WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT AND CONCEPTUAL MITIGATION PLAN

MAPLE RIDGE

NOVEMBER 17, 2017

PROJECT LOCATION
ADJOINING PROPERTY OF 6621 SOUTH 128TH STREET
SEATTLE, WA 98178

PREPARED FOR
JORDAN SALISBURY
BLUE FERN DEVELOPMENT LLC
11232 120TH AVENUE NORTHEAST, SUITE 204
KIRKLAND, WA 98033

PREPARED BY
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2907 HARBORVIEW DRIVE, SUITE D
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(253) 514-8952
Executive Summary

Soundview Consultants LLC (SVC) has been assisting Blue Fern Development LLC (Applicant) with a wetland delineation and fish and wildlife habitat assessment and conceptual mitigation plan for development of a 6.88-acre site located on the property adjoining 6621 South 128th Street in unincorporated King County, Washington. The subject property consists of two parcels and is situated in the Northeast ¼ of Section 14, Township 23 North, Range 04 East, W.M. (King County Tax Parcel Number 1423049002).

Development of the subject property was previously reviewed by the U.S. Army Corps of Engineers (USACE) and the Washington State Department of Ecology (WSDOE) as part of an application by the prior landowner, Maple Ridge Investment Partners LLC. The USACE provided a Jurisdictional Determination and confirmation of approval under Nationwide Permit (NWP) 29 (Residential Development) on July 7, 2015 (NWS-2015-500). The USACE’s review included Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) and approved the fill of 2,024 square feet of onsite wetlands. After receiving NWP 29 approval for the wetland fill, the prior landowner sold the property.

SVC investigated the subject property for the presence of potentially-regulated wetlands, fish and wildlife habitat, and/or priority species within 215 feet of the subject property in the summer of 2014, and reassessed the findings in the summer and fall of 2017. The site investigation identified one 51,224-square foot (1.18 acres) onsite wetland (Wetland A) located on the northern half of the property extending offsite into the adjacent King County right-of-way (ROW). Due to changes observed in soil and hydrologic conditions onsite during the recent site investigations and in response to comments by King County staff, the northwestern boundary of Wetland A was expanded. Wetland A is a Category IV depressional wetland which requires a 50-foot standard buffer per King County Code (KCC).

The Applicant proposes a 49-unit multi-family residential townhome development in a similar footprint and configuration to what was previously approved by various agencies. This project will include clearing and grading, construction of the proposed buildings, an internal access road system, domestic water, sanitary sewer, a stormwater and drainage facility, utilities, landscaping, and recreational open space. Stormwater generated by the proposed impervious surfaces will be collected and conveyed to water quality and detention facilities for treatment. The southern portion of the proposed project will be accessed via 66th Avenue South and the northern portion will have two access points from South 128th Street.

The proposed project was carefully designed in order to avoid and minimize impacts to critical areas to the fullest extent feasible; however, the site is substantially encumbered by Wetland A and the associated buffer; therefore, complete avoidance of impacts to Wetland A is not possible. Impact minimization measures include careful road alignment, limited site utilization, and narrowed road widths in order to allow safe access to the southern portion of the site. Therefore, approximately 2,024 square feet of wetland fill is required in order to accommodate ROW improvements as previously approved by the various agencies. In addition, minor buffer reductions with impact minimization measures are proposed to accommodate a reasonable site layout. Proposed compensatory and non-compensatory wetland mitigation actions in accordance with KCC include
onsite wetland enhancements that will likely improve the overall functions of the Duwamish-Green watershed compared to existing conditions.

The summary table below summarizes the identified critical area and associated regulation by different agencies.

<table>
<thead>
<tr>
<th>Wetland Name</th>
<th>Size (onsite)</th>
<th>Category¹</th>
<th>Regulated Under KCC Title 21A.24.318</th>
<th>Regulated Under RCW 90.48</th>
<th>Regulated Under Clean Water Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland A</td>
<td>51,224 SF</td>
<td>IV</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
1. Revised 2004 WSDOE rating system (Hruby, 2004) and KCC wetland rating and definitions.
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Appendix D – Data Sheets
Appendix E – Wetland Rating Form
Appendix F – Wetland Rating Maps
Appendix G – USACE Jurisdictional Determination Permit
Appendix H – Qualifications
Chapter 1. Introduction

Soundview Consultants LLC (SVC) has been assisting Blue Fern Development LLC (Applicant) with a wetland delineation and fish and wildlife habitat assessment and conceptual mitigation plan for development of a 6.88-acre site located on the property adjoining 6621 South 128th Street in unincorporated King County, Washington. The subject property consists of two parcels and is situated in the Northeast ¼ of Section 14, Township 23 North, Range 04 East, W.M. (King County Tax Parcel Number 1423049002).

The purpose of this report is to identify the presence of potentially-regulated wetlands, fish and wildlife habitat, and/or priority species that may be found on or near the subject property; assess potential impacts to any such critical areas and/or species from the proposed project; and provide impact avoidance and mitigation recommendations.

This report includes conclusions and recommendations regarding:

- Site description, brief project description, and areas of assessment;
- Background research and identification of potentially regulated critical areas on and within the vicinity of the project;
- Identification, delineation, and assessment of potentially regulated wetlands, streams, fish and wildlife habitat, and/or priority species on or near the subject property;
- Standard buffer recommendations, building setbacks, and development limitations;
- Existing conditions site map of the subject property detailing identified critical areas and standard buffers;
- Site plan of the proposed mitigation measures;
- Documentation of wetland avoidance, minimization, and mitigation measures;
- Compensatory and non-compensatory wetland mitigation actions, and
- Supplementary information necessary for regulatory review.
Chapter 2. Proposed Project and Location

2.1 Project Location

The proposed project is located adjoining of 6621 South 128th Street in unincorporated King County, Washington. The subject property consists of one parcel and is situated in the Northeast ¼ of Section 14, Township 23 North, Range 04 East, W.M. (King County Tax Parcel Number 1423049002).

The site can be accessed from downtown Seattle by travelling south on Interstate 5 approximately 8 miles and then take Exit 157 onto Washington-900 East and proceed approximately 1.5 miles and turn left onto South 129th Street. Turn left onto 64th Avenue South after 0.2 mile and take the second right onto South 127th Place after approximately 0.08 mile. In approximately 0.18 mile, turn right onto South 128th Street and the subject property will be located to the south.

Figure 1. Vicinity Map

2.2 Project Description

The purpose of the proposed project is to provide additional affordable housing units within the urban growth area of King County. The proposed project will help alleviate the shortage of residences in the greater King County area by providing 49 multi-family units.

The Applicant proposes a 49-unit multi-family residential townhome development in a similar footprint and configuration to what was previously approved by various agencies. This project will include clearing and grading, construction of the proposed buildings, an internal access road system, domestic water, sanitary sewer, a stormwater and drainage facility, utilities, landscaping, and
The proposed project was carefully designed in order to avoid and minimize impacts to critical areas to the fullest extent feasible; however, the site is substantially encumbered by Wetland A and the associated buffer; therefore, complete avoidance of impacts to Wetland A is not possible. Impact minimization measures include careful road alignment, limited site utilization, and narrowed road widths in order to allow safe access to the southern portion of the site. Therefore, approximately 2,024 square feet of wetland fill is required in order to accommodate ROW improvements as previously approved by the various agencies. In addition, minor buffer reductions with impact minimization measures are proposed to accommodate a reasonable site layout. Proposed compensatory and non-compensatory wetland mitigation actions in accordance with KCC include onsite wetland enhancements that will likely improve the overall functions of the Duwamish-Green watershed compared to existing conditions.
Chapter 3. Methods

SVC investigated the subject property for the presence of potentially-regulated wetlands, fish and wildlife habitat, and/or priority species on or within 215 feet of the subject property in the summer of 2014, and reassessed the findings in the summer and fall of 2017. All wetland determinations were made using observable vegetation, indicators of hydrology, and determinations of hydric soils in conjunction with data from the U.S. Geographic Survey (USGS) topographic map, the Natural Resources Conservation Service (NRCS) Soil Survey, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), Washington Department of Natural Resources (DNR), Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database and SalmonScape mapping tool, King County geographic information systems (GIS), local precipitation data, and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report. Maps detailing background data such as site topography, soils, and critical areas inventories are provided in Appendix B.

Wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and modified according to the guidelines established in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). Qualified SVC wetland scientists marked boundaries of onsite wetlands with orange surveyor’s flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor’s flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP1-DP12). Additional test pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm each delineation. Completed data forms used in the assessment are provided in Appendix D.

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979; Federal Geographic Data Committee, 2013) classification systems, and assessed using the Wetland Functions Characterization Tool for Linear Projects (Null et al., 2000). Following classification and assessment, all wetlands were rated and categorized using the Washington State wetland rating system for western Washington – Revised. Washington State Department of Ecology Publication # 04-06-025 (Hruby, 2004) and guidelines established in KCC 21A.24.318. The completed wetland rating form and maps used in this assessment are provided in Appendices E and F, respectively.

The fish and wildlife habitat assessment was conducted during the same site visit by qualified fish and wildlife biologists. Experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.
Chapter 4. Existing Conditions

4.1 Landscape Setting

The subject property is located in an urban residential setting and is mostly undeveloped except for a two-story barn. Adjacent areas to the east contain the Cedar River Pipeline and undeveloped parcels. Topography onsite slopes moderately to the northwest, with elevations ranging from 390 feet in the southeast portion down to 295 feet along 66th Avenue South in the northwestern corner of the site. A King County Topographic map is provided in Appendix B2. The subject property is located within the Duwamish/Green watershed, or Water Resource Inventory Area (WRIA) 9.

Figure 2. Aerial View of the Subject Property

4.2 Soils

The current NRCS soil survey for King County does not provide data for this urban area onsite; however, a prior soil survey (Poulson & Miller, 1952) indicates that the site has Cathcart loam soil. A description of the onsite soil series is as follows:

The top 10 inches of soil are medium brown to dark brown with a gravelly loam texture. From 10 to 24 inches the soil is yellowish brown clay loam with some gravel. The Cathcart soil type occurs on gentle to rolling topographic relief.
4.3 Vegetation

The northern and south portion of the subject property is predominately forested with third or fourth generation mixed coniferous and deciduous species with a mixed shrub understory. Dominant tree species in these areas include Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), and western hemlock (*Tsuga heterophylla*) intermixed with bigleaf maple (*Acer macrophyllum*), Scouler’s willow (*Salix scouleriana*), red alder (*Alnus rubra*), Pacific willow (*Salix lasiandra*) and black cottonwood (*Populus balsamifera*). The shrub understory includes evergreen huckleberry (*Vaccinium ovatum*), black hawthorn (*Crataegus douglasii*), Indian plum (*Oemleria cerasiformis*), snowberry (*Symphoricarpos albus*), and non-native invasive English holly (*Ilex aquifolium*). The herb stratum is dominated by western swordfern (*Polystichum munitum*), stinging nettle (*Urtica dioica*), catchweed (*Galium aparine*), nootka rose (*Rosa nutkana*), and non-native invasive cut-leaf blackberry (*Rubus laciniatus*), Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*).

4.4 Wetland and Stream Inventories

The King County Streams and Wetlands map (Appendix B2), DNR Stream Typing map (Appendix B3), and the USFWS NWI map (Appendix B4) do not identify any streams or wetlands on or within 215 feet of subject property.

4.5 Priority Habitats and Species

The WDFW SalmonScape map (Appendix B5) and the WDFW PHS map (Appendix B6) do not identify any priority fish and wildlife habitats or species on or within 215 feet of the subject property. For information on Endangered Species Act (ESA)-species potentially affected by the proposed project, please refer to SVC’s Biological Evaluation completed for the subject property (SVC, 2015).

4.6 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) weather station at SeaTac International Airport in order to obtain percent of normal precipitation during and preceding the investigations. A summary of data collected is provided in Table 1.

<table>
<thead>
<tr>
<th>Date</th>
<th>Day Of</th>
<th>Day Before</th>
<th>1 Week Prior</th>
<th>2 Weeks Prior</th>
<th>Month to Date (Observed/Normal)²</th>
<th>Year to Date (Observed/Normal)³</th>
<th>Percent of Normal (Month/Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/20/17</td>
<td>0.13</td>
<td>1.04</td>
<td>2.58</td>
<td>3.16</td>
<td>3.16/1.85</td>
<td>3.16/1.85</td>
<td>171/171</td>
</tr>
</tbody>
</table>

Notes:
1. Precipitation volume provided in inches.
2. Month-to-date is from first of the month to the date of the site visit.
3. Year-to-date is from the water year: October 1st to the date of the site visit.

Precipitation for the October 2017 site visit was at 171 percent of statistical normal for the month-to-date and water year. Such conditions were considered in making professional wetland boundary determinations.
Chapter 5. Results

5.1 Wetlands

The site investigation identified one potentially-regulated onsite wetland (Wetland A) located in the northern portion of the subject property and extending west offsite onto the adjacent King County ROW. SVC’s site investigations consisted of walk-through surveys of all accessible areas on or adjacent to the subject property within 215 feet. After preliminary review by King County staff in the fall of 2017, the extent of the wetland was expanded in the northwest corner of the subject property to accommodate staff comments. Twelve (12) data plots were excavated within the entire subject property. Please see the site map in Appendix C for data plot locations, Appendix D for copies of the completed data forms, and Appendix E for a copy of the wetland rating form. Table 2 summarizes onsite wetland A.

### Table 2. Wetland Summary

<table>
<thead>
<tr>
<th>Wetland</th>
<th>Predominant Wetland Classification / Rating</th>
<th>Wetland Size Onsite (acres)</th>
<th>Buffer Width (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PEM/SSB, Depressional Category IV</td>
<td>1.18</td>
<td>50</td>
</tr>
</tbody>
</table>

**Notes:**
1. Cowardin et al. (1979) and Federal Geographic Data Committee (2013) or NWI Class based on vegetation: PEM= Palustrine Emergent; Modifier (-B) = Water Regime for a Seasonally Saturated hydroperiod.
4. KCC 21A.24.318 wetland definition.
5. KCC 21A.24.328 buffer width standards.

