

August 1, 2014 revised November 26, 2014

Ron Hanson  
City of Kirkland  
Planning & Community Development  
123 Fifth Avenue  
Kirkland, WA 98033  
Via email: ronwhanson@comcast.net

**Re: Hiller Project, Wetland and Stream Delineation Study**

The Watershed Company Reference Number: 140622.1

Dear Ron:

On July 21, 2014 Watershed Company Environmental Planner and Ecologist Clover Muters and Ecologist Mike Foster completed a wetland and stream delineation study on the Hiller properties located at 402 Slater Street South in the City of Kirkland (parcels 123940-0670 & -0671). The study area also includes a portion of the Slater Street S right-of-way west of the property. This letter summarizes the findings of this study and details applicable federal, state, and local regulations. The following attachments are included:

- Wetland Delineation Survey Map
- Wetland Determination Data Forms
- Kirkland's Wetland Field Data Form

**Methods**

Public-domain information on the subject property was reviewed for this delineation study. These sources include USDA Natural Resources Conservation Service Soil maps, U.S. Fish and Wildlife Service National Wetland Inventory maps, Washington Department of Fish and Wildlife interactive mapping programs (PHS on the Web), King County's GIS mapping website (iMAP), and City of Kirkland GIS maps (nwMaps.net).

The study area was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). The Regional Supplement is the current City of Kirkland- and Washington State- recognized method for wetland delineations (KZC 90.35 & WAC 173-22-035). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations along the wetland boundaries to make the

determination. Areas meeting wetland parameters were marked with pink- and black-striped flags. Data was collected at three points on-site, marked with yellow- and black-striped flags.

The wetland areas that meet the City's jurisdictional wetland definition, were classified using two different rating forms: The City of Kirkland *Wetland Field Data Form* and the recently updated Washington State Department of Ecology *Western Washington Wetland Rating System* (Ecology, 2014).

Streams were identified based on the City of Kirkland's stream definition. The ordinary high water mark (OHWM) of on-site streams was determined based on the definition provided by the Washington Department of Fish and Wildlife and WAC 220-110-020(69). The OHWM is located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods. Field observations and published information were used to classify streams. The OHWM was marked with blue- and white-striped flags.

## **Findings**

The subject property, which is located in the Moss Bay basin, contains a single-family residence on the eastern parcel. The parcel to the west of the house, abutting Slater Street South is undeveloped. Vegetation on the parcel is primarily mowed lawn with a few planted and ornamental tree species and some ornamental shrubs along the street edge.

A paved driveway provides access to both parcels at their southern edge. The driveway crosses a ditch which runs parallel to Slater Street. Within the study area, the ditch begins at a culvert outfall near the northwest property corner and is piped again under the driveway. South of the driveway the ditch meets the definition of a stream and was identified as Stream A. An off-site wetland, Wetland A, was observed flowing into Stream A. The eastern OHWM of Stream A was delineated and flagged, as well as the edge of the wetland within the Slater Street South ROW. The approximate edge of Wetland A when it leaves the ROW is shown on the delineation sketch attached.

### *Wetland A*

Wetland A is a slope wetland on the parcel to the south of the review area that extends into the ROW and flows into Stream A. Palustrine scrub/shrub and emergent vegetation classes are present. Species observed included water parsley (*Oenanthe sarmentosa*), creeping buttercup (*Ranunculus repens*), velvetgrass (*Holcus lanatus*), miscellaneous field grasses, American water horehound (*Lycopus americanus*), lady fern (*Athyrium filix-femina*), giant horsetail (*Equisetum telmateia*), small-fruited bulrush (*Scirpus microcarpus*), vine maple, salmonberry and twinberry. Observed wetland soils exhibit Depleted Matrix (F3) indicators. On the day of our site visit, soils were saturated to the surface and the water table was observed eight inches below ground. Wetland criteria for plants, soils and hydrology are all met, making this is a jurisdictional wetland.

The slope of Wetland A limits its capacity to perform water quality and hydrologic functions. Low habitat interspersion, limited hydro-periods, and disturbed buffers all contribute to low to moderate habitat functions in Wetland A.

#### *Stream A*

Stream A originates from Wetland A and receives some input from the piped drainage/ditch to the north. The channel is a shallow, straight, grass lined swale. From the culvert, water flows south at a moderate-gradient for approximately 100 feet to Alexander Ave. It then enters another culvert which presumably discharges into Everest Creek on the south side of Alexander Ave. Everest Creek flows west into Everest Park, then northwest to Kirkland Avenue where it is piped downstream to Lake Washington. No fish use is documented. No flow was observed in Stream A at the time of the site visit but the channel was saturated and evidence of sheet flow entering the channel from wetland A was observed. It is presumed to be a perennial non-fish bearing stream.

