

# **I-5 Blaine Vicinity Ramps (H Street Pit) Mitigation Site**

## **USACE NWP (23) 1999-4-106**

### **Northwest Region**

#### **2014 MONITORING REPORT**

#### **Wetlands Program**

*Issued March 2015*



**Washington State  
Department of Transportation**

Environmental Services Office

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# I-5 Blaine Vicinity Ramps (H Street Pit) Mitigation Site

## USACE NWP (23) 1999-4-106



General Site Information	
<b>USACE NWP 23 Number</b>	1999-4-106
<b>Mitigation Location</b>	H Street gravel pit off SR 543, Whatcom Co
<b>LLID Number</b>	1222146478041
<b>Construction Date</b>	2000
<b>Monitoring Period</b>	2001–2005
<b>Year of Monitoring</b>	14 of 5
<b>Area of Project Impact<sup>1</sup></b>	1.3 acres
<b>Type of Mitigation</b>	Wetland Establishment/Enhancement
<b>Planned Area of Mitigation<sup>2</sup></b>	1.96 acres

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<sup>1</sup> (USACE 1999)

<sup>2</sup> (WSDOT 1999)

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## Summary of Monitoring Results and Management Activities (2014)

Performance Standards	2014 Results <sup>3</sup>		Management Activities
	Creation Areas	Enhancement Areas	
After five years the wetland will be comprised of 75% or greater native facultative or wetter species or will be comprised of a planted and native naturally colonizing plant community at 80% or greater areal cover.	29% cover (CI <sub>80%</sub> = 23-36%) of native facultative or wetter woody species	85% cover of native facultative or wetter species	Extensive planting conducted in the wetland creation areas on four dates in November, 2013; Weed control conducted on 16 dates in 2013 and 3 dates in 2014 (June, August and December)
After five years the buffer will have 75% cover of native species or will be comprised of a planted and native naturally colonizing plant community at 80% or greater areal cover.	56% cover (CI <sub>80%</sub> = 49-63%) of native woody species	90% cover of native species	
After five years wildlife cover and forage species should be established to where habitat structure will change from a single layer of vegetation to multiple layers. An increase in wildlife species should be observable.	Generally two vegetation layers present (herb and shrub); Some trees present in buffer creation areas	Three distinct vegetation layers present	

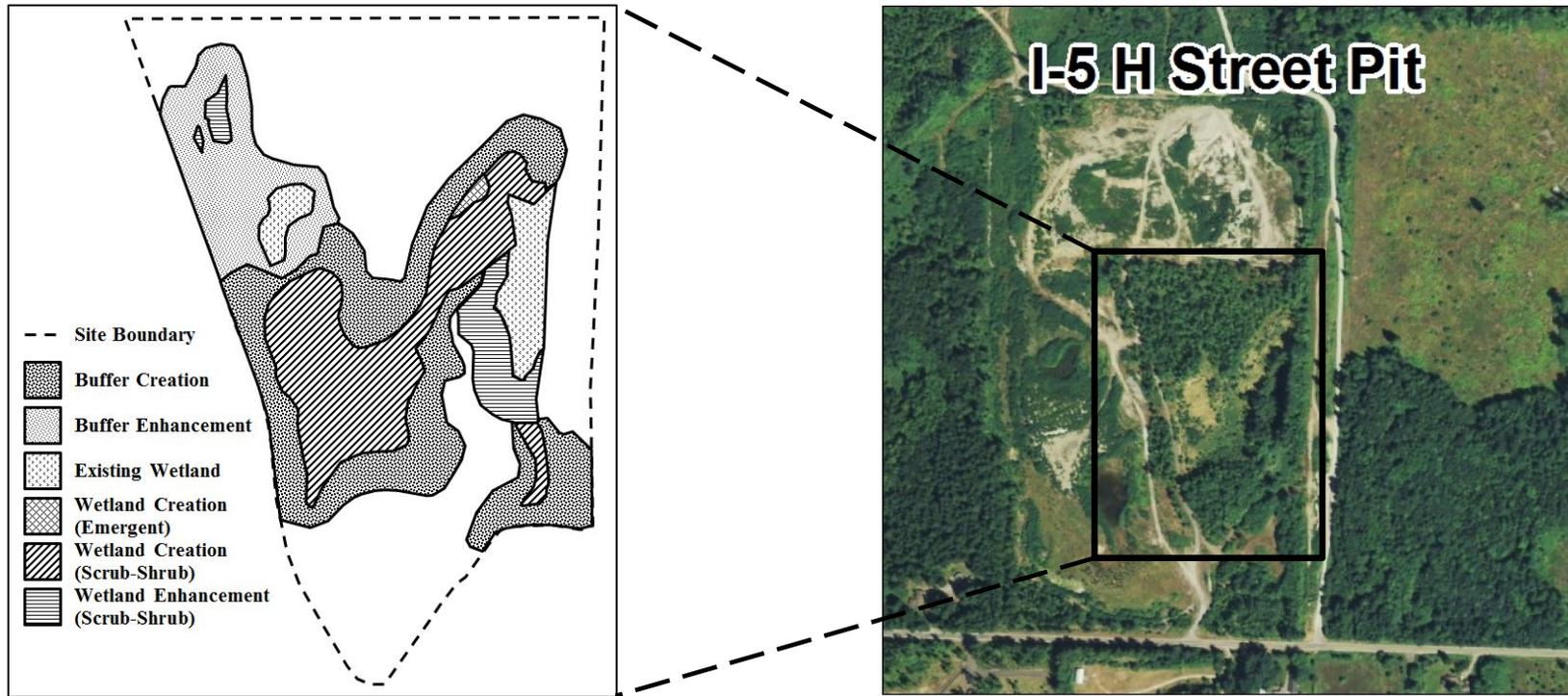
## Report Introduction

This report summarizes fourteenth year (Year-14) monitoring activities at the Interstate (I) 5 H Street Pit Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site development. Monitoring activities in 2014 included vegetation surveys, photo-documentation, and a wetland delineation. Vegetation monitoring occurred on August 25 to 27 and a wetland delineation was conducted on March 18 and 19.

<sup>3</sup> Estimated values are presented with their corresponding statistical confidence interval. For example, 29% cover (CI<sub>80%</sub> = 23-36%) means we are 80% confident that the true cover value is between 23% and 36%.

## What is the I-5 H Street Pit Mitigation Site?

This mitigation site (Figure 1) is a combination of newly established and enhanced wetland and wetland buffer located east of Blaine, WA. This site was created to compensate for the loss of 1.3 acres of wetlands due to the reconstruction of three interchanges on Interstate 5 in northern Whatcom County.



**Figure 1 Site Sketch**

The I-5 H Street Pit Mitigation Site contains newly established scrub-shrub wetland areas interspersed with pre-existing scrub-shrub wetland and wetland buffer areas, some of which have been enhanced. Appendix 1 includes site directions.

## **What are the performance standards for this site?**

### Performance Standard 1

After five years the wetland will be comprised of 75 percent or greater native facultative or wetter species or will be comprised of a planted and native naturally colonizing plant community at 80 percent or greater areal cover.

### Performance Standard 2

After five years the buffer will have 75 percent cover of native species or will be comprised of a planted and native naturally colonizing plant community at 80 percent or greater areal cover.

### Performance Standard 3

After five years wildlife cover and forage species should be established to where habitat structure will change from a single layer of vegetation to multiple layers. An increase in wildlife species should be observable.

Appendix 1 shows the planting plan.