5.1.1 Wetland A

Wetland A is approximately 51,224 square-feet (1.18 acres) in size and is located on the northern portion of the subject property, extending offsite to the west. Hydrology for Wetland A is provided by adjacent stormwater runoff from nearby developments and roads, a seasonally-high groundwater table and direct precipitation. Wetland vegetation is dominated by emergent and scrub-shrub plant communities, including creeping buttercup (*Ranunculus repens*), common velvetgrass (*Holcus lanatus*), reed canarygrass (*Phalaris arundinacea*), black hawthorn, sapling Oregon ash (*Fraxinus latifolia*), and non-native invasive Himalayan blackberry. Wetland A is a Palustrine Emergent, Seasonally-Saturated wetland. Per KCC 21A.24.318, Wetland A is a Category IV depressional wetland. Table 3 provides a detailed summary of Wetland A.
Table 3. Wetland A Summary

<table>
<thead>
<tr>
<th>WETLAND A – INFORMATION SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong></td>
</tr>
<tr>
<td><strong>Local Jurisdiction:</strong></td>
</tr>
<tr>
<td><strong>WRIA:</strong></td>
</tr>
<tr>
<td><strong>WSDOE Rating (Hruby, 2004):</strong></td>
</tr>
<tr>
<td><strong>King County Rating:</strong></td>
</tr>
<tr>
<td><strong>City Buffer Width:</strong></td>
</tr>
<tr>
<td><strong>Building Setback:</strong></td>
</tr>
<tr>
<td><strong>Wetland Size:</strong></td>
</tr>
<tr>
<td><strong>Cowardin Classification:</strong></td>
</tr>
<tr>
<td><strong>HGM Classification:</strong></td>
</tr>
<tr>
<td><strong>Wetland Data Sheet(s):</strong></td>
</tr>
<tr>
<td><strong>Upland Data Sheet(s):</strong></td>
</tr>
<tr>
<td><strong>Boundary Flag color:</strong></td>
</tr>
</tbody>
</table>

**Dominant Vegetation:**
The wetland vegetation is dominated by emergent and scrub-shrub plant communities, including creeping buttercup, common velvetgrass, reed canarygrass, black hawthorn, sapling Oregon ash, and non-native invasive Himalayan blackberry.

**Soils:**
Silt loam with hydric soil indicators Depleted Below Dark Surface (A11), Thick Dark Surface (A12), Depleted Matrix (F3), and Redox Dark Surface (F6) observed.

**Hydrology:**
Hydrology for Wetland A is provided by adjacent stormwater runoff, outfall from nearby development and roads, a seasonally-high groundwater table and direct precipitation.

**Rationale for Delineation:**
Wetland boundaries were determined by following the change in the soil characteristics and vegetation types confirmed by indications of wetland hydrology.

**Rationale for Local Rating:**
Wetland rating is based on WSDEO’s 2004 rating system (Hruby, 2004) as outlined in KCC 21A.24.318.

**Wetland Functions Summary**

**Water Quality:**
Wetland A has the opportunity to retain sediments and pollutants from stormwater runoff due to its proximity to residential areas and a predominance of persistent emergent vegetation.

**Hydrologic:**
Wetland A may provide minimal retention of stormwater runoff from nearby paved roads and upslope residential development; however, storage capacity is limited due to an unrestricted surface outlet.

**Habitat:**
Wildlife habitat functions provided by Wetland A are limited due to urban isolation, but may include small mammal forage and cover, bird foraging and nesting, and some amphibian breeding sites.

**Buffer Condition:**
The buffer surrounding Wetland A is substantially impacted by an underground utility on the eastern edge of the wetland and ROW along the west. The buffer provides little screening of the wetland from outside disturbances and provides only minor water quality enhancement.
5.1.2 Wetland A Functions

Wetland A has the opportunity and potential to retain sediments and pollutants from stormwater runoff due to its proximity to residential areas and a predominance of persistent emergent vegetation. Hydrologic function is limited to minor reductions of surface flows during storm events and retention of stormwater runoff associated with adjacent residential development and roads; however, due to its relatively small storage capacity relative to the basin, this function is limited. The wetland and associated buffer provide some amphibian breeding sites with the abundance of emergent vegetation; however, no suitable habitat exists for wetland-associated mammals and birds due to the lack of both permanent inundation which would provide open water areas, and other required structural and vegetative elements.

Table 4. Functions and Values of Wetland A

<table>
<thead>
<tr>
<th>Function / Value¹</th>
<th>Wetland A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Quality Functions</strong></td>
<td></td>
</tr>
<tr>
<td>Sediment Removal</td>
<td>x</td>
</tr>
<tr>
<td>Nutrient and Toxicant Removal</td>
<td>x</td>
</tr>
<tr>
<td><strong>Hydrologic Functions</strong></td>
<td></td>
</tr>
<tr>
<td>Flood Flow Alteration</td>
<td>x</td>
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<tr>
<td>Erosion Control and Shoreline Stabilization</td>
<td>-</td>
</tr>
<tr>
<td><strong>Habitat Functions</strong></td>
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<tr>
<td>Production and Export of Organic Matter</td>
<td>x</td>
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<tr>
<td>General Habitat Suitability</td>
<td>x</td>
</tr>
<tr>
<td>Habitat for Aquatic Invertebrates</td>
<td>-</td>
</tr>
<tr>
<td>Habitat for Amphibians</td>
<td>x</td>
</tr>
<tr>
<td>Habitat for Wetland-Associated Mammals</td>
<td>-</td>
</tr>
<tr>
<td>Habitat for Wetland-Associated Birds</td>
<td>-</td>
</tr>
<tr>
<td>General Fish Habitat</td>
<td>-</td>
</tr>
<tr>
<td>Native Plant Richness</td>
<td>-</td>
</tr>
<tr>
<td><strong>Special Characteristics</strong></td>
<td></td>
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<tr>
<td>Educational or Scientific Value</td>
<td>-</td>
</tr>
<tr>
<td>Uniqueness and Heritage</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
1. “-” Is the function is not present; “x” means that the function is present is of lower quality; and “+” means the function is present and is of higher quality.

5.1.3 Wetland A Buffer

The upland buffer surrounding Wetland A is dominated by facultative vegetation including black cottonwood, western red cedar, Pacific and Scouler’s willow, red alder, and bigleaf maple with an understory dominated by black hawthorn, Indian plum, Himalayan blackberry, and various herbs and forbs. The buffer is substantially impacted by an underground utility along eastern edge of the wetland and ROW along the west. The buffer provides little screening of the wetland from outside disturbances. Wetland A is a Category IV wetland, which requires a standard 50-foot buffer (KCC 21A.24.318) and a 15-foot building setback (KCC 21A.24.200).
5.2 Critical Fish and Wildlife Habitat Areas

No critical fish or wildlife habitats or species were observed on the subject property during the site investigations. For information on ESA-listed species potentially affected by the proposed project, please refer to SVC’s Biological Evaluation completed for the subject property (SVC, 2015).
Chapter 6. Regulatory Considerations

The results of the investigation identified one potentially-regulated onsite wetland (Wetlands A). Prior permitting efforts for the subject property confirmed the regulatory status. The project was carefully designed in order to avoid and minimize impacts to critical areas; however, complete avoidance of direct impacts to Wetland A is not possible due to safe access requirements. The project requires both direct and indirect impacts to Wetland A which will require compensatory and non-compensatory enhancement measures. Mitigation and enhancement actions will be provided in accordance KCC 21A.24.340 and state and federal guidelines.

This chapter discusses the regulatory implications and considerations of the proposed project development, for which a conceptual mitigation plan is proposed and outlined in Chapter 7. A summary of the regulated wetlands and waterbodies on the subject property is provided in Table 5 below.

Table 5. Summary of Local, State, and Federal Regulatory Considerations.

<table>
<thead>
<tr>
<th>Wetland Name</th>
<th>Size (onsite)</th>
<th>Category¹</th>
<th>Regulated Under KCC Title 21A.24.318</th>
<th>Regulated Under RCW 90.48</th>
<th>Regulated Under Clean Water Act</th>
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<tr>
<td>Wetland A</td>
<td>51,224 SF</td>
<td>IV</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
1. Revised 2004 WSDOE rating system (Hruby, 2004) and KCC wetland rating and definitions.

6.1 Local Regulations

Avoidance and minimization measures have been implemented to the maximum extent possible; however, wetland impacts are proposed which includes the unavoidable fill of 2,024 square feet within the southern portion of Wetland A within the adjacent King County ROW in order to reasonably develop the site and provide a safe access road. In-kind compensatory mitigation for impacting Wetland A will include a minimum of 12,144 square feet of wetland enhancement within Wetland A. In addition, a reduced and enhanced buffer on the northern portion of Wetland A is proposed in exceedance of standard minimization requirements. This buffer area will be reduced from 50 feet to 25 feet as allowed per KCC 21A.24.325.A.3.a by utilizing impact reduction measures in project design and enhancement of the buffer. Direct impacts to Wetland A are being minimized by limiting wetland fill only to necessary ROW improvements, and temporary impacts during construction are being minimized through the use of Best Management Practices (BMPs) and Temporary Erosion and Sediment Control (TESC) measures.

The proposed minimization measures and enhancement actions will ensure no net loss of wetland functions will occur from the proposed project, and an increase in wetland function is expected to occur over existing baseline conditions. The proposed project is designed to meet the King County critical areas regulations as outlined in KCC 21A.24. The following section details how these codes are being met.

6.1.1 Mitigation Sequencing

Impacts of the proposed development to wetlands are allowed pursuant to the general standards and requirements set forth in KCC 21A.24.125, as long as the project is designed to achieve no net loss of critical area functions and values and complies with the following general standards and requirements:
1. **Avoiding the impact or hazard by not taking a certain action.**

The project has been designed to minimize impacts to Wetland A to the greatest extend feasible; however, due to access restrictions in the southern portion of the property and the extent of Wetland A and associated buffer encumbering approximately one-third of the site, direct and indirect impacts are unavoidable. The proposed project will require the filling of approximately 2,024 square feet of Wetland A to provide safe access to the subject property from 66th Avenue South within the existing ROW. Additionally, 9,300 square feet of Wetland A’s buffer along the northern edge and one small area to the south will be reduced from 50 feet to 25 feet as allowed per KCC 21A.24.325.A.3.a to accommodate reasonable site development. Compensatory and non-compensatory mitigation actions are proposed and outlined in Chapter 7 of this report.

2. **Minimizing the impact or hazard by:**

   a. **Limiting the degree or magnitude of the action with appropriate technology; or**

   Wetland fill is only required in a small (2,024 square feet) area of Wetland A to provide safe access. No other direct impacts are proposed. Additionally, indirect impacts will be minimized and only buffer reduction along the northern edge and a small area on the south side of Wetland A. BMPs and TESC measures will be installed prior to, and maintained throughout construction in order to minimize temporary impacts to Wetland A as a result of construction activities. All equipment staging and materials stockpiles will be kept out of the regulated buffers and the area will be kept free of spills and/or hazardous materials using a Spill Prevention, Control, and Countermeasure Plan prepared and implemented by the contractor. All clean fill material and road surfacing will be sourced from upland areas onsite or from approved suppliers, and will be free of pollutants and hazardous materials.

   b. **Taking affirmative steps, such as project redesign, relocation or timing.**

   The proposed project has been redesigned numerous times to avoid as many impacts to critical areas to the greatest extent feasible. In addition, project relocation is not possible; in order to provide safe access to the site, wetland fill within the existing ROW is necessary. Changes in project timing would not help to reduce or minimize any of the proposed impacts.

3. **Rectifying the impact to critical areas by repairing, rehabilitating, or restoring the affected critical area or its buffer.**

Onsite compensatory and non-compensatory enhancement actions and impact minimization measures are proposed to compensate for direct impacts associated with the wetland fill and offset potential impacts from buffer reductions.

4. **Minimizing or eliminating the hazard by restoring or stabilizing the hazard area through engineered or other methods.**

The proposed project provides comprehensive stormwater treatment and flow control to help minimize any permanent impacts to wetland water quality and hydrologic functions, and silt fences
and other TESC measures will be installed and maintained on the site during construction to minimize temporary construction impacts on sedimentation and water quality.

5. Reducing or eliminating the impact or hazard over time by preservation or maintenance operations during the life of the development proposal or alteration.

Reduction of the impact over time will be implemented through a maintenance and monitoring plan that will meet specific performance standards to ensure success of the mitigation enhancement actions. Please refer to Sections 7.7 and 7.11 for the performance standards and maintenance and monitoring plan. Additional potential impacts to critical areas will be reduced over time by the installation of permanent sensitive area signage and fencing between the buffers and adjacent properties in order to discourage trespassing and reduce habitat disturbance. The proposed project has great potential to improve the overall hydrologic and water quality functions on the subject property by improving runoff storage and conveyance capacity, retention of sediments, pollution assimilation, and groundwater recharge functions; and improve onsite habitat functions by increasing native plant species richness and improving wetland-associated wildlife habitat conditions and suitability.

6. Compensating for the adverse impact by enhancing critical areas and their buffers or creating substitute critical areas and their buffers.

Compensation for the 2,024 square feet of wetland fill will include a minimum of 12,144 square feet of enhancement actions within Wetland A constituting a mitigation ratio of 6:1 for wetland enhancement as outlined under KCC 21A.24.340.B.2 and state and federal guidelines (WSDOE, USACE, & EPA, 2006b). Additionally, the buffer of Wetland A will be enhanced through the buffer enhancement actions within approximately 12,000 square feet of wetland buffer area, which is in exceedance of local requirements. Specific wetland enhancement actions can be found in Chapter 7.

7. Monitoring the impact, hazard, or success of required mitigation and taking remedial action.

The mitigation actions will be monitored for a period of 10 years with formal inspections by a qualified Wetland Scientist to ensure success of the proposed mitigation actions. Monitoring events will be scheduled at the time of construction, 30 days after planting, and late in the first through final year’s growing seasons in Years 1, 2, 3, 5, 7, and 10. Please see Section 7.11 for more details on the Maintenance and Monitoring Plan.

6.1.2 Standards for Direct Wetland Impacts

Fill within Wetland A is unavoidable due to site constraints, site topography and safe access requirements to the site; as such, the project will comply with the standards set forth in KCC 21A.24.125, KCC 21A.24.130, and KCC 21A.24.340 for mitigation requirements. Filling Category IV wetlands requires a mitigation ratio of a 6:1 for wetland enhancement per KCC 21A.24.340.B.2.

6.1.3 Wetland Buffer Reduction Requirements

Per KCC 21A.24.325.A.3.a and use KCC 21A.24.325.A.3.b, minimization measures shall be used to obtain a reduced buffer width of up to 25 feet within Urban Growth Areas. Buffers for all categories of wetlands shall be reduced by 25 feet if the applicant implements all applicable
mitigation measures identified in Table 6 below, or if the applicant proposes alternate mitigation to reduce the impacts of the development and the department determines the alternative provides equivalent mitigation (KCC 21A.24.325.A.3.a). The proposed wetland buffer reduction is small and the minimization measures coupled with the proposed enhancement actions have been designed in exceedance of local regulations.

Table 6. Wetland Buffer Mitigation Measures.

