I-405 Kelsey Creek Wetland Mitigation Site
SE 8th to I-90 Project - USACE NWP (14) 200501405
112th Ave SE to I-90 Project - NWP (14) 200600524
NE 195th St to SR 527 - Northbound Auxiliary Lane - NWP (14) NWS200900396
Bellevue to Lynwood Improvement Project – NWP (14) NWS-2007-1711

Northwest Region
2017 MONITORING REPORT

Wetlands Program

Issued March 2018
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I-405 Kelsey Creek Wetland Mitigation Site
SE 8th to I-90 Project - USACE NWP (14) 200501405; 112th Ave SE to I-90 Project- NWP (14) 200600524; NE 195th St to SR 527 - Northbound Auxiliary Lane- NWP (14) 200900396; Bellevue to Lynwood Improvement Project– NWP (14) NWS-2007-1711

General Site Information

<table>
<thead>
<tr>
<th>USACE NWP (14) Numbers</th>
<th>200501405, 200600524, 200900396, NWS-2007-1711</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation Location</td>
<td>In Kelsey Creek Park, in the City of Bellevue, King Co.</td>
</tr>
<tr>
<td>LLID Number</td>
<td>1221672475986</td>
</tr>
<tr>
<td>Construction Date</td>
<td>2007-2008</td>
</tr>
<tr>
<td>Monitoring Period</td>
<td>2008-2017</td>
</tr>
<tr>
<td>Year of Monitoring</td>
<td>10 of 10</td>
</tr>
<tr>
<td>Type of Impact</td>
<td>Wetland</td>
</tr>
<tr>
<td>Area of Project Wetland Impacts¹</td>
<td>0.794 acre</td>
</tr>
<tr>
<td>Type of Mitigation</td>
<td>Wetland Restoration</td>
</tr>
<tr>
<td>Area of Mitigation¹</td>
<td>2.4 acres</td>
</tr>
</tbody>
</table>

¹See Appendix 3, Table 1 for a breakdown of the project impacts and mitigation acreages.
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### Summary of Monitoring Results and Management Activities (2017)

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>2017 Results²</th>
<th>Management Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland delineation (2.452 acres of restored wetland)</td>
<td>2.48 acres (March 2017) See Appendix 4 for delineation report.</td>
<td>Site activities are being performed to achieve restoration goals with adaptive management as necessary due to beaver activity</td>
</tr>
<tr>
<td>65% cover native woody species in the forested and scrub-shrub wetlands</td>
<td>49% cover (CI_{80%} = 44-54%)</td>
<td>Five species achieve at least 10% relative cover</td>
</tr>
<tr>
<td>10% relative cover of two native, non-invasive facultative or wetter woody plant species in the forested and scrub-shrub wetland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30% cover reed canarygrass (<em>Phalaris arundinacea</em>) in the wetland restoration areas; Less than 20% cover other species identified as King County Class A noxious weeds, including non-native blackberries (<em>Rubus</em> species) and Scotch broom (<em>Cytisus scoparius</em>) in the wetland restoration areas; purple loosestrife (<em>Lythrum salicaria</em>) and non-native knotweeds (Japanese knotweed (<em>Reynoutria japonica</em>), Himalayan knotweed (<em>Persicaria wallichii</em>), giant knotweed (<em>Reynoutria sachalinensis</em>), and Bohemian knotweed (<em>Reynoutria X bohemica</em>)) shall not be present at the mitigation site</td>
<td>3% total cover of invasive species across the forested and scrub-shrub wetland (qualitative)</td>
<td>Weed control activities have been performed and site is actively managed</td>
</tr>
</tbody>
</table>

---

² Estimated values are presented with their corresponding statistical confidence interval. For example, 49% (CI_{80\%} = 44-54% cover) means we are 80% confident that the true cover value is between 44% and 54%.
<table>
<thead>
<tr>
<th>Vegetation Coverage</th>
<th>Cover Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native woody species in the buffer</td>
<td>55% cover</td>
</tr>
<tr>
<td>Two native, non-invasive plant species in the buffer</td>
<td>7% relative cover</td>
</tr>
<tr>
<td>Reed canarygrass in the buffer</td>
<td>Less than 30% cover</td>
</tr>
<tr>
<td>Other species identified as King County Class A noxious weeds, including non-native blackberries and Scotch broom in the buffer</td>
<td>Less than 20% cover</td>
</tr>
<tr>
<td>Purple loosestrife and non-native shall not be present in the buffer</td>
<td>Less than 5% cover</td>
</tr>
<tr>
<td>Large woody debris</td>
<td>Present</td>
</tr>
</tbody>
</table>

**Weed control activities have been performed and site is actively managed.**

**Report Introduction**

This report summarizes final-year (Year 10) monitoring activities at the 405 Kelsey Creek Mitigation Site. Included are a site description, performance standards, an explanation of monitoring methods, and an evaluation of site success. Monitoring activities included vegetation surveys, photo-documentation, and a wetland delineation. Vegetation surveys took place on July 17-18, and wetland delineation took place on March 13, 2017.
What is the I-405 Kelsey Creek Mitigation Site?