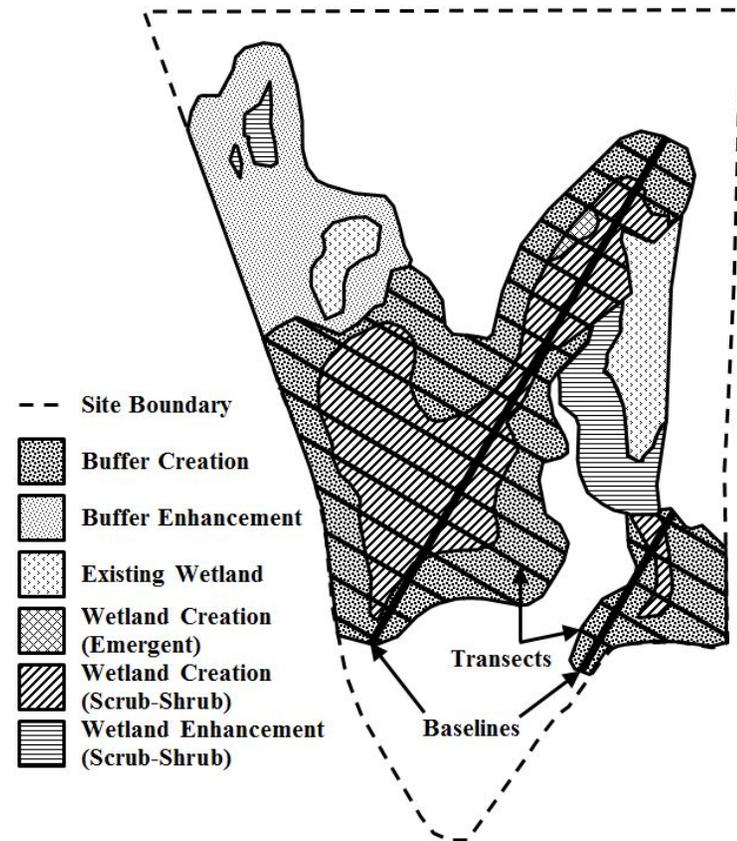
## How were the performance standards evaluated?

To evaluate standards for vegetative cover, a 277-meter baseline was established in two segments oriented roughly southwest to northeast (Figure 2). Twenty-seven sampling transects were placed perpendicular to the baseline using a systematic random sampling method. The line-intercept method was used to estimate native woody cover (Performance Standards 1 and 2) in the wetland creation and buffer creation areas. In the buffer creation areas, 30 ten-meter-long line-segment sample units were randomly positioned along the transects. In the scrub-shrub wetland creation areas, 35 ten-meter-long line-segment sample units were randomly positioned along the transects. The newly replanted (in November 2013) portions of the scrub-shrub wetland were also sampled for survival, using the unequal-area belt transect method. Twenty-three one-meter-wide belt transect sample units were positioned along the entire length of the transects in these areas.

Visual observations were used to estimate native woody cover in the wetland and buffer enhancement areas (Performance Standards 1 and 2), native herbaceous cover in the emergent wetland area, and vegetative structure in all mitigation areas (Performance Standard 3).

WSDOT staff performed a wetland delineation using methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE 2010), and a Global Positioning System (Trimble Mapping Grade).

For additional details on the methods, see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](#) (WSDOT 2008).



**Figure 2 Site Sampling Design (2014)**

## Is this site a success?

This mitigation site was constructed in 2000, with its original monitoring period starting in 2001 and ending in 2005. The site never met its final-year performance standards, however, and in 2013 a substantial remediation effort was begun to attempt to rehabilitate the site. Remediation efforts have been focused on the scrub-shrub wetland establishment (creation) areas, and have included extensive replanting as well as manual, chemical, and biological control of weeds. These areas, along with the buffer creation areas, were sampled for woody cover in 2014. Although the performance standards do not specify “woody” cover, only woody cover was sampled because much of this area was mowed prior to monitoring, so many of the herbaceous species were not identifiable. The newly replanted portions of the wetland establishment areas were also sampled for survival of woody plantings. The enhancement areas of the site were clearly already meeting final-year performance standards. Visual observations were used to address performance standards in these areas.

In the newly replanted portions of the wetland establishment areas, the survival rate of the new woody plantings is estimated at 84% ( $CI_{80\%} = 82-87\%$ ), which equates to an estimated density of 4.5 plants per 100 square feet ( $CI_{80\%} = 4.1-4.9$ ). These new plantings were primarily willows (*Salix spp.*) and some redosier dogwood (*Cornus alba*). The portions of the wetland establishment areas that were not recently replanted consist primarily of well-established patches of twinberry honeysuckle (*Lonicera involucrata*) from the original plantings. All portions of the wetland establishment areas were sampled together for native woody cover (see results for Performance Standard 1 below).

Although the site is not yet meeting all of its final-year performance standards, it does now appear to be on the right trajectory to do so. There is a substantial noxious weed population in the wetland establishment areas, primarily reed canarygrass (*Phalaris arundinacea*) and Canada thistle (*Cirsium arvense*), that will need to continue to be kept under control until the new plantings are more established. Once the new plantings are more established, however, they should be able to compete with and partially shade out the noxious weeds.

Results for Performance Standard 1

(After five years the wetland will be comprised of 75% or greater native facultative or wetter species or will be comprised of a planted and native naturally colonizing plant community at 80% or greater areal cover):

**Enhancement Areas**

The cover of native facultative or wetter species in the wetland enhancement areas (Photo 1) was visually estimated at 85 percent. The dominant species in this zone are hardhack (*Spiraea douglasii*), in the northwestern enhancement areas, and willows (*Salix spp.*) in the eastern enhancement areas.

**Creation Areas**

The cover of native facultative or wetter woody species in the wetland establishment areas (Photo 2) is estimated at 29 percent ( $CI_{80\%} = 23-36\%$ ). The dominant species in this zone are twinberry honeysuckle (*Lonicera involucrata*) and willows (*Salix spp.*). Herbaceous species were not included in sampling because much of this area was recently mowed, so the herbaceous species were not identifiable. From what could be identified, it appeared that the majority of the herbaceous cover in this zone was non-native and consisted primarily of grasses, with a substantial population of Canada thistle (*Cirsium arvense*) in the western wetland establishment area.

There is a small emergent area in the northern wetland establishment area. The cover of native facultative or wetter species in this area was visually estimated at 80 percent and is dominated by broadleaf cattail (*Typha latifolia*).



**Photo 1**  
**Native cover in the wetland enhancement areas (August 2014)**



**Photo 2**  
**Woody cover in the scrub-shrub wetland establishment area (August 2014)**

### Results for Performance Standard 2

(After five years the buffer will have 75% cover of native species or will be comprised of a planted and native naturally colonizing plant community at 80% or greater areal cover):

#### **Enhancement Areas**

The cover of native species in the buffer enhancement areas (Photo 3) is visually estimated at 90 percent. The dominant species in this zone are black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), snowberry (*Symphoricarpos albus*), and Indian plum (*Oemleria cerasiformis*).

#### **Creation Areas**

The cover of native woody species in the buffer establishment areas (Photo 3) is estimated at 56% ( $CI_{80\%} = 49-63\%$ ). The dominant species in this zone are snowberry (*Symphoricarpos albus*) and Douglas-fir (*Pseudotsuga menziesii*).



