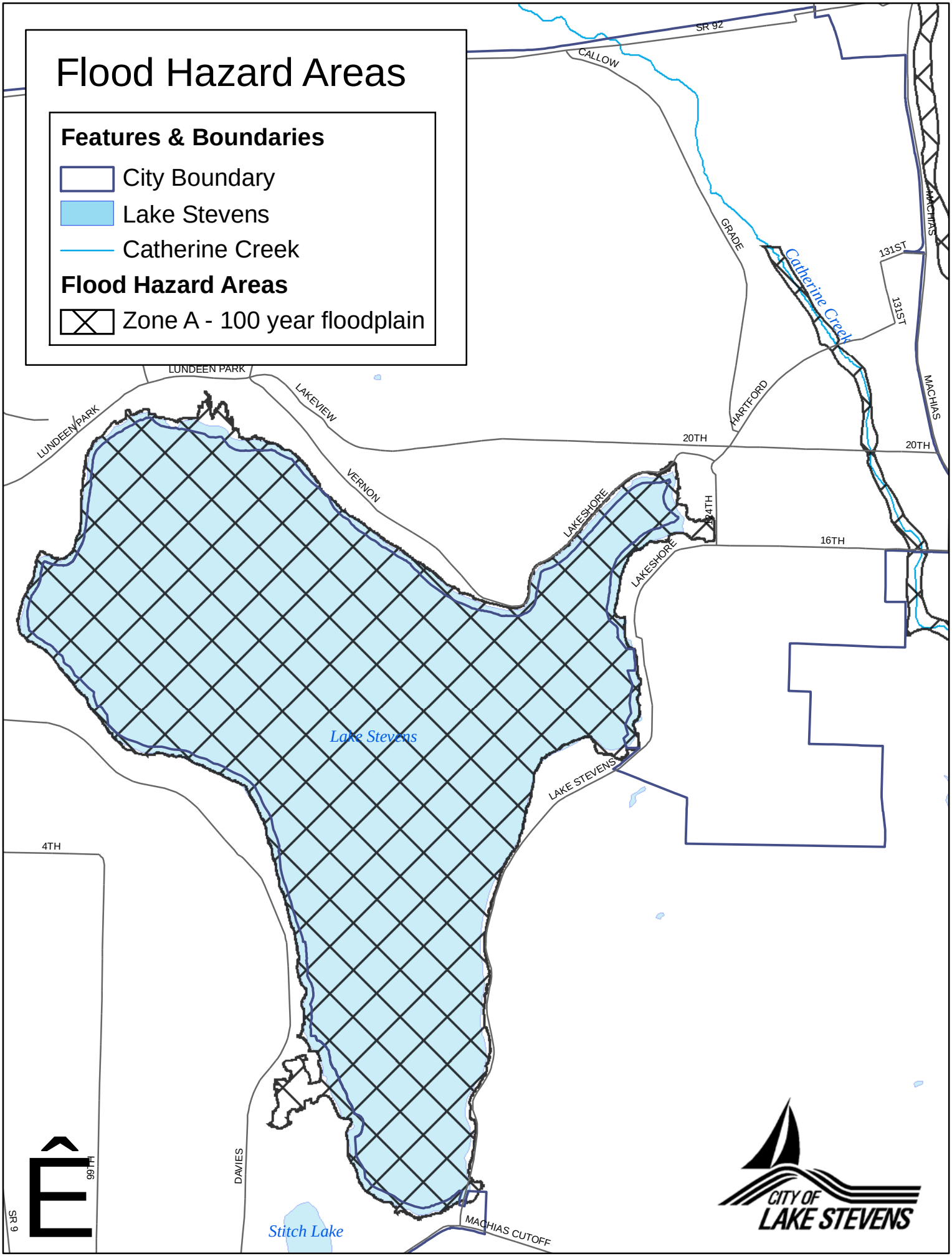
N W E S

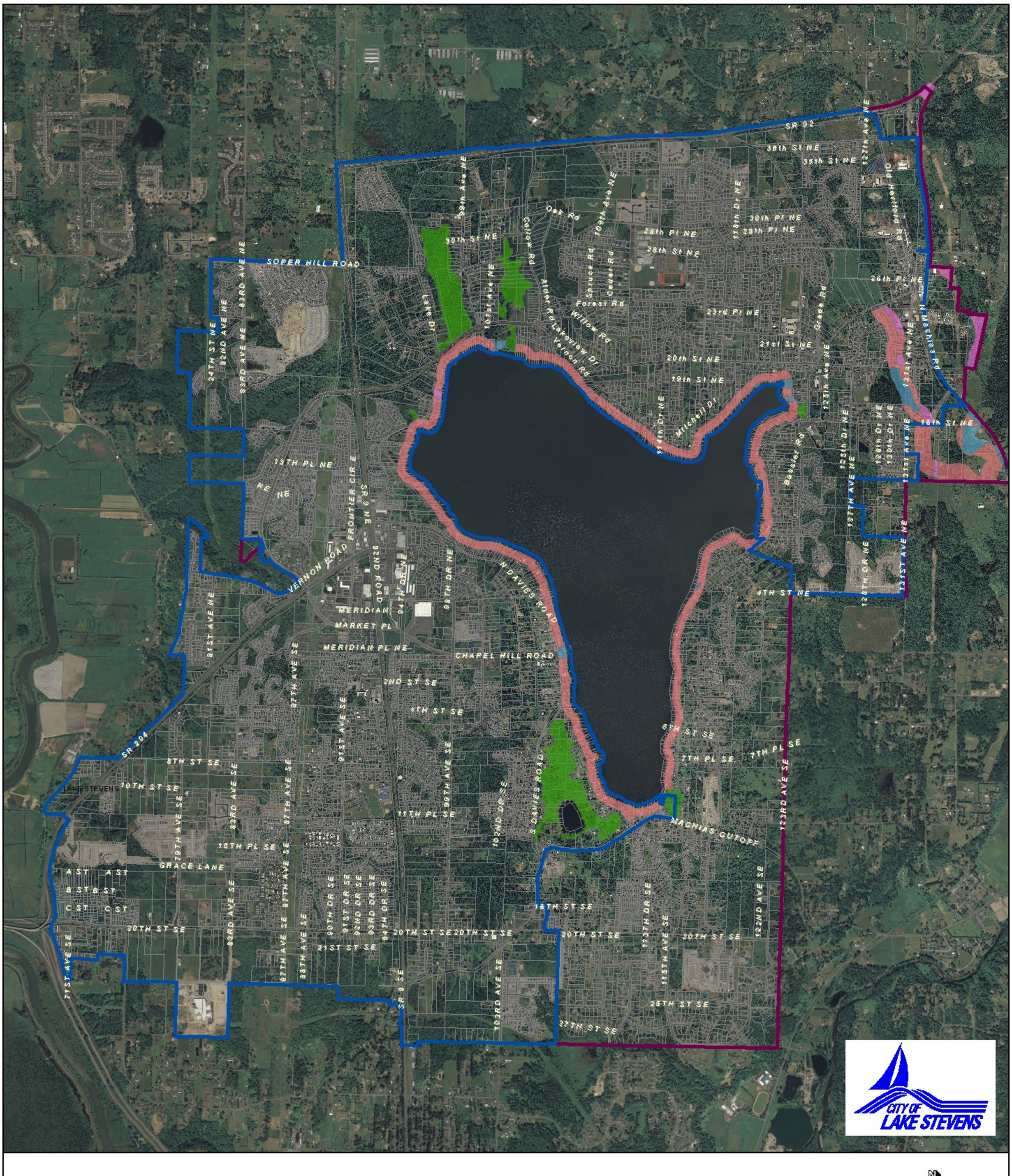
0 500 1,000 2,000 Feet

All data, information and maps are provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. The city of Lake Stevens makes no warranties, expressed or implied as to the use of the information obtained here. There are no implied warranties of merchantability or fitness for a particular purpose. The requestor acknowledges and accepts all limitations, including the fact that the data, information and maps are dynamic and in a constant state of maintenance, correction and update.