The Kelsey Creek Mitigation Site includes 2.4 acres of wetland restoration located within Kelsey Creek Park in the City of Bellevue. This 3.6-acre mitigation site (Figure 1) is bordered on three sides by the existing Kelsey Creek wetland complex. This site was established in part to compensate for the loss of 0.794 acre from the four projects listed above. Currently 1.408 acres of wetland have been applied to mitigate these impacts. The remaining wetland restoration acreage on this site is intended as advanced mitigation for future I-405 Corridor Program projects (Appendix 3 Table 1).

![Site Sketch]

Figure 1   Site Sketch

The I-405 Kelsey Creek Mitigation Site contains emergent wetland, scrub-shrub wetland, forested wetland, and upland buffer plant communities. Photo points and directions to the site are in Appendix 2.
What are the performance standards for this site?

Year 10

Performance Standard 1  
Wetland areas will be delineated using methods described in the *Washington State Wetlands Identification and Delineation Manual* (Ecology, 1997) to ensure that the mitigation site contains at least 2.452 acres of restored wetland.

Performance Standard 2  
After 10 years, aerial cover of native woody species will be at least 65 percent in the forested and scrub-shrub wetlands.

Performance Standard 3  
At least two native, non-invasive facultative or wetter woody plant species will achieve a minimum of 10 percent relative cover for each species in the forested and scrub-shrub wetland zones by Year 10.

Performance Standard 4  
Reed canarygrass will not exceed 30 percent aerial cover in the wetland restoration areas. Other species identified as King County Class A noxious weeds, including non-native blackberries and Scot’s broom, will not exceed 20 percent aerial cover in the wetland restoration areas. Purple loosestrife and non-native knotweeds (Japanese, giant, Himalayan or related hybrid) shall not be present at the mitigation site.

Performance Standard 5  
After 10 years, aerial cover of native woody species will be at least 55 percent in the buffer.

Performance Standard 6  
At least two native, non-invasive plant species will achieve a minimum of seven percent relative cover for each species in the buffer.

Performance Standard 7  
Reed canarygrass will not exceed 30 percent aerial cover in the buffer areas. Other species identified as King County Class A noxious weeds, including non-native blackberries and Scot’s broom, will not exceed 20 percent aerial cover in the buffer. Purple loosestrife and non-native knotweeds (Japanese, giant, Himalayan or related hybrid) shall not be present in the buffer.
Performance Standard 8
At least 52 pieces of wood (vertical snags, naturally fallen snags, and/or large woody debris) will occur at the mitigation site by Year 10.

Appendix 1 shows the as-built planting plan (WSDOT 2007).
How were the performance standards evaluated?

WSDOT staff delineated the mitigation site in the spring of 2017 to determine total wetland acreage (Performance Standard 1). To evaluate standards for vegetative cover in the scrub-shrub wetland, a 120 meter baseline was established through the center of the wetland at 50 degrees (Figure 2). Twelve sampling transects were randomly placed perpendicular to the baseline. The line intercept method was used to determine woody cover (Performance Standards 2 & 3). Thirty 20-meter line-segment sample units were randomly positioned along the sampling transects in the wetland.

On March 30, 2017 a request to discontinue quantitative sampling for woody cover in the upland buffer (Performance Standards 5 & 6) was sent to the USACE and the Department of Ecology. This request was accepted on April 6, 2017 by the Department of Ecology and April 10, 2017 by USACE. These performance standards were qualitatively estimated.

The cover of target invasive and noxious species (Performance Standards 4 & 7) were also qualitatively estimated. Habitat structures were counted to ensure that all snags and large woody debris installations were present according to plan (Performance Standard 8).

For additional details on the methods, see the WSDOT Wetland Mitigation Site Monitoring Methods Paper (WSDOT 2008).
**Is the site a success?**

The Kelsey Creek mitigation site has successfully reestablished wetland hydrology and contains diverse, native plant communities. The site provides high quality wildlife habitat that was lost as a result of road improvements along I-405. The buffer zone has dense vegetation that continues to develop an upper canopy and a lower understory of shrubs. In the forested and scrub-shrub wetland zones, native woody and herbaceous vegetation has established. While the site did not achieve the woody cover performance standard, the zones have filled in with robust herbaceous emergent vegetation composed of native sedges, rushes, and cattails.

This variety of vegetation, in addition to the installation of dead snags and large woody debris, has created many habitat niches for wildlife. Observed avian species included Swanson’s Thrush (*Buteo swainsoni*), Cedar Waxwing (*Bombycilla cedrorum*), American Goldfinch (*Carduelis tristis*), Northern Flicker (*Picoides villosus*), Downy Woodpecker (*Picoides pubescens*), Marsh Wren (*Cistothorus palustris*), Virginia Rail (*Rallus limicola*), and Red-tailed Hawk (*Buteo jamaicensis*). Coyote and deer tracks were also observed on site. Beaver chews and canals were prevalent along the southern periphery. The site’s position to adjacent wetlands within a regionally significant wildlife habitat area increases connectivity and likely provides a net biological lift in habitat function.
Results for Performance Standard 1
(Wetland delineation [2.452 acres of restored wetland]):

WSDOT delineated this site on March 13, 2017 and estimated a total of 2.48 acres of restored wetland. See Appendix 4 for delineation report (Photo 1).