**Photo 3**  
**Native cover in the buffer establishment area (foreground) and the buffer enhancement area (background) (August 2014)**

### Results for Performance Standard 3

(After five years wildlife cover and forage species should be established to where habitat structure will change from a single layer of vegetation to multiple layers):

#### **Enhancement Areas**

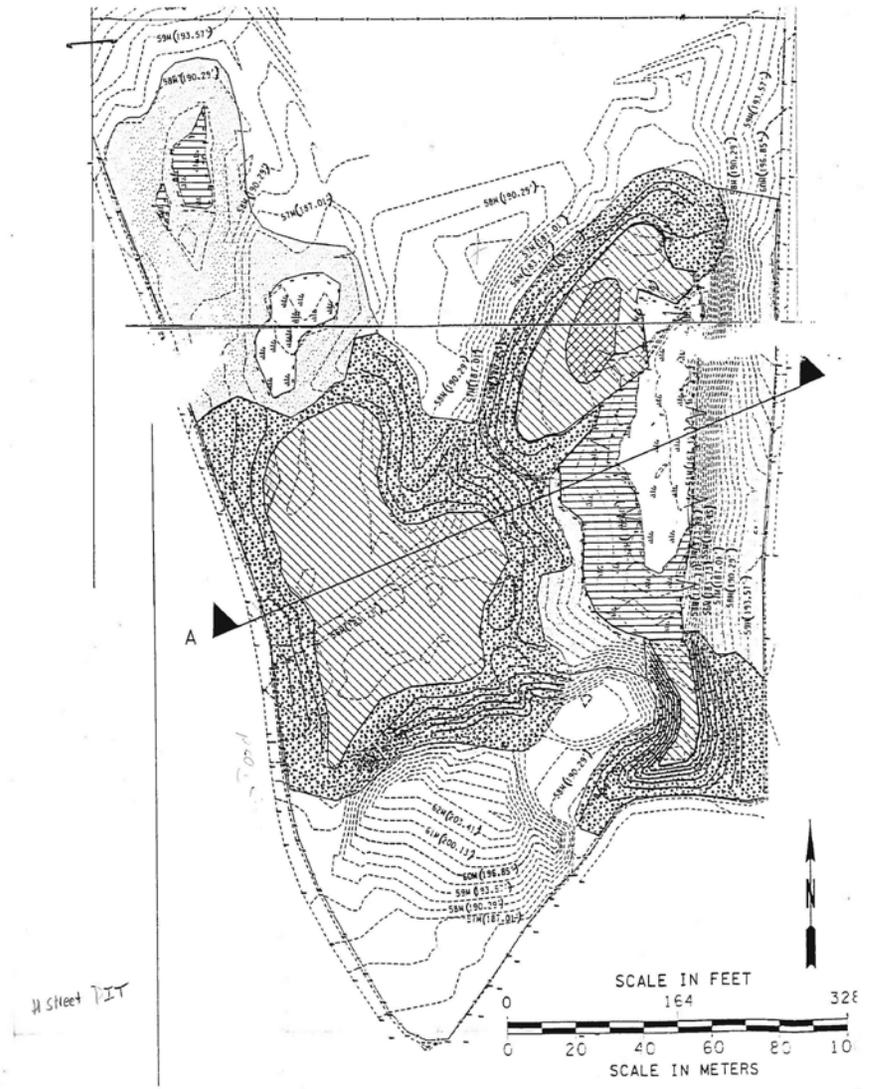
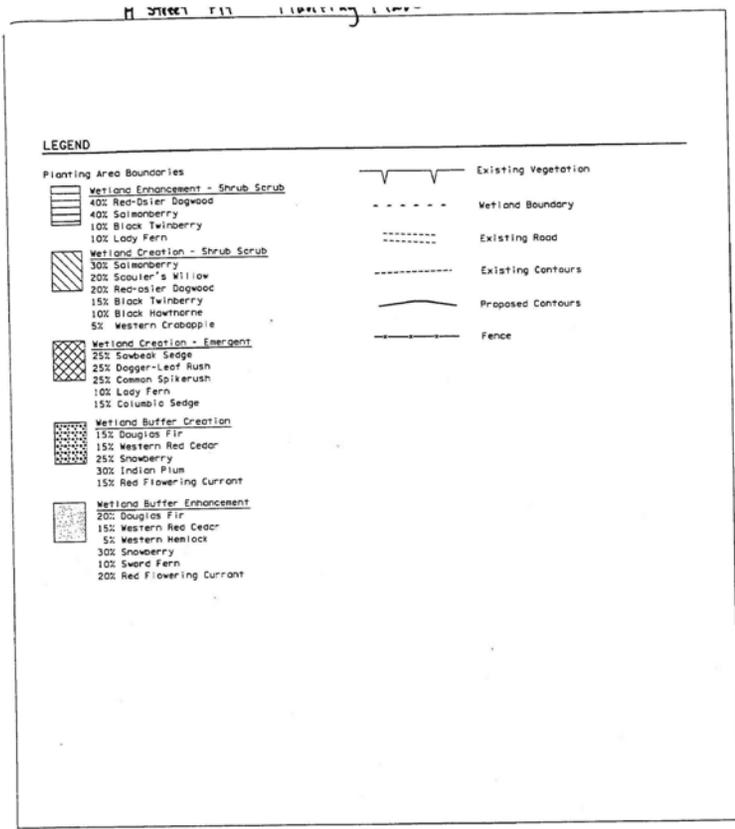
Three distinct vegetation layers are present in the enhancement areas. The lowest layer (<1 meter) is dominated by trailing blackberry (*Rubus ursinus*) and western swordfern (*Polystichum munitum*), with occasional patches of grasses and herbs. The second layer (1 to 5 meters) is dominated by shrubs such as hardhack (*Spiraea douglasii*), snowberry (*Symphoricarpos albus*), and willows (*Salix spp.*). The third layer (15 to 25 meters) is dominated by black cottonwood (*Populus balsamifera*) and red alder (*Alnus rubra*).

**Creation Areas**

Although three vegetation layers (herb, shrub and tree) are present across the buffer and wetland creation areas as a whole, there is generally not much overlapping of these layers. The wetland has distinct herb and shrub layers. There are very few trees in the wetland creation areas, but more in the buffer areas.

# Appendix 1 – Planting Plan

(from WSDOT 1999)



**Driving Directions:**

From I-5 take Exit 275 to SR 543 North. After about 0.6 mile, turn right onto H Street. After 4.2 miles, turn left into a driveway with a locked gate. A key should be obtained from region personnel. Go through the gate onto a dirt road. Stay to the right and the site will be on your right after about 0.1 mile.

# Appendix 3 – Wetland Delineation Report

# **WETLAND DELINEATION REPORT**

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## **I-5 H Street Pit Mitigation Site**

**SR 5 Blaine Vicinity Ramps  
USACE (NWP 23) 1994-4-106**

**Whatcom County, Washington**

**Prepared by:  
Tatiana Dreisbach  
WSDOT Environmental Services Office  
Olympia, Washington**

**May 2014**



# Introduction

This report was prepared by the Washington State Department of Transportation (WSDOT) to describe the wetland boundary delineation for the I-5 H Street Pit mitigation site. Field work was conducted by WSDOT wetland biologists Tatiana Dreisbach and Doug Swanson, on March 18 and 19, 2014. The delineation identifies 3.08 acres of wetland within the mitigation site boundaries.

General Information for the I-5 H Street Pit mitigation site		
<b>Location:</b>	S35, T41N, R1E. Whatcom County. (Vicinity map, Figure 1)	
	<b>USACE NWP 23 Number</b>	1999-4-106
	<b>Long./Lat. ID Number</b>	1226409489957
	<b>Land Resource Region (LRR)</b>	A
	<b>Major Land Resource Area (MLRA)</b>	From GIS workbench
	<b>Construction Date</b>	1999
	<b>Monitoring Period</b>	2001 - 2005
	<b>Year of Monitoring</b>	14 of 5 (in 2014)
<b>Area of Project Impact<sup>1</sup></b>	1.3 acres	
<b>Type of Mitigation</b>	<b>Intended Area (acres)</b>	
Establishment	1.41 acres (1.33 acres PSS, 0.08 acre PEM)	
Enhancement	0.55 acre	
<b>Total Intended Wetland Mitigation Area<sup>2</sup></b>	1.96 acres	
<b>Total Delineated Wetland Area</b>	3.08 acres (2.53 acres within establishment/enhancement areas and 0.55 acre in preservation areas)	

<sup>1</sup> Project impact numbers from USACE Nationwide Permit 1999-4-106 (USACE 1999) and WSDOT conceptual mitigation plan (WSDOT 1999).