<table>
<thead>
<tr>
<th>Disturbance</th>
<th>Measures to Minimize Impacts</th>
<th>Activities that may Cause the Disturbance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lights</td>
<td>• Direct lights away from wetland</td>
<td>• Parking lots, warehouses, manufacturing, and high density residential</td>
</tr>
<tr>
<td>Noise</td>
<td>• Place activity that generates noise away from the wetland</td>
<td>• Manufacturing and high density residential</td>
</tr>
<tr>
<td>Toxic runoff</td>
<td>• Route all new untreated runoff away from wetland</td>
<td>• Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, and landscaping</td>
</tr>
<tr>
<td></td>
<td>• Covenants limiting use of pesticides within 150 feet of wetland</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Implement integrated pest management program</td>
<td></td>
</tr>
<tr>
<td>Change in water regime</td>
<td>• Infiltrate or treat, detain and disperse into buffer new runoff from impervious surfaces using low impact development measures identified in the King County Surface Water Design Manual</td>
<td>• Any impermeable surface, lawns, and tilling</td>
</tr>
<tr>
<td>Pets and human disturbance</td>
<td>• Privacy fencing or landscaping to delineate buffer edge and to discourage disturbance or wildlife by humans and pets</td>
<td>• Residential use</td>
</tr>
<tr>
<td>Dust</td>
<td>• BMP’s for dust</td>
<td>• Tilled fields</td>
</tr>
<tr>
<td>Degraded buffer condition</td>
<td>• Non-native plants to be removed and replaced with native vegetation per an approved landscaping plan to be bonded and monitored for a three-year period after completion to assure at least 80 percent survival of plantings</td>
<td>• All activities potentially requiring buffers</td>
</tr>
</tbody>
</table>
6.2 State and Federal Considerations

6.2.1 USACE and WSDOE Requirements
Under USACE and WSDOE guidance, projects should first attempt to avoid wetland impacts all together by not taking certain actions (WSDOE & USACE, 2006). If impacts cannot be eliminated, impacts should be minimized by restraining the magnitude of an action, using different technology or by taking steps to avoid or reduce impacts. For wetland impacts that cannot be avoided or minimized, compensation or rectification for the impact should be provided by replacing, enhancing or providing substitute resources or environments, followed by monitoring and reduction of the impact over time. The mitigation strategy as outlined in Chapter 7 of this report also meets local, state, and federal requirements.

Wetland A has potential surface and/or subsurface connections to waters of the United States, and as such is potentially regulated under Section 404 of the Clean Water Act (CWA) by the USACE. Should Wetland A not be regulated by the USACE, WSDOE would likely assert jurisdiction over the wetlands under RCW 90.48; therefore, project permitting with WSDOE under an Administrative Order would likely be required for the proposed direct impacts to the wetlands. The USACE previously asserted jurisdiction over the wetlands and the prior residential project was approved by both agencies (NWS-2015-500; Appendix G).

Mitigation ratio requirements for WSDOE are summarized in Table 7 below:

Table 7. WSDOE Mitigation Ratios.

<table>
<thead>
<tr>
<th>Wetland Category</th>
<th>Re-establishment or Creation</th>
<th>Rehabilitation Only</th>
<th>Re-establishment or Creation (R/C) and Rehabilitation (RH)</th>
<th>Re-establishment or Creation (R/C) and Enhancement (E)</th>
<th>Enhancement Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Category IV</td>
<td>1.5:1</td>
<td>3:1</td>
<td>1:1 R/C and 1:1 RH</td>
<td>1:1 R/C and 2:1 E</td>
<td>6:1</td>
</tr>
</tbody>
</table>

6.2.2 NMFS and USFWS Requirements
SVC completed a Biological Evaluation (SVC, 2015) for the subject property under the previous owner which evaluated any potential impacts of the prior proposed project to any ESA-listed species. Letters of concurrence from the NMFS and the USFWS provide support that no ESA-listed species would be harmed by the proposed project. The current proposed project remains residential with the same potential “No Effects” to listed species with the exception of Marbled Murrelet which the project “May Affect, Not likely to Adversely Affect”. As no new species have been listed or critical habitat designated that may be affected by the proposed development, and as the proposed project is substantively similar to the previously approved actions, no new consultation by NMFS or USFWS should be required at this time.
Chapter 7. Conceptual Mitigation Plan

The following sections present the proposed wetland mitigation sequencing and conceptual mitigation plan for the proposed project. The proposed wetland impacts and mitigation actions attempt to closely adhere to local critical areas regulations specified in KCC 21A.24 for all wetlands and the National and Regional Conditions for State and Federal authorization of fill under the Nationwide Permit (NWP) 29 (Residential Development), as required under Sections 401 and 404 of the Clean Water Act (CWA) for non-isolated wetlands. Potential compensatory wetland mitigation actions were also examined in the context of mitigation sequencing and watershed-level processes as required by federal compensatory mitigation rules (USACE 33 CFR Parts 325 and 332, EPA 40 CFR Part 230), state and federal interagency wetland mitigation guidance (WSDOE, 2006; Hruby, 2009), and the Revised Code of Washington (RCW) 90.48. The proposed wetland fill, buffer reduction, and associated compensatory and non-compensatory enhancement plan are described below.

7.1 Purpose and Need

The purpose of the project is to provide affordable residential housing, improved access, and associated infrastructure that expands housing opportunities for residents within the Urban Growth Area of unincorporated King County. The proposed project includes construction of 49-unit multi-family residential townhomes which will include clearing and grading, construction of the proposed buildings, an internal access road system, domestic water, sanitary sewer, a stormwater and drainage facility, utilities, landscaping, and recreational open space.

7.2 Description of Impacts and Mitigation Strategy

The proposed project avoids and minimizes wetland impacts to the greatest extent possible; however, to provide safe access to the southern portion of the subject property, the 66th Avenue South ROW must be improved. As such, the proposed project will require the filling of 2,024 square feet of Wetland A within the King County ROW. Additionally, 9,300 square feet of wetland buffer will be reduced on the northern edge and a small area to the south of Wetland A to accommodate reasonable site development.

Impacts to wetlands are being avoided and minimized to the greatest extent feasible through careful project design. While some wetland impacts are unavoidable due to safe access needs and topography of the site, full site development could include a larger portion of the site that would have impacted considerably more wetland area than proposed. These avoidance measures significantly reduce direct wetland impacts. Potential indirect impacts to wetlands are further being minimized by protecting and enhancing existing wetland buffers. In addition, the proposed project provides comprehensive stormwater treatment facilities and regulated flow.

In general, compensatory wetland mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services that best benefit the impacted watershed. The proposed compensatory mitigation plan is intended to compensate for lost wetland functions and values and ensure no net loss by providing additional water quality, hydrologic, and habitat functions according to the needs of the Duwamish-Green watershed (WRIA 9). Compensatory mitigation at a 6:1 ratio will include the enhancement of
a minimum of 12,144 square feet of onsite Wetland A. In addition, buffer reduction from 50 feet to 25 feet along the northern edge and a small part to the south of Wetland A is proposed, for which 11,850 square feet of non-compensatory, voluntary buffer enhancement will occur with minimization measures.

Compensatory enhancement actions will consist of non-native invasive species management and establishment of hydrophytic plant communities to enhance water quality and habitat functions within the wetland. Non-compensatory, voluntary buffer enhancement will consist of non-native, invasive species management and establishment of native tree, shrub, and herb strata that will reduce the opportunity for physical intrusion into the wetland and increase plant density and diversity over existing conditions. Water quality and hydrologic functions will be provided by increases in storage and infiltration capacity in areas of dense native vegetation and preservation of existing trees. A diverse herbaceous plant community will provide forage, resting, cover, and nesting for small mammals, amphibian, and avian fauna which in turn provide prey for raptors and other small mammals. Replacing non-native invasive species such as Himalayan blackberry with native vegetation will also improve the habitat functions of the site.

These compensatory and non-compensatory mitigation actions were previously approved by the WSDOE and USACE under NWS-2015-500 (Appendix G) on July 7, 2015. While the proposal is new and the project has changed to some extent, the proposed mitigation plan is consistent with prior approvals.

7.3 Approach and Best Management Practices

The proposed mitigation enhancement plan is intended to provide increased wetland protections by maintenance or improvement of wetland functions. Impacts to the wetland and buffer are being minimized through careful planning efforts and project design. The enhancement actions should occur immediately after development actions have concluded, and should be completed during one enhancement effort. TESC measures will be implemented that consist of high-visibility fencing (HVF) installed around native vegetation along the reduced perimeter of the buffer, silt fencing between the graded areas and undisturbed buffer, plastic sheeting on stockpiled materials, and seeding of disturbed soils. These TESC measures should be installed prior to the start of development and enhancement actions and actively managed for the duration of the project.

All equipment staging and materials stockpiles should be kept out of the wetland and buffer, and the area will need to be kept free of spills and/or hazardous materials. All fill material and road surfacing should be sourced from upland areas onsite or from approved suppliers, and will need to be free of pollutants and hazardous materials. Construction materials along with all construction waste and debris should be effectively managed and stockpiled on paved surfaces and kept out of the wetland and buffer area. Following completion of the development activities, the entire site should be cleaned and detail graded using hand tools wherever necessary, and TESC measures will need to be removed. In addition, permanent stormwater treatment features will need to be implemented as designed by the project engineer. Following completion of the proposed project, all wetland and associated buffer areas adjacent to the planned development areas will be protected by installation of split-rail fencing and critical areas signage to discourage intrusion and improper use of these areas.
7.4 Enhancement Actions

Enhancement actions for the wetland and buffer include, but may not be limited to, the following recommendations:

- Prior to all planned enhancement actions, pre-treat invasive plants with a Washington Department of Agriculture approved herbicide. After pre-treatment, grub to remove the invasive plants and replant all cleared areas with native trees and shrubs listed in Tables 10 and 11. Pre-treatment of the invasive plants should occur a minimum of two weeks prior to removal;
- Enhance a minimum of 12,144 square feet of Wetland A and approximately 12,000 square feet of Wetland A’s buffer as needed based on existing vegetative conditions;
- Remove any trash from wetlands and buffers;
- An approved native seed mix will be used to seed disturbed areas after planting;
- Maintain and control invasive plants annually, at a minimum, or more frequently if necessary. Maintenance to reduce the growth and spread of invasive plants is not restricted to chemical applications but may include hand removal, if warranted;
- Provide dry-season irrigation as necessary to ensure native plant survival;
- Direct exterior lights away from the wetlands wherever possible; and
- Place all activities that generate excessive noise (i.e. generators and air conditioning equipment) away from the wetlands where feasible.

7.5 Mitigation Implementation

As mentioned in the sections above, the compensatory mitigation for impacts associated with the wetland fill and non-compensatory, voluntary mitigation for buffer reduction will be accomplished through targeted enhancement actions within portions of Wetland A and the associated buffer. Quantification of the functions and values being lost is important for determination of the size and extent of these mitigation actions necessary for compensation. While many methods of detailed analysis for evaluating loss and/or establishment of wetland functions and values are available, few of these methods are reliable or applicable for evaluation of very small wetland areas and/or wetlands receiving hydrologic input from partial or altogether artificial sources. The wetland area being permanently lost is very small and substantially compromised, and these areas provide limited functions of value to the Duwamish-Green watershed. Quantification of wetland functions being lost is difficult beyond spatial calculations and use of standardized replacement ratios. Wetland mitigation ratios per KCC 21A.24.340 were used to determine the minimum necessary compensatory enhancement requirements, which are consistent with state and federal guidelines. Tables 8 and 9 below summarize the required compensatory enhancement to mitigate for the permanent fill in Wetland A, and the non-compensatory, voluntary enhancement actions for the buffer reduction of Wetland A.

Table 8. Required Wetland Mitigation Summary.

<table>
<thead>
<tr>
<th>Wetland</th>
<th>Total Onsite Area (SF)</th>
<th>Cowardin Class</th>
<th>WSDOE Rating</th>
<th>Impact (SF)</th>
<th>Compensation (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>51,224</td>
<td>PEM/SSB</td>
<td>IV</td>
<td>2,024</td>
<td>12,144</td>
</tr>
</tbody>
</table>
Table 9. Voluntary Wetland Buffer Enhancement Summary.

<table>
<thead>
<tr>
<th>Wetland Name</th>
<th>Buffer Reduction (SF)</th>
<th>Buffer Enhancement (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9,300</td>
<td>Approximately 12,000</td>
</tr>
</tbody>
</table>

Major compensatory enhancement actions will occur in a minimum of 12,144 square feet (0.28 acre) of selected areas within Wetland A. Such areas have been identified in the southern and western portion of the wetland. Please refer to the site plans in Appendix C for details on the mitigation enhancement actions. In these areas, trees and brush salvaged from the clearing activities will be placed in the wetland to create a minimum of six (6) LWD and six (6) habitat piles throughout Wetland A. In addition, a mixture of slough sedge, small-fruited bulrush, and tall mannagrass will be hand-seeded throughout any potentially ponded areas, and native tree and shrub species will be planted throughout the wetland and in areas where non-native invasive vegetation is removed.

Approximately 9,300 square feet (0.21 acre) of wetland buffer area will be reduced to accommodate a reasonable building pad and the necessary associated infrastructure. This buffer reduction will not impair or reduce the habitat, water quality, or hydrologic functions of Wetland A. Approximately 12,000 square feet (0.28 acre) of voluntary buffer enhancement will occur as a non-compensatory enhancement element in exceedance of local requirements. Non-native invasive species and scattered waste and debris will be removed as necessary, and disturbed areas will be replanted with native buffer vegetation approximately 5 to 10 feet on center in clusters wherever feasible. Planting species that help screen the nearby wetlands and discourage intrusion will be emphasized in areas closest to areas of potential disturbance.

7.6 Mitigation Goals, Objectives, and Performance Standards

The previously approved goals and objectives for the mitigation actions are based on compensating for lost functions, providing additional functions according to the needs of the Duwamish-Green watershed, and providing an overall improvement in the quality of wetland habitat. These mitigation actions are capable of improving water quality and hydrologic functions, and providing a moderate to high level of habitat function for wetland-associated wildlife. The goals and objectives of the mitigation actions are as follows:

**Goal 1** – Compensate for the loss of 2,024 square feet (0.05 acre) of wetland area by enhancing a minimum of 12,144 square feet (0.28 acre) of wetland area that provides a low to moderate level of water quality and habitat functions.

**Objective 1** – Enhance wetland habitat with diverse horizontal and vertical vegetation structure and high species richness to provide habitat for wetland-associated wildlife.

**Performance Standard 1** – The wetland enhancement area will be planted with native shrub and tree species. This shall be documented in an as-built report.

**Performance Standard 2** – By the end of Year 1, native plant survival for the wetland enhancement areas will be 100 percent.
Performance Standard 3 – At least 3 native tree species and 5 shrub species will be present in the wetland enhancement areas in all monitoring years. To be considered, the native species must make up at least five (5) percent of the vegetation class.

Performance Standard 4 – The wetland enhancement area will contain at least 30 percent total cover by native tree species and 50 percent total cover by native shrub species by Year 5, and 40 percent total cover by native tree species and 60 percent total cover by native shrub species at the end of Year 10.

Performance Standard 5 – Non-native invasive plants will not make up more than 15 percent total cover within the wetland enhancement area in any growing season following year 1.

Objective 2 – Introduce habitat enhancement features such as large woody debris (LWD) and small habitat piles.

Performance Standard 6 – A minimum of six (6) LWD and six (6) small habitat piles will be situated in the wetland enhancement areas.

Goal 2 – Improve habitat functions within Duwamish-Green watershed by reducing presence of non-native invasive species and increasing presence of habitat features and diversity within Wetland A buffer enhancement area.

Objective 3 – Effectively control and/or eliminate non-native invasive species from the wetland and buffer enhancement area.