Results for Performance Standard 2
(65% cover native woody species in the forested and scrub-shrub wetlands)

Cover of species in these zones is estimated 49% (CI_{80\%} = 44-54%). This is below the performance standard target. The lower cover of woody species is present alongside a hydrophytic emergent community, which favors the wetter conditions than are currently present in the scrub shrub zone (Photo 2).

Results for Performance Standard 3
(10% relative cover of two native, non-invasive facultative or wetter woody plant species in the forested and scrub-shrub wetland)

Five species achieved at least 10 percent relative cover (Photo 3). These included Sitka willow (*Salix sitchensis*), Pacific willow (*Salix lasiandra*), red alder (*Alnus rubra*), cluster rose (*Rosa pisocarpa*), and Nootka rose (*Rosa nutkana*).
Results for Performance Standard 4
(Less than 30% cover reed canarygrass in the wetland restoration areas; Less than 20% cover other species identified as King County Class A noxious weeds, including non-native blackberries and Scotch broom in the wetland restoration areas; purple loosestrife and non-native knotweeds shall not be present at the mitigation site):

Total cover of invasive species across the site is qualitatively estimated at three percent. Purple loosestrife was observed at the time of monitoring, reported, and controlled. Patches of Himalayan blackberry (Rubus armeniacus), cutleaf blackberry (Rubus laciniatus), Scot’s broom, and reed canarygrass are also present in small quantities.

Results for Performance Standard 5
(Fifty-five percent cover native woody species in the buffer):

Cover in the buffer is qualitatively estimated at 90-95 percent (Photo 4). This exceeds the performance standard target.

Results for Performance Standard 6
(Seven percent relative cover of at least two native, non-invasive plant species in the buffer):

Five species were qualitatively estimated to have at least seven percent relative cover, including snowberry (Symphoricarpos albus), black cottonwood (Populus balsamifera), Douglas-fir (Pseudotsuga menziesii), Sitka spruce (Picea sitchensis), and Nootka rose (Photo 5).
Results for Performance Standard 7
(Less than 30% cover reed canarygrass in the buffer; less than 20% cover other species identified as King County Class A noxious weeds, including non-native blackberries and Scotch broom in the buffer; purple loosestrife and non-native knotweeds shall not be present in the buffer):

Cover of target invasive species in the upland buffer was qualitatively estimated at one percent. This is below the performance standard threshold. Target species observed in the buffer were reed canarygrass, Himalayan blackberry, and cutleaf blackberry.

Results for Performance Standard 8
(At least 52 pieces of wood, e.g. vertical snags, naturally fallen snags, and/or large woody debris):

At least 52 snags and woody debris piles are present on site (Photo 6).
Appendix 1 – Planting Plan with Photo Point Locations and Hydrology Well Locations

(WSDOT 2007)
Appendix 2 – Photo Points
The photographs below were taken from permanent photo-points on July 17, 2017 and document current site development.

Photo Point 1
Photo Point 2
Photo Point 3
Photo Point 4
Driving Directions:
From I-405 North take the exit at 8th Street Southeast and turn right, following to Lake Hills Connector. Turn right. Follow past Richards Road (near site) and continue on to 134th Street. At 134th Street, perform a U-turn. Go back to the site and park on the rip-rap parking pad.
Table 1. Project Impacts and Mitigation Summary from the Kelsey Creek Wetland Mitigation Plan Addendum Numbers 3 and 4 and 5 (WSDOT 2008, 2009, and 2011).

<table>
<thead>
<tr>
<th>Project</th>
<th>USACE Permit Number</th>
<th>Wetland Impacts (acres)</th>
<th>Restoration Needed per Implementing Agreement (acres)</th>
<th>Additional Mitigation Provided (acres)</th>
<th>Total Restoration Applied (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 8th to I-90</td>
<td>NWP (14) 200501405</td>
<td>0.228</td>
<td>0.377</td>
<td>-</td>
<td>0.377</td>
</tr>
<tr>
<td>112th Ave SE to I-90</td>
<td>NWP (14) 200600524</td>
<td>0.098</td>
<td>0.122</td>
<td>0.124</td>
<td>0.246</td>
</tr>
<tr>
<td>NE 195th St to SR 527</td>
<td>NWP (14) 200900396</td>
<td>0.078⁵</td>
<td>0.125</td>
<td></td>
<td>0.125</td>
</tr>
<tr>
<td>Bellevue to Lynwood</td>
<td>NWP (14) 2007-1711</td>
<td>0.39</td>
<td>0.660</td>
<td></td>
<td>0.660</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td><strong>0.404</strong></td>
<td><strong>1.284</strong></td>
<td><strong>0.124</strong></td>
<td><strong>1.408</strong></td>
</tr>
</tbody>
</table>

**Total Proposed Restoration (acres)** 2.452  
**Excess Available as Advance Mitigation for Future Impacts (acres)** 1.044

⁴ Additional mitigation provided for forested buffer impacts per Ecology recommendation  
⁵ The USACE permit lists this impact as 0.08 acre.
Appendix 4 – Delineation Report
WETLAND DELINEATION REPORT