<sup>2</sup> Area of mitigation from the WSDOT conceptual mitigation plan (WSDOT 1999).

# Location

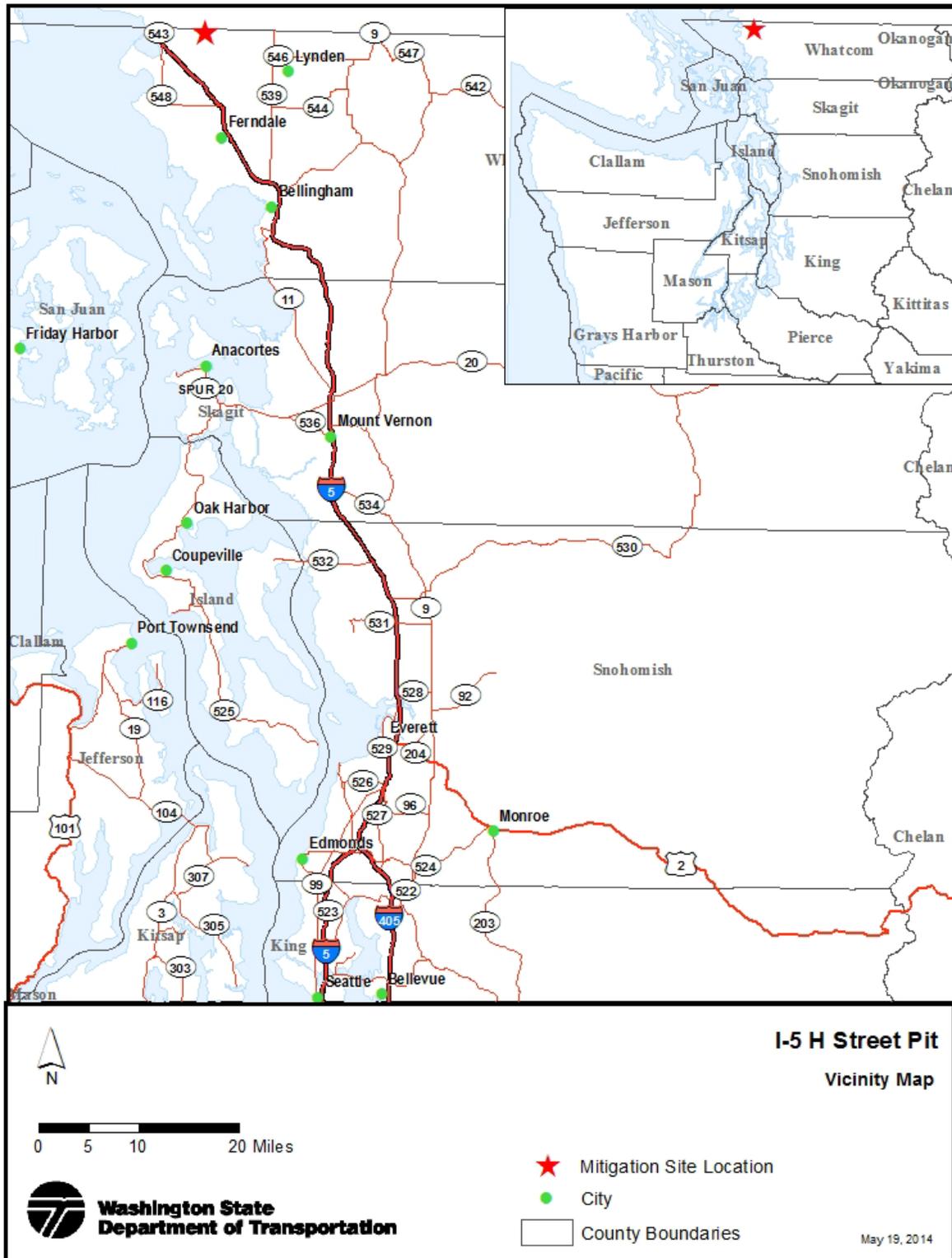


Figure 1. Vicinity Map

# Methods

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Wetland boundaries within the I-5 H Street Pit mitigation site were delineated using routine methods described in the:

- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987),
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010)

Wetland boundaries were delineated based on on-site observations of hydrology, soils, and plant communities, in conjunction with background information.

A Global Positioning System (GPS) Trimble GeoXT mapping grade unit was used to record the wetland boundaries and sampling point locations (Figure 2). Wetland boundary points were recorded at regular intervals and at any change in direction along the boundary.

## Wetland Delineation and Study Area

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### Study Area

Wetlands described in this report were assessed only within the wetland mitigation site boundary (Figure 2). Wetland preservation areas are present within the mitigation site boundary and were included in this delineation.

### Wetlands

Delineation data were collected at 16 sampling points and recorded on wetland determination data forms (Appendix A). Paired wetland and upland sample points were used to define the wetland edge. Data recorded on wetland determination data forms characterize typical wetland and upland conditions observed on site. Vegetation, soils, and hydrology were examined in many additional sampling locations to determine the wetland boundary. The delineation determined 3.08 acres of wetland were present within the I-5 H Street Pit mitigation site.

### Precipitation

The Regional Delineation Supplement Version 2.0 (USACE 2010) recommends using methods described in Chapter 19 in *Engineering Field Handbook* (NRCS 1997) to determine if precipitation occurring in the three full months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. When considering the three prior months as whole, normal precipitation conditions were present prior to field work. Two of the three months prior to field work were within the normal range with the third prior month drier than normal (Appendix B-1).

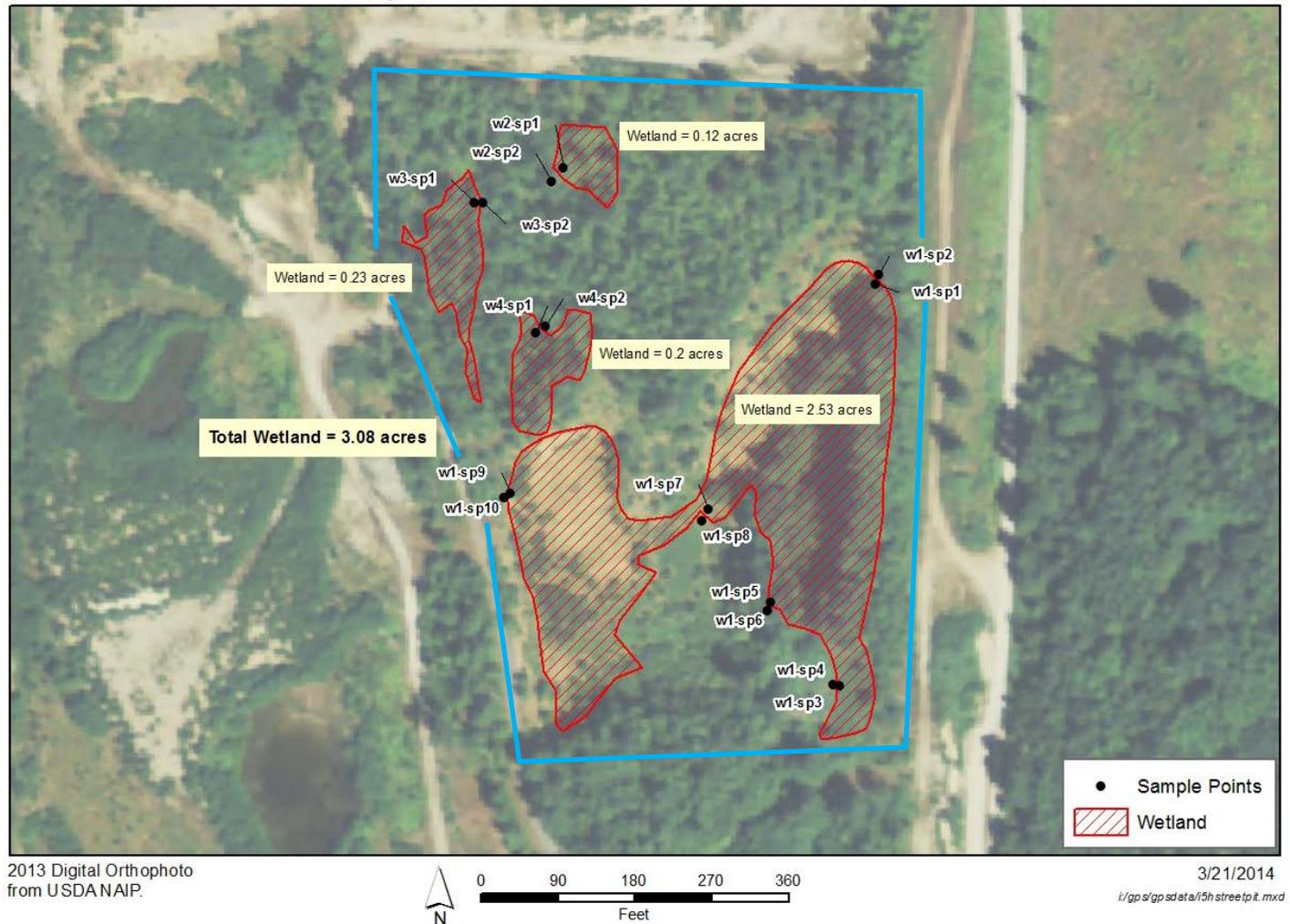
Moderate precipitation was recorded in the ten days preceding field work (Appendix B-2).

