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Monitoring reports are published on the web at: http://www.wsdot.wa.gov/environment/technical/disciplines/wetlands/monitoring-reports
Springbrook Creek Wetland and Habitat Mitigation Bank
Units A and B

USACE IP 2006-00100

<table>
<thead>
<tr>
<th>General Site Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>USACE IP Number</td>
</tr>
<tr>
<td>Mitigation Location</td>
</tr>
</tbody>
</table>
| LLID Number                                      | Unit A: 1222271474553  
                                           | Unit B: 1222324474518 |
| Monitoring Period                                | 2009-2018   |
| Year of Monitoring                               | 10 of 10    |
Summary of Monitoring Results and Management Activities (2018)

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>2018 Results¹</th>
<th>Management Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10% of the site un-vegetated and permanently inundated during the summer</td>
<td>None observed</td>
<td></td>
</tr>
<tr>
<td>Wetland Delineation (0.12 acre wetland re-establishment)</td>
<td>Present (See Appendix 4)</td>
<td></td>
</tr>
<tr>
<td>75% cover native woody vegetation in the wetland tree/shrub planting areas</td>
<td>96% cover (CI80% = 92-99%)</td>
<td></td>
</tr>
<tr>
<td>10% cover of at least two native woody species each in the wetland tree/shrub planting areas</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>50% cover native woody vegetation in the upland and riparian upland planting areas</td>
<td>93% cover (CI80% = 89-97%)</td>
<td></td>
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<tr>
<td>7% cover of at least two native woody species each in the upland and riparian upland planting areas</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>One native living tree on each planting hummock in the wetland tree/shrub planting areas</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>Less than 20% cover Himalayan blackberry (<em>Rubus armeniacus</em>) in the buffers and riparian areas</td>
<td>10% cover (qualitative)</td>
<td>Weed control activity occurred on 5/2 and 5/3 in 2018.</td>
</tr>
<tr>
<td>No Japanese knotweed (<em>Reynoutria japonica</em>), English ivy (<em>Hedera helix</em>), or purple loosestrife (<em>Lythrum salicaria</em>) across the units</td>
<td>Knotweed (<em>Reynoutria</em> species) observed and reported; no English ivy or purple loosestrife observed</td>
<td></td>
</tr>
</tbody>
</table>

Report Introduction

This report summarizes final-year (Year-10) monitoring activities at the 000 Springbrook Bank Units AB Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site success. Monitoring activities included vegetation surveys and photo-documentation on July 9-11, and a wetland delineation on March 7, in 2018.

¹ Estimated values are presented with their corresponding statistical confidence interval. For example, 96% cover (CI80% = 92-99%) means we are 80% confident that the true cover value is between 92% and 99%.
What is the 000 Springbrook Bank Units AB Mitigation Site?

This mitigation bank contains reestablished, rehabilitated, and enhanced wetlands as well as enhanced uplands and riparian areas adjacent to Springbrook Creek. Units A and B (Figure 1) encompass 62.2 acres, of which 55.5 acres are pre-existing wetlands. The bank is operated and managed by WSDOT and the City of Renton. The bank provides compensation for unavoidable impacts to wetlands and other aquatic resources caused by WSDOT highway construction projects and City of Renton mitigation requirements within the service area.

Figure 1  Site Sketch

The Springbrook Creek Wetland and Habitat Mitigation Bank is composed of five separate units, totaling 129.37 acres, which represents some of the last remaining large tracts of undeveloped land in the Green River Basin. All five units are located in the southwestern portion of the City of Renton, King County, Washington. Appendix 2 includes site directions.
What are the performance standards for this site?

**Year 10**

**Performance Standard 1**
In Years 3, 5, and 10, no more than 10 percent of the sites will be un-vegetated and permanently inundated based on observations made during the summer monitoring visit.

**Performance Standard 2**
In Years 5 and 10, at least 0.12 acre of wetland will be present in the wetland re-establishment areas (bottom of the berm breaches) of units A and B. Also, a separate wetland delineation will be done to verify that mitigation actions have not reduced the extent of existing wetlands in units A and B.

**Performance Standard 3**
In Year 10, native woody vegetation within wetland tree/shrub planting areas will provide at least 75 percent aerial cover.

**Performance Standard 4**
In Year 10, at least two native woody species will provide at least 10 percent aerial cover each within the wetland tree/shrub planting areas.

**Performance Standard 5**
In Year 10, native woody vegetation within the upland and riparian upland planting areas will provide at least 50 percent aerial cover.

**Performance Standard 6**
In Year 10, at least two native woody species will provide at least seven percent aerial cover each within the upland and riparian upland planting areas.

**Performance Standard 7**
In Years 5 and 10, planting hummocks located within the wetland tree/shrub planting areas will have at least one living native tree.
Performance Standard 8
In Years 5 and 10, Himalayan blackberry will not cover more than 20 percent of the buffers and riparian areas at the site.

Performance Standard 9
In Years 1 through 10, remove all Japanese knotweed, English ivy, and purple loosestrife identified within Units A and B.

Appendix 1 shows the as-built planting plan (WSDOT 2009).
How were the performance standards evaluated?

WSDOT staff performed a wetland delineation using 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) and a Global Positioning System (Trimble Mapping Grade) (Performance Standard 2).

Table 1 (Appendix 3) documents the sampling methodology utilized for all of the remaining performance standards (PS) as required by the mitigation plan or permits. For additional details on the methods see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](https://example.com) (WSDOT 2008).

**Wetland tree/shrub planting areas**: Random points were generated in a GIS. Transects were run east to west from each point.

**Upland areas baseline**: A baseline was established around the perimeter of the site and parallel to both banks of Springbrook Creek.

Length 1,998m Transects 1-17
Is this site a success?

This site is successfully meeting all final-year performance standards. Wetland area, flood storage capacity, and connectivity to Springbrook Creek increased, improving hydrologic, floodplain, and water quality functions.

Habitat functions have also improved. Cover of native woody vegetation across the site is high. There are multiple plant assemblages and vegetation strata present. Invasive cover is low. Garter snakes, beaver chew, and six species of birds were observed at the time of monitoring.
Results for Performance Standard 1
(Less than 10% of the site un-vegetated and permanently inundated during the summer):

No un-vegetated and permanently inundated areas were observed on site, other than Springbrook Creek itself.