#### *Ditch and non-wetland*

The ditch north of the driveway is a shallow, grass lined swale which appears to convey stormwater from runoff and a storm drain to the north. Hydrophytic emergent vegetation was observed adjacent to the ditch (data point 3) but most species were facultative and did not strongly indicate wetland presence. Soils exhibited a depleted matrix in the subsoil but the layer started too deep and the surface layer was too bright to meet a hydric soil indicator. No wetland hydrology indicators were observed. Because hydric soil and hydrology indicators were not met, this area did not meet the definition of a wetland.

Upland areas on the undeveloped parcel consist primarily of closely mowed field grasses with some ornamental evergreen and dogwood shrubs. Species observed in the offsite upland areas outside of Wetland A included Bitter cherry (*Prunus emarginata*), Scouler's willow (*Salix scouleriana*), big leaf maple (*Acer macrophyllum*) and Himalayan blackberry (*Rubus armeniacus*). The upland forest provides canopy cover over Wetland A, but trees did not appear to be rooted in the wetland itself.

#### **Local Regulations**

Wetlands and streams in the City of Kirkland are regulated under the Kirkland Zoning Code, Chapter 90 – Drainage Basins. In Chapter 90, wetland buffers are assigned based on the Kirkland wetland rating form and the basin ranking. Stream buffers are assigned based on the stream class and basin ranking. The subject property is in the Moss Bay basin, a secondary basin.

Per Chapter 90, wetlands are rated as one of three types based on the Kirkland Rating Form. Wetland A does not meet any of the Type 1 wetland conditions, such as organic soils (some organic matter is present but is not a high enough content to meet NRCS definition) or habitat for threatened or endangered species. Wetland A scores 20 points

on the Kirkland rating form, making it a Type 3 wetland. Type 3 wetlands in a secondary basins require a 25-foot buffer (KZC 90.45). Additionally, a 10 foot building setback is required from the edge of wetland buffers (KZC 90.45).

Type 3 wetlands that are 2,500 square feet or less in any of the secondary basins are exempt from Kirkland’s critical area regulations (KZC 90.20). The exact extent of Wetland A could not be delineated as it is off of the subject property, however, it appears to likely be greater than 2,500 square feet and would be regulated. In general, site improvements should be designed to avoid and, if unavoidable, to minimize adverse impacts to sensitive areas (KZC 90.130). Buffer modifications may be permitted pursuant to KZC 90.60. Buffer reduction/enhancement requests for Type 3 wetlands shall be reviewed by the Planning Official.

Since other agencies regulate wetlands under a different classification system, Wetland A was also rated using the newly revised 2014 Ecology rating form. Under that rating system Wetland A appears to be a high Category IV wetland. However, this rating form has recently been pulled from the Ecology website to address some typographical errors in the current version. Therefore, we are not including the rating form with this report at this time. It is not clear if the corrections to the rating form would alter the wetland category in this case. If the findings of this rating form are applicable to a future proposed project it is recommended the wetland be re-rated to confirm the findings once the form is corrected and finalized.

Kirkland’s stream definition excludes entirely artificial watercourses used to convey only storm water which are not used by salmonids. Based on this definition the ditch north of the driveway does not qualify as a stream. Furthermore, drainage ditches artificially created from non-wetland sites are exempt from Kirkland’s critical areas regulations (KMC 90.20(1)).

Stream A, however, conveys natural flow from Wetland A and meets the definition of a jurisdictional stream channel. Seasonal streams not used by salmonids are considered Class C streams by the City of Kirkland. Class C streams in a secondary basin, such as Stream A, are required to have a 25 foot buffer (KZC 90.90). Additionally, a 10 foot building setback is required from the edge of stream buffers (KZC 90.90).

### **Recommendation**

Since the wetland buffer extends into the area of the driveway in Tract A, it is appropriate to improve the remaining on-site buffer area with the installation of a native species hedge. The area between the driveway and the southern property line should be planted with a mix of salal, red flowering currant, vine maple, Oregon grape and snowberry. Selected plants should be obtained from a conservation-grade nursery and should not be hybrid cultivars. Vegetation spacing should be dense, at least 4-foot on-center, to maximize coverage and buffer function. To ensure success, vegetation

survival of 100% the first year and at least 80% survival in the two subsequent years should be verified by the owner and reported to the City of Kirkland at the end of each summer. Survival may be achieved either through planting success or by replacement plantings installed during the fall.