405 Kelsey Creek Mitigation Site

I-405, SR 522 to 520, Kirkland Nickel Project
USACE IP 200401410

SE 8th to I-90 (South Bellevue) Project
USACE (NWP 14) 200501405

112th Ave SE to I-90 Project
USACE (NWP 14) 200600524

Bellevue Braids Project
USACE (NWP 14) 2009-396

Bellevue to Lynwood Improvement Project
USACE (NWP 14) 2007-1711

King County, Washington

Prepared by:
Kristen Andrews
WSDOT Environmental Services Office
Olympia, Washington

September 19, 2017
**Introduction**

This report was prepared by the Washington State Department of Transportation (WSDOT) to describe the wetland boundary delineation for the 405 Kelsey Creek Mitigation Site. Field work was conducted by WSDOT wetland biologists Jennie Husby and Tom Mohagen on March 13, 2017 and Kristen Andrews on September 5, 2017. The delineation identifies 2.48 acres of wetland.

The wetland was previously delineated in April 2011 (WSDOT 2011). The purpose of the 2017 field work was to reevaluate the 2011 wetland boundary and document any wetland boundary modifications if necessary. This report updates and replaces the 2011 delineation report. The 2017 delineation resulted in a minor wetland boundary amendment (Figure 1).

<table>
<thead>
<tr>
<th>General Information for the 405 Kelsey Creek Mitigation Site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong> S04, T24N, R5E. King County. (Vicinity map, Figure 1)</td>
</tr>
<tr>
<td><strong>USACE NWP 14 and IP Numbers</strong></td>
</tr>
<tr>
<td><strong>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>
</tr>
<tr>
<td><strong>Construction Date</strong></td>
</tr>
<tr>
<td><strong>Monitoring Period</strong></td>
</tr>
<tr>
<td><strong>Year of Monitoring</strong></td>
</tr>
</tbody>
</table>

| **Area of Project Impact** | 1.034 acres |
| **Type of Mitigation** | **Required Acreage** | **2017 Delineated Acreage** |
| **Re-establishment** | 1.838 | 2.48 acres |
| **Totals** | ²1.838 | 2.48 acres |

| **Total Delineated Wetland Area** | In addition to 2.41 acres of wetland occurring within the required re-establishment area, an additional 0.07 acre of wetland is present in the upland buffer enhancement area. The total delineated wetland area within the study area is 2.48 acres (Figure 2). |

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¹ Project impact and required acreages from Kelsey Creek Wetland Mitigation Plan (WSDOT 2006), Addenda 3 (2008), 4 (2009), and 5 (2011) and from WA State DOE WQC #2547, Fourth Amendment, July 22, 2011.

² The required wetland mitigation acreage is 1.838 acres. Additional wetland area in excess of the required acreage was planned at the mitigation site (WSDOT 2006).
Location

Figure 1. Vicinity Map
Methods

Wetland boundaries within the 405 Kelsey Creek 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
- navigate to the 2011 delineation boundary
- record 2017 sampling point locations and
- record 2017 wetland boundary amendments where necessary (Figure 2).

Wetland mitigation types were georeferenced by digitizing the mitigation site as-built planting plan in ArcGIS 10.3.1. Inherent in both GPS and georeferencing are minute errors, resulting in slight inaccuracies in both boundary line placement and acreage calculations. These tools represent the best available methods at the time of the study and report preparation.

Wetland Delineation and Study Area

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

Wetlands
The Kelsey Creek Mitigation Site remains in similar condition as documented in 2011 with the exception of the vegetation community. The wetland boundary and acreage had a moderate change. The vegetation community has continued to establish, with the woody plant community increasing in height and providing additional cover. The palustrine scrub-shrub (PSS) community was documented in 2011. A robust herbaceous emergent community has developed in the understory of the palustrine scrub-shrub community (PSS) and even taken over as the dominant community in parts of the wetland.

The six year lapse in time has allowed a young palustrine forested (PFO) community to establish where it was originally planned. This area did not delineate with the rest of the wetlands on site in 2011. The wetland boundary was amended during the 2017 delineation, as the required wetland indicators were present in this area. This variation
in the wetland boundary location was documented.

Wetland Boundary Verification
The 2017 delineation verification determined 2.48 acres of wetland were present within the Kelsey Creek Mitigation Site. Moderate wetland boundary amendments were made in 2017 and likely represent minor changes in observable field conditions and variations in yearly precipitation accumulation.

Delineation data were collected at four sampling points and recorded on wetland determination data forms (Appendix A). Paired wetland and upland sample points were used to define the wetland edge and were placed

- in locations documenting where the wetland boundary has remained unchanged, and
- in locations where the wetland boundary required adjustment.

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.