Results for Performance Standard 2
(Wetland Delineation [0.12 acre wetland re-establishment]):

A delineation conducted in March 2018 indicated that 0.12 acre of wetland re-establishment is present. See Appendix 4 for a report on the results of this delineation.

Results for Performance Standard 3
(75% cover native woody vegetation in the wetland tree/shrub planting areas):

Cover of native woody vegetation in the wetland is estimated at 96% ($CI_{80\%} = 92-99\%$) (Photo 1). This exceeds the performance standard target.

Photo 1
Native woody cover in the wetland (July 2018)
Results for Performance Standard 4
(10% relative cover of at least two native woody species each in the wetland tree/shrub planting areas):

Three native woody species provide at least 10 percent cover each in the wetland tree/shrub planting areas. This exceeds the performance standard target. Cover of willows (Salix species) is estimated at 82 percent, Oregon ash (Fraxinus latifolia) at 26 percent, and redosier dogwood (Cornus alba) at 14 percent.

Results for Performance Standard 5
(50% cover native woody vegetation in the upland and riparian upland planting areas):

Cover of native woody vegetation in the upland and riparian upland is estimated at 93% (CI 80% = 89-97%) (Photo 2). This exceeds the performance standard target.

Results for Performance Standard 6
(7% relative cover of at least two native woody species each in the upland and riparian upland planting areas):

Nine native woody species provide at least seven percent cover each in the upland areas. This exceeds the performance standard target. Cover of snowberry (Symphoricarpos albus) is estimated at 40 percent, black cottonwood (Populus balsamifera) at 30 percent, red alder (Alnus rubra) at 26 percent, willows at 22 percent, Douglas-fir (Pseudotsuga menziesii) at 17 percent, redosier dogwood at 13 percent, oceanspray (Holodiscus discolor) at 11 percent, Oregon ash at nine percent, and Sitka spruce (Picea sitchensis) at eight percent.
Results for Performance Standard 7
(One native living tree on each planting hummock in the wetland tree/shrub planting areas):

At least one living native tree was observed on each of the hummocks. One planting hummock was not found.

Results for Performance Standard 8
(Less than 20% cover Himalayan blackberry (Rubus armeniacus) in the buffers and riparian areas):

Cover of Himalayan blackberry in the buffer and riparian areas is qualitatively estimated at 10 percent. This is below the performance standard threshold.

Results for Performance Standard 9
(No Japanese knotweed (Reynoutria japonica), English ivy (Hedera helix), or purple loosestrife (Lythrum salicaria) across the units):

One small patch of knotweed (Reynoutria species) was observed in the riparian upland on the east side of Springbrook Creek, and was immediately reported for removal. No English ivy of purple loosestrife were observed across the site.

What is planned for this site?
The WSDOT headquarters restoration crew plans to eradicate the patch of knotweed at the beginning of the next treatment window. Weed control, trash removal, vandalism repair, and structure and/or signage repair will continue as this site transitions to long-term management.
Appendix 1 – As-Built Planting Plan
(from WSDOT 2009)
Appendix 2 – Photo Points
The photographs below were taken from permanent photo-points on July 11, 2018 and document current site development.
Driving Directions:
From northbound SR 167, take the South 180th Street/Southwest 43rd Street exit. Turn left at South 180th Street/Southwest 43rd Street. Take the 3rd right onto Lind Avenue Southwest. Turn left at Southwest 27th Street. Park on the grassy area to the south of 27th Street near the north end of the pedestrian boardwalk.
### Table 1. Sampling Methods

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<thead>
<tr>
<th>Attribute</th>
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<th>PS 3</th>
<th>PS 4</th>
<th>PS 5</th>
<th>PS 6</th>
<th>PS 7</th>
<th>PS 8</th>
<th>PS 9</th>
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<td>Cover</td>
<td>Cover</td>
<td>Cover</td>
<td>Cover</td>
<td>Cover</td>
<td>Cover</td>
<td>Presence/absence</td>
<td>Cover</td>
<td>Presence/absence</td>
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<td>Target population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Japanese knotweed, English ivy, and purple loosestrife</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Native woody vegetation</td>
<td>Native woody vegetation</td>
<td>Native woody vegetation</td>
<td>Native woody vegetation</td>
<td>Living native tree</td>
<td>Himalayan blackberry</td>
<td></td>
<td></td>
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<tr>
<td>Zone</td>
<td>Entire Site</td>
<td>Wetland tree/shrub planting areas</td>
<td>Wetland tree/shrub planting areas</td>
<td>Upland and riparian upland planting areas</td>
<td>Upland and riparian upland planting areas</td>
<td>Planting hummocks</td>
<td>Buffer and riparian areas</td>
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</tr>
<tr>
<td>Sample method</td>
<td>Qualitative</td>
<td>Line-intercept</td>
<td>Line-intercept</td>
<td>Line-intercept</td>
<td>Line-intercept</td>
<td>Qualitative</td>
<td>Qualitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>SU length</td>
<td>10 m</td>
<td>10 m</td>
<td>7 m</td>
<td>7 m</td>
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<td>Qualitative</td>
<td>Qualitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Total # of SU</td>
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<td>15</td>
<td>17</td>
<td>17</td>
<td>Qualitative</td>
<td>Qualitative</td>
<td>Qualitative</td>
<td>Qualitative</td>
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</table>
Appendix 4 – Delineation
Springbrook Creek Wetland and Habitat Mitigation Bank Site
Units A and B

USACE IP 200600100

King County, Washington

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

February 2019
Introduction

This report was prepared by the Washington State Department of Transportation (WSDOT) to describe the wetland boundary delineation for the Springbrook Creek Wetland and Habitat Mitigation Bank Units A and B (Springbrook Bank Units A and B). Field work was conducted by WSDOT wetland biologists Tatiana Dreisbach and Jennie Husby, on March 7, 2018.

The wetland was previously delineated in May 2013 (WSDOT 2013). The purpose of the 2018 field work was to reevaluate the May 2013 wetland boundary and document any wetland boundary modifications if necessary. The 2018 delineation confirmed the wetland boundary has not changed from 2013 to 2018 with 56.88 acres of wetland identified (Figure 2).