### **State and Federal Regulations**

Wetlands and streams are also regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. Any filling of Waters of the State, including all wetlands (except isolated wetlands), would require notification and permits from the Corps. Wetland A would not likely be considered isolated as it abuts a seasonally flowing stream. Federally permitted actions that could affect endangered species (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology.

In general, neither the Corps nor Ecology regulates buffers, unless direct impacts are proposed. When direct impacts are proposed, mitigated wetlands may be required to employ buffers based on Corps and Ecology joint regulatory guidance.

Note that while the subject ditch does not meet the City of Kirkland's definition of a stream, and as an artificial ditch may not be regulated under Kirkland's critical areas regulations (KZC 90.20(1)), it may still be subject to regulation by state or federal agencies. If direct impacts are proposed to the ditch the Washington State Department of Fish and Wildlife and the Corps should be consulted for a jurisdictional determination.

### **Disclaimer**

The information contained in this letter or report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, State and Federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



Clover Muters,

Ecologist

Enclosures

# HILLER SHORT PLAT

### BUILDING SETBACK NOTES

FRONT YARD: 20'  
 SIDE YARD: 5' (SIDE YARDS MUST EQUAL AT LEAST 15')  
 REAR: 10'

### PROJECT NOTES

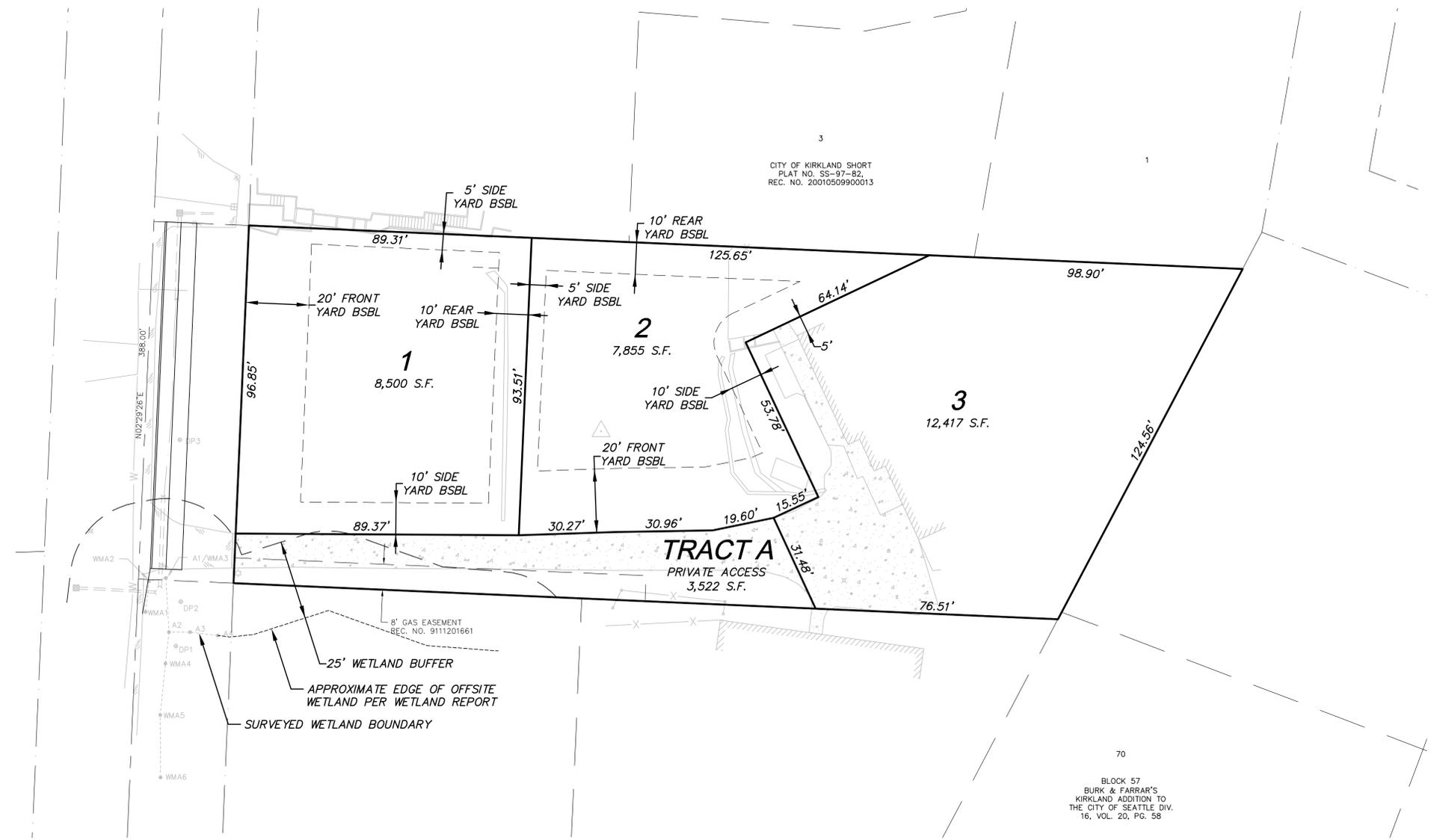
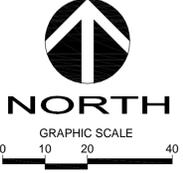
- ALL SITE INFORMATION OBTAINED FROM PUBLIC RECORDS. BOUNDARY AND OTHER SITE FEATURES ARE APPROXIMATE AND HAVE NOT BEEN CONFIRMED.
- SITE ADDRESS: 402 SLATER STREET S KIRKLAND, WA
- TAX PARCEL NO: 1239400670 AND 0671
- SITE AREA: 0.75 ACRES
- ZONING: RS-B.5
- MIN LOT AREA: 8,500 S.F. (ONE LOT MAY BE REDUCED BY A MAXIMUM OF 10 PERCENT GIVEN THAT THE AVERAGE LOT AREA IS GREATER THAN THE MINIMUM LOT AREA REQUIRED)
- REC SPACE REQ'D/PROVIDED: NONE
- WATER AND SEWER: SEWER TO THE SOUTH, WATER TO THE WEST AND SOUTH
- STORM DRAINAGE REQUIREMENTS YET TO BE ASSESSED.