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. One of the three months prior to field work were within the normal range with the first prior month wetter than normal and 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 was present on some herbaceous plants.
- The buds on most woody species were breaking.
Figure 2. Study area in black, wetland boundary in red, and sampling point locations in black.
## 405 Kelsey Creek Mitigation Site – Wetland Delineation Summary

<table>
<thead>
<tr>
<th>Total Delineated Wetland Area</th>
<th>2.48 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wetland Determination Data Form</strong></td>
<td>Appendix A; Sampling Point W1-SP1, W1-SP3</td>
</tr>
<tr>
<td><strong>Upland Determination Data Form</strong></td>
<td>Appendix A; Sampling Point W1-SP2, W1-SP4</td>
</tr>
<tr>
<td><strong>Delineators</strong></td>
<td>Jennie Husby, Tom Mohagen, Kristen Andrews</td>
</tr>
<tr>
<td><strong>Delineation Date</strong></td>
<td>March 13, 2017, September 5, 2017</td>
</tr>
</tbody>
</table>

### Vegetation

- Trees – red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*)
- Shrubs – cluster rose (*Rosa pisocarpa*), Pacific willow (*Salix lasiandra*), Sitka willow (*Salix sitchensis*), redosier dogwood (*Cornus alba*)
- Herbs – slough sedge (*Carex obnupta*), soft rush (*Juncus effusus*), colonial bentgrass (*Agrostis capillaris*), broadleaf cattail (*Typha latifolia*)

### Soils

Soils examined to a depth of 18 inches exhibited hydric characteristics. Matrix colors of 10YR 4/2, 7.5YR 5/1, 10B 5/1, and 10YR 4/1 were observed. Redoximorphic concentrations were observed in the bottom layer (3-18 inches) for W1-SP1. Redoximorphic concentrations were observed throughout the soil profile (0-18 inches) for W1-SP3. Indicators F2 and F3 met.

### Hydrology

Groundwater appears to be the main source of hydrology. Precipitation also contributes to the hydrologic regime of this wetland. The water table in the W1-SP1 sample pit was observed at 9 inches below the surface and the soil was saturated to the surface. Surface water as deeper than 16 inches was observed in some areas during the March 2017 site visit. Hydrology was lacking in the W1-SP3 sample pit at the time of the September site visit. Three secondary hydrology indicators were relied upon to demonstrate hydrology in this area due to the extremely dry conditions. However, areas of deep inundation was observed elsewhere on site despite this lack of rain.

### Rationale for Delineation

Positive indicators of all three wetland criteria are present. Placement of boundary determined by vegetation, topography and in some cases, the area of interest. Wetland vegetation stopped abruptly and upland areas directly adjacent to wetland were dominated by upland species on the south edge of the site. A distinct topographic break was present in this area. The boundary around a large portion of the site was determined by area of interest because the Kelsey Creek wetland is a part of a larger wetland complex that continues outside of the site boundary.

## 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.


Appendix A —Wetland Determination Data Forms

Wetland Delineation Data Forms for:
W1-SP1
W1-SP2
W1-SP3
W1-SP4
Wetland polygons, sampling point locations, and wetland names shown in Figure 2.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 405 Kelsey Creek  
City/County: Bellevue, King County  
Sampling Date: 3/13/2017  
Applicant/Owner: WSDOT  
State: WA  
Sampling Point: w1-sp1

Investigator(s): Jennie Husby  
Tom Mohagen  
Section, Township, Range: S04, T24N, R5E  
Landform (hillslope, terrace, etc.): Lowland  
Local relief (concave, convex, none): convex  
Slope (%): 2  
Subregion (LRR): A  
Lat: 47.59636  
Long: -122.167261  
Datum: NAD83HARN

Soil Map Unit Name: Seattle Muck, Bellingham 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  
(If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

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

Remarks:

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30ft x 30ft)</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>
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<td></td>
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</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15ft 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. <em>Alnus rubra</em></td>
<td>20</td>
<td>Y</td>
<td>47.6</td>
<td>FAC</td>
</tr>
<tr>
<td>2. <em>Thuja plicata</em></td>
<td>2</td>
<td>N</td>
<td>4.8</td>
<td>FAC</td>
</tr>
<tr>
<td>3. <em>Picea sitchensis</em></td>
<td>5</td>
<td>N</td>
<td>11.9</td>
<td>FAC</td>
</tr>
<tr>
<td>4. <em>Rosa pisocarpa</em></td>
<td>10</td>
<td>Y</td>
<td>23.8</td>
<td>FAC</td>
</tr>
<tr>
<td>5. <em>Populus balsamifera</em></td>
<td>5</td>
<td>N</td>
<td>11.9</td>
<td>FAC</td>
</tr>
</tbody>
</table>

= Total Cover

<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. <em>Agrostis capillaris</em></td>
<td>90</td>
<td>Y</td>
<td>84.1</td>
<td>FAC</td>
</tr>
<tr>
<td>2. <em>Cardamine oligosperma</em></td>
<td>1</td>
<td>N</td>
<td>0.9</td>
<td>FAC</td>
</tr>
<tr>
<td>3. <em>Ranunculus repens</em></td>
<td>1</td>
<td>N</td>
<td>0.9</td>
<td>FAC</td>
</tr>
<tr>
<td>4. <em>Carex obtusa</em></td>
<td>10</td>
<td>N</td>
<td>9.3</td>
<td>OBL</td>
</tr>
<tr>
<td>5. <em>Holcus lanatus</em></td>
<td>5</td>
<td>N</td>
<td>4.7</td>
<td>FAC</td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15ft 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.</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 5

### 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, FAC, or FAC: 100.0% (A/B)

### Prevalence Index worksheet:

- Total % Cover of:  
  - OBL species 10 x 1 = 10  
  - FACW species 0 x 2 = 0  
  - FAC species 139 x 3 = 417  
  - FACU species 0 x 4 = 0  
  - UPL species 0 x 5 = 0  
- Column Totals: 149 (A) 427 (B)

- Prevalence Index = B/A = 2.866

### 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)

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

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>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>10YR</td>
<td>4/2</td>
<td>40</td>
<td>Silty Clay Loam</td>
</tr>
<tr>
<td></td>
<td>7.5YR</td>
<td>5/1</td>
<td>60</td>
<td>Silty Clay Loam</td>
</tr>
<tr>
<td>3-18</td>
<td>10B</td>
<td>5/1</td>
<td>85</td>
<td>Silty Clay Loam</td>
</tr>
<tr>
<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.