Data Sources: Snohomish County (2021), City of Lake Stevens (2021)




Flood Hazard Areas
Features & Boundaries
City Boundary
Lake Stevens
Catherine Creek
Flood Hazard Areas
Zone A - 100 year floodplain
SR 92
CALLOW
GRADE
Catherine Creek
131ST
MACHIAS
LUNDEEN PARK
LAKEVIEW
HARTFORD
20TH
VERNON
LAKESHORE
24TH
16TH
Lake Stevens
LAKE STEVENS
4TH
DAVIES
99TH
SR 9
Stitch Lake
MACHIAS CUTOFF
CITY OF LAKE STEVENS




# City of Lake Stevens Shoreline

## Boundaries and Features

**Boundaries**
- Lake Stevens
- UGA

**Shoreline Environments**
- High Intensity
- Natural
- Shoreline Residential
- Urban Conservancy

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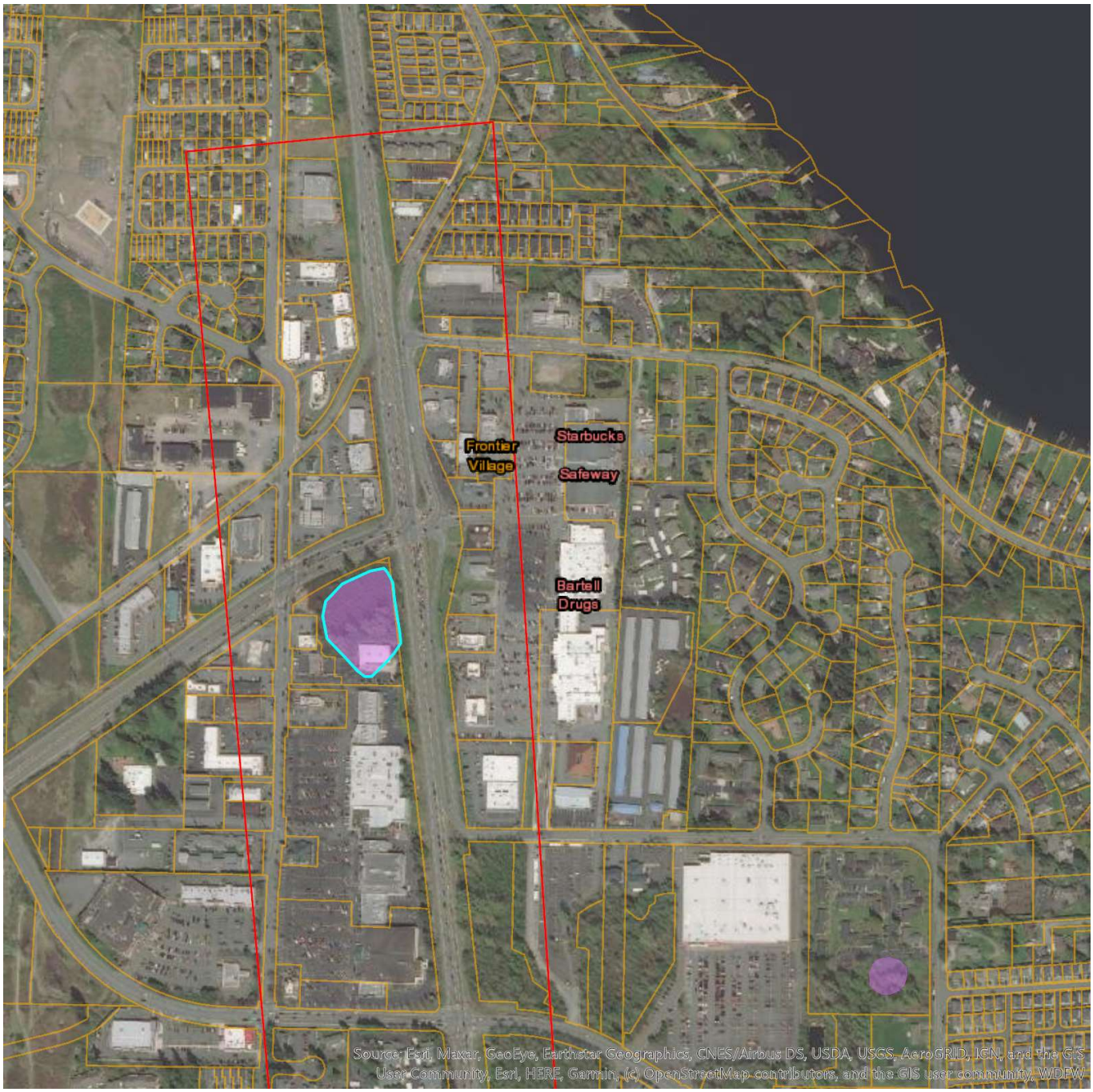
Data Sources: Snohomish County (2013), City of Lake Stevens (2013) June 2013

# Priority Habitats and Species on the Web




**Report Date: 11/23/2021**

## PHS Species/Habitats Overview:

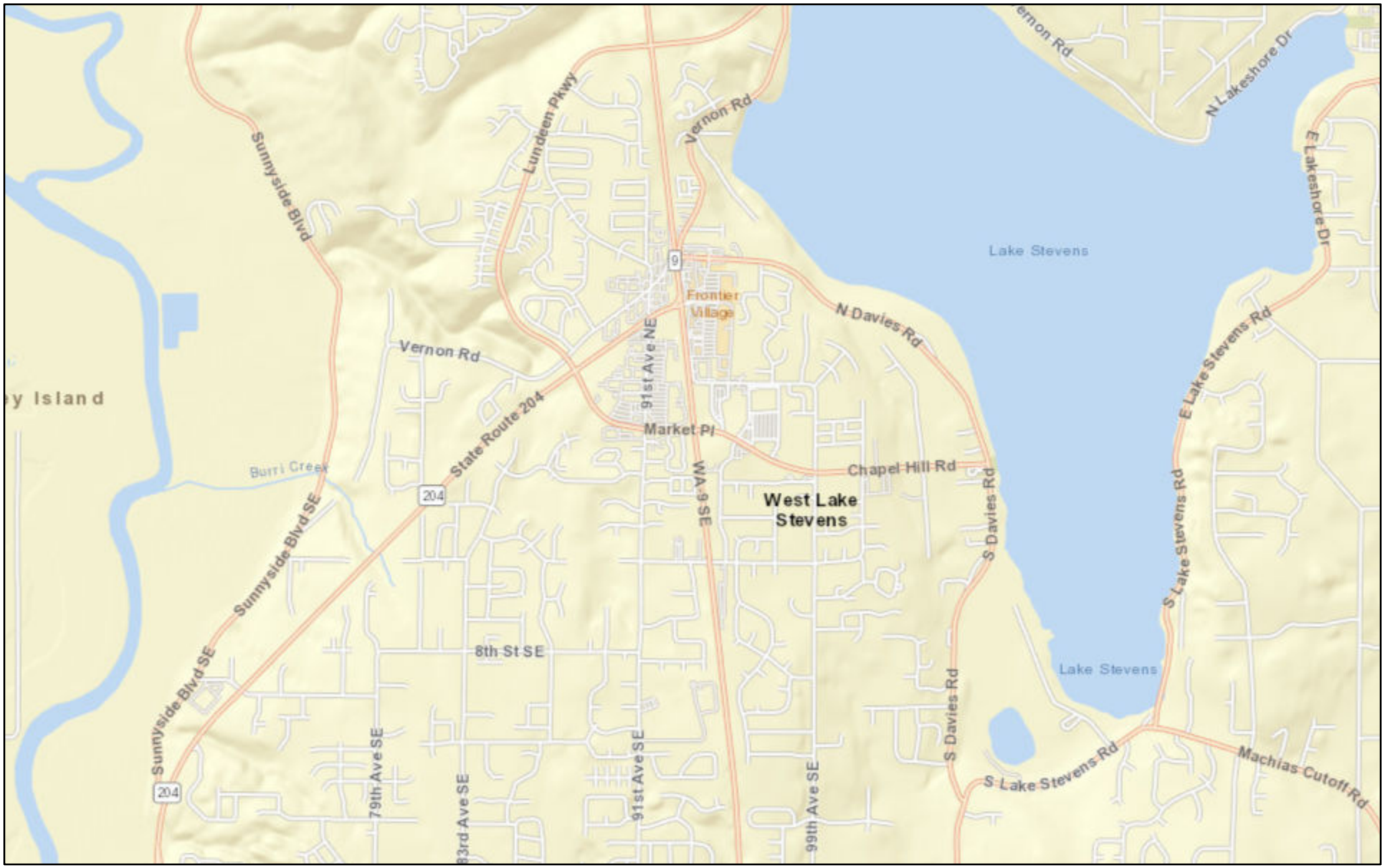
| Occurence Name | Federal Status | State Status | Sensitive Location |
|---|---|---|---|
| Freshwater Forested/Shrub Wetland | N/A | N/A | No |

## PHS Species/Habitats Details:

| Freshwater Forested/Shrub Wetland | |
|---|---|
| Priority Area | Aquatic Habitat |
| Site Name | N/A |
| Accuracy | NA |
| Notes | Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PSSC |
| Source Dataset | NWIWetlands |
| Source Name | Not Given |
| Source Entity | US Fish and Wildlife Service |
| Federal Status | N/A |
| State Status | N/A |
| PHS Listing Status | PHS Listed Occurrence |
| Sensitive | N |
| SGCN | N |
| Display Resolution | AS MAPPED |
| ManagementRecommendations | http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html |
| Geometry Type | Polygons |