<table>
<thead>
<tr>
<th>General Information for Springbrook Bank Units A and B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit A Location:</strong> S30, T23N, R5E. King County. (Vicinity map, Figure 1)</td>
</tr>
<tr>
<td><strong>Unit B Location:</strong> S25, T24N, R4E. King County. (Vicinity map, Figure 1)</td>
</tr>
<tr>
<td><strong>USACE IP Number</strong></td>
</tr>
<tr>
<td><strong>Unit A Long./Lat. ID Number</strong></td>
</tr>
<tr>
<td><strong>Unit B Long./Lat. ID Number</strong></td>
</tr>
<tr>
<td><strong>Land Resource Region (LRR)</strong></td>
</tr>
<tr>
<td><strong>Major Land Resource Area (MLRA)</strong></td>
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<tr>
<td><strong>Monitoring Period</strong></td>
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<tr>
<td><strong>Year of Monitoring</strong></td>
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<table>
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<tr>
<th><strong>Area of Project Impact</strong></th>
<th>provides advance mitigation for future projects</th>
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<tbody>
<tr>
<td><strong>Type of Mitigation</strong></td>
<td><strong>Intended Area (acres)</strong></td>
</tr>
<tr>
<td>Re-establishment (breaches in dike)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.12 acre</td>
</tr>
<tr>
<td>Rehabilitation&lt;sup&gt;3&lt;/sup&gt;</td>
<td>51.08 acres (Unit A 19.92 acres, Unit B 31.16 acres)</td>
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<tr>
<td><strong>Total Intended Wetland Mitigation Area Units A and B</strong></td>
<td>51.20 acres</td>
</tr>
<tr>
<td><strong>Total Delineated Wetland Area Units A and B</strong></td>
<td>56.88 acres (Figure 2), with 0.16 acre occurring within re-establishment areas (Figure 3). Wetland area includes the majority of the 2.66 acres of Trail Zone in Unit A and wetland areas occurring within the 40-foot-wide protection setback area around the outer perimeter of Units A and B.</td>
</tr>
</tbody>
</table>

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<sup>1</sup> Project permitted under USACE Nationwide Permit 200600100 (USACE 2006).

<sup>2</sup> Area of mitigation from the Springbrook Creek Wetland and Habitat Mitigation Bank Mitigation Bank Instrument (MBI) (WSDOT 2006). Acreage requirements for re-establishment areas from Performance Standard Table 3-1, page 3-5. Table 2-2, page 2-9 requires a higher amount of acreage: 0.17 acre (Unit A 0.05 acre, Unit B 0.12 acre).

<sup>3</sup> Area of mitigation from the MBI (WSDOT 2006). Acreage requirements for rehabilitation areas from Table 2-2, page 2-9.
Location

Figure 1. Vicinity Map
**Methods**

Wetland boundaries within Springbrook Bank Units A and B were verified 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) equipped Panasonic Toughpad paired with a Trimble R2 Global Navigation Satellite System (GNSS) Receiver mapping grade unit was used to navigate to the 2013 delineation boundary and record 2018 sampling point locations (Figure 2). Delineation line amendments were not necessary as the boundaries for Springbrook Bank Units A and B did not change between 2013 and 2018.

Re-establishment polygons and associated wetland area were established in 2013 and were developed using GPS Trimble GeoXT data collected in the field combined with ArcGIS 10.2 software (Figure 3).

**Wetland Delineation and Study Area**

**Study Area**
Wetlands described in this report were assessed only within the wetland mitigation site boundary (Figure 2).

Units A and B are divided by Springbrook Creek. The wetland areas adjacent to Springbrook Creek, between the dikes, are not part of the mitigation area and were not included in the study area.

Unit B is divided by the Oaksdale Mitigation site which is also excluded from the study area. The Oaksdale Mitigation site contains areas of upland and wetland. Some wetland sections on the Oaksdale Mitigation site connect the east and west sections of wetland in Unit B, resulting in ecologic connectivity between the two sections of the Unit B wetland.
Wetland Changes Since 2013
Springbrook Bank Units A and B remain in similar condition as documented in 2013. Vegetation and hydrology appear in similar condition as observed in 2013, with both units dominated by palustrine scrub-shrub (PSS) communities with a few smaller palustrine emergent (PEM) areas in the interior of the wetlands. The wetland boundary and acreage remain unchanged.

Wetland Boundary Verification
The 2018 delineation verification determined 56.88 acres of wetland were present within Springbrook Bank Units A and B. Delineation data were collected at eight sampling points and recorded on wetland determination data forms (Appendix A). Paired wetland and upland sample points were used to define the wetland edge documenting the unchanged wetland boundary between 2013 and 2018. Additional sample points capture variations in vegetation communities.

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 interior of the large wetlands in Units A and B were not thoroughly investigated during April 2018 field work based on previous monitoring and management visits indicating that the interior is uniformly wetland. The delineation determined 56.88 acres of wetland were present within Springbrook Bank Units A and B (this includes the majority of the 2.66 acres of Trail Zone in Unit A as well as wetland areas within the 40-foot setback zone surrounding the outer perimeter of Units A and B). Of the total wetland delineated on site, 0.16 acre of wetland occurs in wetland re-establishment areas (Figure 3).
Figure 2. Springbrook Bank Units A and B 2018 wetland delineation.
Figure 3. 2013 delineated wetland re-establishment areas in Units A and B shown in grey (Trail Zone in Unit A is excluded from delineation acreage).
Precipitation
The Regional Delineation Supplement Version 2.0 (USACE 2010) recommends using methods described in Chapter 19 in *Engineering Field Handbook* (NRCS 2015) 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 a whole, normal precipitation conditions were present prior to field work. The first month prior to field work was drier than normal, the second prior month was wetter than normal, and the third prior month was within the normal range (Appendix B-1).