### Growing Season

The following evidence of the growing season was observed at the time of the delineation:

- New vegetative growth on grasses was present throughout the site.
- Buds were breaking and leaves on woody species were newly emerging.

### GPS Data - I-5 H Street Pit, 3/19/2014



**Figure 2. Study area in blue, wetland boundary in red, and sampling point locations in black.**

**I-5 H Street Pit Mitigation Site – Wetland Delineation Summary**

<b>Total Delineated Wetland Area</b>		3.08 acres	
	<b>Wetland Determination Data Form(s)</b>	Appendix A; Sampling Point W1-SP1, W1-SP3, W1-SP5, W1-SP7, W1-SP9, W2-SP1, W3-SP1, W4-SP1	
	<b>Upland Determination Data Form(s)</b>	Appendix A; Sampling Point W1-SP2, W1-SP4, W1-SP6, W1-SP8, W1-SP10, W2-SP2, W3-SP2, W4-SP2	
	<b>Delineator(s)</b>	Tatiana Dreisbach, Doug Swanson	
	<b>Delineation Date</b>	March 18 and 19, 2014	
<b>Vegetation</b>	<p>Trees – black cottonwood (<i>Populus balsamifera</i>), red alder (<i>Alnus rubra</i>)                  Shrubs – hardhack (<i>Spiraea douglasii</i>), willows (<i>Salix spp.</i>), redosier dogwood (<i>Cornus alba</i>), twinberry honeysuckle (<i>Lonicera involucrata</i>), red alder, Indian plum (<i>Oemleria cerasiformis</i>), snowberry (<i>Symphoricarpos albus</i>)                  Herbs – meadow foxtail (<i>Alopecurus pratensis</i>), colonial bentgrass (<i>Agrostis capillaris</i>), spike bentgrass (<i>Agrostis exarata</i>), water foxtail (<i>Alopecurus geniculatus</i>), soft rush (<i>Juncus effusus</i>), dovefoot geranium (<i>Geranium molle</i>), pioneer violet (<i>Viola glabella</i>), creeping buttercup (<i>Ranunculus repens</i>), reed canarygrass (<i>Phalaris arundinacea</i>).</p>		
<b>Soils</b>	<p>Soils examined to a depth of 18 inches exhibited hydric characteristics. Matrix colors of 2.5Y 4/2, 2.5Y 5/2 and 10YR 2/2 were observed. Redoximorphic concentrations and depletions were observed in some layers. Indicators Depleted below Dark Surface (A11), Depleted Matrix (F3), and Depleted Dark Surface (F7) met.</p>		
<b>Hydrology</b>	<p>It was dry during the field work on March 18 and was raining on March 19, 2014. Surface water to greater than 20 inches deep was observed in some areas. Other areas had soil saturation or a high water table within the upper 12 inches of the soil. Direct observation of water was present throughout the wetland. A perched water table driven by precipitation and run-on is the primary source of hydrology in this wetland.</p>		
<b>Rationale for Delineation</b>	<p>Positive indicators of all three wetland criteria are present. Placement of boundary determined by hydrology indicators and topography in some areas. Direct observation of water was present throughout the wetland area and was lacking in adjacent uplands. Soils also helped inform placement of the wetland boundary in some areas.</p>		

## Limitations

This wetland delineation report documents the investigation, best professional judgment and conclusions of WSDOT based on the site conditions encountered at the time of this study. The wetland delineation was performed in compliance with accepted standards for professional wetland biologists and applicable federal, state, and local ordinances. It is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities.

# References

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

Wetland Delineation Data Forms for:

W1-SP1

W1-SP2

W1-SP3

W1-SP4

W1-SP5

W1-SP6

W1-SP7

W1-SP8

W1-SP9

W1-SP10

W2-SP1

W2-SP2

W3-SP1

W3-SP2

W4-SP1

W4-SP2

Wetland polygons, sampling point locations, and wetland names shown in Figure 2.

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp1  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.64 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Growing season has started. Ribes sanguineum, Symphoricarpos albus, and Lonicera involucrata have newly emerged leaves. Cornus alba, Mentha sp., Galium aparine, and Alopecurus pratensis have new leaves.

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				
1. <u>Spiraea douglasii</u>	15	<input checked="" type="checkbox"/> 50.0%	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>5</u> x 5 = <u>25</u> Column Total s: <u>70</u> (A) <u>145</u> (B)  Prevalence Index = B/A = <u>2.071</u>
2. <u>Salix spp.</u>	5	<input checked="" type="checkbox"/> 16.7%	_____	
3. <u>Symphoricarpos albus</u>	5	<input checked="" type="checkbox"/> 16.7%	FACU	
4. <u>Cornus alba</u>	5	<input checked="" type="checkbox"/> 16.7%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	30	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. <u>Agrostis exarata</u>	20	<input checked="" type="checkbox"/> 44.4%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Alopecurus geniculatus</u>	20	<input checked="" type="checkbox"/> 44.4%	OBL	
3. <u>Geranium molle</u>	5	<input type="checkbox"/> 11.1%	UPL	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	45	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>55</u>				

**Remarks:**  
 Geranium molle, Alopecurus geniculatus, and Agrostis exarata are the only vegetation in herbaceous community showing this year's new growth. Other species in herb layer are last years growth and are not included in the cover estimates.

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: w1-sp1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:  
 Inundated. Soil meets definition of hydric soil due to prolonged inundation during the growing season.

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="9"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	

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

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

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp2  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): slope of depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.64 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
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**Remarks:**  
 New saplings planted. Nearly all appear alive with bud break and new leaves emerging.