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

# WA Wetlands of High Conservation Value




11/23/2021, 12:36:19 PM

Counties

1:36,112

0 0.2 0.4 0.8 mi

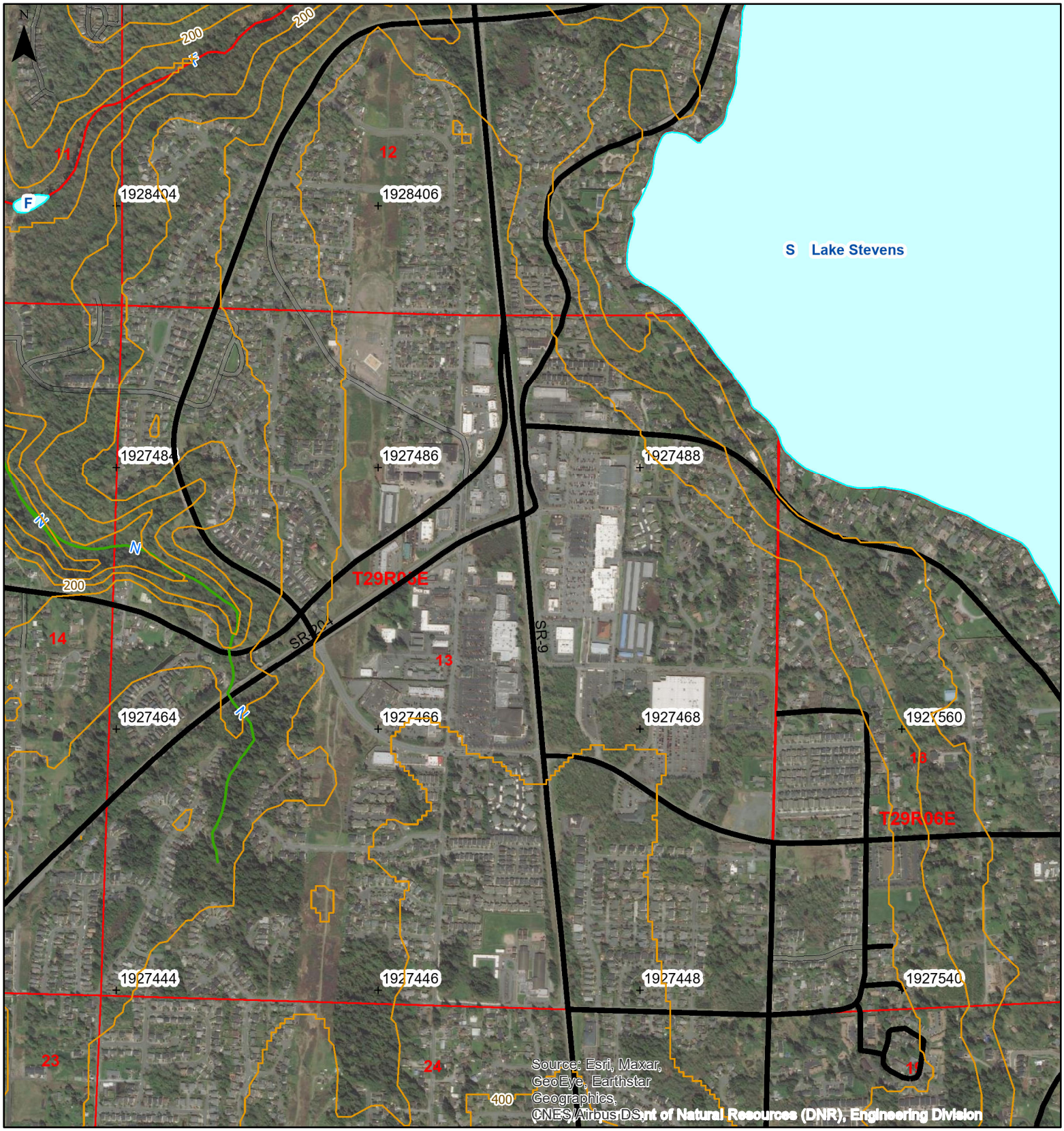
0 0.33 0.65 1.3 km

Everett Community College, Bureau of Land Management, Esri, HERE,

Washington Natural Heritage Program

Everett Community College, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, NGA, USGS | Washington State Department of Natural Resources | Washington Natural Heritage Program http://www.dnr.wa.gov/natural-heritage-program |

# Forest Practices Activity Map - Application #_____




**Map Symbols**

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

**Additional Information**

**Legal Description**

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

0 0.25 Miles

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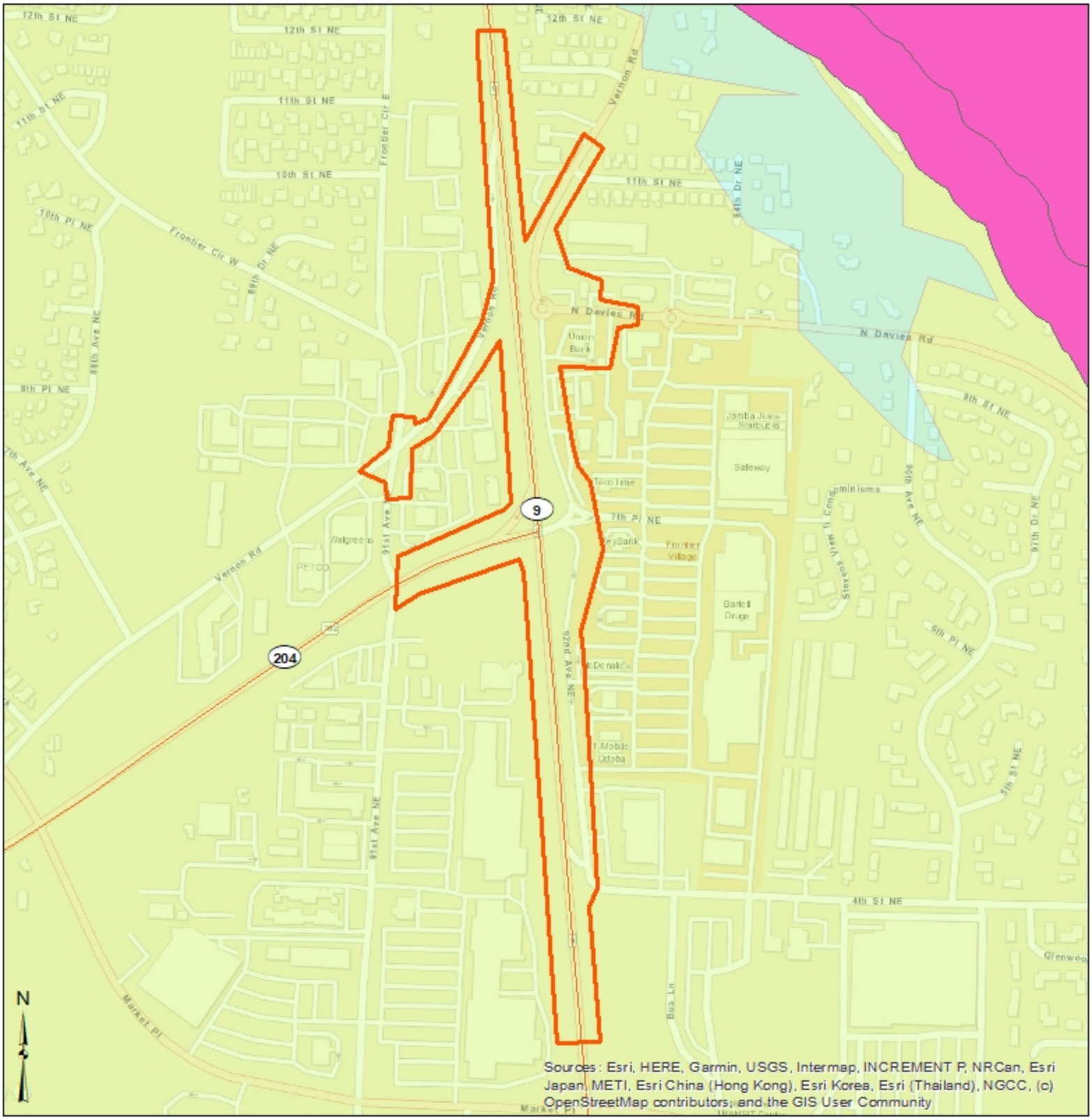



## Lake Stevens - Critical Areas Map

Date: 11/23/2021

**Legend**

- Well Zone Protection Areas, Assigned
- Well Zone Protection Areas, 6 Month
- Well Zone Protection Areas, 5 Year
- Project_Area
- Well Zone Protection Areas, 10 Year
- Well Zone Protection Areas, 1 Year
- Aquifer System
- Stream Flow Source Area
- 33-100%
- Greater than 100%
- Low sensitivity
- Medium sensitivity
- High sensitivity
- Urban
- Suburban
- Rural
- Conservancy
- Natural
- Out of Jurisdiction
- Waterbodies

0 130 260 520 Feet

Washington State Department of Transportation

# Appendix 6: Cunningham Critical Area Site Plan (CASP) & Binding Site Plan (BSP)

**Return Address:** C23-1 Cunningham LLC
10515 20th Street SE, Suite 100
Everett WA 98205

200410200173 3 PGS
10-20-2004 10:41am $21.00
SNOHOMISH COUNTY. WASHINGTON

Unofficial Document

# CRITICAL AREAS SITE PLAN

**Project #:** 04-113531-LU
C23-1 Cunningham
**Applicant:** C23-1 Cunningham LLC
**Site Address:** 515 91st Avenue NE, Lake Stevens, WA 98258
**Tax Acct. #:** 004934-003-002-04
**Critical Area Sq. Ft.:** 73,355 sq. ft **Buffer Sq. Ft.:** 12,130 sq. ft

REFERENCE NUMBER(S) OF RELATED DOCUMENTS 1 OF 3

GRANTOR(S)

C23-1 CUNNINGHAM LLC

NAME NAME MI

GRANTEE(S) SAME AS ABOVE

**Legal Description:**

LOT 2, OF SNOHOMISH COUNTY SHORT PLAT NUMBER 405 (10-76) RECORDED UNDER AUDITOR'S FILE NUMBER 7701100139 BEING A PORTION OF LOTS 2 AND 3, BLOCK 3, REPLAT OF LAKE STEVENS HOME TRACTS, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 9 OF PLATS, PAGE 66, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