Light 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 was present on reed canarygrass (*Phalaris arundinacea*)
- Willow (*Salix spp.*) bud break and redosier dogwood (*Cornus alba*) leaf emergence was observed.
## Springbrook Bank Unit A – Wetland Delineation Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Delineated Wetland Area</strong></td>
<td>24.28 acres (acreage includes nearly all of the 2.66 acres of Trail Zone and some wetland areas within the 40-foot setback zone around the outer perimeter of the site)</td>
</tr>
<tr>
<td><strong>Wetland Determination Data Form(s)</strong></td>
<td>Appendix A; Sampling Point WA-SP1, WA-SP2, WA-SP3</td>
</tr>
<tr>
<td><strong>Upland Determination Data Form(s)</strong></td>
<td>Appendix A; Sampling Point WA-SP4</td>
</tr>
<tr>
<td><strong>Delineator(s)</strong></td>
<td>Tatiana Dreisbach, Jennie Husby</td>
</tr>
<tr>
<td><strong>Delineation Date</strong></td>
<td>March 7, 2018</td>
</tr>
<tr>
<td><strong>Vegetation</strong></td>
<td>Trees – Pacific willow (<em>Salix lasiandra</em>)</td>
</tr>
<tr>
<td></td>
<td>Shrubs – Sitka willow (<em>Salix sitchensis</em>), redosier dogwood (<em>Cornus alba</em>)</td>
</tr>
<tr>
<td></td>
<td>Herbs – reed canarygrass, stinging nettle (<em>Urtica dioica</em>), narrowleaf cattail (<em>Typha angustifolia</em>)</td>
</tr>
<tr>
<td><strong>Soils</strong></td>
<td>Soils were too wet to examine in many areas, as deep to shallow inundation was present throughout most of the wetland. Soils meet the definition of a hydric soil due to prolonged inundation or saturation for extended periods during the growing season.</td>
</tr>
<tr>
<td><strong>Hydrology</strong></td>
<td>Shallow surface water was present in many areas of the wetland during the field visit. A high groundwater table associated with Springbrook Creek provides the main source of hydrology. Seasonal surface flows from the creek backwater into depressional areas on the site through the re-established wetland breaches in the dike. Precipitation also contributes to the hydrologic regime of this wetland.</td>
</tr>
<tr>
<td><strong>Rationale for Delineation</strong></td>
<td>Positive indicators of all three wetland criteria are present. Placement of boundary determined by hydrology indicators and topography. Distinct topographic break present on all sides of the wetland boundary as site abuts fill slopes or the dike. Hydrology indicators correlated with this topography. Snohomish silt loam, a Washington State hydric soil, is the mapped soil covering the majority of the unit.</td>
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</table>
Springbrook Bank Unit B – Wetland Delineation Summary

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<tr>
<th>Total Delineated Wetland Area</th>
<th>32.6 acres (acreage includes some wetland areas within the 40-foot setback zone around the outer perimeter of the site)</th>
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<tbody>
<tr>
<td>Wetland Determination Data Form(s)</td>
<td>Appendix A; Sampling Point WB-SP1, WB-SP3, WB-SP4</td>
</tr>
<tr>
<td>Upland Determination Data Form(s)</td>
<td>Appendix A; Sampling Point WB-SP2</td>
</tr>
<tr>
<td>Delineator(s)</td>
<td>Tatiana Dreisbach, Jennie Husby</td>
</tr>
<tr>
<td>Delineation Date</td>
<td>March 7, 2018</td>
</tr>
</tbody>
</table>

Vegetation
Trees – Pacific willow, Oregon ash (*Fraxinus latifolia*)
Shrubs – redosier dogwood, willows (*Salix spp.*), cluster rose (*Rosa pisocarpa*)
Herbs – broadleaf cattail (*Typha latifolia*), reed canarygrass

Soils
Soils examined to a depth of 16 inches exhibited hydric characteristics. Dark soils either lacking redoximorphic features or with redoximorphic depletions were observed above a layer with depleted matrix colors with redoximorphic concentrations. Indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were met.

Hydrology
Water in observation pits ranged from 1 inch to 10 inches below the surface. Surface water was observed in some areas of the wetland. A high groundwater table associated with Springbrook Creek provides the main source of hydrology. Seasonal surface flows from the creek backwater into depressional areas on site through the re-established wetland breaches in the dike. Precipitation contributes secondary inputs.

Rationale for Delineation
Positive indicators of all three wetland criteria are present. Placement of boundary determined by hydrology indicators and topography. Distinct topographic break present on all sides of the wetland boundary as site abuts fill slopes. Hydrology indicators correlated with this topography. The exception is the adjacent Oaksdale mitigation site dividing the west and east portions of the Unit B wetland. The Oaksdale site has some wetland areas that are contiguous with the Unit B wetland. Woodinville silt loam and Snohomish silt loam, both Washington State hydric soils, are the mapped soils covering the majority of the unit.

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


8. [WSDOT] Washington State Department of Transportation. 2006. Springbrook Creek Wetland and Habitat Mitigation Bank Mitigation Bank Instrument. Washington State Department of Transportation, I-405 Corridor Program. Intended Mitigation acreages from Table 2-2 P. 2-9 and Table 3-1 P. 3-5.


Appendix A —Wetland Determination Data Form

Wetland Delineation Data Forms for Springbrook Unit A:
WA-SP1
WA-SP2
WA-SP3
WA-SP4

Wetland Delineation Data Forms for Springbrook Unit B:
WB-SP1
WB-SP2
WB-SP3
WB-SP4

Wetland polygons, sampling point locations, and wetland names shown in Figure 2, wetland re-establishment areas shown in Figure 3.
**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 5ft x 15ft)</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
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</tr>
<tr>
<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<tr>
<td>Total</td>
<td>10</td>
<td>Y</td>
<td>100.0</td>
<td>FACW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 5ft x 15ft)</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix sitchensis</td>
<td>20</td>
<td>Y</td>
<td>57.1</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Cornus alba</td>
<td>15</td>
<td>Y</td>
<td>42.9</td>
<td>FACW</td>
</tr>
<tr>
<td>3.</td>
<td></td>
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<td>4.</td>
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<tr>
<td>Total</td>
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<td>Y</td>
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<td>FACW</td>
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<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5ft x 5ft)</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Urtica dioica</td>
<td>10</td>
<td>Y</td>
<td>52.6</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Tolmiea menziesii</td>
<td>2</td>
<td>N</td>
<td>10.5</td>
<td>FAC</td>
</tr>
<tr>
<td>3. Phalaris arundinacea</td>
<td>5</td>
<td>Y</td>
<td>26.3</td>
<td>FACW</td>
</tr>
<tr>
<td>4. Agrostis capillaris</td>
<td>2</td>
<td>N</td>
<td>10.5</td>
<td>FAC</td>
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<td>5.</td>
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<td>11.</td>
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<tr>
<td>Total</td>
<td>19</td>
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</tbody>
</table>