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)
- Loam Mucky Matrix (F1) (except MLRA 1)
- Depleted 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: Meets both F2 and F3 indicators.

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.

### HYDROLOGY

Wetland Hydrology Indicators:

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

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

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

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

Field Observations:

- Surface Water Present? ■ Yes  ○ No  Depth (inches): __________
- Water Table Present?  ■ Yes  ○ No  Depth (inches): __________  9
- Saturation Present?  ■ Yes  ○ No  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: 405 Kelsey Creek  
City/County: Bellevue, King County  
Sampling Date: 3/13/2017

Applicant/Owner: WSDOT  
State: WA  
Sampling Point: W1-sp2

Investigator(s): Jennie Husby  
Tom Mohagen  
Section, Township, Range: S04, T24N, R5E

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

Subregion (LRR): A  
Lat: 47.598636  
Long: -122.167261  
Datum: NAD83HARN

Soil Map Unit Name: Seattle Muck, Bellingham Silt Loam  
NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year?  
Yes  
No

Are Vegetation, Soil, or Hydrology significantly disturbed?  
Yes  
No

Are Vegetation, Soil, or Hydrology naturally problematic?  
Yes  
No

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

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

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30ft x 30ft)</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alnus rubra</td>
<td>25</td>
<td>Y</td>
<td>100.0</td>
<td>FAC</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25 = Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15ft 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. Picea sitchensis</td>
<td>15</td>
<td>Y</td>
<td>39.5</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Populus balsamifera</td>
<td>10</td>
<td>Y</td>
<td>26.3</td>
<td>FAC</td>
</tr>
<tr>
<td>3. Thuja plicata</td>
<td>3</td>
<td>N</td>
<td>7.9</td>
<td>FAC</td>
</tr>
<tr>
<td>4. Physocarpus capitatus</td>
<td>5</td>
<td>N</td>
<td>13.2</td>
<td>FACW</td>
</tr>
<tr>
<td>5. Rosa nutkana</td>
<td>5</td>
<td>N</td>
<td>13.2</td>
<td>FAC</td>
</tr>
</tbody>
</table>

38 = Total Cover

<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. Ranunculus repens</td>
<td>40</td>
<td>Y</td>
<td>59.7</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Agrostis capillaris</td>
<td>20</td>
<td>Y</td>
<td>29.9</td>
<td>FAC</td>
</tr>
<tr>
<td>3. Cirsium vulgare</td>
<td>5</td>
<td>N</td>
<td>7.5</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Cardamine oligosperma</td>
<td>1</td>
<td>N</td>
<td>1.5</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Geum macrophyllum</td>
<td>1</td>
<td>N</td>
<td>1.5</td>
<td>FAC</td>
</tr>
<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>
<td>9.</td>
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</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>
<tr>
<td>67 = Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15ft 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. Hedera helix</td>
<td>2</td>
<td>Y</td>
<td>28.6</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Rubus armeniac</td>
<td>5</td>
<td>Y</td>
<td>71.4</td>
<td>FAC</td>
</tr>
</tbody>
</table>

7 = Total Cover

% Bare Ground in Herb Stratum: 15

Remarks:

**Dominance Test worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
- Total Number of Dominant Species Across All Strata: 7 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>0 x 1 = 0</td>
</tr>
<tr>
<td>FACW species</td>
<td>5 x 2 = 10</td>
</tr>
<tr>
<td>FAC species</td>
<td>125 x 3 = 375</td>
</tr>
<tr>
<td>FACU species</td>
<td>7 x 4 = 28</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>137 (A) 413 (B)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A = 3.015

**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
- 6 - Problematic Hydrophytic Vegetation¹ (Explain)

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

**Hydrophytic Vegetation Present?**

- Yes
- No

Remarks:

US Army Corps of Engineers (WSDOT Adapted Form - February 2016)  
Western Mountains, Valleys, and Coast – Version 2.0
### 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>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10YR</td>
<td>5/3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>Silty Clay Loam</td>
<td></td>
</tr>
<tr>
<td>10-18</td>
<td>5GY</td>
<td>5/1</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td>Silty Clay Loam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10YR</td>
<td>5/3</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>Silty Clay Loam</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)

**Indicators for Problematic Hydric Soils³:**
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Hydric Soil Present?** Yes

**Restrictive Layer (if present):**
- Type: 
- Depth (inches): 

**Remarks:**
This sample point is located on a mound at the edge of the mitigation site. It is surrounded on all sides by wetland. The plants growing in this area are mostly FAC. The top layer of soil displays no redox features indicating a fluctuation of water on a seasonal basis and no oxidation along root channels was observed in the gley layer. The gley matrix color begins at ten inches below the soil surface. The gley soil matrix color is possibly relict, having formed under circumstances different from the ones currently present.