☐ Additional legal description is on page _____ of document

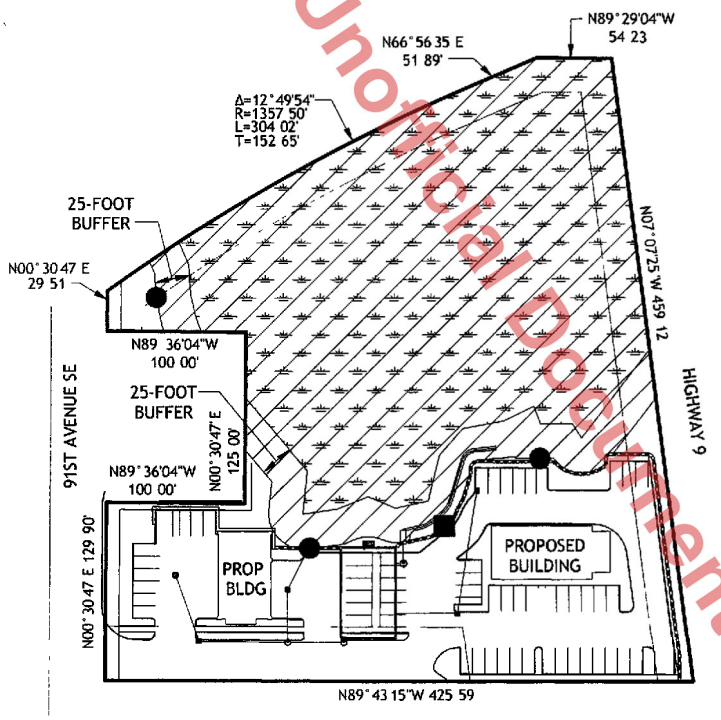
NATIVE GROWTH PROTECTION AREA is to be left permanently undisturbed in a substantialy natural state No clearing, grading, filling, building construction or placement, or road construction of any kind shall occur, except removal of hazardous trees The activities as set forth in SCC 30 91N (1), (3), and (4), are allowed when approved by the County
Representations on this site plan may be approximations only and should not be used for purposes other than for determining general locations of critical areas Development activities beyond the scope of this plan may require additional studies and approvals

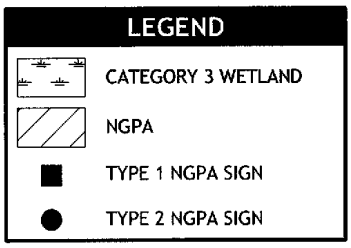
APPLICANT C23-1 Cunningham LLC
PROJECT # 04-113531-LU
TAX ACCT # 004934-003-002-04

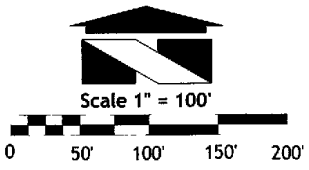
SITE PLAN



Unofficial Document




NATIVE GROWTH PROTECTION AREA (NGPA) is to be left permanently undisturbed in a substantially natural state No clearing, grading, filling, building construction or placement, or road construction of any kind shall occur, except removal of hazardous trees The activities set forth in SCC 30 91N 010 (1) through (5) are allowed when approved by the county

Edward Cori — 10/14/04
APPROVED SNO CO PDS — DATE

C23-1 Cunningham, LLC
By: J3 Holdings, LLC, Member
By: James L. Adams, Member — 10/19/04
GRANTOR — DATE

(Individual form)
STATE OF WASHINGTON )
COUNTY OF ) ss

On this . . 19th . day of . October . . . . . , 2004.
before me the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared: . . . . . .
. . . . . Patrick L. McCourt , Member . . . . . .
. . . . . .
to me known to be the individual(s) that executed the foregoing instrument, and acknowledged that said instrument to be (his/her or their) free and voluntary act and deed, for the uses and purposes therein mentioned, and on oath stated that . . . . . were authorized to execute the said instrument.

Witness my hand and official seal hereto affixed the day and year first above written.

Signature: . . Laurie A Carroll . . . . . .
Printed or Typed Name: LAURIE A CARROLL

My appointment expires on September 22, 2007

LAURIE A CARROLL
STATE OF WASHINGTON
NOTARY -- PUBLIC
My Commission Expires 9-22-2007

(Corporate form)
STATE OF WASHINGTON )
COUNTY OF ) ss

On this . . . . . day of . . . . . , 20 . . . .
before me the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared . . . . . .
. . . . . and . . . . . .
. . . . . .
to me known to be the . . . . . .(President) and . . . . . .
.of . . . . . .
. . . . . .
the corporation that executed the foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that . . . . . .
. . authorized to execute the said instrument and that the seal affixed is the corporate seal of said corporation.

Witness my hand and official seal hereto affixed the day and year first above written.

Signature: . . . . . .
Printed or Typed Name:
My appointment expires on . . . . . .

Unofficial Document

Document

# CUNNINGHAM

## BINDING SITE PLAN

**SW1/4, NE1/4, SEC. 13, TWP. 29 N., RGE. 5 E., W.M.**
**SNOHOMISH COUNTY, WASHINGTON**
**PFN 04-113531-LU**

## LEGAL DESCRIPTION

LOT 2, OF SNOHOMISH COUNTY SHORT PLAT NUMBER 405(10-76) RECORDED UNDER AUDITOR'S FILE NUMBER 7701100139 BEING A PORTION OF LOTS 2 AND 3, BLOCK 3, REPLAT OF LAKE STEVENS SUMMER HOME TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 9 OF PLATS, PAGE 66, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

EXCEPTING THE WEST 10 FEET CONVEYED TO SNOHOMISH COUNTY BY DEED RECORDED UNDER AUDITOR'S FILE NUMBER 200412140175, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

## DECLARATION

KNOW ALL PERSONS BY THESE PRESENTS THAT C23-1 CUNNINGHAM, LLC A WASHINGTON LIMITED LIABILITY COMPANY, THE UNDERSTOOD OWNER IN FEE SIMPLE OF THE LAND CONTAINED WITHIN AND HEREBY BOUND BY THIS BINDING SITE PLAN WITH RECORD OF SURVEY, AND PEOPLES BANK, THE MORTGAGEE(S) THEREOF, HEREBY DECLARE THIS BINDING SITE PLAN WITH RECORD OF SURVEY SUBJECT TO THE FOLLOWING CONDITIONS, COVENANTS, RESTRICTIONS, EASEMENTS, AND REQUIREMENTS.

A) ALL DEVELOPMENT AND USE OF THE LAND DESCRIBED HEREIN SHALL BE IN ACCORDANCE WITH THE BINDING SITE PLAN, AS IT MAY LAWFULLY BE AMENDED WITH THE APPROVAL OF SNOHOMISH COUNTY, AND IN ACCORDANCE WITH SUCH OTHER GOVERNMENTAL PERMITS, APPROVALS, REGULATIONS, REQUIREMENTS AND RESTRICTIONS THAT MAY BE IMPOSED UPON SUCH LAND AND THE DEVELOPMENT AND USE THEREOF.

B) NO FURTHER SUBDIVISION OF ANY LOT SHALL OCCUR WITHOUT RESUBMITTING FOR COUNTY APPROVAL.

C) THE SALE AND/OR LEASE OF LESS THAN A WHOLE LOT HEREIN IS EXPRESSLY PROHIBITED.

D) FOLLOWING COMPLETION OF THE ORIGINAL GRADING OF PARKING AREAS, ROAD AND WAYS SHOWN HEREON, NO DRAINAGE WATERS ON ANY LOT(S), TRACT(S), AND OTHER FEATURES COVERED BY THIS BINDING SITE PLAN SHALL BE DIVERTED OR BLOCKED FROM THEIR NATURAL COURSE SO AS TO DISCHARGE UPON ANY PUBLIC ROAD RIGHT-OF-WAY TO HAMPER PROPER ROAD DRAINAGE. PRIOR TO MAKING ANY ALTERATION IN THE DRAINAGE SYSTEM AFTER THE RECORDING OF THIS BINDING SITE PLAN WITH RECORD OF SURVEY, THE OWNER OF ANY LOT(S), TRACT(S), AND OTHER FEATURES OF THE LAND DESCRIBED HEREIN MUST MAKE APPLICATION TO AND RECEIVE APPROVAL FROM THE DEPARTMENT OF PLANNING AND DEVELOPMENT SERVICES FOR SAID ALTERATION. ANY ENCLOSURE OF DRAINAGE WATERS IN CULVERTS OR DRAINS OR REROUTING THEREOF ACROSS ANY LOT(S), TRACT(S) AND OTHER FEATURES OF THE LAND COVERED HEREIN AS MAY BE UNDERTAKEN BY OR FOR THE OWNER OF ANY LOT(S) SHALL BE DONE BY AND AT EXPENSE OF SUCH OWNER.