**Hydrophytic Vegetation Indicators:**
- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [ ] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0
- [ ] 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- [ ] 5 - Wetland Non-Vascular Plants¹
- [ ] Problematic Hydrophytic Vegetation¹ (Explain)

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

**Sampling Point:** WA-SP1

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
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</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

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

**Restrictive Layer (if present):**

- Type: ____________________________
- Depth (inches): ____________________

**Hydric Soil Present?** Yes  No

**Remarks:**
A soil pit was not excavated due to the presence of water (see hydrology section below). This soil meets the definition of a hydric soil due to the presence of inundation, saturation, or a high water table for extended periods during the growing season.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

- Primary Indicators (minimum of one required; check all that apply)
- Secondary Indicators (2 or more required)

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

- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes  No
- Water Table Present? Yes  No
- Saturation Present? Yes  No
- Depth (inches): 2
- Depth (inches): 0
- Depth (inches): 0

**Wetland Hydrology Present?** Yes  No

**Remarks:**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

**Project/Site:** 000 Springbrook Bank - Unit A  
**City/County:** Renton/King  
**Sampling Date:** 3/7/2018  
**Applicant/Owner:** WSDOT  
**State:** WA  
**Sampling Point:** WA-SP2  
**Investigator(s):** Tatiana Dreisbach, Jennie Husby  
**Section, Township, Range:** S30, T23N, R5E  
**Landform (hillslope, terrace, etc.):** depression  
**Local relief (concave, convex, none):** none  
**Slope (%):** 5  
**Subregion (LRR):** A  
**Lat:** 47.454  
**Long:** -122.224  
**Datum:** NAD83HARN  
**Soil Map Unit Name:** Snohomish silt loam  
**NWI Classification:** PEM  

**Are climatic / hydrologic conditions on the site typical for this time of year?**  
- Yes  
- No  
  (If no, explain in Remarks.)

**Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present?**  
- Yes  
- No  
  (If needed, explain any answers in Remarks.)

**Are Vegetation, Soil, or Hydrology naturally problematic?**  
- Yes  
- No  
  (If needed, explain any answers in Remarks.)

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

- Hydrophytic Vegetation Present?  
  - Yes  
  - No  
- Hydric Soil Present?  
  - Yes  
  - No  
- Wetland Hydrology Present?  
  - Yes  
  - No  
- Is the Sampled Area within a Wetland?  
  - Yes  
  - No

**Remarks:**

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Plot Size</th>
<th>Absolute % Cover</th>
<th>Domin. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Stratum</td>
<td>(Plot size: 20ft x 20ft)</td>
<td>47.454</td>
<td>Y</td>
<td>100.0</td>
<td>OBL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sapling/Shrub Stratum</td>
<td>(Plot size: 15ft x 15ft)</td>
<td>90</td>
<td>Y</td>
<td>100.0</td>
<td>OBL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herb Stratum</td>
<td>(Plot size: 5ft x 5ft)</td>
<td>90</td>
<td>Y</td>
<td>100.0</td>
<td>OBL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Vine Stratum</td>
<td>(Plot size: 5ft x 5ft)</td>
<td>90</td>
<td>Y</td>
<td>100.0</td>
<td>OBL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist) %</td>
<td>Color (moist) %</td>
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</tbody>
</table>

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

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sandy Redox (S5)</td>
</tr>
<tr>
<td>Histic Epipedon (A2)</td>
<td>Stripped Matrix (S6)</td>
</tr>
<tr>
<td>Black Histic (A3)</td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
</tr>
<tr>
<td>Hydrogen Sulfide (A4)</td>
<td>Loamy Gleyed Matrix (F2)</td>
</tr>
<tr>
<td>Depleted Below Dark Surface (A11)</td>
<td>Depleted Matrix (F3)</td>
</tr>
<tr>
<td>Thick Dark Surface (A12)</td>
<td>Redox Dark Surface (F6)</td>
</tr>
<tr>
<td>Sandy Mucky Mineral (S1)</td>
<td>Depleted Dark Surface (F7)</td>
</tr>
<tr>
<td>Sandy Gleyed Matrix (S4)</td>
<td>Redox Depressions (F8)</td>
</tr>
</tbody>
</table>

**Restrictive Layer (if present):**

Type: __________________________

Depth (inches): __________________________

Hydric Soil Present?  ○ Yes  ○ No

Remarks:

A soil pit was not excavated due to the presence of water (see hydrology section below). This soil meets the definition of a hydric soil due to the presence of inundation, saturation, or a high water table for extended periods during the growing season.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B3)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

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

**Field Observations:**

- Surface Water Present?  ○ Yes  ○ No
- Water Table Present?  ○ Yes  ○ No
- Saturation Present? (includes capillary fringe)  ○ Yes  ○ No

Depth (inches): 1

Wetland Hydrology Present?  ○ Yes  ○ No

Remarks:

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 000 Springbrook Bank - Unit A
City/County: Renton/King
Sampling Date: 3/7/2018
Applicant/Owner: WSDOT
State: WA
Sampling Point: WA-SP3
Investigator(s): Tatiana Dreisbach, Jennie Husby
Section, Township, Range: S30, T23N, R5E
Landform (hillslope, terrace, etc.): depression
Local relief (concave, convex, none): concave
Slope (%): 5
Subregion (LRR): A
Lat: 47.454
Long: -122.224
Datum: NAD83HARN
Soil Map Unit Name: Snohomish silt loam
WNI 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
(If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soil Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Is the Sampled Area within a Wetland? ☑ Yes ☐ No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20ft x 20ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salix lasiandra</td>
<td>5</td>
<td>Y 100.0</td>
<td>FACW</td>
</tr>
<tr>
<td>Cornus alba</td>
<td>5</td>
<td>N 6.7</td>
<td>FACW</td>
</tr>
</tbody>
</table>