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )					
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)	
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
3. _____	_____	<input type="checkbox"/> 0.0%	_____		
4. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )					
1. <u>Symphoricarpos albus</u>	10	<input checked="" type="checkbox"/> 31.3%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>22</u> x 4 = <u>88</u> UPL species <u>40</u> x 5 = <u>200</u> Column Total s: <u>102</u> (A) <u>408</u> (B)  Prevalence Index = B/A = <u>4.000</u>	
2. <u>Ribes sanguineum</u>	10	<input checked="" type="checkbox"/> 31.3%	UPL		
3. <u>Oemleria cerasiformis</u>	10	<input checked="" type="checkbox"/> 31.3%	FACU		
4. <u>Pseudotsuga menziesii</u>	2	<input type="checkbox"/> 6.3%	FACU		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
	32	<b>= Total Cover</b>			
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )					
1. <u>Agrostis capillaris</u>	30	<input checked="" type="checkbox"/> 37.5%	FAC		
2. <u>Alopecurus pratensis</u>	10	<input type="checkbox"/> 12.5%	FAC		
3. <u>Geranium molle</u>	30	<input checked="" type="checkbox"/> 37.5%	UPL		
4. <u>Mentha spp.</u>	10	<input type="checkbox"/> 12.5%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	80	<b>= Total Cover</b>			
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )					
1. _____	_____	<input type="checkbox"/> 0.0%	_____		
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>% Bare Ground in Herb Stratum:</b> <u>20</u>					

**Hydrophytic Vegetation Indicators:**  
 1 - Rapid Test for Hydrologic Vegetation  
 2 - Dominance Test is > 50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 5 - Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

**Remarks:**

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-sp2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	2/2	100				Sandy Loam	
3-18	2.5Y	4/2	100				Sandy Loam	cobbles in this layer. higher sand content than up

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp3  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.995 Long.: -122.64 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Cornus alba Salix ssp. planted last year. New saplings have high survival with buds breaking. Higher cover of herbs will be present later in the growing season.

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
<b>= Total Cover</b>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				
1. <u>Lonicera involucrata</u>	<u>20</u>	<input checked="" type="checkbox"/> <u>66.7%</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x <u>1</u> = <u>0</u> FACW species <u>5</u> x <u>2</u> = <u>10</u> FAC species <u>20</u> x <u>3</u> = <u>60</u> FACU species <u>0</u> x <u>4</u> = <u>0</u> UPL species <u>0</u> x <u>5</u> = <u>0</u> Column Total s: <u>25</u> (A) <u>70</u> (B)  Prevalence Index = B/A = <u>2.800</u>
2. <u>Cornus alba</u>	<u>5</u>	<input type="checkbox"/> <u>16.7%</u>	<u>FACW</u>	
3. <u>Salix spp.</u>	<u>5</u>	<input type="checkbox"/> <u>16.7%</u>	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>= Total Cover</b>				
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	
<b>= Total Cover</b>				
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
<b>= Total Cover</b>				
<b>% Bare Ground in Herb Stratum:</b> <u>100</u>				

**Hydrophytic Vegetation Indicators:**  
 1 - Rapid Test for Hydrologic Vegetation  
 2 - Dominance Test is > 50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 5 - Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

**Remarks:**

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-SB3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox depressions (F8)		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:  
 Inundated. Soil meets definition of hydric soil due to prolonged inundation during the growing season.

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
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**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="22"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="0"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="0"/>	

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

Remarks:  
 22 inches near wetland boundary. so depression in this area likely holds greater than 3 feet of water. too deep to access at this time.

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp4  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): slope of deprssion Local relief (concave, convex, none): concave Slope: 40.0 % / 21.8 °  
 Subregion (LRR): LRR A Lat.: 48.995 Long.: -122.64 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
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**Remarks:**  
 Higher cover of herbs will be present later in the growing season. Growing season just beginning.

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )					
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
3. _____	_____	<input type="checkbox"/> 0.0%	_____		
4. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )					
1. <u>Symphoricarpos albus</u>	20	<input checked="" type="checkbox"/> 74.1%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>32</u> x 3 = <u>96</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>5</u> x 5 = <u>25</u> Column Total s: <u>62</u> (A) <u>221</u> (B)  Prevalence Index = B/A = <u>3.565</u>	
2. <u>Pseudotsuga menziesii</u>	5	<input type="checkbox"/> 18.5%	FACU		
3. <u>Thuja plicata</u>	2	<input type="checkbox"/> 7.4%	FAC		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
	27	<b>= Total Cover</b>			
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )					
1. <u>Alopecurus pratensis</u>	30	<input checked="" type="checkbox"/> 66.7%	FAC		
2. <u>Mentha spp.</u>	10	<input checked="" type="checkbox"/> 22.2%	_____		
3. <u>Geranium molle</u>	5	<input type="checkbox"/> 11.1%	UPL		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	45	<b>= Total Cover</b>			
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )					
1. _____	_____	<input type="checkbox"/> 0.0%	_____		
2. _____	_____	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>% Bare Ground in Herb Stratum:</b> <u>55</u>					

**Remarks:**

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-SP4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	2/2	100				Sandy Loam	
3-18	2.5Y	5/3	100				Sandy Loam	higher sand content than upper layer.

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp5  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.641 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel NWI classification: PFO

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

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks:</b> Preservation area.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				
1. <u>Populus balsamifera</u>	65	<input checked="" type="checkbox"/> 100.0%	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	65	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				
1. <u>Oemleria cerasiformis</u>	35	<input checked="" type="checkbox"/> 53.8%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>85</u> x 3 = <u>255</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>435</u> (B)  Prevalence Index = B/A = <u>3.346</u>
2. <u>Alnus rubra</u>	20	<input checked="" type="checkbox"/> 30.8%	FAC	
3. <u>Symphoricarpos albus</u>	10	<input type="checkbox"/> 15.4%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	65	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____		<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____		<input type="checkbox"/> 0.0%		
3. _____		<input type="checkbox"/> 0.0%		
4. _____		<input type="checkbox"/> 0.0%		
5. _____		<input type="checkbox"/> 0.0%		
6. _____		<input type="checkbox"/> 0.0%		
7. _____		<input type="checkbox"/> 0.0%		
8. _____		<input type="checkbox"/> 0.0%		
9. _____		<input type="checkbox"/> 0.0%		
10. _____		<input type="checkbox"/> 0.0%		
11. _____		<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____		<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____		<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>100</u>				

Remarks:

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: w1-sp5

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

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR	2/2	100					Sandy Loam	
1-14	2.5Y	4/2	78	7.5YR	5/6	2	C	PL	concentration is distinct
				10YR	5/8	20	C	M	

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: cobbles and large cottonwood roots  
 Depth (inches): 14

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="7"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp6  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 20.0 % / 11.3 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.641 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Alnus rubra</u>	30	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = <b>Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>120</u> (A) <u>420</u> (B) Prevalence Index = B/A = <u>3.500</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				
1. <u>Symphoricarpos albus</u>	40	<input checked="" type="checkbox"/> 44.4%	FACU	
2. <u>Lonicera involucrata</u>	40	<input checked="" type="checkbox"/> 44.4%	FAC	
3. <u>Ribes sanguineum</u>	10	<input type="checkbox"/> 11.1%	UPL	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
90 = <b>Total Cover</b>				
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
5. _____	_____	<input type="checkbox"/> 0.0%	_____	
6. _____	_____	<input type="checkbox"/> 0.0%	_____	
7. _____	_____	<input type="checkbox"/> 0.0%	_____	
8. _____	_____	<input type="checkbox"/> 0.0%	_____	
9. _____	_____	<input type="checkbox"/> 0.0%	_____	
10. _____	_____	<input type="checkbox"/> 0.0%	_____	
11. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = <b>Total Cover</b>				
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
0 = <b>Total Cover</b>				
<b>% Bare Ground in Herb Stratum:</b> <u>100</u>				

**Hydrophytic Vegetation Indicators:**  
 1 - Rapid Test for Hydrologic Vegetation  
 2 - Dominance Test is > 50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 5 - Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-sp6

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

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR	2/2	100					Sandy Loam	
1-16	2.5Y	4/3	95	10YR	4/6	5	M	Sandy Loam	

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp7  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): slope between upper/lower we Local relief (concave, convex, none): sloping Slope: 30.0 % / 16.6 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.641 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 This set of points documents where sub surface water flowing from upper wetland terrace is within 12 inches of the surface along the slope.