E) PRIVATE ACCESS AND PARKING AREAS: THE COST OF CONSTRUCTION AND MAINTENANCE OF ALL ACCESS AND PARKING AREAS NOT HEREIN DEDICATED AS PUBLIC ROADS SHALL BE THE OBLIGATION OF ALL OWNERS AND/OR BENEFICIARIES THEREOF AND THE OBLIGATION TO MAINTAIN SHALL BE CONCURRENTLY THE OBLIGATION OF ANY PERSON(S), CORPORATION(S) OR OTHER LEGAL ENTITY IN WHICH TITLE MAY BE HELD. THE OBLIGATION FOR PRIVATE ACCESS AND PARKING AREA MAINTENANCE AND THE ABILITY TO PLACE LIENS AGAINST OWNERS NOT FULFILLING THEIR MAINTENANCE OBLIGATION SHALL CONSTITUTE A COVENANT THAT TOUCHES AND CONCERNS THE PROPERTY AND RUNS WITH THE LAND AND SHALL BE BINDING ON ALL OF THE OWNERS AND/OR BENEFICIARIES OF THE PRIVATE ACCESS AND PARKING AREAS AND THEIR ASSIGNS AND SUCCESSORS. IN THE EVENT THAT THE OWNERS OF ANY LOTS OF THE LAND DESCRIBED HEREIN, SERVED BY THE ACCESS AND PARKING AREAS OF THIS BINDING SITE PLAN WITH RECORD OF SURVEY SHALL PETITION THE COUNTY TO INCLUDE THESE ACCESS AND PARKING AREAS IN THE PUBLIC ROAD SYSTEM, THE PETITIONERS SHALL BE OBLIGATED TO BRING THE SAME TO COUNTY ROAD STANDARDS APPLICABLE AT THE TIME OF PETITION IN ALL RESPECTS, INCLUDING DEDICATION OF RIGHT-OF-WAY, PRIOR TO ACCEPTANCE BY THE COUNTY.

F) UTILITY EASEMENTS: AN EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO ALL UTILITIES SERVING SUBJECT BINDING SITE PLAN/RECORD OF SURVEY AND THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, UNDER AND UPON THE EXTERIOR TEN (10) FEET PARALLEL WITH AND ADJOINING THE STREET FRONTAGE OF ALL LOTS, TRACTS AND COMMON AREAS IN WHICH TO INSTALL, LAY, CONSTRUCT, RENEW, OPERATE AND MAINTAIN UNDERGROUND CONDUITS, CABLES, PIPE, AND WIRES WITH NECESSARY FACILITIES AND OTHER EQUIPMENT FOR THE PURPOSE OF SERVING THIS SUBDIVISION AND OTHER PROPERTY WITH ELECTRIC, TELEPHONE, GAS, TELEVISION CABLE AND OTHER UTILITY SERVICES TOGETHER WITH THE RIGHT TO ENTER UPON THE LOTS AT ALL TIMES FOR THE PURPOSES HEREIN STATED. DRAINAGE EASEMENTS DESIGNATED ON THE BINDING SITE PLAN/RECORD OF SURVEY ARE HEREBY RESERVED FOR AND GRANTED TO SNOHOMISH COUNTY, EXCEPT THOSE DESIGNATED ON THE BINDING SITE PLAN/RECORD OF SURVEY AS PRIVATE EASEMENTS, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS AND THE RIGHT TO EXCAVATE, CONSTRUCT, OPERATE, MAINTAIN, REPAIR AND/OR REBUILD AN ENCLOSED OR OPEN CHANNEL STORM WATER CONVEYANCE SYSTEM AND/OR OTHER DRAINAGE FACILITIES, UNDER, UPON OR THROUGH THE DRAINAGE EASEMENT.

G) PRIOR APPROVAL MUST BE OBTAINED FROM THE DIRECTOR OF PUBLIC WORKS BEFORE ANY STRUCTURES, FILL OR OBSTRUCTIONS, INCLUDING FENCES, ARE LOCATED WITHIN ANY DRAINAGE EASEMENT, DELINEATED FLOOD PLAIN AREA, NGPA, WETLAND OR WETLAND BUFFER AREA OR DRAINAGE SWALE.

H) TRACT 999, NATIVE GROWTH PROTECTION AREA, IS HEREBY CONVEYED FOR THE COMMON USE AND BENEFIT OF THE OWNERS OF ALL LOTS 1 AND 2, FOR THE PURPOSE OF A NATIVE GROWTH PROTECTION AREA, AND SHALL BE OWNED BY LOT 2.

I) SUBJECT TO CONDEMNATION OF ACCESS TO STATE HIGHWAY NO. 9, AND OF LIGHT, VIEW, AND AIR BY SNOHOMISH COUNTY DECREE TO STATE OF WASHINGTON BY SUPERIOR COURT CAUSE NUMBER SC 64565.

J) SUBJECT TO CONDEMNATION OF ACCESS TO STATE HIGHWAY NO. 15A, AND OF LIGHT, VIEW, AND AIR RECORDED UNDER AUDITOR'S FILE NUMBER 1121394.

K) SUBJECT TO WATER TRANSMISSION LINE EASEMENT RECORDED UNDER AUDITOR'S FILE NUMBER 1422281.

L) SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, AGREEMENTS, EASEMENT, MAINTENANCE PROVISIONS AND NOTES AS CONTAINED IN SNOHOMISH COUNTY SHORT PLAT NUMBER 405(10-76), RECORDED UNDER AUDITOR'S FILE NUMBER 7701100139 AND NOTICE OF CORRECTION OF SHORT PLAT RECORDED UNDER AUDITOR'S FILE NUMBER 9308260844.

M) SUBJECT TO COMMON ACCESS EASEMENT AND THE TERMS AND CONDITIONS THEREOF RECORDED UNDER AUDITOR'S FILE NUMBER 8807060400.

N) SUBJECT TO COMMON ACCESS EASEMENT AND THE TERMS AND CONDITIONS THEREOF RECORDED UNDER AUDITOR'S FILE NUMBER 9008030434.

O) SUBJECT TO VOLUNTARY AGREEMENT MITIGATION OF IMPACTS TO THE COUNTY ROAD SYSTEM AND THE TERMS AND CONDITIONS THEREOF RECORDED UNDER AUDITOR'S FILE NUMBER 9209140564.

P) SUBJECT TO CUNNINGHAM DEVELOPER EXTENSION AGREEMENT AND THE TERMS, CONDITIONS AND PROVISIONS RECORDED UNDER AUDITOR'S FILE NUMBER 200409100239.

Q) SUBJECT TO DRAINAGE MAINTENANCE COVENANTS AND TERMS, CONDITIONS AND PROVISIONS RECORDED UNDER AUDITOR'S FILE NUMBER 200410101910768.

R) SUBJECT TO CRITICAL AREAS SITE PLAN AND THE TERMS, CONDITIONS, AND PROVISIONS RECORDED UNDER 200410200173.

S) SUBJECT TO DECLARATION OF EASEMENTS, PARKING RIGHTS, AND USE RESTRICTIONS AND THE TERMS, CONDITIONS AND PROVISIONS RECORDED UNDER AUDITOR'S FILE NUMBER 200411030072.

T) SUBJECT TO RECORD OF DEVELOPER OBLIGATIONS FOR MITIGATION OF IMPACTS TO THE COUNTY ROAD SYSTEMS AND THE TERMS, CONDITIONS, AND PROVISIONS RECORDED UNDER AUDITOR'S FILE NUMBER 200412140169.

U) SUBJECT TO PUGET SOUND ENERGY EASEMENT AND THE TERMS AND CONDITIONS THEREOF RECORDED UNDER AUDITOR'S FILE NUMBER 200502150434.

V) SUBJECT TO PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY AND VERIZON NORTHWEST, INC. AND THE TERMS AND CONDITIONS THEREOF RECORDED UNDER AUDITOR'S FILE NUMBER 200503150830.

W) SUBJECT TO ADDENDUM TO DEVELOPER EXTENSION AGREEMENT SEWER CONNECTION FEE BINDER AND THE TERMS AND CONDITIONS AND PROVISIONS CONTAINED THEREIN RECORDED UNDER AUDITOR'S FILE NUMBER 200506220257.

X) SUBJECT TO SANITARY SEWER EASEMENT RECORDED UNDER AUDITOR'S FILE NUMBER 200506290903.

IN WITNESS WHEREOF WE SET OUR HANDS AND SEALS THIS 15th DAY OF February, 20 06.

C23-1 CUNNINGHAM, LLC, A WASHINGTON LIMITED LIABILITY COMPANY

Scot L. Becraft — Authorized Agent
(PRINT NAME) (TITLE)

PEOPLES BANK

GEORGE W. BOWEN — EVP/CLO
(PRINT NAME) (TITLE)

TAX LOT NO. 004934 003 002 04
SHEET 1 OF 4 G4 JOB NO. 04-4502

## ACKNOWLEDGMENTS

STATE OF WASHINGTON )
COUNTY OF Snohomish ) SS.

I CERTIFY THAT I KNOW OR HAVE SATISFACTORY EVIDENCE THAT Scot L. Becraft IS THE PERSON WHO APPEARED BEFORE ME, AND SAID PERSON ACKNOWLEDGED THAT (HE/SHE) SIGNED THIS INSTRUMENT, ON OATH STATED THAT (HE/SHE) WAS AUTHORIZED TO EXECUTE THE INSTRUMENT AND ACKNOWLEDGED IT AS THE Authorized Agent OF C23-1 CUNNINGHAM, LLC, A WASHINGTON LIMITED LIABILITY COMPANY TO BE THE FREE AND VOLUNTARY ACT OF SUCH PARTY FOR THE USES AND PURPOSES MENTIONED IN THE INSTRUMENT.

DATED: February 15, 2006

(PRINT NAME) Laurie A. Carroll
MY APPOINTMENT EXPIRES September 22, 2007.

LAURIE A. CARROLL
STATE OF WASHINGTON
NOTARY PUBLIC
My Commission Expires 9-22-2007

STATE OF WASHINGTON )
COUNTY OF Whatcom ) SS.