**D.R. STRONG**  
 CONSULTING ENGINEERS  
 ENGINEERS PLANNERS SURVEYORS  
 10604 NE 38th PL, #101 KIRKLAND, WA 98033  
 O 425.827.3063 F 425.827.2423  
 www.drstrong.com

**HILLER SHORT PLAT**  
 PRELIMINARY SUBDIVISION LAYOUT  
 402 SLATER STREET S  
 KIRKLAND, WASHINGTON

**SG LAND GROUP**  
 11400 SE 8TH STREET, SUITE 415  
 BELLEVUE, WA 98004  
 206.909.8187

**NORTH**  
 GRAPHIC SCALE  
 0 10 20 40  
 1 INCH = 20 FT.

DATE	REVISION	APR

DRAFTED BY: MAJ  
 DESIGNED BY: MAJ  
 PROJECT ENGINEER: MAJ  
 DATE: 08.15.14  
 PROJECT NO.: 14061

DRAWING: P1  
 SHEET: 1 OF 1

**DP- 1**

Project Site: <b>402 Slater Street South</b>		Sampling Date: <b>7/21/14</b>	
Applicant/Owner: <b>Hiller</b>		Sampling Point: <b>DP- 1</b>	
Investigator: <b>M. Foster, C. Muters</b>		City/County: <b>Kirkland</b>	
Sect., Township, Range S                      T                      R		State: <b>WA</b>	
Landform (hillslope, terrace, etc)		Slope (%)	
Local relief (concave, convex, none)			
Subregion (LRR) <b>A</b>	Lat	Long	Datum
Soil Map Unit Name		NW1 classification	
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks: DP located in ROW, in Wetland A	