### HYDROLOGY

**Wetland Hydrology Indicators:**
- 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)

**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
- Water Table Present? Yes
- Saturation Present? Yes

**Wetland Hydrology Present?** Yes

**Remarks:**
The water table is significantly lower than this particular sample point. The spring has been wet and the silty clay loam soil texture has poor drainage. This is likely why there was saturation at 7.2 inches.
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys, and Coast Region

<table>
<thead>
<tr>
<th>Project/Site: 405 Kelsey Creek</th>
<th>City/County: Bellevue, King County</th>
<th>Sampling Date: 9/5/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant/Owner: WSDOT</td>
<td>State: WA</td>
<td>Sampling Point: W1-SP3</td>
</tr>
<tr>
<td>Investigator(s): Kristen Andrews</td>
<td>Section, Township, Range: S04, T24N, R5E</td>
<td></td>
</tr>
<tr>
<td>Landform (hillslope, terrace, etc.): Floodplain</td>
<td>Local relief (concave, convex, none): concave</td>
<td>Slope (%): 0</td>
</tr>
<tr>
<td>Subregion (LRR): A</td>
<td>Lat: 47.598636</td>
<td>Long: -122.167261</td>
</tr>
<tr>
<td>Soil Map Unit Name: Seattle Muck, Bellingham Silt Loam</td>
<td>NWI Classification: PSS</td>
<td></td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Present?** Yes ○ No

**Hydric Soil Present?** Yes ○ No

**Wetland Hydrology Present?** Yes ○ No

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

**Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?** Are "Normal Circumstances" present? Yes ○ No

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

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

**Hydrophytic Vegetation Present?** Yes ○ No

**Is the Sampled Area within a Wetland?** Yes ○ No

Remarks:

Drier and hotter than normal summer.

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

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Plot Size</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Stratum (Plot size: 20’ x 20’)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<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>
<td></td>
<td></td>
<td></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>
<tr>
<td>Total Cover =</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sapling/Shrub Stratum (Plot size: 15’ x 15’) | | | | |
| 1. | Salix lasiandra | 15 | Y | 62.5 | FACW |
| 2. | Salix sitchensis | 5 | Y | 20.8 | FACW |
| 3. | Populus balsamifera | 2 | N | 8.3 | FAC |
| 4. | Cornus alba | 2 | N | 8.3 | FACW |
| 5. | | 24 | | |
| Total Cover = | | | | |

| Herb Stratum (Plot size: 5’ x 5’) | | | | |
| 1. | Schoenoplectus tabernaemontani | 10 | N | 18.2 | OBL |
| 2. | Juncus effusus | 20 | Y | 36.4 | FACW |
| 3. | Typha latifolia | 20 | Y | 36.4 | OBL |
| 4. | Phalaris arundinacea | 5 | N | 9.1 | FACW |
| 5. | | | | |
| Total Cover = | | | | |

| Woody Vine Stratum (Plot size: 5’ x 5’) | | | | |
| 1. | | | | |
| 2. | | | | |
| Total Cover = | | | | |

% Bare Ground in Herb Stratum 10

**Remarks:**

**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.

**Hydrophytic Vegetation Present?** Yes ○ No

**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:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>30</td>
</tr>
<tr>
<td>FACW species</td>
<td>47</td>
</tr>
<tr>
<td>FAC species</td>
<td>2</td>
</tr>
<tr>
<td>FACU species</td>
<td>0</td>
</tr>
<tr>
<td>UPL species</td>
<td>0</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>79</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A = 1.646

**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.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inches)</td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-18</td>
<td>10YR</td>
<td>4/1</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)

Indicators for Problematic Hydric Soils³:

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

³Indicators 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:

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) (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
- Water Table Present? ○ Yes ○ No
- Saturation Present? ○ Yes ○ No

(includes capillary fringe)

Depth (inches): __________

Wetland Hydrology Present? ○ Yes ○ No

Remarks:

There were no primary indicators present, however, 3 secondary indicators are present. In light of the hot and dry summer we have had in western WA, it is not surprising that there is no water present in the wetland.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 405 Kelsey Creek  
City/County: Bellevue, King County  
Sampling Date: 9/5/2017

Applicant/Owner: WSDOT  
State: WA  
Sampling Point: W1-SP4

Investigator(s): Kristen Andrews  
Section, Township, Range: S04, T24N, R5E

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

Subregion (LRR): A  
Lat: 47.598636  
Long: -122.167261  
Datum: NAD83HARN

Soil Map Unit Name: Seattle Muck, Bellingham Silt Loam  
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  
(If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>☐ Yes  ☐ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>☐ Yes  ☐ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>☐ Yes  ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>☐ Yes  ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 20ft x 20ft)</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Salix scouleriana</strong></td>
<td>20</td>
<td>Y</td>
<td>66.7</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Populus balsamifera</strong></td>
<td>10</td>
<td>Y</td>
<td>33.3</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td>30</td>
<td></td>
<td></td>
<td>83.3%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Rosa nutkana</strong></td>
<td>30</td>
<td>Y</td>
<td>33.3</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Symphoricarpus albus</strong></td>
<td>20</td>
<td>Y</td>
<td>22.2</td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>3. <strong>Populus balsamifera</strong></td>
<td>20</td>
<td>Y</td>
<td>22.2</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>4. <strong>Thuja plicata</strong></td>
<td>10</td>
<td>N</td>
<td>11.1</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>5. <strong>Physocarpus capitatus</strong></td>
<td>10</td>
<td>N</td>
<td>11.1</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Lotus corniculatus</strong></td>
<td>50</td>
<td>Y</td>
<td>90.9</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Epilobium ciliatum</strong></td>
<td>5</td>
<td>N</td>
<td>9.1</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dom. Sp.?</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum         |                  |           |                 |                  |         |