I CERTIFY THAT I KNOW OR HAVE SATISFACTORY EVIDENCE THAT George W. Bowen IS THE PERSON WHO APPEARED BEFORE ME, AND SAID PERSON ACKNOWLEDGED THAT (HE/SHE) SIGNED THIS INSTRUMENT, ON OATH STATED THAT (HE/SHE) WAS AUTHORIZED TO EXECUTE THE INSTRUMENT AND ACKNOWLEDGED IT AS THE EVP + Chief Lending Officer OF PEOPLE BANK TO BE THE FREE AND VOLUNTARY ACT OF SUCH PARTY FOR THE USES AND PURPOSES MENTIONED IN THE INSTRUMENT.

DATED: February 16, 2006

(PRINT NAME) CHRISTINE A. KOELL
MY APPOINTMENT EXPIRES 7-29-06.

## PDS APPROVALS

EXAMINED, FOUND TO BE IN CONFORMITY WITH APPLICABLE ZONING AND OTHER LAND USE CONTROLS, AND APPROVED THIS _____ DAY OF FEB, 21, 20 06.

DIRECTOR, SNOHOMISH COUNTY
PLANNING & DEVELOPMENT SERVICES

## TREASURER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL STATE AND COUNTY TAXES HERETOFORE LEVIED AGAINST THE PROPERTY DESCRIBED HEREIN, ACCORDING TO THE BOOKS AND RECORDS OF MY OFFICE, HAVE BEEN FULLY PAID AND DISCHARGE, INCLUDING 2006 TAXES.

TREASURER, SNOHOMISH COUNTY — DEPUTY TREASURER, SNOHOMISH COUNTY — 2.21.06

## AUDITOR'S CERTIFICATE

FILED FOR RECORD AT THE REQUEST OF _____,
THIS 21st DAY OF February, 2006
AT 56 MINUTES PAST 10 A.M., AND RECORDED UNDER AUDITOR'S FILE NUMBER _____, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

BOB JERWILLIGER — DEPUTY COUNTY AUDITOR
AUDITOR, SNOHOMISH COUNTY

## SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF C23-1 CUNNINGHAM, LLC THIS 12 DAY OF January, 20 06.

REGISTERED PROFESSIONAL LAND SURVEYOR — 30450 CERTIFICATE NO. — 1/12/2006 DATE

#200602215091

INDEXING DATA:
SW1/4, NE1/4, SEC. 13, TWP.29 N., RGE. 5 E., W.M.

DANIEL K. ROUPE — STATE OF WASHINGTON — 30450 — REGISTERED PROFESSIONAL LAND SURVEYOR — EXPIRES: JAN. 12, 2006

GROUP FOUR, Inc.
SURVEYING • ENGINEERING • PLANNING • MANAGEMENT
16030 JUANITA-WOODINVILLE WAY NE
BOTHELL, WASHINGTON 98011
(425)775-4581 * (206)362-4244 * FAX(206)362-3819

DRAWN BY: JCK DATE: 11/16/05 | CHECKED BY: DATE: | APPROVED BY: DRK DATE:

**BINDING SITE PLAN FOR**
**CUNNINGHAM, LLC**
**SNOHOMISH COUNTY WASHINGTON**

Unofficial Document

Document

# CUNNINGHAM

**BINDING SITE PLAN**
**SW1/4, NE1/4, SEC. 13, TWP. 29 N., RGE. 5 E., W.M.**
**SNOHOMISH COUNTY, WASHINGTON**
**PFN 04-113531-LU**

## ADDITIONAL CONDITIONS, COVENANTS, AND RESTRICTIONS

1. BINDING EFFECT: THIS BINDING SITE PLAN AND THE FOREGOING CONDITIONS, COVENANTS, AND RESTRICTIONS SHALL CONSTITUTE COVENANTS THAT RUN WITH THE LAND, AS PROVIDED BY LAW, AND SHALL BE BINDING UPON ALL PARTIES AND ALL PERSONS WHO ARE OR SHALL BECOME AN OWNER OF, OR OTHERWISE HAVE AN INTEREST IN, THE LAND DESCRIBED HEREIN.

2. REVISIONS: REVISIONS TO CONDITIONS, COVENANTS, RESTRICTIONS AND/OR SITE DEVELOPMENT CHARACTERISTICS OF THE RECORDED BINDING SITE PLAN/RECORD OF SURVEY SHALL BE PROCESSED IN ACCORDANCE TO SCC TITLE 19A AND INCLUDE DOCUMENTATION INDICATING CONSENTS OF ANY MULTIPLE LEGAL ENTITIES REPRESENTING THE INTEREST OF OWNERS SUBJECT TO THE BINDING SITE PLAN/RECORD OF SURVEY.

3. MULTIPLE OWNERSHIP OBLIGATIONS: IF THE PROPERTY SUBJECT TO THIS BINDING SITE PLAN/RECORD OF SURVEY IS SUBJECT TO MULTIPLE OWNERSHIP INTERESTS, (INDIVIDUALS, CONDOMINIUMS, CORPORATIONS AND/OR OTHER LEGAL ENTITIES) THEN ALL OF SAID ENTITIES SHALL HAVE JOINT RESPONSIBILITY TO PERFORM AND PAY FOR THE MAINTENANCE AND REPAIR WORK OF THE COMMON AREAS AND/OR DEVELOPMENT CHARACTERISTICS REQUIRED BY THIS BINDING SITE PLAN/RECORD OF SURVEY.

4. NOTICES OF ACTIONS: ANY DEMAND TO BE MADE UPON OR ANY NOTICE HEREUNDER TO BE GIVEN TO THE OWNER OR OWNERS OF THE LAND SUBJECT TO THIS BINDING SITE PLAN/RECORD OF SURVEY SHALL BE IN WRITING AND MAILED, POSTAGE PREPAID, CERTIFIED MAIL RETURN RECEIPT REQUESTED, TO THE LAST KNOWN ADDRESS OF SAID OWNER(S).

5. ENFORCEMENT: THE PROVISIONS OF THE BINDING SITE PLAN/RECORD OF SURVEY (AND THE DECLARATIONS, CONDITIONS, COVENANTS, RESTRICTIONS AND/OR EASEMENTS HEREIN) ARE DECLARED TO CREATE MUTUAL AND EQUITABLE COVENANTS AND SERVITUDES FOR THE BENEFIT OF THE DECLARANT, EACH FUTURE OWNER OR CONTRACT PURCHASER, AND THEIR SUCCESSORS IN INTEREST. ENFORCEMENT OF THESE PROVISIONS MAY BE BY ANY PROCEEDING AT LAW OR IN EQUITY AGAINST ANY PERSON OR PERSONS VIOLATING OR ATTEMPTING TO VIOLATE SUCH PROVISIONS EITHER TO RESTRAIN VIOLATION OR TO RECOVER DAMAGES. FAILURE OF THE DECLARANT OR ANY SUCCESSOR IN INTEREST TO ENFORCE ANY SAID PROVISIONS, OR EXERCISE ANY RIGHTS HEREIN CONTAINED, SHALL IN NO EVENT BE DEEMED A WAIVER OF THE RIGHT TO DO SO THEREAFTER. ALL COSTS INCURRED IN THE ENFORCEMENT OF SAID PROVISIONS, INCLUDING REASONABLE ATTORNEY'S FEE, SHALL BE BORNE BY THE NON-PREVAILING PARTY. INVALIDATION OF ANY ONE OF THE PROVISIONS HEREOF BY JUDGMENT OR COURT ORDER SHALL IN NO WAY AFFECT ANY OTHER PROVISIONS HEREIN.

6. GOVERNMENT EASEMENT: ANY GOVERNMENTAL ENTITY HAVING JURISDICTION OF THE LAND SUBJECT TO THIS BINDING SITE PLAN/RECORD OF SURVEY AND THE IMPROVEMENTS THERETO, AND ANY PUBLIC ENTITY PROVIDING UTILITY SERVICE THERETO, SHALL HAVE A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS OVER AND ACROSS SAID LAND FOR THE PURPOSE OF INSTALLATION, INSPECTION, MAINTENANCE AND REPAIR.

7. MULTI-PURPOSE ACCESS AND USE: DECLARANT HEREBY GRANTS NON-EXCLUSIVE ACCESS AND USE OVER AND ACROSS SAID LAND FOR INGRESS AND EGRESS AND OVER AND ACROSS OTHER EASEMENTS, ROADWAYS, AND UTILITY LINES SPECIFIED IN THE BINDING SITE PLAN/RECORD OF SURVEY OR ESTABLISHED IN OR ON SAID LAND AND IMPROVEMENTS THERETO. SUCH RESERVATIONS ARE FOR THE PURPOSE OF: COMPLETING, AND THEREAFTER USING AND OPERATING, ALL PHASES OF DEVELOPMENT OF SAID LAND. THE EASEMENTS RESERVED HEREUNDER SHALL ENTITLE THE DECLARANT, OR ITS SUCCESSORS, TO CONNECT TO WATER, SEWER, STORM SEWER, ELECTRICAL, GAS, TELEPHONE, OR OTHER UTILITY LINES OF ALL VARIETIES, AND TO CONNECT WITH ROADWAYS OR UTILITY SYSTEMS DEVELOPED AND EMPLACED ON SAID LAND.