Performance Standard 6 – Non-native invasive plants will not make up more than 20 percent total cover within the buffer enhancement area in any growing season following year 1.

7.7 Mitigation Specifications

The project manager and grading contractor shall meet with the Wetland Scientist at the site before construction activities commence in order to ensure mitigation objectives will be met and critical elements are properly addressed, and implementation of the approved wetland impacts and mitigation actions will be conducted under the oversight of the responsible Wetland Scientist and Project Engineer for the duration of the project.

The following specifications are established as a set of minimum standards for proper implementation of the mitigation actions. Additional actions, modifications, and/or substitutions may be necessary at the time of construction and may be approved by the responsible Wetland Scientist and Project Engineer.

7.8 Plant Materials and Installation

7.8.1 Plant Materials
All plant materials to be used for enhancement actions will be nursery grown stock from a reputable, local source. Only native species are to be used; no hybrids or cultivars will be allowed. Plant material
provided will be typical of their species or variety; if not cuttings they will exhibit normal, densely-developed branches and vigorous, fibrous root systems. Plants will be sound, healthy, vigorous plants free from defects, and all forms of disease and infestation.

Container stock shall have been grown in its delivery container for not less than six months but not more than two years. Plants shall not exhibit rootbound conditions. Under no circumstances shall container stock be handled by their trunks, stems, or tops. Seed mixture used for hand or hydroseeding shall contain fresh, clean, and new crop seed mixed by an approved method. The mixture is specified in Table 12.

All plant material shall be inspected by a qualified Wetland Scientist upon delivery. Plant material not conforming to the specifications below will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site.

Fertilizer will be in the form of Agroform plant tabs or an approved like form. Mulch will consist of sterile wheat straw or clean recycled wood chips approximately 1/2 inch to 1 inch in size and 1/2 inch thick. If free of invasive plant species, the mulch material may be sourced from woody materials salvaged from the land clearing activities.

7.8.2 Plant Scheduling, Species, Density, and Location

Plant installation should occur as close to conclusion of development activities as possible to limit temporal loss of function provided by the wetland and associated buffer. All planting should occur between September 1 and May 1 to ensure plants do not dry out after installation, or temporary irrigation measures may be necessary. Planting shall be under the direction of the Wetland Scientist. A proposed plant list and planting details are provided in Appendix C. All planting will be installed according to the procedures detailed in the following subsections using the species and densities outlined in Tables 10 through 12 below.

### Table 10. Wetland Plant Species

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Typical Spacing (feet on-center)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thuja plicata</td>
<td>Western red cedar</td>
<td>Bare root</td>
<td>10</td>
</tr>
<tr>
<td>Picea sitchensis</td>
<td>Sitka spruce</td>
<td>Bare root</td>
<td>10</td>
</tr>
<tr>
<td>Salix lucida</td>
<td>Pacific willow</td>
<td>Bare root</td>
<td>10</td>
</tr>
<tr>
<td>Salix sitchensis</td>
<td>Sitka willow</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Lonicera involucrata</td>
<td>Twinberry</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Physocarpus capitatus</td>
<td>Pacific nine bark</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Ribes bracteatum</td>
<td>Stink currant</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Ribes lacustre</td>
<td>Swamp gooseberry</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Rosa nutkana</td>
<td>Nootka rose</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Rosa pisocarpa</td>
<td>Swamp rose</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td>Fraxinus latifolia</td>
<td>Oregon ash</td>
<td>Bare root</td>
<td>10</td>
</tr>
</tbody>
</table>

1. Native plant species may be substituted or added with Wetland Scientist approval.

### Table 11. Wetland Buffer Plant Species

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Typical Spacing (feet on-center)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abies grandis</td>
<td>Grand fir</td>
<td>Bare root</td>
<td>10</td>
</tr>
<tr>
<td>Acer circinatum</td>
<td>Vine maple</td>
<td>Bare root</td>
<td>8</td>
</tr>
<tr>
<td>Species</td>
<td>Common Name</td>
<td>Percentage (by volume)</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td><em>Amelanchier alnifolia</em></td>
<td>Saskatoon serviceberry</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td><em>Rosa nutkana</em></td>
<td>Nootka rose</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td><em>Ribes sanguineum</em></td>
<td>Red flowering currant</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td><em>Mahonia aquifolium</em></td>
<td>Tall Oregon grape</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td><em>Symphoricarpos albus</em></td>
<td>Snowberry</td>
<td>Bare root</td>
<td>5</td>
</tr>
<tr>
<td><em>Salix scouleriana</em></td>
<td>Scouler’s willow</td>
<td>Bare root</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Native plant species may be substituted or added with Wetland Scientist approval.

### Table 12. Wetland Seed Mix

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Percentage (by volume)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Carex obnupta</em></td>
<td>Slough sedge</td>
<td>10 percent</td>
</tr>
<tr>
<td><em>Scirpus microcarpus</em></td>
<td>Small fruited bulrush</td>
<td>10 percent</td>
</tr>
<tr>
<td><em>Glyceria borealis</em></td>
<td>Northern mannagrass</td>
<td>30 percent</td>
</tr>
<tr>
<td><em>Hordeum brachyantherum</em></td>
<td>Meadow barley</td>
<td>50 percent</td>
</tr>
</tbody>
</table>

1. Native seed mix may be modified with Wetland Scientist approval.

### 7.8.3 Quality Control for Planting Plan

All plant material shall be inspected by a qualified Wetland Scientist upon delivery. Plant material not conforming to the specifications above will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site. Under no circumstances shall container stock be handled by their trunks, stems, or tops.

The landscape contractor shall provide the responsible Wetland Scientist with documentation of plant material that includes the supplying nursery contact information, plant species, plant quantities, and plant sizes.

### 7.8.4 Product Handling, Delivery, and Storage

All seed and fertilizer should be delivered in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. This material should be stored in a manner to prevent wetting and deterioration. All precautions customary in good trade practice shall be taken in preparing plants for moving. Workmanship that fails to meet industry standards will be rejected. Plants will be packed, transported, and handled with care to ensure protection against injury and from drying out. If plants cannot be planted immediately upon delivery they should be protected with soil, wet peat moss, or in a manner acceptable to the Wetland Scientist. Plants, fertilizer, and mulch not installed immediately upon delivery shall be secured on the site to prevent theft or tampering. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Plants transported on open vehicles should be secured with a protective covering to prevent windburn.

### 7.8.5 Preparation and Installation of Plant Materials

The planting contractor shall verify the location of all elements of the mitigation plan with the Wetland Scientist prior to installation. The responsible Wetland Scientist reserves the right to adjust the locations of landscape elements during the installation period as appropriate to the mitigation actions outlined above. If obstructions are encountered that are not shown on the drawings, planting operations will cease until alternate plant locations have been selected by and/or approved by the Wetland Scientist.

Circular plant pits with vertical sides will be excavated for all container stock. The pits should be at least 12 inches in diameter, and the depth of the pit should accommodate the entire root system. The bottom of each pit will be scarified to a depth of four (4) inches.
Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water plants thoroughly midway through backfilling and add Agroform tablets. Water pits again upon completion of backfilling. No filling should occur around trunks or stems. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water, and install a four (4)- to six (6)-inch layer of mulch around the base of each container plant.

**7.8.6 Temporary Irrigation Specifications**

While the native species selected for mitigation are hardy and typically thrive in northwest conditions, and the approved mitigation actions are planned in areas with sufficient hydroperiods for the species selected, some individual plants might perish due to dry conditions. Therefore, irrigation or regular watering will be provided as necessary for the duration of the first two (2) growing seasons while the native plantings become established.

**7.8.7 Invasive Plant Control and Removal**

Invasive species to be removed include reed canarygrass, Himalayan blackberry, cut-leaf blackberry, and all other listed noxious weeds. To ensure these species do not expand following the mitigation actions, non-native invasive species within the wetland and buffer enhancement areas will be pretreated with a root-killing herbicide approved for use in aquatic sites (i.e. Rodeo) approximately 30 days prior to being cleared and grubbed from the entire wetland and associated buffer. The pre-treatment with herbicide should occur prior to all planned mitigation actions, and spot treatment of any surviving other invasive vegetation should be performed again each fall prior to leaf senescence for a minimum of three (3) years.

**7.9 Conceptual Maintenance and Monitoring Plan**

The Applicant is committed to compliance with the mitigation plan and overall success of the project. As such, the Applicant will continue to maintain the mitigation area, keeping the site free from non-native invasive vegetation, trash, and yard waste.

The wetland enhancement actions will require continued monitoring and maintenance to ensure the mitigation actions are successful. Therefore, the mitigation site will be monitored for a period of 10 years with formal inspections by a qualified Wetland Scientist. Monitoring events will be scheduled at the time of construction, 30 days after planting, and late in the first through final year’s growing seasons in Years 1, 2, 3, 5, 7, and 10. Closeout assessment will also be conducted in Year 10 to ensure the adequate compensatory wetland mitigation area was established.

Monitoring will consist of plant counts and percent cover measurements at permanent monitoring stations, walk-through surveys to identify invasive species presence and dead or dying enhancement plantings, photographs taken at fixed locations, wildlife observations, and general qualitative habitat and wetland function observations.

To determine percent cover, observed vegetation will be identified and recorded by species and an estimate of areal cover of dominant species within each sampling plot. Circular sample plots, approximately 30 feet in diameter (706 square feet), are centered at each monitoring station. The sample plots encompass the specified wetland areas and terminate at the observed wetland boundary. Trees and shrubs within each 30-foot diameter monitoring plot are then recorded to species and areal
cover. Herbaceous vegetation is sampled from a 10-foot diameter (78.5 square feet) within each monitoring plot, established at the same location as the center of each tree and shrub sample plot. Herbaceous vegetation within each monitoring plot is then recorded to species and includes an estimate of percent areal cover. A list of observed tree, shrub, and herbaceous species including percent areal cover of each species and wetland status is included within the monitoring report. Routine maintenance is necessary to ensure the integrity and success of the enhancement actions. Long-term management actions include continuous invasive plant removal, removal of potential garbage, and ensuring survival of native plant species. The annual cost estimate for these management actions will be determined through King County’s bond quantity sheet.

7.10 Reporting

Following each monitoring event, a brief monitoring report detailing the current ecological status of the wetland, measurement of performance standards, and management recommendations will be prepared and submitted to King County, USACE, and WSDOE within 90 days of each monitoring event to ensure full compliance with the mitigation plan, performance standards, and regulatory conditions of approval.

7.11 Contingency Plans

If monitoring results indicate that performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the site fail to meet the success criteria, a contingency plan will be developed and implemented with regulatory approval. Such plans are adaptive and should be prepared on a case-by-case basis to reflect the failed mitigation characteristics. Contingency plans can include additional plant installation, erosion control, and plant substitutions including type, size, and location.

Contingency/maintenance activities may include, but are not limited to:

1. Replacing plants lost to vandalism, drought, or disease, as necessary;
2. Replacing any plant species with a 20 percent or greater mortality rate after two (2) growing seasons with the same species or native species of similar form and function;
3. Irrigating the mitigation areas only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water;
4. Reseeding and/or repair of wetland and buffer areas as necessary if erosion or sedimentation occurs;
5. Spot treat non-native invasive plant species; and
6. Removing all trash or undesirable debris from the wetland and buffer areas as necessary.

7.12 Financial Assurances

Per KCC 27A.30.080 and 27A.30.090, performance security is required to assure that all actions approved under this Conceptual Mitigation Plan are satisfactorily completed no later than the time established, and are in accordance with the mitigation plan, performance standards, and regulatory conditions of approval.
Chapter 8. Closure

The findings and conclusions documented in this report have been prepared for specific application to this project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

Wetland status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland is validated by the jurisdictional agencies. Validation of the wetland boundaries and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the wetland determination and boundaries verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

As wetlands are dynamic communities affected by both natural and human activities, changes in boundaries may be expected; therefore, delineations cannot remain valid for an indefinite period of time. Regulatory agencies typically recognize the validity of wetland delineations for a period of five years after completion of an assessment report. Development activities on a site five years after the completion of this assessment report may require reassessment of the wetland delineations. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.
Chapter 9. References


United States Department of Agriculture (USDA) and NRCS. 2017. *Field Indicators of Hydric Soils in the United States, Version 8.1.* L.M. Vasialas, G.W. Hurt, and C.V. Noble (eds.) USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.


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

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<th>Parameter</th>
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<tr>
<td>USFWS species lists by County</td>
<td><a href="http://www.fws.gov/westwafwo/species/SE_List/endangered_Species.asp">http://www.fws.gov/westwafwo/species/SE_List/endangered_Species.asp</a></td>
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Appendix B – Background Information

This Appendix includes a King County Topographic Map (B1); King County Streams and Wetlands Map (B2); DNR Stream Typing Map (B3); USFWS NWI Map (B4); WDFW SalmonScape Map (B5); and WDFW PHS Map (B6).
Appendix B1. King County Topographic Map
Appendix B2. King County Streams and Wetlands Map

King County Streams and Wetlands Map

Subject Property (Approximate)
Appendix B3. DNR Stream Typing Map

DNR Stream Typing Map

September 18, 2017
King County parcels _Queryresult

Subject Property (Approximate)
Appendix B4. USFWS NWI Map
Appendix B5. WDFW SalmonScape Map
Appendix B6. WDFW PHS Map
Appendix C – Site Plans
WETLAND FILL AREA (2,024 SF)

WETLAND AREA CATEGORY IV (51,224 SF)

SPLIT RAIL FENCE

PROPERTY BOUNDARY

BEACON AVE SOUTH

SOUTH 128TH STREET

66TH AVE SOUTH

UPLAND HUMMOCK

50' STANDARD WETLAND BUFFER

25' REDUCED WETLAND BUFFER

MINIMUM WETLAND ENHANCEMENT AREA (12,144 SF)

BUFFER ENHANCEMENT AREA (12,000 SF)

WETLAND BUFFER REDUCTION AREA APPOX. 9,300 SF

MAPLE RIDGE - PROPOSED PROJECT

PRELIMINARY INFORMATION ONLY
NOT FOR CONSTRUCTION

SOUNDVIEW CONSULTANTS, LLC. ASSUMES NO LIABILITY OR RESPONSIBILITY FOR CONSTRUCTION IMPROVEMENTS OR ESTIMATES BASED ON THIS PLAN SET.

SOURCE:
PRELIMINARY INFORMATION ONLY

NOT FOR CONSTRUCTION

SOUNDVIEW CONSULTANTS, LLC. ASSUMES NO LIABILITY OR RESPONSIBILITY FOR CONSTRUCTION IMPROVEMENTS OR ESTIMATES BASED ON THIS PLAN SET.