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>10 x 10 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>10 x 10 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>270</u> (B)  Prevalence Index = B/A = <u>3.000</u>
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
5. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. <u>Alopecurus pratensis</u>	70	<input checked="" type="checkbox"/> 77.8%	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrostis capillaris</u>	20	<input checked="" type="checkbox"/> 22.2%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	90	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>10</u>				

**Remarks:**

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-sp7

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	2/2	100						Sandy Loam	
4-10	2.5Y	5/2	95	7.5YR	5/6	5	C	M	Sandy Loam	concentration is prominent

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="6"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp8  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): slope between upper/lower we Local relief (concave, convex, none): sloping Slope: 30.0 % / 16.6 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.641 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>20 x 10 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 10 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>270</u> (B)  Prevalence Index = B/A = <u>3.000</u>
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
5. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. <u>Agrostis capillaris</u>	60	<input checked="" type="checkbox"/> 66.7%	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Alopecurus pratensis</u>	30	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	90	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>10</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-sp8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-3	10YR	3/2	100				Sandy Loam		
3-12	2.5Y	5/3	98	2.5Y	5/6	2	C	M	Sandy Loam

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp9  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 5.0 % / 2.9 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
1. _____	_____	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
2. _____	_____	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
3. _____	_____	<input type="checkbox"/> 0.0%	_____	
4. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				<b>Prevalence Index worksheet:</b>
1. <u>Lonicera involucrata</u>	40	<input checked="" type="checkbox"/> 76.9%	FAC	Total % Cover of: _____ Multiply by: _____
2. <u>Salix spp.</u>	5	<input type="checkbox"/> 9.6%	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. <u>Thuja plicata</u>	2	<input type="checkbox"/> 3.8%	FAC	FACW species <u>5</u> x 2 = <u>10</u>
4. <u>Symphoricarpos albus</u>	5	<input type="checkbox"/> 9.6%	FACU	FAC species <u>47</u> x 3 = <u>141</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>5</u> x 4 = <u>20</u>
	52	<b>= Total Cover</b>		UPL species <u>0</u> x 5 = <u>0</u>
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				Column Total s: <u>57</u> (A) <u>171</u> (B)
1. <u>Viola glabella</u>	5	<input checked="" type="checkbox"/> 50.0%	FACW	Prevalence Index = B/A = <u>3.000</u>
2. <u>Agrostis capillaris</u>	5	<input checked="" type="checkbox"/> 50.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	10	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>90</u>				

**Hydrophytic Vegetation Indicators:**  
 1 - Rapid Test for Hydrologic Vegetation  
 2 - Dominance Test is > 50%  
 3 - Prevalence Index is ≤ 3.0<sup>1</sup>  
 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 5 - Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes  No

Remarks:  
 The Salix spp. in the shrub layer are the recently planted saplings.

**Soil**

Sampling Point: W1-sp9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-6	10YR	2/2	100				Silt Loam		
6-14	10YR	2/2	60	2.5Y	5/3	35	D	M	Silt Loam
				10YR	4/4	5	C	M	concentration is distinct

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="1"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 18-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w1-sp10  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): slope of depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Stratum	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: 20 x 10 feet )				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Alnus rubra</u>	20	<input checked="" type="checkbox"/> 66.7%	FAC	
2. <u>Pseudotsuga menziesii</u>	10	<input checked="" type="checkbox"/> 33.3%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	30 = <b>Total Cover</b>
<b>Sapling/Shrub Stratum</b> (Plot size: 15 x 10 feet )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>65</u> (A) <u>235</u> (B) Prevalence Index = B/A = <u>3.615</u>
1. <u>Symphoricarpos albus</u>	30	<input checked="" type="checkbox"/> 85.7%	FACU	
2. <u>Thuja plicata</u>	5	<input type="checkbox"/> 14.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	35 = <b>Total Cover</b>
<b>Herb Stratum</b> (Plot size: 5 x 5 feet )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____		<input type="checkbox"/> 0.0%	_____	
2. _____		<input type="checkbox"/> 0.0%	_____	
3. _____		<input type="checkbox"/> 0.0%	_____	
4. _____		<input type="checkbox"/> 0.0%	_____	
5. _____		<input type="checkbox"/> 0.0%	_____	
6. _____		<input type="checkbox"/> 0.0%	_____	
7. _____		<input type="checkbox"/> 0.0%	_____	
8. _____		<input type="checkbox"/> 0.0%	_____	
9. _____		<input type="checkbox"/> 0.0%	_____	
10. _____		<input type="checkbox"/> 0.0%	_____	
11. _____		<input type="checkbox"/> 0.0%	_____	0 = <b>Total Cover</b>
<b>Woody Vine Stratum</b> (Plot size: 5 x 5 feet )				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____		<input type="checkbox"/> 0.0%	_____	
2. _____		<input type="checkbox"/> 0.0%	_____	
<b>% Bare Ground in Herb Stratum:</b> <u>100</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W1-sp10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	2/2	100				Sandy Loam	
5-16	2.5Y	4/4	100				Sandy Loam	

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w2-sp1  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel NWI classification: PFO

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

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Higher cover of herbs will be present later in the growing season.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Populus balsamifera</u>	20	<input checked="" type="checkbox"/> 50.0%	FAC	
2. <u>Alnus rubra</u>	20	<input checked="" type="checkbox"/> 50.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
<b>= Total Cover</b>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>130</u> x 2 = <u>260</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>170</u> (A) <u>380</u> (B) Prevalence Index = B/A = <u>2.235</u>
1. <u>Spiraea douglasii</u>	60	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
<b>= Total Cover</b>				
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Agrostis exarata</u>	60	<input checked="" type="checkbox"/> 85.7%	FACW	
2. <u>Juncus effusus</u>	10	<input type="checkbox"/> 14.3%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
<b>= Total Cover</b>				
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
<b>= Total Cover</b>				
<b>% Bare Ground in Herb Stratum:</b> <u>30</u>				
Remarks:				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox depressions (F8)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input checked="" type="checkbox"/> Other (Explain in Remarks)
---	--	--	---

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:  
 Inundated to 12 inches in wetland. Raining during delineation. Soils meet definition of hydric soil due to prolonged inundation.

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
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**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="10"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="0"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<input type="text" value="0"/>	

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

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

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w2-sp2  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: 20 x 20 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	40	<input checked="" type="checkbox"/> 66.7%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
2. <u>Populus balsamifera</u>	20	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
<b>60 = Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>215</u> (A) <u>600</u> (B) Prevalence Index = B/A = <u>2.791</u>
<b>Sapling/Shrub Stratum (Plot size: 15 x 15 feet )</b>				
1. <u>Oemleria cerasiformis</u>	40	<input checked="" type="checkbox"/> 50.0%	FACU	
2. <u>Spiraea douglasii</u>	40	<input checked="" type="checkbox"/> 50.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
<b>80 = Total Cover</b>				
<b>Herb Stratum (Plot size: 5 x 5 feet )</b>				
1. <u>Agrostis exarata</u>	60	<input checked="" type="checkbox"/> 80.0%	FACW	
2. <u>Rubus ursinus</u>	10	<input type="checkbox"/> 13.3%	FACU	
3. <u>Polystichum munitum</u>	5	<input type="checkbox"/> 6.7%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
<b>75 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: 5 x 5 feet )</b>				
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
<b>0 = Total Cover</b>				
% Bare Ground in Herb Stratum: <u>25</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/2	100				Sandy Loam	
3-17	2.5Y	4/2	100				Sandy Loam	gravel s

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w3-sp1  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel NWI classification: PFO

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

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks:</b> Higher cover of herbs will be present later in the growing season.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
1. <u>Populus balsamifera</u>	40	<input checked="" type="checkbox"/> 80.0%	FAC	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
2. <u>Alnus rubra</u>	10	<input checked="" type="checkbox"/> 20.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	50	<b>= Total Cover</b>		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>52</u> x 3 = <u>156</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>112</u> (A) <u>276</u> (B) Prevalence Index = B/A = <u>2.464</u>
1. <u>Spiraea douglasii</u>	30	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	30	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Agrostis exarata</u>	30	<input checked="" type="checkbox"/> 93.8%	FACW	
2. <u>Ranunculus repens</u>	2	<input type="checkbox"/> 6.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	32	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>68</u>				
<b>Remarks:</b>				

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:  
 Inundation. Soils meet definition of hydric soil due to prolonged inundation.