8. INTEGRATED SITE DEVELOPMENT (COMMON SITE FEATURES AND AREAS): THE DECLARANT, ITS SUCCESSORS, ASSIGNS, BUSINESS INVITEES, LICENSEES, TENANTS AND THEIR GUESTS SHALL HAVE COMMON ACCESS AND USE OF ALL COMMON FEATURES AND AREAS AS DELINEATED ON THIS BINDING SITE PLAN OR AS CONSTRUCTED ON THE LAND SUBJECT THERETO, (INCLUDING BUT NOT LIMITED TO: PARKING AND CIRCULATION AREAS; OPEN SPACE AREAS AND/OR TRACTS, RECREATION FACILITIES AND AREAS; LANDSCAPING; UTILITIES, STORM WATER DRAINAGE FACILITIES; GREENBELT AND/OR NATIVE GROWTH PROTECTION AREAS; BUT EXCLUDING ANY BUILDING SITES AND LIMITED COMMON ELEMENTS ALLOCATED TO CONDOMINIUM UNITS).

9. MULTI-PURPOSE MAINTENANCE: EXCEPT AS OTHERWISE PROVIDED BY LAW, AND EXCEPT TO THE EXTENT MAINTENANCE IS PERFORMED BY A PUBLIC OR PRIVATE ENTITY PROVIDING UTILITY SERVICE, ALL PRESENT AND FUTURE OWNERS OF THE LAND SUBJECT TO THIS BINDING SITE PLAN/RECORD OF SURVEY SHALL MAINTAIN, OPERATE, AND/OR REPAIR ALL PRIVATE ROADWAYS, PARKING AND CIRCULATION AREAS, UTILITIES, DRAINAGE AND RECREATION FACILITIES, AND OTHER COMMON SITE FEATURES AND AREAS.

10. PHASED CONSTRUCTION: ALTHOUGH THE PROPERTY SUBJECT TO THIS BINDING SITE PLAN/RECORD OF SURVEY SHALL FUNCTION AS ONE INTEGRATED SITE, PUBLIC AND PRIVATE IMPROVEMENTS MAY BE CONSTRUCTED INCREMENTALLY, IN PHASES. EACH PHASE SHALL INCLUDE SUCH IMPROVEMENTS AS REQUIRED BY THE COUNTY, AND CERTIFICATES OF OCCUPANCY FOR EACH LOT OR PHASE (BUILDINGS AND/OR UNITS WITHIN A PHASE) SHALL ONLY BE ISSUED UPON COMPLIANCE WITH THE CONDITIONS IMPOSED BY THE COUNTY. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE FOLLOWING SITE IMPROVEMENTS WITHIN EACH LOT OR PHASE WILL BE COMPLETED PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED FOR ANY LOT OR PHASE: PUBLIC RIGHT OF WAY IMPROVEMENTS; N.G.P.A. BOUNDARY MARKERS; AND STORM WATER FACILITIES. CONSTRUCTION AND USES SHALL BE CONSISTENT WITH PREVIOUS ADMINISTRATIVE PLAN APPROVALS UNDER SNO. CO. PFN(S) 04-113531-LU.

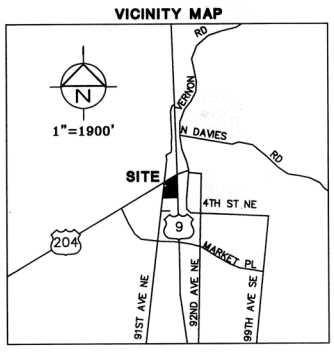
11. DETAILED DRAINAGE PLAN: PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT FOR THE SUBJECT PROPERTY, A DETAILED DRAINAGE AND GRADING PLAN SHALL HAVE BEEN SUBMITTED TO AND APPROVED BY THE DEPARTMENT OF PLANNING AND DEVELOPMENT SERVICES THAT CONFORMS TO THE BINDING SITE PLAN/RECORDED OF SURVEY CHARACTERISTICS.

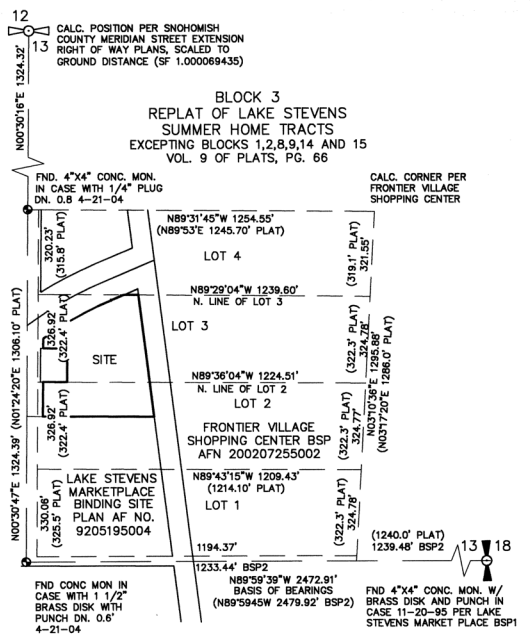
12. NATIVE GROWTH PROTECTION AREAS: ALL NATIVE GROWTH PROTECTION AREAS SHALL BE LEFT IN A SUBSTANTIALLY NATURAL STATE, NO CLEARING, GRADING, FILLING, BUILDING CONSTRUCTION OR PLACEMENT, FENCE CONSTRUCTION, OR ROAD CONSTRUCTION OF ANY KIND SHALL OCCUR WITHIN THESE AREAS, PROVIDED THAT THE INSTALLATION AND MAINTENANCE OF STORM DRAINAGE FACILITIES IF NECESSARY IN SUCH LOCATION AND IF EXPRESSLY APPROVED BY THE COUNTY MAY BE PLACED IN SUCH AREAS AND THAT UNDERGROUND UTILITY LINES AND DRAINAGE DISCHARGE SWALES MAY CROSS SUCH AREAS UTILIZING THE SHORTEST ALIGNMENT POSSIBLE IF AND ONLY IF NO FEASIBLE ALIGNMENT IS AVAILABLE WHICH WOULD AVOID SUCH A CROSSING. REMOVAL OF VEGETATION BY THE PROPERTY OWNER(S) SHALL BE LIMITED TO THAT WHICH IS DEAD, DISEASED OR HAZARDOUS. NO ADJUSTMENT TO THE BOUNDARY OF ANY SUCH AREA SHALL OCCUR UNLESS FIRST APPROVED BY SNOHOMISH COUNTY.

WETLAND MITIGATION: WETLAND MITIGATION/N.G.P.A. PLAN SHALL HAVE BEEN ACCEPTED BY SNOHOMISH COUNTY PRIOR TO ANY OCCUPANCY FOR LOT 1 OR LOT 2.

13. SHARED ACCESS WITH LAKE STEVENS MARKET PLACE AND/OR SUCCESSORS SHALL BE GOVERNED BY PRIVATE AGREEMENTS, RESPONSIBILITIES, AND LIABILITIES OF THE PARTIES, SNOHOMISH COUNTY SHALL NOT BE DEEMED A PARTY TO SUCH PRIVATE AGREEMENT(S), OBLIGATIONS, AND/OR LIABILITIES.

### VICINITY MAP




**NE1/4, SEC. 13, T. 24 N., R. 5 E., W.M.**

LEGEND

- SUBDIV. CORNER/FOUND
- SUBDIV. CORNER/NOT FOUND
- FOUND CONC. MON. IN CASE
- FOUND SURFACE MON.
- BSP1 LAKE STEVENS MARKET PLACE BSP AF NO. 9205195004
- BSP2 FRONTIER VILLAGE SHOPPING CENTER BSP AFN 200207255002

N
NTS

SHEET 2 OF 4 G4 JOB NO. 04-4502

INDEXING DATA:
SW1/4, NE1/4, SEC. 13 ,TWP.29 N.,RGE. 5 E. ,W.M.

DANIEL K. ROURKE — STATE OF WASHINGTON — 30450 — REGISTERED PROFESSIONAL LAND SURVEYOR — 1-12-2006 — EXPIRES: JAN. 12, 2006

GROUP FOUR, Inc.
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DRAWN BY: JCK DATE: 11/18/05 CHECKED BY: DATE: APPROVED BY: DATE:

**BINDING SITE PLAN FOR**
**CUNNINGHAM, LLC**
**SNOHOMISH COUNTY WASHINGTON**

#200602215091

Unofficial Document

Unofficial Document

# CUNNINGHAM

**BINDING SITE PLAN**

**SW1/4, NE1/4, SEC. 13, TWP. 29 N., RGE. 5 E., W.M.**
**SNOHOMISH COUNTY, WASHINGTON**
**PFN 04-113531-LU**

SEWAGE PERVEYOR: LAKE STEVENS SEWER DISTRICT
A WASHINGTON MUNICIPAL CORPORATION

WATER PERVEYOR: SNOHOMISH COUNTY PUPLIC
UTILITY DISTRICT NO. 1

TOTAL SITE AREA: 141,867 SF

## LEGEND

| | |
|---|---|
| AF NO. | AUDITOR'S FILE NUMBER |
| BSP1 | LAKE STEVENS MARKET PLACE BSP AF NO. 9205195004. |
| BSP2 | FRONTIER VILLAGE SHOPPING CENTER BSP AF NO. 200207255002. |
| CALC. | CALCULATED |
| DN. | DOWN |
| FND. | FOUND |
| MON. | MONUMENT |
| NGPA/E | NATIVE GROWTH PROTECTION AREA EASEMENT |
| PLAT | LAKE STEVENS SUMMER HOME TRACTS, VOL. 9 OF PLATS, PG. 66 |
| PG. | PAGE |
| RGE. | RANGE |
| ROS | RECORD OF SURVEY |
| ROW | RIGHT OF WAY |
| SEC. | SECTION |
| SE,NE,NW,SW | SOUTHEAST, NORTHEAST, NORTHWEST, SOUTHWEST |
| S.,N.,E.,W., | SOUTH, NORTH, EAST, WEST |
| S.F. | SQUARE FEET |
| THEO. | THEORETICAL |
| TWP. | TOWNSHIP |
| VOL. | VOLUME |
| W.M. | WILLAMETTE MERIDIAN |
| ⊙ | EXISTING MONUMENT AS NOTED |
| ● | EXISTING REBAR OR IRON PIPE AS NOTED |
| × | SET TACK & SHINER, LS NO. 30450 |
| o | SET 1/2" X 24" REBAR WITH PLASTIC CAP, LS NO. 30450 |