= Total Cover

Salpin/Shrub Stratum (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salix sitchensis</td>
<td>70</td>
<td>Y 93.3</td>
<td>FACW</td>
</tr>
<tr>
<td>Cornus alba</td>
<td>5</td>
<td>N 6.7</td>
<td>FACW</td>
</tr>
</tbody>
</table>

= Total Cover

Herb Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iris pseudacorus</td>
<td>2</td>
<td>Y 40.0</td>
<td>OBL</td>
</tr>
<tr>
<td>Veronica americana</td>
<td>3</td>
<td>Y 60.0</td>
<td>OBL</td>
</tr>
</tbody>
</table>

= Total Cover

Woody Vine Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salix sitchensis</td>
<td>70</td>
<td>Y 93.3</td>
<td>FACW</td>
</tr>
</tbody>
</table>

= Total Cover

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species 5 x 1 = 5
FACW species 80 x 2 = 160
FAC species 0 x 3 = 0
FACU species 0 x 4 = 0
UPL species 0 x 5 = 0
Column Totals: 85 (A) 165 (B)
Prevalence Index = B/A = 3.141

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☑ 2 - Dominance Test is >50%
☑ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations² (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants¹
Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ☑ Yes ☐ No

Remarks:
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Type</th>
<th>Redox Features</th>
<th>Remarks</th>
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</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epeipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils⁴:

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

Hydric Soil Present?  ○ Yes  ○ No

Remarks:

A soil pit was not excavated due to the presence of water (see hydrology section below). This soil meets the definition of a hydric soil due to the presence of inundation, saturation, or a high water table for extended periods during the growing season.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Field Observations:

- Surface Water Present?  ○ Yes  ○ No  Depth (inches):  7
- Water Table Present?  ○ Yes  ○ No  Depth (inches):  0
- Saturation Present?  ○ Yes  ○ No  Depth (inches):  0

Wetland Hydrology Present?  ○ Yes  ○ No

Remarks:

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soil Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Is the Sampled Area within a Wetland? ☐ Yes ☐ No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Abs. % Cover</th>
<th>Dom. Sp.?</th>
<th>Rel. % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pseudotsuga menziesii</td>
<td>30</td>
<td>Y</td>
<td>42.9</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Acer macrophyllum</td>
<td>30</td>
<td>Y</td>
<td>42.9</td>
<td>FACU</td>
</tr>
<tr>
<td>3. Salix sitchensis</td>
<td>5</td>
<td>N</td>
<td>9.3</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Populus balsamifera</td>
<td>5</td>
<td>N</td>
<td>7.1</td>
<td>FACW</td>
</tr>
</tbody>
</table>

Sapling/Shrub Stratum (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Abs. % Cover</th>
<th>Dom. Sp.?</th>
<th>Rel. % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rosa pisocarpa</td>
<td>30</td>
<td>Y</td>
<td>55.6</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Symphoricarpus albus</td>
<td>15</td>
<td>Y</td>
<td>27.8</td>
<td>FACU</td>
</tr>
<tr>
<td>3. Pseudotsuga menziesii</td>
<td>5</td>
<td>N</td>
<td>9.3</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Blechnum spicant</td>
<td>2</td>
<td>N</td>
<td>3.7</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Hedera helix</td>
<td>2</td>
<td>N</td>
<td>3.7</td>
<td>FACU</td>
</tr>
</tbody>
</table>

Herb Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Abs. % Cover</th>
<th>Dom. Sp.?</th>
<th>Rel. % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
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<td></td>
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<tr>
<td>4.</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
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<tr>
<td>7.</td>
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<tr>
<td>8.</td>
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</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Woody Vine Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Abs. % Cover</th>
<th>Dom. Sp.?</th>
<th>Rel. % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum 98

Remarks:

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? ☐ Yes ☐ No
### Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>10YR</td>
<td>3/4</td>
<td>100</td>
<td></td>
<td></td>
<td>Silt Loam</td>
<td></td>
</tr>
</tbody>
</table>


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

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

### Restrictive Layer (if present):
Type: __________________________
Depth (inches): __________________________

### Hydric Soil Present?  ○ Yes  ○ No

### Remarks:

#### HYDROLOGY

### Wetland Hydrology Indicators:

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

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

**Secondary Indicators** (2 or more required)

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

### Field Observations:

- Surface Water Present?  ○ Yes  ○ No
- Water Table Present?  ○ Yes  ○ No
- Saturation Present? (includes capillary fringe)  ○ Yes  ○ No

### Wetland Hydrology Present?  ○ Yes  ○ No

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

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

Project/Site: 000 Springbrook Bank - Unit B  
City/County: Renton/King  
Sampling Date: 3/7/2018

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

Investigator(s): Tatiana Dreisbach, Jennie Husby  
Section, Township, Range: S25, T23N, R4E

Landform (hillslope, terrace, etc.): swale  
Local relief (concave, convex, none): concave  
Slope (%): 5

Subregion (LRR): A  
Lat: 47.455  
Long: -122.23  
Datum: NAD83HARN

Soil Map Unit Name: Woodinville silt loam  
NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? (Yes, No) (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Yes, No)

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? (Yes, No)  
Hydric Soil Present? (Yes, No)  
Wetland Hydrology Present? (Yes, No)  
Is the Sampled Area within a Wetland? (Yes, No)

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum  (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th></th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

 Sapling/Shrub Stratum  (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th></th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Corus alba</td>
<td>20</td>
<td>Y</td>
<td>76.9 FACW</td>
</tr>
<tr>
<td>2.</td>
<td>Salix lasiandra</td>
<td>5</td>
<td>N</td>
<td>19.2 FAC</td>
</tr>
<tr>
<td>3.</td>
<td>Rosa pisocarpa</td>
<td>1</td>
<td>N</td>
<td>3.8 FAC</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

Herb Stratum  (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th></th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
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<td></td>
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<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

Woody Vine Stratum  (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th></th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

% Bare Ground in Herb Stratum  100

Remarks:

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species 0 x 1 = 0

FAC species 25 x 2 = 50

FAC species 1 x 3 = 3

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 26 (A) 53 (B)