DATE: 11/17/2017

JOB: 1583.0001

SHEET 2 of 4

DRAFT FOR REVIEW
### WETLAND PLANT SPECIES

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size (Min)</th>
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<tr>
<td>Carex Gymnista</td>
<td>Slough Sedge</td>
<td>10</td>
<td>30 lbs/acre</td>
</tr>
<tr>
<td>Glycyrrhiza Borealis</td>
<td>Northern Manna Grass</td>
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<tr>
<td>Scorpus Microcarus</td>
<td>Small Frusted Bulrush</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Nardus Brachy-Antchelum</td>
<td>Meadow Barley</td>
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### WETLAND BUFFER SPECIES

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<td>Acer Circinatum</td>
<td>Vine Maple</td>
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<td>3</td>
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<tr>
<td>Amelanchier Alnifoia</td>
<td>Saskatoon Service Berry</td>
<td>5</td>
<td>25</td>
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<tr>
<td>Rosa Nutkana</td>
<td>Nootka Rose</td>
<td>28</td>
<td></td>
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<tr>
<td>Ribes Sangium</td>
<td>Red Flowering Current</td>
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<td></td>
</tr>
<tr>
<td>Mahonia Aquifolium</td>
<td>Tall Oregon Grape</td>
<td>25</td>
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<tr>
<td>Symphoricarpus Albus</td>
<td>Snowberry</td>
<td>5</td>
<td>27</td>
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<td>Salix Scouleriana</td>
<td>Schooler's Willow</td>
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### WETLAND SEED MIX

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<th>Common Name</th>
<th>Quantity</th>
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<th>Size (Min)</th>
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<td>Glycyrrhiza Borealis</td>
<td>Northern Manna Grass</td>
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<td>Scorpus Microcarus</td>
<td>Small Frusted Bulrush</td>
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<tr>
<td>Nardus Brachy-Antchelum</td>
<td>Meadow Barley</td>
<td>50</td>
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### WETLAND ENHANCEMENT PLANTING PLAN

- **Primary Wetland Buffer**: To be delineated by split rail fencing. Critical area protection signs, approved by the county, shall be placed at intervals of 50 ft or as otherwise specified by the county. See sheet 4 for details.
- **Large Woody Debris (typical)**: Locations to be field located by wetland scientist.
- **Wetland Buffer**: Enhance as necessary by removing invasive vegetation and revegetate with species found in the wetland buffer table on this sheet.
- **Wetland Buffer Enhancement**
  - To be revegetated with species found in the wetland enhancement plan list and seeded with the wetland seed mix found on this sheet.
- **Proposed Wetland Buffer**: To be delineated by split rail fencing. Critical area protection signs, approved by the county, shall be placed at intervals of 50 ft or as otherwise specified by the county. See sheet 4 for details.

### WETLAND ENHANCEMENT PLAN

- **Trees**
  - Thuja Plicata / Western Red Cedar
  - Picea Sitchensis / Sitka Spruce
  - Salix Lucida / Pacific Willow
  - Salix Sitchensis / Sitka Willow
  - Fraxinus Latifolia / Oregon Ash
  - Physocarpus Capsitatus / Pacific Ninebark
  - Ribes Bracteatum / Stink Current
  - Ribes Lacustre / Swamp Goosberry
  - Rosa Nutkana / Nootka Rose
  - Rosa Piscoparca / Clustered Swamp Rose
- **Shrubs**
  - Amelanchier Alnifoia / Serviceberry
  - Mahonia Aquifolium / Tall Oregon Grape
  - Symphoricarpus Albus / Snowberry

### Notes

- **Preliminary Information Only**
- **Not for Construction**
- **Soundview Consultants, LLC. Assumes no liability or responsibility for construction, improvements, or estimates based on this plan set**

---

**MAPLE RIDGE - CONCEPTUAL PLANTING PLAN**

**Legend**

- **Trees**
- **Shrubs**
- **Habitat Piles**
- **Critical Area Protection Sign**
- **Split Rail Fencing**
- **Buffer Envelope**
- **Primary Wetland Enhancement Area**
- **Wetland Seed Mix**

**Scale**: 1" = 30'-0"
Preliminary Information Only

Not for Construction

Soundview Consultants, LLC. Assumes No Liability or Responsibility For Construction, Improvements, or Estimates Based on this Plan Set

Critical Area Protection Sign

Not to Scale

12"x18" Aluminum Sign with White Reflective Background. Install One Per Protected Feature in a Conspicuous Place Minimum of Two Ballized or Stainless Steel Wood Lag Bolts to Firmly Secure Sign. 4x4 Pressure Treated Wooden Post with 1/2" Chamfer at Top.

Tree Planting Detail

Not to Scale

(3) 2" D.E. Stakes, Tie at Armpit, 6 to 8' Height of Tree with Flexible Rubber Tie in Figure Eight Pattern. Stakes and Tree Plum: Stake Plants As Noted on Legend.

Remove all ties, wrap & containers. Fine Perimeter Roots from Nursery Ball. 3' Deep Dugout for Water.

Locate Stakes at Top of a Times DIA. of Rootball at Ball Center. Wedge Fit Grit to Firm Shane.

Pit Spills, Nursery Ball Waste Backfill. Set Ball on Undisturbed Subgrade or Compacted Soil.

Note: Work Perimeter Roots Free of Nursery Ball & Spread over Excavated Pit. Ball & Pit to be Courously Scarified.

Shrub Planting Detail (Typical)

Not to Scale

Locater Lath (if Specified)

3 to 4 Inch Layer of Mulch

Notes:

1. Plant Shrubs of the Same Species in Groups of 3 to 6 as Appropriate.

2. Excavate Pit to Full Depth of Root Mass and Canopy Diameter. Spread Roots to Full Width of Canopy.

3. Midway Through Planting Add Agroform Tablet and Water Thoroughly.


5. Water Immediately After Planting.

6. Place 3 Inches of Bark Mulch Around Trees and Shrubs.

Hummock Detail (Typical)

Not to Scale

Hummock Size: 2' x 2' max, 1' to 2' min Width (Top). Length as Shown on Sheets X, Y, and Z.

Large Woody Debris Detail (Typical)

Not to Scale

Humble Size: 2' x 2' max, 1' to 2' min Width (Top). Length as Shown on Sheets X, Y, and Z.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Maple Ridge City/County: Renton/ King County Sampling Date: 07/02/2014
Applicant/Owner: Maple Ridge Investment Partners, LLC State: WA Sampling Point: DP-1
Investigator(s): J. Carsner, P. Acharya Section, Township, Range: Section 14, Township 23N, Range 04E
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 0
Subregion (LRR): A - Northwest Forest and Coast Lat: 47.4884 Long: -122.2517 Datum: WGS-84
Soil Map Unit Name: Soil Map for the site is not available NWI classification: N/A

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

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.)

Vegetation – Use scientific names of plants.


Remarks: Not all three wetland criteria observed.

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0
☐ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
☐ 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? ☒ No ☐

Remarks: Dominance test criteria met.
### 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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>0-16</td>
<td>10YR 2/2</td>
<td>90</td>
<td>10YR 3/6</td>
<td>10</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
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</table>

Type: 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)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

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

Hydric Soil Present? Yes ☒ No ☐

Remarks: Hydric soil indicator F6 observed.

### 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 ☐

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

Remarks: No wetland hydrology indicators observed.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Maple Ridge
City/County: Renton/ King County
Sampling Date: 07/02/2014
Applicant/Owner: Maple Ridge Investment Partners, LLC
State: WA
Sampling Point: DP-2
Investigator(s): J. Carsner, P. Acharya
Section, Township, Range: Section 14, Township 23N, Range 04E
Landform (hillslope, terrace, etc.): Flat
Local relief (concave, convex, none): None
Slope (%): 0
Subregion (LRR): A 2
Lat: 47.4881
Long: -122.2517
Datum: WGS-84
Soil Map Unit Name: Soil Map for the site is not available
WNI classification: N/A

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

Remarks: Not all three wetland criteria observed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft.)
1. Populus balsamifera 50 Yes FAC
2. Fraxinus latifolia 30 Yes FACW
3. Salix scouleriana 10 No FAC
4. Luxuriant Total Cover 90
Sapling/Shrub Stratum (Plot size: 15 ft.)
1. Rubus laciniatus 30 Yes FACU
2. Rubus armeriacus 20 Yes FAC
3. Crataegus douglasii 5 No FAC
4. Rosa nutkana 10 No FAC
5. Luxuriant Total Cover 65
Herb Stratum (Plot size: 5 ft.)
1. Ranunculus repens 70 Yes FAC
2. Equisetum arvense 20 Yes FAC
3. Karriean Total Cover 90

Woody Vine Stratum (Plot size: 15 ft.)
1. Luxuriant Total Cover 90

% Bare Ground in Herb Stratum 10

Remarks: Dominance test criteria met.
### SOIL

**Sampling Point:** DP-2

#### 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>Matrix</th>
<th>Redox Features</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>10YR 2/2</td>
<td>99</td>
<td>10YR 4/6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
</tbody>
</table>

1. **Type:** C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
2. **Location:** PL=Pore Lining, M=Matrix.
3. **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**

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

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sandy Redox (S5)</td>
</tr>
<tr>
<td>Histic Eppideon (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: No hydric soil indicators observed. Does not meet redox dark surface requirements.

### HYDROLOGY

#### Wetland Hydrology Indicators:

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

#### 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: No wetland hydrology indicators observed.
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys, and Coast Region

**Project/Site:** Maple Ridge  
**City/County:** Renton/ King County  
**Sampling Date:** 07/02/2014

**Applicant/Owner:** Maple Ridge Investment Partners, LLC  
**State:** WA  
**Sampling Point:** DP-3

**Investigator(s):** J. Carsner, P. Acharya  
**Section, Township, Range:** Section 14, Township 23N, Range 04E

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

**Subregion (LRR):** A 2  
**Lat:** 47.4879  
**Long:** -122.2515  
**Datum:** WGS-84

**Soil Map Unit Name:** Soil Map for the site is not available  
**NWI classification:** PEMB

**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?**  
(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: All three wetland criteria observed.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### Tree Stratum (Plot size: 30 ft.)

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus laciniatus</td>
<td>5</td>
<td>Yes</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Rubus armeriacus</td>
<td>5</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

**Dominant Species?**

**Indicator Status**

**Dominance Test worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
- Total Number of Dominant Species Across All Strata: 3 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

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

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus laciniatus</td>
<td>5</td>
<td>Yes</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Rubus armeriacus</td>
<td>5</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

**Dominant Species?**

**Indicator Status**

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

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ranunculus repens</td>
<td>60</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Equisetum hyemale</td>
<td>10</td>
<td>No</td>
<td>FACW</td>
</tr>
<tr>
<td>3. Epilobium watsonii spp. ciliatum</td>
<td>10</td>
<td>No</td>
<td>FACW</td>
</tr>
<tr>
<td>4. Athryum filix-femina spp. cyclosorum</td>
<td>10</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Holcus lanatus</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>6. Agrostis capillaris</td>
<td>4</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>7. Vicia americana</td>
<td>T</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>8. Solanum dulcamara</td>
<td>1</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
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</tr>
</tbody>
</table>

**Absolute % Cover**

**Dominant Species?**

**Indicator Status**

### Woody Vine Stratum (Plot size: 15 ft.)

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

**Dominant Species?**

**Indicator Status**

### % Bare Ground in Herb Stratum

**Remarks: Hydrophytic vegetation criteria met via dominance test.**

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation
- Prevalence Index is ≤3.0
- Morphological Adaptations
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation

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>0-11</td>
<td>10YR 2/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-17</td>
<td>10YR 4/2</td>
<td>95</td>
<td>10YR 3/6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<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.)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Histic Epopedon (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>

### Indicators for Problematic Hydric Soils:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 cm Muck (A10)</td>
<td>Red Parent Material (TF2)</td>
</tr>
<tr>
<td>Red Parent Material (TF2)</td>
<td>Very Shallow Dark Surface (TF12)</td>
</tr>
<tr>
<td>Other (Explain in Remarks)</td>
<td></td>
</tr>
</tbody>
</table>

### Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type;</th>
<th>Depth (inches):</th>
</tr>
</thead>
</table>

Hydric Soil Present?  Yes ☒  No ☐

Remarks: Hydric soil indicator A11 observed.

## HYDROLOGY

### Wetland Hydrology Indicators:

<table>
<thead>
<tr>
<th>Primary Indicators (minimum of one required; check all that apply)</th>
<th>Secondary Indicators (2 or more required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Salt Crust (B11)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Sparsely Vegetated Concave Surface (B8)</td>
<td>FAC-Neutral Test (D5)</td>
</tr>
<tr>
<td></td>
<td>Frost-Heave Hummocks (D7)</td>
</tr>
</tbody>
</table>

### Field Observations:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes ☐  No ☒  Depth (inches):</th>
<th>Water Table Present?</th>
<th>Yes ☐  No ☒  Depth (inches):</th>
<th>Saturation Present?</th>
<th>Yes ☒  No ☐  Depth (inches):</th>
<th>Wetland Hydrology Present?</th>
<th>Yes ☒  No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</td>
<td>Remarks: Wetland hydrology indicators A3 and C3 observed.</td>
</tr>
</tbody>
</table>
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** Maple Ridge  
**City/County:** Renton/ King County  
**Sampling Date:** 07/02/2014  
**Applicant/Owner:** Maple Ridge Investment Partners, LLC  
**State:** WA  
**Sampling Point:** DP-4  
**Investigator(s):** J. Carsner, P. Acharya  
**Section, Township, Range:** Section 14, Township 23N, Range 04E  
**Landform (hillslope, terrace, etc.):** Flat  
**Local relief (concave, convex, none):** None  
**Slope (%):** 0  
**Subregion (LRR):** A - Northwest Forest and Coast  
**Lat:** 47.4878  
**Long:** -122.2515  
**Datum:** WGS-84  
**Soil Map Unit Name:** Soil Map for the site is not available  
**NWI classification:** N/A

**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?** Yes ☑ No ☐  
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>
</table>

**Remarks:** All three wetland criteria observed via 2017 site visit update - 10/20/2017

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

<table>
<thead>
<tr>
<th>Stratum</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tree Stratum (Plot size: 30 ft.)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sapling/Shrub Stratum (Plot size: 15 ft.)</strong></td>
<td>0 ☑</td>
<td></td>
<td>Total Cover</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Herb Stratum (Plot size: 5 ft.)</strong></td>
<td>0 ☑</td>
<td></td>
<td>Total Cover</td>
</tr>
<tr>
<td>1. Ranunculus repens</td>
<td>60 ☑</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Equisetum hyemale</td>
<td>10 ☑</td>
<td>No</td>
<td>FACW</td>
</tr>
<tr>
<td>3. Epilobium watsonii spp. ciliatum</td>
<td>10 ☑</td>
<td>No</td>
<td>FACW</td>
</tr>
<tr>
<td>4. Solanum dulcamara</td>
<td>5 ☑</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Holcus lanatus</td>
<td>10 ☑</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>6. Vicia americana</td>
<td>5 ☑</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
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<tr>
<td>9.</td>
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<tr>
<td>10.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11.</td>
<td>100 ☑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Woody Vine Stratum (Plot size: 15 ft.) | 0 ☑     |                   | Total Cover      |
| 1.                        |         |                   |                  |
| 2.                        |         |                   |                  |
| **% Bare Ground in Herb Stratum** | 0 ☑     |                   | Total Cover      |

**Remarks:** Dominance test criteria observed.

**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 ☑ (A/B)

**Prevalence Index worksheet:**
- Total % Cover of: Multiply by:
  - OBL species ☑ x 1 = ☑
  - FACW species ☑ x 2 = ☑
  - FAC species ☑ x 3 = ☑
  - FACU species ☑ x 4 = ☑
  - UPL species ☑ x 5 = ☑
- Column Totals: ☑ (A) ☑ (B)
- Prevalence Index = B/A = ☑

**Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation ☐
- Dominance Test is >50% ☑
- Prevalence Index is ≤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:** All three wetland criteria observed.
### 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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-11</td>
<td>10YR 2/2</td>
<td>98</td>
<td>10YR 3/6</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>11-16</td>
<td>10YR 4/2</td>
<td>98</td>
<td>7.5YR 4/6</td>
<td>2</td>
<td>C</td>
<td>M/PL</td>
<td>Silt loam</td>
<td></td>
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</tr>
</tbody>
</table>

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

#### Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

#### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### 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)

#### 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): 8
- Water Table Present? Yes ☑ No ☐ Depth (inches): 8
- Saturation Present? Yes ☑ No ☐ Depth (inches): 8

#### Wetland Hydrology Present? Yes ☑ No ☐

Remarks: Primary hydrologic indicators A2/A3 observed.