N

SCALE 1" = 50'

50' 0 50' 100'

BASIS OF BEARINGS: SOUTH LINE OF THE NE1/4, SEC. 13, T. 29 N., R. 5 E., W.M., FROM CENTER OF SECTION MONUMENT TO WEST 1/4 CORNER MONUMENT EQUALS N89°59'39"W, BLOCK 3, PER FRONTIER VILLAGE SHOPPING CENTER BSP, AUDITOR'S FILE NO. 200207255002.

**INSTRUMENT DATA:** LEICA TCR 703 AUTO
(1" DIRECT READING THEODOLITE WITH E.D.M)

PRECISION OF CONTROL TRAVERSE IS AT HIGHER LEVEL THAN MINIMUM STANDARDS REQUIRED BY WAC, 332-130-090.

#200602215091

SHEET 3 OF 4 G4 JOB NO. 04-4502

INDEXING DATA:
SW1/4, NE1/4, SEC. 13 ,TWP.29 N.,RGE. 5 E. ,W.M.

DANIEL K. ROUSE — STATE OF WASHINGTON — 20450 — REGISTERED PROFESSIONAL LAND SURVEYOR
EXPIRES: JAN. 12, 2006

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DRAWN BY: JCK DATE: 11/16/05 CHECKED BY: DATE: APPROVED BY: DATE:

**RECORD OF SURVEY FOR**

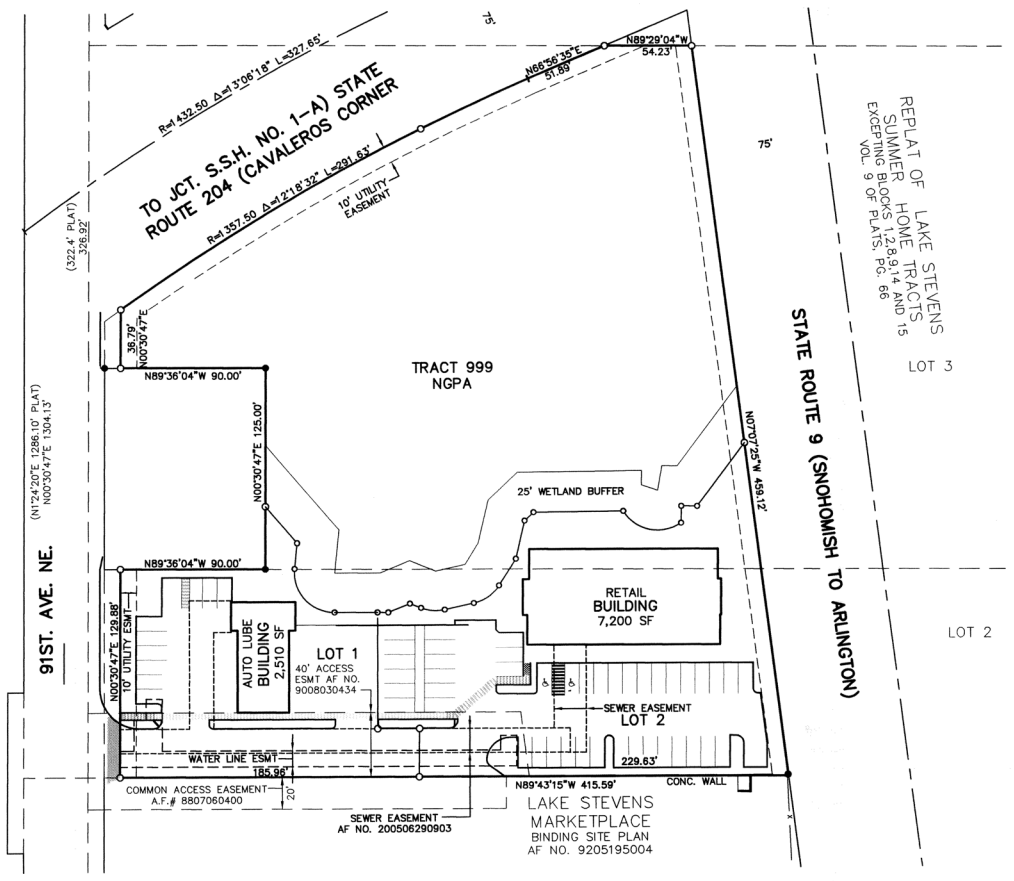
**CUNNINGHAM, LLC**

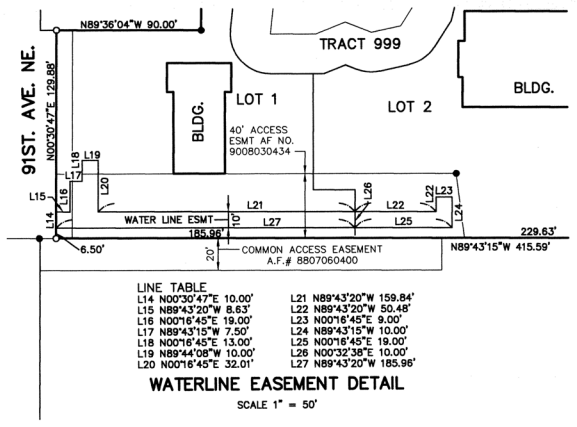
SNOHOMISH COUNTY WASHINGTON

Unofficial Document

# CUNNINGHAM

**BINDING SITE PLAN**
**SW1/4, NE1/4, SEC. 13, TWP. 29 N., RGE. 5 E., W.M.**
**SNOHOMISH COUNTY, WASHINGTON**
**PFN 04-113531-LU**

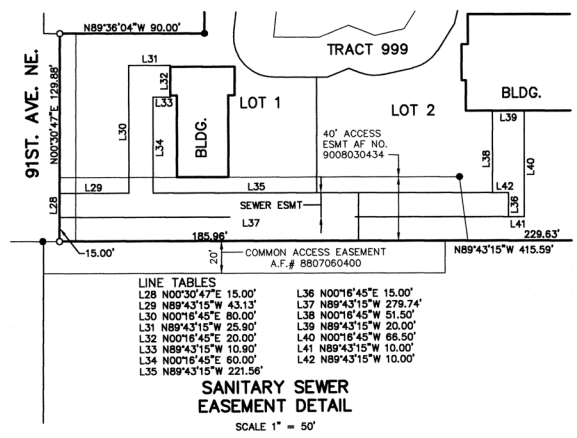



LINE TABLE

| | |
|---|---|
| L14 N00°30'47"E 10.00' | L21 N89°43'20"W 159.84' |
| L15 N89°43'20"W 8.63' | L22 N89°43'20"W 50.48' |
| L16 N00°16'45"E 19.00' | L23 N00°16'45"E 9.00' |
| L17 N89°43'15"W 7.50' | L24 N89°43'15"W 10.00' |
| L18 N00°16'45"E 13.00' | L25 N00°16'45"E 19.00' |
| L19 N89°44'08"W 10.00' | L26 N00°32'38"E 10.00' |
| L20 N00°16'45"E 32.01' | L27 N89°43'20"W 185.96' |

**WATERLINE EASEMENT DETAIL**
SCALE 1" = 50'

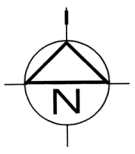



LINE TABLES

| | |
|---|---|
| L28 N00°30'47"E 15.00' | L36 N00°16'45"E 15.00' |
| L29 N89°43'15"W 43.13' | L37 N89°43'15"W 279.74' |
| L30 N00°16'45"E 80.00' | L38 N00°16'45"W 51.50' |
| L31 N89°43'15"W 25.90' | L39 N89°43'15"W 20.00' |
| L32 N00°16'45"E 20.00' | L40 N00°16'45"W 66.50' |
| L33 N89°43'15"W 10.90' | L41 N89°43'15"W 10.00' |
| L34 N00°16'45"E 60.00' | L42 N89°43'15"W 10.00' |
| L35 N89°43'15"W 221.56' | |

**SANITARY SEWER EASEMENT DETAIL**
SCALE 1" = 50'

SHEET 4 OF 4 G4 JOB NO. 04-4502




SCALE 1" = 50'
CONTOUR INTERVAL = 2'
50' 0 50' 100'

**INSTRUMENT DATA:** LEICA TCR 703 AUTO (1" DIRECT READING THEODOLITE WITH E.D.M)

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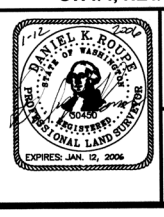


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