Prevalence Index = B/A = 2.038

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? (Yes, No)
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>10Y</td>
<td>3/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>Sandy Loam</td>
<td></td>
</tr>
<tr>
<td>3-16</td>
<td>10Y</td>
<td>4/1</td>
<td>90</td>
<td></td>
<td>10Y</td>
<td>4/6</td>
<td>C</td>
<td>M</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

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

Restrictive Layer (if present):

Type: ____________________________
Depth (inches): __________________

Hydric Soil Present?  Yes  No

Remarks: ____________________________

Hydrology

Primary Indicators (minimum of one required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Field Observations:

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

Wetland Hydrology Present?  Yes  No

Remarks: ____________________________

Hydric Soil Present?  Yes  No

Indicators for Problematic Hydric Soils³:

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

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

US Army Corps of Engineers (WSDOT Adapted Form - Updated May 2017)
Western Mountains, Valleys, and Coast – Version 2.0
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

**Project/Site:** 000 Springbrook Bank - Unit B

**City/County:** Renton/King

**Sampling Date:** 3/7/2018

**Applicant/Owner:** WSDOT

**State:** WA

**Sampling Point:** WB-SP2

**Investigator(s):** Tatiana Dreisbach, Jennie Husby

**Section, Township, Range:** S25, T23N, R4E

**Landform (hillslope, terrace, etc.):** berm

**Local relief (concave, convex, none):** convex

**Slope (%):** 20

**Subregion (LRR):** A

**Lat:** 47.455

**Long:** -122.231

**Datum:** NAD83HARN

**Soil Map Unit Name:** Woodinville silt loam

**NWI Classification:** upland

---

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

**Hydrophytic Vegetation Present?** ☑ Yes ☐ No

**Hydric Soil Present?** ☑ Yes ☐ No

**Is the Sampled Area within a Wetland?** ☑ Yes ☐ No

**Remarks:**

---

### VEGETATION – Use scientific names of plants.

#### Tree Stratum (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraxinus latifolia</td>
<td>5</td>
<td>Y</td>
<td>50.0</td>
<td>FACW</td>
</tr>
<tr>
<td>Salix lasiandra</td>
<td>5</td>
<td>Y</td>
<td>50.0</td>
<td>FACW</td>
</tr>
</tbody>
</table>

#### Sapling/Shrub Stratum (Plot size: 15ft x 15ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sambucus racemosa</td>
<td>10</td>
<td>Y</td>
<td>32.3</td>
<td>FACU</td>
</tr>
<tr>
<td>Rosa piscarpa</td>
<td>15</td>
<td>Y</td>
<td>48.4</td>
<td>FAC</td>
</tr>
</tbody>
</table>

#### Herb Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equisetum telmateia</td>
<td>2</td>
<td>Y</td>
<td>33.3</td>
<td>FACW</td>
</tr>
<tr>
<td>Geum macrophyllum</td>
<td>2</td>
<td>Y</td>
<td>33.3</td>
<td>FAC</td>
</tr>
<tr>
<td>Tolmiea menziesii</td>
<td>2</td>
<td>Y</td>
<td>33.3</td>
<td>FAC</td>
</tr>
</tbody>
</table>

#### Woody Vine Stratum (Plot size: 5ft x 5ft)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubus armeniacus</td>
<td>2</td>
<td>N</td>
<td>6.5</td>
<td>FACU</td>
</tr>
<tr>
<td>Oemleria cerasiformis</td>
<td>2</td>
<td>N</td>
<td>6.5</td>
<td>FACU</td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

### Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants¹
- 6 - Problematic Hydrophytic Vegetation¹ (Explain)

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

### Remarks:

---

**Hydrophytic Vegetation Present?** ☑ Yes ☐ No
**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>10YR</td>
<td>2/2</td>
<td>100</td>
<td></td>
<td></td>
<td>Sandy Loam</td>
<td>concentration is faint</td>
</tr>
<tr>
<td>3-16</td>
<td>2.5Y</td>
<td>5/6</td>
<td>98</td>
<td>10YR</td>
<td>4/6</td>
<td>C</td>
<td>M</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Hydric Soil Present?**  Yes  No

**Restrictive Layer (if present):**

- Type: __________________________
- Depth (inches): ________________

**Hydric Soil Present?**  Yes  No

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

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

**Field Observations:**

- Surface Water Present?  Yes  No  Depth (inches): ________________
- Water Table Present?  Yes  No  Depth (inches): ________________
- Saturation Present?  Yes  No  Depth (inches): ________________

**Wetland Hydrology Present?**  Yes  No

**Remarks:**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 000 Springbrook Bank - Unit B  City/County: Renton/King  Sampling Date: 3/7/2018
Applicant/Owner: WSDOT  State: WA  Sampling Point: WB-SP3
Investigator(s): Tatiana Dreisbach, Jennie Husby  Section, Township, Range: S25, T23N, R4E
Landform (hillslope, terrace, etc.): depression  Local relief (concave, convex, none): concave  Slope (%): 5
Subregion (LRR): A  Lat: 47.455  Long: -122.231  Datum: NAD83HARN
Soil Map Unit Name: Woodinville silt loam  NWI Classification: PFO

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

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

Hydrophytic Vegetation Present?  Yes  No
Hydric Soil Present?  Yes  No
Wetland Hydrology Present?  Yes  No

Is the Sampled Area within a Wetland?  Yes  No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum  (Plot size: 20 x 10ft)

1. Salix lasiandra  % Cover  20  Dom. Sp.?  Y  Relative % Cover  74.1  Indicator Status  FACW
2. Fraxinus latifolia
3. 
4. 
5. = Total Cover

Sapling/Shrub Stratum  (Plot size: 15 x 10ft)

1. Salix lasiandra  20  Y  74.1  FACW
2. Cornus alba  5  N  18.5  FACW
3. Rosa pisocarpa  2  N  7.4  FAC
4. 
5. = Total Cover

Herb Stratum  (Plot size: 5ft x 5ft)

1. Typha angustifolia  5  Y  33.3  OBL
2. grass  10  Y  66.7  #N/A
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 
13. 
14. 
15. = Total Cover

Woody Vine Stratum  (Plot size: 5ft x 5ft)

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 
13. 
14. 
15. = Total Cover