---

**US Army Corps of Engineers**

**Western Mountains, Valleys, and Coast – Version 2.0**
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Maple Ridge
City/County: Renton/ King County
Sampling Date: 07/02/2014
Applicant/Owner: Maple Ridge Investment Partners, LLC
State: WA
Sampling Point: DP-5
Investigator(s): J. Carsner, P. Acharya
Section, Township, Range: Section 14, Township 23N, Range 04E
Landform (hillslope, terrace, etc.): Flat
Local relief (concave, convex, none): None
Slope (%): 0
Subregion (LRR): A - Northwest Forest and Coast
Lat: 47.4873
Long: -122.2504
Datum: WGS-84
Soil Map Unit Name: Soil Map for the site is not available
NWI classification: PEMB

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.

<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>
</tbody>
</table>

Remarks: All three wetland criteria observed.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>5 (A)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata:</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>5 (B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alnus rubra (sapling)</td>
<td>5</td>
<td>Yes</td>
<td>FAC</td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>2. Rubus armeniacus</td>
<td>5</td>
<td>Yes</td>
<td>FAC</td>
<td>5 (A)</td>
</tr>
<tr>
<td>3. Crataegus douglasii</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td>Total Number of Dominant Species Across All Strata:</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>5 (B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ranunculus repens</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>2. Holcus lanatus</td>
<td>70</td>
<td>Yes</td>
<td>FAC</td>
<td>5 (A)</td>
</tr>
<tr>
<td>3. Juncus effusus</td>
<td>5</td>
<td>No</td>
<td>FACW</td>
<td>Total Number of Dominant Species Across All Strata:</td>
</tr>
<tr>
<td>4. Alopecurus pratensis</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
<td>5 (B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>5 (A)</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum ______

Remarks: Dominion test criteria met.

Hydrophytic Vegetation Indicators:

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

**Sampling Point:** DP-5

#### 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>0-16</td>
<td>10YR 2/2</td>
<td>95</td>
<td>7.5YR 3/4</td>
<td>5</td>
<td></td>
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<td>Silty loam</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.)

- 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 Soils:

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

#### Restrictive Layer (if present):

- Type:
- Depth (inches):

#### Hydric Soil Present?  Yes ☒  No ☐

Remarks: Hydric soil indicator F6 observed.

### HYDROLOGY

#### Wetland Hydrology Indicators:

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

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Salt Crust (B11)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Frost-Heave Hummocks (D7)</td>
</tr>
</tbody>
</table>

**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)

#### 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:

Remaining Hydrology

- Water Table Present?  Yes ☐  No ☒ Depth (inches): ____________
- Saturation Present?  Yes ☐  No ☒ Depth (inches): ____________

Remarks: Wetland hydrology indicator C3 observed.
VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Stratum (Plot size: 30 ft.)</td>
<td></td>
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</tr>
<tr>
<td>1.</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>0</td>
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<tr>
<td>Sapling/Shrub Stratum (Plot size: 15 ft.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Alnus rubra (sapling)</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. Fraxinus latifolia (sapling)</td>
<td>5</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>3. Crataegus douglasii</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td></td>
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<td>4.</td>
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<tr>
<td>5.</td>
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<tr>
<td>Herb Stratum (Plot size: 5 ft.)</td>
<td></td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ranunculus repens</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. Holcus lanatus</td>
<td>70</td>
<td>Yes</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>3. Carex spp. *</td>
<td>1</td>
<td>No</td>
<td>FAC*</td>
<td></td>
</tr>
<tr>
<td>4. Alopecurus pratensis</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>5. Carex stipata</td>
<td>4</td>
<td>No</td>
<td>OBL</td>
<td></td>
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<tr>
<td>6.</td>
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<td>7.</td>
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<td>9.</td>
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<td>10.</td>
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<tr>
<td>11.</td>
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<td>100</td>
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<tr>
<td>Woody Vine Stratum (Plot size: 15 ft.)</td>
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<td></td>
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<tr>
<td>1.</td>
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<td></td>
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<tr>
<td>2.</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Dominance test criteria met. *Listed as facultative for scoring purposes only.
### Profile Description:

(Describe 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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-16</td>
<td>10YR 2/2</td>
<td>99</td>
<td>7.5YR 4/6</td>
<td>1</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
</tbody>
</table>

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

### Hydric Soil Indicators:

(Applicable to all LRRs, unless otherwise noted.)

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

#### Indicators for Problematic Hydric Soils:

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

### Restrictive Layer (if present):

- Type: _______________________
- Depth (inches): _______________

### Hydric Soil Present?

- Yes ☐ No ☑

### Remarks:

No hydric soil indicators observed. Does not meet redox dark surface requirements.

### 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)
  - Other (Explain in Remarks)

#### 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:

No wetland hydrology indicators observed.
Project/Site: Maple Ridge  
City/County: Renton/ King County  
Sampling Date: 07/03/2014  
Applicant/Owner: Maple Ridge Investment Partners, LLC  
State: WA  
Sampling Point: DP-7  
Investigator(s): J. Carsner, P. Acharya  
Section, Township, Range: Section14, Township 23N, Range 04E  
Landform (hillslope, terrace, etc.): Flat  
Local relief (concave, convex, none): None  
Slope (%): 0  
Subregion (LRR): A - Northwest Forest and Coast  
Lat: 47.4871  
Long: -122.2518  
Datum: WGS-84  
Soil Map Unit Name: Soil Map for the site is not available  
NWI classification: N/A  
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? (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 ☐  
Remarks: Not all three wetland criteria observed.  

VEGETATION – Use scientific names of plants.  

**Tree Stratum** (Plot size: 30 ft.)  
1. [Species]  
2. [Species]  
3. [Species]  
4. [Species]  

**Sapling/Shrub Stratum** (Plot size: 15 ft.)  
1. Crataegus douglasii 10 Yes FAC  
2. Rubus armeniacus 5 Yes FAC  
3. [Species]  
4. [Species]  
5. [Species]  

0 = Total Cover  

**Herb Stratum** (Plot size: 5 ft.)  
1. Ranunculus repens 20 Yes FAC  
2. Holcus lanatus 10 No FAC  
3. Phalaris arundinacea 60 Yes FACW  
4. Agrostis gigantea 10 No FAC  
5. [Species]  
6. [Species]  
7. [Species]  
8. [Species]  
9. [Species]  
10. [Species]  
11. [Species]  

15 = Total Cover  

**Woody Vine Stratum** (Plot size: 15 ft.)  
1. [Species]  
2. [Species]  

100 = Total Cover  

% Bare Ground in Herb Stratum  
Remarks: Dominance test criteria met.

**Dominance Test worksheet:**  
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  
Total Number of Dominant Species Across All Strata: 4 (B)  
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)  

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

**Hydrophytic Vegetation Indicators:**  
☐ Rapid Test for Hydrophytic Vegetation  
☒ Dominance Test is >50%  
☐ Prevalence Index is ≤3.01  
☐ Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)  
☐ Wetland Non-Vascular Plants1  
☐ Problematic Hydrophytic Vegetation1 (Explain)  

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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>%</th>
<th>Redox Features Color (moist)</th>
<th>%</th>
<th>Type1</th>
<th>Loc2</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-13</td>
<td>10YR 2/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>13-17</td>
<td>10YR 3/2</td>
<td>98</td>
<td>10YR 3/6</td>
<td>2</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

Indicators for Problematic Hydric Soils:

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

Restrictive Layer (if present):

- Type: ______________________
- Depth (inches): ________________

Hydric Soil Present? Yes ☐ No ☒

Remarks: No hydric soil indicators observed.

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)
- 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: No wetland hydrology indicators observed.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Maple Ridge City/County: Renton/ King County Sampling Date: 07/03/2014
Applicant/Owner: Maple Ridge Investment Partners, LLC State: WA Sampling Point: DP-8
Investigator(s): J. Carsner, P. Acharya Section, Township, Range: Section 14, Township 23N, Range 04E
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): A - Northwest Forest and Coast Lat: 47.4871 Long: -122.2518 Datum: WGS-84
Soil Map Unit Name: Soil Map for the site is not available

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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☒ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☒ No ☐</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☒ No ☐</td>
</tr>
<tr>
<td>Remarks: All three wetland criteria observed.</td>
<td></td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes ☒ No ☐

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 3 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15 ft.)</th>
<th>1. Crataegus douglasii 15 Yes FAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>0   = Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 ft.)</th>
<th>1. Ranunculus repens 70 Yes FAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Phalaris arundinacea 30 Yes FACW</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
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<tr>
<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>15 = Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15 ft.)</th>
<th>1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>0 = Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum __________

Remarks: Dominance test criteria met.
### 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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>10YR 2/2</td>
<td>99</td>
<td>5YR 4/6</td>
<td>1</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>12-17</td>
<td>10YR 5/1</td>
<td>90</td>
<td>10YR 4/6</td>
<td>10</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

- Type:  
- Depth (inches):

**Hydric Soil Present?** Yes ☑️ No ☐

Remarks: Hydric soil indicator A11/A12 observed.

### 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:** Wetland hydrology indicator C3 observed.
Project/Site: Maple Ridge
City/County: Renton/ King County
Sampling Date: 07/03/2014
Applicant/Owner: Maple Ridge Investment Partners, LLC
State: WA
Sampling Point: DP-9
Investigator(s): J. Carsner, P. Acharya
Section, Township, Range: Section14, Township 23N, Range 04E
Landform (hillslope, terrace, etc.): Flat
Local relief (concave, convex, none): None
Slope (%): 0
Subregion (LRR): A - Northwest Forest and Coast
Lat: 47.4871     Long: -122.2518    Datum: WGS-84
Soil Map Unit Name: Soil Map for the site is not available
NWI classification: N/A
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?
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>
</tbody>
</table>

Remarks: Not all three wetland criteria observed.

VEGETATION – Use scientific names of plants.

### Tree Stratum (Plot size: 30 ft.)

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>0 ☐</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cover:

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

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crataegus douglasii</td>
<td>10 ☐</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Rubus armeniacus</td>
<td>5 ☐</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cover:

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

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ranunculus repens</td>
<td>20 ☐</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Holcus lanatus</td>
<td>10 ☐</td>
<td>No</td>
<td>FACU</td>
</tr>
<tr>
<td>3. Phalaris arundinacea</td>
<td>60 ☐</td>
<td>Yes</td>
<td>FACW</td>
</tr>
<tr>
<td>4. Agrostis gigantea</td>
<td>10 ☐</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
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<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cover:

### Woody Vine Stratum (Plot size: 15 ft.)

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cover:

% Bare Ground in Herb Stratum ☐

Remarks: Dominance test criteria met.

### Hydrophytic Vegetation Indicators:

- Rapid Test for Hydrophytic Vegetation [☐]
- Dominance Test is >50% [☒]
- Prevalence Index is ≤3.0 [☐]
- Morphological Adaptations [☐]
- Wetland Non-Vascular Plants [☐]
- Problematic Hydrophytic Vegetation [☐]

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>Matrix Color (moist)</th>
<th>% Color (moist)</th>
<th>Redox Features</th>
<th>Type1</th>
<th>Loc2</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-13</td>
<td>10YR 2/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>13-17</td>
<td>10YR 3/2</td>
<td>98</td>
<td>10YR 3/6</td>
<td>2</td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</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 Soils:

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

#### Restrictive Layer (if present):

Type: ____________________ Depth (inches): ____________________

Hydric Soil Present? Yes ☐ No ☑

Remarks: No hydric soil indicators observed.

---

### 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): ___________
- 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: No primary nor secondary wetland hydrology indicators observed.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** Maple Ridge  
**City/County:** Renton/ King County  
**Sampling Date:** 07/03/2014  
**Applicant/Owner:** Maple Ridge Investment Partners, LLC  
**State:** WA  
**Investigator(s):** J. Carsner, P. Acharya  
**Landform (hillslope, terrace, etc.):** Flat  
**Local relief (concave, convex, none):** None  
**Section, Township, Range:** Section 14, Township 23N, Range 04E  
**Subregion (LRR):** A - Northwest Forest and Coast  
**Lat:** 47.48714  
**Long:** -122.25186  
**Datum:** WGS-84

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

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<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>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ranunculus repens</td>
<td>80 Yes</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>2. Holcus lanatus</td>
<td>10 No</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>3. Epilobium watsonii spp. ciliatum</td>
<td>5 No</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>4. Agrostis gigantea</td>
<td>5 No</td>
<td>FAC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum | 0 = Total Cover |

**Vegetation Analysis**

- **Hydrophytic Vegetation Present?** Yes ❌ No □
- **Hydric Soil Present?** Yes ❌ No □
- **Wetland Hydrology Present?** Yes ❌ No □

**Remarks:** All three wetland criteria observed.

**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 (A/B)

**Prevalence Index Worksheet:**

- Total % Cover of: Multiply by:  
  - OBL species x 1 =  
  - FACW species x 2 =  
  - FAC species x 3 =  
  - FACU species x 4 =  
  - UPL species x 5 =  
- Column Totals: (A) (B)
- Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

- Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
### 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>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-13</td>
<td></td>
<td>10YR 2/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>13-20</td>
<td></td>
<td>10YR 4/2</td>
<td>95</td>
<td>10YR 4/6</td>
<td>5</td>
<td></td>
<td></td>
<td>Silty 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 Soils**:  

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

**Restrictive Layer (if present):**

- Type:  
- Depth (inches): ____________

**Remarks:** Hydric soil indicator A12 observed.

### 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)
- 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)
- 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:** Wetland hydrology indicator C3 observed.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** Maple Ridge  
**City/County:** Renton/ King County  
**Sampling Date:** 07/03/2014

**Applicant/Owner:** Maple Ridge Investment Partners, LLC  
**State:** WA  
**Sampling Point:** DP-11

**Investigator(s):** J. Carsner, P. Acharya  
**Section, Township, Range:** Section 14, Township 23N, Range 04E

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

**Subregion (LRR):** A - Northwest Forest and Coast  
**Lat:** 47.4876  
**Long:** -122.2509  
**Datum:** WGS-84

**Soil Map Unit Name:** Soil Map for the site is not available  
**NWI classification:** N/A

**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.**

<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>
</tbody>
</table>

**Remarks:** Not all three wetland criteria observed.

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

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 2 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total % Cover of: Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species   x 1 =</td>
</tr>
<tr>
<td>FACW species  x 2 =</td>
</tr>
<tr>
<td>FAC species    x 3 =</td>
</tr>
<tr>
<td>FACU species   x 4 =</td>
</tr>
<tr>
<td>UPL species    x 5 =</td>
</tr>
<tr>
<td>Column Totals: (A) (B) Prevalence Index = B/A =</td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation
- Dominance Test is >50%
- Prevalence Index is ≤3.0¹
- Morphological Adaptations² (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation² (Explain)

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

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

**Herb Stratum (Plot size: 5 ft.)**

| Species                              | % Cover | Indicator Status | |
|--------------------------------------|---------|------------------||
| Ranunculus repens                    | 60      | Yes FAC          | |
| Agrostis capillaris                  | 10      | No FAC           | |
| Epilotium watsonii spp. ciliatum     | 5       | No FACW          | |
| Agrostis gigantea                    | 20      | Yes FAC          | |
| Vicia americana                      | 5       | No FAC           | |
|                                      | 100     | Total Cover      | |

**Woody Vine Stratum (Plot size: 15 ft.)**

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>Total Cover</td>
</tr>
</tbody>
</table>

**Remarks:** Dominance test criteria met.
### 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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>10YR 2/2</td>
<td>95</td>
<td>7.5YR 4/6</td>
<td>5</td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
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</tbody>
</table>

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

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

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

#### Indicators for Problematic Hydric Soils:

- 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)

#### Hydric Soil Present? Yes ☑ No □

Remarks: Hydric soil indicator F6 observed.