**Remarks:**

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Relative % Cover</th>
<th>Indicator Status</th>
<th>Multiply by</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>0</td>
<td>1</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACW species</td>
<td>15</td>
<td>2</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC species</td>
<td>140</td>
<td>3</td>
<td>420</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACU species</td>
<td>20</td>
<td>4</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UPL species</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column Totals:</td>
<td>175</td>
<td></td>
<td>530</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prevalence Index = B/A = 3.029

**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)

*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>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-16</td>
<td>7.5YR</td>
<td>3/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<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)
- [ ] Loamy Mucky Mineral (F1) (except MLRA 1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Redox Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] 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 Stains (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) (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)
- [ ] FAC-Neutral Test (D5)
- [ ] 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) leading up to the March 13, 2017 site visit.


<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&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Condition dry, wet, normal&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Condition Value</th>
<th>Month weight value</th>
<th>Product of previous two columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; prior month</td>
<td>Feb</td>
<td>2.73</td>
<td>4.18</td>
<td>5.02</td>
<td>8.85</td>
<td>W</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; prior month</td>
<td>Jan</td>
<td>3.58</td>
<td>5.13</td>
<td>6.10</td>
<td>4.22</td>
<td>N</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; prior month</td>
<td>Dec</td>
<td>3.94</td>
<td>5.62</td>
<td>6.68</td>
<td>3.87</td>
<td>D</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>a</sup> NRCS 2017

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

Conclusions: Normal precipitation conditions were present prior to the field visit.
Appendix B-2.

Daily Precipitation 10 days preceding field work leading up to the March 13, 2017 site visit.


<table>
<thead>
<tr>
<th>Date (2017)</th>
<th>Daily Precipitation (inches)(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 12</td>
<td>0.02</td>
</tr>
<tr>
<td>March 11</td>
<td>0.37</td>
</tr>
<tr>
<td>March 10</td>
<td>0.03</td>
</tr>
<tr>
<td>March 9</td>
<td>0.70</td>
</tr>
<tr>
<td>March 8</td>
<td>0.13</td>
</tr>
<tr>
<td>March 7</td>
<td>0.75</td>
</tr>
<tr>
<td>March 6</td>
<td>T</td>
</tr>
<tr>
<td>March 5</td>
<td>T</td>
</tr>
<tr>
<td>March 4</td>
<td>0.04</td>
</tr>
<tr>
<td>March 3</td>
<td>0.36</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>2.4</strong></td>
</tr>
</tbody>
</table>

\(^a\) NRCS 2017

Conclusions: Moderate precipitation was recorded in the ten days preceding field work.
Appendix B-3.

Comparison of Observed and Normal Precipitation (NRCS 2015) leading up to the September 5, 2017 site visit.


<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</th>
<th>Condition dry, wet, normal</th>
<th>Condition Value</th>
<th>Month weight value</th>
<th>Product of previous two columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st prior month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>0.38</td>
<td>1.02</td>
<td>1.24</td>
<td>0.02</td>
<td>D</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2nd prior month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>0.43</td>
<td>0.79</td>
<td>0.97</td>
<td>T</td>
<td>D</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3rd prior month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>0.96</td>
<td>1.49</td>
<td>1.79</td>
<td>1.52</td>
<td>N</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

a NRCS 2017
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: Drier than normal precipitation conditions were present prior to the field visit.
Appendix B-4.
Daily Precipitation 10 days preceding field work leading up to the September 5, 2017 site visit.


<table>
<thead>
<tr>
<th>Date</th>
<th>Daily Precipitation (inches)^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 4</td>
<td>0.00</td>
</tr>
<tr>
<td>September 3</td>
<td>0.00</td>
</tr>
<tr>
<td>September 2</td>
<td>0.00</td>
</tr>
<tr>
<td>September 1</td>
<td>0.00</td>
</tr>
<tr>
<td>August 31</td>
<td>0.00</td>
</tr>
<tr>
<td>August 30</td>
<td>0.00</td>
</tr>
<tr>
<td>August 29</td>
<td>0.00</td>
</tr>
<tr>
<td>August 28</td>
<td>0.00</td>
</tr>
<tr>
<td>August 27</td>
<td>0.00</td>
</tr>
<tr>
<td>August 26</td>
<td>0.00</td>
</tr>
<tr>
<td>Sum</td>
<td>0.00</td>
</tr>
</tbody>
</table>

^a NRCS 2017

Conclusions: No precipitation was recorded in the ten days preceding field work.
Literature Cited