% Bare Ground in Herb Stratum  85

Remarks:

grass = not in flr

Dominate Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:
OBL species  5  x 1 = 5
FACW species  25  x 2 = 50
FAC species  2  x 3 = 6
FACU species  0  x 4 = 0
UPL species  0  x 5 = 0
Column Totals:  32  (A)  61 (B)
Prevalence Index = B/A = 1.906

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

Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present?  Yes  No
### Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Location²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>10YR</td>
<td>3/2</td>
<td>100</td>
<td></td>
<td></td>
<td>SANDY LOAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-16</td>
<td>10YR</td>
<td>4/1</td>
<td>75</td>
<td></td>
<td></td>
<td>SILT LOAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.5Y</td>
<td>5/4</td>
<td>C</td>
<td>PL&amp;M</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5GY</td>
<td>5/1</td>
<td>D</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

### Restrictive Layer (if present):

- Type: ____________________________
- Depth (inches): ____________________

### Wetland Hydrology Indicators:

#### Primary Indicators (minimum of one required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

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

### Field Observations:

- Surface Water Present? ☐ Yes ☐ No
- Water Table Present? ☐ Yes ☐ No
- Saturation Present? ☐ Yes ☐ No

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

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

Project/Site: 000 Springbrook Bank - Unit B  City/County: Renton/King  Sampling Date: 3/7/2018
Applicant/Owner: WSDOT  State: WA  Sampling Point: WB-SP4
Investigator(s): Tatiana Dreisbach, Jennie Husby  Section, Township, Range: S25, T23N, R4E
Landform (hillslope, terrace, etc.): depression  Local relief (concave, convex, none): concave  Slope (%): 5
Subregion (LRR): A  Lat: 47.452  Long: -122.23  Datum: NAD83HARN
Soil Map Unit Name: Woodinville silt loam  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  No
Hydric Soil Present?  Yes  No
Wetland Hydrology Present?  Yes  No
Is the Sampled Area within a Wetland?  Yes  No
Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20ft x 20ft)
1. *Salix lasiandra*  
   Absolute % Cover 75  
   Relative % Cover 100.0 FACW
2. 
3. 
4. 
5. 

Sapling/Shrub Stratum (Plot size: 15ft x 15ft)
1. *Cornus alba*  
   Absolute % Cover 20  
   Relative % Cover 100.0 FACW
2. 
3. 
4. 
5. 

Herb Stratum (Plot size: 5ft x 5ft)
1. *Phalaris arundinacea*  
   Absolute % Cover 20  
   Relative % Cover 90.9 FACW
2. *Ranunculus repens*  
   Absolute % Cover 2  
   Relative % Cover 9.1 FAC
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3  (A)
Total Number of Dominant Species Across All Strata: 3  (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0%  (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species 0  x 1 = 0
FACW species 115  x 2 = 230
FAC species 2  x 3 = 6
FACU species 0  x 4 = 0
UPL species 0  x 5 = 0
Column Totals: 117  (A)  236  (B)
Prevalence Index = B/A = 2.017

Hydrophytic Vegetation Indicators:
- Rapid Test for Hydrophytic Vegetation
- Dominance Test is >50%
- Prevalence Index <3.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation (Explain)

Hydrophytic Vegetation Present?  Yes  No

Remarks:
### Sampling Point: WB-SP4

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>Matrix %</th>
<th>Redox Features Color (moist)</th>
<th>Redox Features %</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>10YR</td>
<td>3/2</td>
<td>2.5Y</td>
<td>4/2</td>
<td>10</td>
<td>D</td>
<td>M</td>
<td>Sandy Loam</td>
</tr>
<tr>
<td>5-16</td>
<td>2.5Y</td>
<td>4/2</td>
<td>10YR</td>
<td>4/4</td>
<td>10</td>
<td>C</td>
<td>M</td>
<td>Sandy Loam</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

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

#### Restrictive Layer (if present):
Type: ____________________________
Depth (inches): ____________________________

Hydric Soil Present? ○ Yes ○ No

#### Remarks:

---

#### Hydrology

### Wetland Hydrology Indicators:

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

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

#### Field Observations:
- Surface Water Present? ○ Yes ○ No Depth (inches): __________
- Water Table Present? ○ Yes ○ No Depth (inches): __________
- Saturation Present? ○ Yes ○ No Depth (inches): __________

Wetland Hydrology Present? ○ Yes ○ No

---

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

#### Remarks:
### Appendix B — Precipitation Data

**Appendix B-1. Comparison of Observed and Normal Precipitation (NRCS 2015)**


<table>
<thead>
<tr>
<th>Month</th>
<th>3 yrs. in 10 less than</th>
<th>Average</th>
<th>3 yrs. in 10 more than</th>
<th>Rainfall (a)</th>
<th>Condition dry, wet, normal (b)</th>
<th>Condition Value</th>
<th>Month weight value</th>
<th>Product of previous two columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb</td>
<td>2.73</td>
<td>4.18</td>
<td>5.02</td>
<td>2.16</td>
<td>D</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Jan</td>
<td>3.58</td>
<td>5.13</td>
<td>6.10</td>
<td>8.12</td>
<td>W</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Dec</td>
<td>3.94</td>
<td>5.62</td>
<td>6.68</td>
<td>5.43</td>
<td>N</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

\(a\)NRCS 2018  
\(b\)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, SeaTac, Washington

Daily precipitation data for SeaTac, Washington.

<table>
<thead>
<tr>
<th>Date (2018)</th>
<th>Daily Precipitation (inches)(^a)</th>
</tr>
</thead>
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<td>March 6</td>
<td>0.00</td>
</tr>
<tr>
<td>March 5</td>
<td>0.00</td>
</tr>
<tr>
<td>March 4</td>
<td>0.13</td>
</tr>
<tr>
<td>March 3</td>
<td>0.00</td>
</tr>
<tr>
<td>March 2</td>
<td>0.18</td>
</tr>
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<td>March 1</td>
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<td>Feb 28</td>
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<tr>
<td>Feb 27</td>
<td>0.01</td>
</tr>
<tr>
<td>Feb 26</td>
<td>0.00</td>
</tr>
<tr>
<td>Feb 25</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>0.70</strong></td>
</tr>
</tbody>
</table>

\(^a\) NRCS 2018

Conclusions: Light precipitation was recorded in the ten days preceding field work.
Literature Cited