### 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): __________
- 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: No primary nor secondary wetland hydrology indicators observed.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: Maple Ridge  
City/County: Renton/ King County  
Sampling Date: 07/03/2014  
Applicant/Owner: Maple Ridge Investment Partners, LLC  
State: WA  
Investigator(s): J. Carsner, P. Acharya  
Section, Township, Range: Section 14, Township 23 N, Range 04 E  
Landform (hillslope, terrace, etc.): Flat  
Local relief (concave, convex, none): Convex  
Slope (%): 0  
Subregion (LRR): A - Northwest Forest and Coast  
Lat: 47.4883  
Long: -122.25038  
Datum: WGS-84  
Soil Map Unit Name: Soil Map for the site is not available  
NWI classification: N/A  
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.**  

<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>
</tbody>
</table>

Remarks: Not all three wetland criteria observed.

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

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 30 ft.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Populus balsamifera</td>
<td>80</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Salix lucida</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>100</td>
<td>= Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 15 ft.)</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oemleria cerasiformis</td>
<td>5</td>
<td>No</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Rubus armeriacus</td>
<td>50</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>3. Crataegus douglasii</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>60</td>
<td>= Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 ft.)</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ranunculus repens</td>
<td>95</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Epilobium watsonii spp. ciliatum</td>
<td>5</td>
<td>No</td>
<td>FACW</td>
</tr>
<tr>
<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
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<tr>
<td>5.</td>
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<tr>
<td>6.</td>
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<tr>
<td>7.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>100</td>
<td>= Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15 ft.)</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Dominance test criteria met.

**Dominance Test worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)
- Total Number of Dominant Species Across All Strata: **4** (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: **100** (A/B)

**Prevalence Index worksheet:**

- Total % Cover of: Multiply by:
  - OBL species x 1 =
  - FACW species x 2 =
  - FACU species x 3 =
  - FAC species x 4 =
  - UPL species x 5 =
- Column Totals: (A) (B)
- Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation
  - Dominance Test is >50%
  - Prevalence Index is ≤3.0
- Morphological Adaptations
  - 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 ☐

Remarks: Dominance test criteria met.
**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>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>10YR 2/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty loam</td>
<td></td>
</tr>
<tr>
<td>9-16</td>
<td>10YR 4/2</td>
<td>98</td>
<td>10YR 4/4</td>
<td>2</td>
<td></td>
<td></td>
<td>Silt loam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<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)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

- Type: __________________________
- Depth (inches): __________________

Hydric Soil Present?  Yes ☒  No ☐

Remarks: Hydric soil indicators F3 and A11 observed.

**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:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes ☐ No ☒ Depth (inches):</th>
<th>Wetland Hydrology Present?</th>
<th>Yes ☐ No ☒</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes ☐ No ☒ Depth (inches):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes ☐ No ☒ Depth (inches):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** No wetland hydrology indicators observed.
Appendix E – Wetland Rating Form
Wetland name or number: Wetland A

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct. 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland A Date of site visit: 10/20/2017
Rated by: J. Downs and E. Swaim Trained by Ecology? Yes X No Date of training: 03/31/2016
SEC: 14 TWNSHP: 23N RNGE: 04E Is S/T/R in Appendix D? Yes No X
Map of wetland unit: Figure Attached Estimated size: 51,244 square feet on-site

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I II III IV X

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I</td>
<td>Score &gt; 70</td>
<td>Water Quality</td>
</tr>
<tr>
<td>Category II</td>
<td>Score 51 - 69</td>
<td>Hydrologic</td>
</tr>
<tr>
<td>Category III</td>
<td>Score 30 – 50</td>
<td>Habitat</td>
</tr>
<tr>
<td>Category IV</td>
<td>Score &lt; 30</td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

| Category based on SPECIAL CHARACTERISTICS of Wetland | I II Does not apply X |

Final Category (choose the “highest” category from above”) IV

Summary of basic information about the wetland unit.

<table>
<thead>
<tr>
<th>Wetland Unit has Special Characteristics</th>
<th>Wetland HGM Class used for Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estuarine</td>
<td>Depressional X</td>
</tr>
<tr>
<td>Natural Heritage Wetland</td>
<td>Riverine</td>
</tr>
<tr>
<td>Bog</td>
<td>Lake-fringe</td>
</tr>
<tr>
<td>Mature Forest</td>
<td>Slope</td>
</tr>
<tr>
<td>Old Growth Forest</td>
<td>Flats</td>
</tr>
<tr>
<td>Coastal Lagoon</td>
<td>Freshwater Tidal</td>
</tr>
<tr>
<td>Interdunal</td>
<td>Check if unit has multiple HGM classes present</td>
</tr>
<tr>
<td>None of the above</td>
<td>X</td>
</tr>
</tbody>
</table>

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

<table>
<thead>
<tr>
<th>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SP4. Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.
Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?
   - NO – go to 2
   - YES – the wetland class is Tidal Fringe
     If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
     - NO – go to 5
     - YES – the wetland class is Freshwater Tidal Fringe
       If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ______ ).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   - NO – go to 3
   - YES – The wetland class is Flats
     If your wetland can be classified as a “Flats” wetland, use the form for Depressional wetlands.

3. Does the entire wetland meet both of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   - At least 30% of the open water area is deeper than 6.6 (2 m)?
     - NO – go to 4
     - YES – The wetland class is Lake-fringe (Lacustrine Fringe)

4. Does the entire wetland meet all of the following criteria?
   - The wetland is on a slope (slope can be very gradual).
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   - The water leaves the wetland without being impounded?
     - NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
     - NO – go to 5
     - YES – The wetland class is Slope

5. Does the entire wetland meet all of the following criteria?
   - The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
   - The overbank flooding occurs at least once every two years.
     - NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding..
     - NO – go to 6
     - YES – The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   - NO – go to 7
   - YES – The wetland class is Depressional

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   - NO – go to 8
   - YES – The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

<table>
<thead>
<tr>
<th>HGM Classes within the wetland unit being rated</th>
<th>HGM Class to Use in Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slope + Riverine</td>
<td>Riverine</td>
</tr>
<tr>
<td>Slope + Depressional</td>
<td>Depressional</td>
</tr>
<tr>
<td>Slope + Lake-fringe</td>
<td>Lake-fringe</td>
</tr>
<tr>
<td>Depressional + Riverine along stream within boundary</td>
<td>Depressional</td>
</tr>
<tr>
<td>Depressional + Lake-fringe</td>
<td>Depressional</td>
</tr>
<tr>
<td>Salt Water Tidal Fringe and any other class of freshwater wetland</td>
<td>Treat as ESTUARINE under wetlands with special characteristics</td>
</tr>
</tbody>
</table>

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.
<table>
<thead>
<tr>
<th>D</th>
<th>Depressional and Flat Wetlands</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>D 1</td>
<td><strong>Does the wetland have the potential to improve water quality?</strong></td>
<td>(only 1 score per box)</td>
</tr>
<tr>
<td></td>
<td><strong>WATER QUALITY FUNCTIONS</strong> – Indicators that wetland functions to improve water quality.</td>
<td>(see p.38)</td>
</tr>
<tr>
<td><strong>D 1.1</strong></td>
<td>Characteristics of surface water flows out of the wetland:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Unit is a depression with no surface water leaving it (no outlet)</td>
<td>points = 4</td>
</tr>
<tr>
<td></td>
<td>• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet</td>
<td>points = 2</td>
</tr>
<tr>
<td></td>
<td>• Unit has an unconfined, or slightly constricted, surface outlet (permanently flowing)</td>
<td>points = 1</td>
</tr>
<tr>
<td></td>
<td>• Unit is a “flat” depression (Q.7 on key), in the Flats class, with permanent surface</td>
<td></td>
</tr>
<tr>
<td></td>
<td>outflow and no obvious natural outlet and/or outlet is a man-made ditch</td>
<td>points = 1</td>
</tr>
<tr>
<td></td>
<td><strong>Figure</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Table</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total for D 1</strong></td>
<td>Add the points in the boxes above</td>
</tr>
<tr>
<td>D 2</td>
<td><strong>Does the wetland have the opportunity to improve water quality?</strong></td>
<td>(see p.44)</td>
</tr>
<tr>
<td></td>
<td>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <strong>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Grazing in the wetland or within 150 ft</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Untreated stormwater discharges to wetland</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>X</strong> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>X</strong> Residential, urban areas, golf courses are within 150 ft. of wetland</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>X</strong> Wetland is fed by groundwater high in phosphorus or nitrogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Multiplier</strong></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong> – Water Quality Functions</td>
<td>Multiply the score from D1 by D2; then add score to table on p. 1</td>
</tr>
<tr>
<td>D 3</td>
<td><strong>Does the wetland have the potential to reduce flooding and erosion?</strong></td>
<td>(see p.46)</td>
</tr>
<tr>
<td></td>
<td><strong>HYDROLOGIC FUNCTIONS</strong> – Indicators that wetland unit functions to reduce flooding and stream degradation.</td>
<td></td>
</tr>
<tr>
<td><strong>D 3.1</strong></td>
<td>Characteristics of surface water flows out of the wetland unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Unit is a depression with no surface water leaving it (no outlet)</td>
<td>points = 4</td>
</tr>
<tr>
<td></td>
<td>• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet</td>
<td>points = 2</td>
</tr>
<tr>
<td></td>
<td>• Unit is a “flat” depression (Q.7 on key), in the Flats class, with permanent surface</td>
<td></td>
</tr>
<tr>
<td></td>
<td>outflow and no obvious natural outlet and/or outlet is a man-made ditch</td>
<td>points = 1</td>
</tr>
<tr>
<td></td>
<td><strong>Figure</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Table</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total for D 3</strong></td>
<td>Add the points in the boxes above</td>
</tr>
</tbody>
</table>
### D 4 Does the wetland have the opportunity to reduce flooding and erosion?

Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. **Note which of the following indicators of opportunity apply.**

- Wetland is in a headwater of a river or stream that has flooding problems.
- Wetland drains to a river or stream that has flooding problems.
- Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems.
- Other

**Multipliers**

- **YES** multiplier is 2
- **NO** multiplier is 1

<table>
<thead>
<tr>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

◆ **TOTAL – Hydrologic Functions**

Multiply the score from D3 by D4; then **add score to table on p. 1**

| 4 |

Comments:

**D1.1 & D3.1:** Wetland A outlets to ditch and catch basin within the right-of-way (ROW)

**D1.2:** Mineral soils consistent throughout wetland - please attached data sheets.

**D1.3:** Unvegetated drainage channels, small areas of ponding, and other areas of sparse cover account for approximately 5-8% of the wetland unit.

**D1.4:** Seasonal ponding (per WSDOE standard) occurs in only 5.2% of wetland

(please see wetland rating map Figure No. 2)

**D3.2:** Drainage channels and catch basin in the ROW now limit the potential for ponding within the wetland.

**D3.3:** Contributing basin is approximately 120 times the size of the wetland unit -

(please see wetland rating map Figure No. 3)
### H 1 Does the wetland have the potential to provide habitat for many species?