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="14"/>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text" value="0"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): <input type="text"/>	

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

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

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w3-sp2  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 48.997 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>20 x 20 feet</u> )				
1. <u>Alnus rubra</u>	40	<input checked="" type="checkbox"/> 61.5%	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
2. <u>Populus balsamifera</u>	20	<input checked="" type="checkbox"/> 30.8%	FAC	
3. <u>Pseudotsuga menziesii</u>	5	<input type="checkbox"/> 7.7%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
	65	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 x 15 feet</u> )				
1. <u>Oemleria cerasiformis</u>	40	<input checked="" type="checkbox"/> 66.7%	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>170</u> (A) <u>580</u> (B) Prevalence Index = B/A = <u>3.412</u>
2. <u>Symphoricarpos albus</u>	10	<input type="checkbox"/> 16.7%	FACU	
3. <u>Spiraea douglasii</u>	10	<input type="checkbox"/> 16.7%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	60	<b>= Total Cover</b>		
<b>Herb Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. <u>Rubus ursinus</u>	30	<input checked="" type="checkbox"/> 66.7%	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrostis exarata</u>	10	<input checked="" type="checkbox"/> 22.2%	FACW	
3. <u>Polystichum munitum</u>	5	<input type="checkbox"/> 11.1%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	45	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: <u>5 x 5 feet</u> )				
1. _____		<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____		<input type="checkbox"/> 0.0%		
	0	<b>= Total Cover</b>		
<b>% Bare Ground in Herb Stratum:</b> <u>55</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: W3-sp2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR	3/1	100				Sandy Loam	
2-11	10YR	5/4	100				Sandy Loam	gravelly

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w4-sp1  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 10.0 % / 5.7 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel NWI classification: PFO

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

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: 20 x 20 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Populus balsamifera</u>	20	<input checked="" type="checkbox"/> 66.7%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Alnus rubra</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>30 = Total Cover</b>		
Sapling/Shrub Stratum (Plot size: 15 x 15 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Prevalence Index worksheet:
1. <u>Spiraea douglasii</u>	50	<input checked="" type="checkbox"/> 80.6%	FACW	Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>92</u> x 2 = <u>184</u> FAC species <u>42</u> x 3 = <u>126</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>134</u> (A) <u>310</u> (B) Prevalence Index = B/A = <u>2.313</u>
2. <u>Lonicera involucrata</u>	10	<input type="checkbox"/> 16.1%	FAC	
3. <u>Thuja plicata</u>	2	<input type="checkbox"/> 3.2%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>62 = Total Cover</b>		
Herb Stratum (Plot size: 5 x 5 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1. <u>Agrostis exarata</u>	20	<input checked="" type="checkbox"/> 47.6%	FACW	
2. <u>Juncus effusus</u>	20	<input checked="" type="checkbox"/> 47.6%	FACW	
3. <u>Phalaris arundinacea</u>	2	<input type="checkbox"/> 4.8%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
		<b>42 = Total Cover</b>		
Woody Vine Stratum (Plot size: 5 x 5 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1. _____	_____	<input type="checkbox"/> 0.0%	_____	
2. _____	_____	<input type="checkbox"/> 0.0%	_____	
		<b>0 = Total Cover</b>		
% Bare Ground in Herb Stratum: <u>58</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region**

Project/Site: I-5 H St Pit City/County: n/a / Whatcom Sampling Date: 19-Mar-14  
 Applicant/Owner: WSDOT State: WA Sampling Point: w4-sp2  
 Investigator(s): Tatiana Dreisbach, Doug Swanson Section, Township, Range: S 35 T 41N R 1E  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: 15.0 % / 8.5 °  
 Subregion (LRR): LRR A Lat.: 48.996 Long.: -122.642 Datum: NAD83HARN  
 Soil Map Unit Name: Pits, gravel 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: 20 x 20 feet )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	30	<input checked="" type="checkbox"/> 75.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
2. <u>Populus balsamifera</u>	10	<input checked="" type="checkbox"/> 25.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>40 = Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>175</u> (A) <u>540</u> (B) Prevalence Index = B/A = <u>3.086</u>
<b>Sapling/Shrub Stratum (Plot size: 15 x 15 feet )</b>				
1. <u>Oemleria cerasiformis</u>	40	<input checked="" type="checkbox"/> 72.7%	FACU	
2. <u>Spiraea douglasii</u>	10	<input type="checkbox"/> 18.2%	FACW	
3. <u>Pseudotsuga menziesii</u>	5	<input type="checkbox"/> 9.1%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>55 = Total Cover</b>				
<b>Herb Stratum (Plot size: 5 x 5 feet )</b>				
1. <u>Agrostis exarata</u>	50	<input checked="" type="checkbox"/> 62.5%	FACW	
2. <u>Rubus ursinus</u>	20	<input checked="" type="checkbox"/> 25.0%	FACU	
3. <u>Polystichum munitum</u>	10	<input type="checkbox"/> 12.5%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>80 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: 5 x 5 feet )</b>				
1. _____		<input type="checkbox"/> 0.0%		
2. _____		<input type="checkbox"/> 0.0%		
<b>0 = Total Cover</b>				
% Bare Ground in Herb Stratum: <u>20</u>				
Remarks:				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: w4-sp2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR	3/2	100				Sandy Loam	
3-16	2.5Y	6/3	100				Sandy Loam	gravelly

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**Hydrology**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

# Appendix B — Precipitation Data

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## Appendix B-1. Comparison of Observed and Normal Precipitation (NRCS 1997)

Monthly precipitation data for Blaine, Washington.

		Long-term rainfall records <sup>a</sup>			Rain fall <sup>a</sup>	Condition dry, wet, normal <sup>b</sup>	Condition Value	Month weight value	Product of previous two columns
	Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than					
1 <sup>st</sup> prior month	Feb 14	2.74	4.21	5.06	3.54	N	2	3	6
2 <sup>nd</sup> prior month	Jan 14	3.75	5.32	6.30	3.84	N	2	2	4
3 <sup>rd</sup> prior month	Dec 13	4.38	5.79	6.75	2.89	D	1	1	1
								<b>Sum</b>	<b>11</b>

<sup>a</sup>NRCS 2014

<sup>b</sup>Conditions are considered normal if they fall within the low and high range around the average.

Note: If sum is

- 6 - 9 then prior period has been drier than normal
- 10 - 14 then period has been normal
- 15 - 18 then period has been wetter than normal

Condition value:

- Dry (D) =1
- Normal (N) =2
- Wet (W) =3

Conclusions: Normal precipitation conditions were present prior to the field visit.

## Appendix B-2. Daily Precipitation 10 days preceding field work, Blaine, Washington

Date (2013)	Daily Precipitation (inches) <sup>a</sup>
March 18	0.41
March 17	0.00
March 16	0.00
March 15	0.32
March 14	0.81
March 13	0.35
March 12	0.00
March 11	0.00
March 11	0.00
March 9	0.00

<sup>a</sup>NOAA 2014

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