<table>
<thead>
<tr>
<th>H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) — Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Bed</td>
<td>1</td>
</tr>
<tr>
<td>X Emergent plants</td>
<td></td>
</tr>
<tr>
<td>X Scrub/shrub (areas where shrubs have &gt; 30% cover)</td>
<td></td>
</tr>
<tr>
<td>Forested (areas where trees have &gt; 30% cover)</td>
<td></td>
</tr>
<tr>
<td>If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</td>
<td>Figure ___</td>
</tr>
<tr>
<td>4 structures or more........ points = 4</td>
<td>1</td>
</tr>
<tr>
<td>3 structures...................... points = 2</td>
<td></td>
</tr>
<tr>
<td>2 structures.................... points = 1</td>
<td></td>
</tr>
<tr>
<td>1 structure ................... points = 0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanently flooded or inundated</td>
<td>3</td>
</tr>
<tr>
<td>Seasonally flooded or inundated</td>
<td>2</td>
</tr>
<tr>
<td>X Occasionally flooded or inundated</td>
<td>1</td>
</tr>
<tr>
<td>X Saturated only</td>
<td></td>
</tr>
<tr>
<td>Permanently flowing stream or river in, or adjacent to, the wetland</td>
<td></td>
</tr>
<tr>
<td>Seasonally flowing stream in, or adjacent to, the wetland</td>
<td></td>
</tr>
<tr>
<td>Lake-fringe wetland............... = 2 points</td>
<td>Map of hydroperiods</td>
</tr>
<tr>
<td>Freshwater tidal wetland......... = 2 points</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you counted: &gt; 19 species...................... points = 2</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 5 species .................... points = 0</td>
<td></td>
</tr>
</tbody>
</table>

List species below if you want to:

<table>
<thead>
<tr>
<th>H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”. Use map of Cowardin classes.</td>
<td>Figure ___</td>
</tr>
<tr>
<td>None = 0 points</td>
<td>1</td>
</tr>
<tr>
<td>Low = 1 point</td>
<td></td>
</tr>
<tr>
<td>Moderate = 2 points</td>
<td></td>
</tr>
<tr>
<td>High = 3 points</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)</td>
<td>2</td>
</tr>
<tr>
<td>Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</td>
<td></td>
</tr>
<tr>
<td>Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)</td>
<td></td>
</tr>
<tr>
<td>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)</td>
<td></td>
</tr>
<tr>
<td>At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)</td>
<td></td>
</tr>
<tr>
<td>X Invasive plants cover less than 25% of the wetland area in each stratum of plants</td>
<td>Note: The 20% stated in early printings of the manual on page 78 is an error.</td>
</tr>
</tbody>
</table>

### H 1 TOTAL Score — potential for providing habitat

Add the points in the column above 6
### H 2.1 Buffers (see P. 80):

**Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating.** See text for definition of “undisturbed”.

<table>
<thead>
<tr>
<th>Condition Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 95% of circumference</td>
<td>5</td>
</tr>
<tr>
<td>50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 95% of circumference</td>
<td>4</td>
</tr>
<tr>
<td>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference</td>
<td>4</td>
</tr>
<tr>
<td>50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference</td>
<td>3</td>
</tr>
<tr>
<td>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference</td>
<td>2</td>
</tr>
<tr>
<td>If buffer does not meet any of the criteria above: No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt; 95% circumference. Light to moderate grazing or lawns are OK</td>
<td>2</td>
</tr>
<tr>
<td>No paved areas of buildings within 50m of wetland for &gt; 50% circumference. Light to moderate grazing or lawns are OK</td>
<td>2</td>
</tr>
<tr>
<td>Heavy grazing in buffer</td>
<td>1</td>
</tr>
<tr>
<td>Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference</td>
<td>0</td>
</tr>
<tr>
<td>Buffer does not meet any of the criteria above</td>
<td>1</td>
</tr>
</tbody>
</table>

### H 2.2 Corridors and Connections (see p. 81):

<table>
<thead>
<tr>
<th>Condition Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).</td>
<td>4</td>
</tr>
<tr>
<td>Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</td>
<td>2</td>
</tr>
<tr>
<td>Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (&gt; 40 acres) OR Within 1 mile of a lake greater than 20 acres?</td>
<td>1</td>
</tr>
</tbody>
</table>

**Comments:**
Wetland name or number: Wetland A

| H 2.3 | Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report [http://wdfw.wa.gov/hab/phslist.htm](http://wdfw.wa.gov/hab/phslist.htm))
|       | Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? |
|       | NOTE: the connections do not have to be relatively undisturbed. |
|       | **Aspen Stands**: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). |
|       | **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife ([full descriptions in WDFW PHS report p. 152](http://wdfw.wa.gov/hab/phslist.htm)). |
|       | **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock. |
|       | **Old-growth/Mature forests**: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature Forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. |
|       | **Oregon white Oak**: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important ([full descriptions in WDFW PHS report p. 158](http://wdfw.wa.gov/hab/phslist.htm)). |
|       | **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. |
|       | **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie ([full descriptions in WDFW PHS report p. 161](http://wdfw.wa.gov/hab/phslist.htm)). |
|       | **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. |
|       | **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. ([full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A](http://wdfw.wa.gov/hab/phslist.htm)). |
|       | **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. |
|       | **Cliffs**: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. |
|       | **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. |
|       | **X Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. |
|       | **If wetland has 3 or more priority habitats = 4 points** |
|       | **If wetland has 2 priority habitats = 3 points** |
|       | **If wetland has 1 priority habitat = 1 point** |
|       | No habitats = 0 points |

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4

<table>
<thead>
<tr>
<th>H 2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wetland Landscape</strong>: Choose the one description of the landscape around the wetland that best fits (see p. 84)</td>
</tr>
<tr>
<td>• There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development........points = 5</td>
</tr>
<tr>
<td>• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .................................................................points = 5</td>
</tr>
<tr>
<td>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .........................................................points = 3</td>
</tr>
<tr>
<td>• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .........................................................points = 3</td>
</tr>
<tr>
<td>• There is at least 1 wetland within 1/2 mile .........................................................points = 2</td>
</tr>
<tr>
<td>• There are no wetlands within 1/2 mile........................................................................points = 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H 2 TOTAL Score – opportunity for providing habitat</th>
<th>Add the scores from H2.1, H2.2, H2.3, H2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL for H 1 from page 8</td>
<td>4</td>
</tr>
</tbody>
</table>

◆ Total Score for Habitat Functions | Add the points for H 1 and H 2; then record the result on p. 1 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</th>
</tr>
</thead>
</table>
| **SC1**      | **Estuarine wetlands?** (see p. 86)  
Does the wetland unit meet the following criteria for Estuarine wetlands?  
___ The dominant water regime is tidal,  
___ Vegetated, and  
___ With a salinity greater than 0.5 ppt.  
**YES** = Go to SC 1.1  
**NO** = X  |
| **SC 1.1**   | Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?  
**YES** = Category I  
**NO** = go to SC 1.2  |
| **SC 1.2**   | Is the wetland at least 1 acre in size and meets at least two of the following conditions?  
**YES** = Category I  
**NO** = Category II  
___ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.  
___ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland  
___ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  |
| **SC2**      | **Natural Heritage Wetlands** (see p. 87)  
Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.  
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.)  
S/T/R information from Appendix D or accessed from WNHP/DNR web site  
**YES** = Contact WNHP/DNR (see p. 79) and go to SC 2.2  
**NO** =  |
| **SC 2.2**   | Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?  
**YES** = Category I  
**NO** = not a Heritage Wetland  |
| **SC3**      | **Bogs** (see p. 87)  
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function.  
1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)?  
   **YES** = go to question 3  
   **NO** = go to question 2  
2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?  
   **YES** = go to question 3  
   **NO** = is not a bog for purpose of rating  
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?  
   **YES** = Is a bog for purpose of rating  
   **NO** = go to question 4  
   NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.  
4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?  
   **YES** = Category I  
   **NO** = Is not a bog for purpose of rating  |
### SC4 Forested Wetlands (see p. 90)

Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife’s forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.*

*Old-growth forests:* (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).

NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and “OR” so old-growth forests do not necessarily have to have trees of this diameter.

*Mature forests:* (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.

**YES** = Category I  
**NO** = x not a forested wetland with special characteristics

### SC5 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

*The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.*

*The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom).*

**YES** = Go to SC 5.1  
**NO** = x not a wetland in a coastal lagoon

#### SC 5.1 Does the wetland meet all of the following three conditions?

*The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).*

*At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.*

*The wetland is larger than 1/10 acre (4350 square ft.)*

**YES** = Category I  
**NO** = Category II

### SC6 Interdunal Wetlands (see p. 93)

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?

**YES** = Go to SC 6.1  
**NO** = x not an interdunal wetland for rating

*If you answer yes you will still need to rate the wetland based on its functions.*

In practical terms that means the following geographic areas:

- Long Beach Peninsula -- lands west of SR 103
- Grayland-Westport -- lands west of SR 105
- Ocean Shores-Copalis – lands west of SR 115 and SR 109

#### SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

**YES** = Category II  
**NO** = go to SC 6.2

#### SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

**YES** = Category III

### Category of wetland based on Special Characteristics

*Choose the “highest” rating if wetland falls into several categories, and record on p. 1.*

*If you answered NO for all types enter “Not Applicable” on p. 1*

N/A

**Comments:**
Appendix F – Wetland Rating Maps
Hydroperiod Map
- Saturated
- Seasonally Ponded
- Site Boundary

Seasonally Ponded 5.2%
Saturated 94.9%

MAPLE RIDGE - WETLAND RATING MAP

DATE: 11/17/2017
JOB: 1583.0001
BY: DLS
SCALE: 1" = 170'
FIGURE NO. 2 of 3

Hydroperiod Map
- Saturated
- Seasonally Ponded
- Site Boundary

Seasonally Ponded 5.2%
Saturated 94.9%

MAPLE RIDGE
ADJACENT TO:
6621 S. 128TH ST.
SEATTLE, WA 98178

KING COUNTY PARCEL NUMBER:
142304-9002

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

Pictometry International Corp. 2015
Contributing Basin Map

Wetland

Contributing Basin

D.4.0

Area of Contributing Basin (SF) 6,172,097
Area of Wetland A (SF) 51,224
Percent of Wetland A within Contributing Basin 0.830%

MAPLE RIDGE

ADJACENT TO:
6621 S. 128TH ST.
SEATTLE, WA 98178

KING COUNTY PARCEL NUMBER: 142304-9002

DATE: 11/17/2017
JOB: 1583.0001
BY: DLS
SCALE: 1" = 1,075'
FIGURE NO. 3 of 3
Appendix G – USACE Jurisdictional Determination Permit
DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

AUG 13 2015

Regulatory Branch

Mr. Brad Habenicht
Maple Ridge Investment Partners LLC.
23620 225th Avenue Southeast
Maple Valley, Washington 98038

Reference: NWS-2015-500
Maple Ridge Investment Partners, LLC.

Dear Mr. Habenicht:

We have reviewed your application to fill 2,024 square feet of wetland for the widening of an existing road to support a planned residential development at Seattle, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 29, Residential Developments (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated May 8, 2015.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed NWP 29, Terms and Conditions and the following special condition:

a. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Evaluation, dated May 2015, in their entirety. The U.S. Army Corps of Engineers (Corps) made a determination of No Effect for all species and critical habitat based on this document. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your Corps permit.

We have reviewed your project pursuant to the requirements of the ESA, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

We are unable to determine whether or not your project requires individual Water Quality Certification (WQC) and/or a Coastal Zone Management (CZM) consistency determination response from the Washington State Department of Ecology (Ecology). Before you may proceed
with the work authorized by this NWP, you must contact Ecology regarding these requirements at: Washington Department of Ecology, Federal Permit Coordinator, P.O. Box 47600, Olympia, Washington 98504-7660; telephone: (360) 407-6068; or email: ecyrefedpermits@ecy.wa.gov.

If more than 180 days pass from when you provide Ecology a copy of this letter and request your individual WQC and CZM consistency determination concurrence review, your requirement to obtain an individual WQC and CZM consistency determination response becomes waived. You may then proceed to construction.

We have prepared and enclosed a Preliminary Jurisdictional Determination (JD) dated July 7, 2015, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the U.S. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may not occur until the approved JD has been finalized.

Our verification of this NWP authorization is valid until March 18, 2017, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2017, you will have until March 18, 2018, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

You are cautioned that any change in project location or plans will require that you submit a copy of the revised plans to this office and obtain our approval before you begin work. Deviating from the approved plans could result in the assessment of criminal or civil penalties.

Upon completing the authorized work, you must fill out and return the enclosed Certificate of Compliance with Department of the Army Permit form. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at www.nws.usace.army.mil select “Regulatory Branch, Permit Information” and then “Contact Us.” A copy of this letter, without enclosures, will be furnished to Ms. Railin Santiago, of Soundview Consultants LLC., at
2907 Harborview Drive, Gig Harbor, Washington 98335. If you have any questions, please contact me at jacalen.m.printz@usace.army.mil or (206) 764-6901.

Sincerely,

Jacalen Printz, Project Manager
Regulatory Branch

Enclosures
Appendix H – Qualifications

All field inspections, jurisdictional wetland boundary delineations, habitat assessments, and supporting documentation, including this *Wetland and Fish and Wildlife Habitat Assessment and Conceptual Wetland Mitigation Plan* prepared for the *Maple Ridge* site were prepared by, or under the direction of a Senior Environmental Planner of SVC. In addition, the site investigations were conducted by Wetland Scientists of SVC, and report preparation was completed by a Staff Scientist of SVC.

**Jon Pickett**
Senior Environmental Planner
Professional Experience: 8 years

Jon Pickett is a Senior Scientist/Environmental Planner with diverse professional experience in habitat development as a Regional Biologist and Environmental Project Manager, with an emphasis in wetland restoration and enhancement. Jon has extensive experience successfully planning, developing, securing funding, managing and implementing numerous large-scale wetland habitat projects aimed at restoring the biological and physical functions of wetlands throughout California’s Central Valley and Southern California. During this time he managed a 2,200 acre private wetland and upland habitat complex as a public trust resource for conservation and consumptive use. He worked to ensure projects were designed and implemented to achieve habitat restoration goals, including reclamation of wetland and floodplain habitats, reintroduction of aquatic complexity and habitat, and reestablishment of riparian corridor.

Jon has worked with federal and state agencies and private entities on land acquisitions for conservational habitat and public use, including prioritizing acquisitions relative to value and opportunity and funding. In addition, Jon has experience in regulatory coordination to ensure projects operated in compliance with federal, state and local environmental regulations, preparing permit documentation, coordinating with all pertinent agencies and stakeholders, and developing and maintaining appropriate permitting timelines to ensure timely approvals. He also oversaw earthwork construction components and revegetation efforts, as well as post-project monitoring, with an emphasis in native vegetation establishment and natural channel morphology.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science Minor in Forestry.

**Emily Swaim**
Wetland Scientist/Field Geologist
Professional Experience: 4 years

Emily Swaim is a Wetland Scientist and Field Geologist with a background in conducting Phase I, II and III Environmental Site Assessments (ESAs), underground natural gas pipeline and overhead electrical transmission line project assessment and environmental inspections, construction oversight, stormwater compliance inspections, soil sampling, delineating and assessing wetland and aquatic systems, and stormwater, floodplain, and wetland permitting. Ms. Swaim’s expertise focuses on projects involving sensitive wetland and stream habitats where extensive team coordination and
various regulatory challenges must be carefully and intelligently managed from project inception to completion.

Emily earned a Bachelor of Science degree in Geology from Illinois State University and Wetland Science and Management Professional Certification from the University of Washington, Seattle. She is also educated in Environmental Science from Iowa State University. Her education and experience has provided her with extensive knowledge on soils, wetland science, hydrogeology, sedimentology, environmental law, environmental geology, landscape ecology, and structural geology. Ms. Swaim has been formally trained in Hazardous Waste Operations and Emergency Response (HAZWOPER) and is Occupational Health and Safety Administration (OSHA) 30-hour Construction and 10-hour Construction certified. She is also a Pierce County Qualified Wetland Specialist and Wetland Professional In-Training (WPIT) through the Society of Wetland Scientists.

Kyla Caddey
Staff Scientist
Professional Experience: 3 years

Kyla Caddey is a Staff Scientist and Pierce County Qualified Wildlife Biologist with a diverse background in riparian habitat restoration, stream and wetland ecology, wildlife ecology and conservation, and wildlife and natural resource assessments and monitoring. Kyla has advanced expertise in report preparation, grant writing, environmental education, data compilation and statistical analysis. Kyla has field experience performing in-depth studies in both the Pacific Northwest and Central American ecosystems. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has received formal training through the Washington State Department of Ecology and Coastal Training Program in Using the Credit-Debit Method in Estimating Wetland Mitigation Needs, How to Determine the Ordinary High Water Mark, Using Field Indicators for Hydric Soils, How to Administer Development Permits in Washington Shorelines, Puget Sound Coastal Processes, and Forage Fish Survey Techniques.