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

Tree Stratum (Plot size 5m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet			
1.				Number of Dominant Species that are OBL, FACW, or FAC: <b>3</b> (A)			
2.							
3.				Total Number of Dominant Species Across All Strata: <b>4</b> (B)			
4.							
_____ = Total Cover				Percent of Dominant Species that are OBL, FACW, or FAC: <b>75</b> (A/B)			
Sapling/Shrub Stratum (Plot size 3m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet			
1.				Total % Cover of			
2.				Multiply by			
3.				OBL species	x 1 =		
4.				FACW species	x 2 =		
5.				FAC species	x 3 =		
_____ = Total Cover				FACU species	x 4 =		
_____ = Total Cover				UPL species	x 5 =		
_____ = Total Cover				Column totals	(A) (B)		
Herb Stratum (Plot size 1m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =			
1. <i>Equisetum telmateia</i>	<b>20</b>	<b>x</b>	<b>FACW</b>				
2. <i>Scirpus microcarpus</i>	<b>50</b>	<b>x</b>	<b>OBL</b>				
3. <i>Ranunculus repens</i>	<b>35</b>	<b>x</b>	<b>FAC</b>				
4. <i>Veronica americanum</i>	<b>trace</b>		<b>OBL</b>				
5. <i>Mint sp.</i>	<b>30</b>	<b>x</b>	<b>-</b>	<b>Hydrophytic Vegetation Indicators</b> x      Dominance test is > 50% Prevalence test 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			
6.							
7.							
8.							
9.							
10.							
11.							
<b>100+</b> = Total Cover							
Woody Vine Stratum (Plot size )	Absolute % Cover	Dominant Species?	Indicator Status			<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.							
2.							
_____ = Total Cover							
% Bare Ground in Herb Stratum Remarks:							

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100	none				sandy loam	
6-14	10Y 4/1	80	7.5YR 4/6	20	C	PL, M	loamy sand	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>**

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)
- 

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

Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric soil present?

Yes

No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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

**Field Observations**

- |  |   |  |             |   |
|--|---|--|-------------|---|
| Surface Water Present?                             | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No | Depth (in): |   |
| Water Table Present?                               | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            | Depth (in): | 8 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            | Depth (in): | 0 |

Wetland Hydrology Present?

Yes

No

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

Remarks: **Rained the night before**  
**Signs of wetland sheet flow into adjacent stream**

DP- 2

Project Site: <b>402 Slater Street South</b>		Sampling Date: <b>7/21/14</b>	
Applicant/Owner: <b>Hiller</b>		Sampling Point: <b>DP- 2</b>	
Investigator: <b>M. Foster, C. Muters</b>		City/County: <b>Kirkland</b>	
Sect., Township, Range S                      T                      R		State: <b>WA</b>	
Landform (hillslope, terrace, etc)	Slope (%)	Local relief (concave, convex, none)	
Subregion (LRR) <b>A</b>	Lat	Long	Datum
Soil Map Unit Name		NW1 classification	
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks: DP located in Slater St. S. ROW, just south of driveway	

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

Tree Stratum (Plot size 5m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet																					
1.				Number of Dominant Species that are OBL, FACW, or FAC: <b>3</b> (A)																					
2.																									
3.																									
4.																									
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <b>4</b> (B)																					
_____ = Total Cover				Percent of Dominant Species that are OBL, FACW, or FAC: <b>75</b> (A/B)																					
Sapling/Shrub Stratum (Plot size 3m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. <b>Salix scouleriana</b>	<b>20</b>	<b>x</b>	<b>FAC</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Total % Cover of</th> <th>Multiply by</th> </tr> <tr> <td>OBL species</td> <td></td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td></td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td></td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 =</td> </tr> <tr> <td>Column totals</td> <td>(A)</td> <td>(B)</td> </tr> </table>	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)
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)																							
2.																									
3.																									
4.																									
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Herb Stratum (Plot size 1m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. <b>Equisetum telmateia</b>	<b>25</b>	<b>x</b>	<b>FACW</b>	Prevalence Index = B / A =																					
2. <b>Field grasses</b>	<b>40</b>	<b>x</b>	<b>FAC</b>																						
3. <b>Geranium robertianum</b>	<b>10</b>		<b>FACU</b>																						
4. <b>Ranunculus acris</b>	<b>10</b>		<b>FAC</b>																						
_____ = Total Cover																									
Woody Vine Stratum (Plot size )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators																					
1. <b>Rubus armeniacus</b>	<b>20</b>	<b>x</b>	<b>FACU</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">x</td> <td>Dominance test is &gt; 50%</td> </tr> <tr> <td></td> <td>Prevalence test is ≤ 3.0 *</td> </tr> <tr> <td></td> <td>Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Wetland Non-Vascular Plants *</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation * (explain)</td> </tr> </table>	x	Dominance test is > 50%		Prevalence test is ≤ 3.0 *		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)		Wetland Non-Vascular Plants *		Problematic Hydrophytic Vegetation * (explain)											
x	Dominance test is > 50%																								
	Prevalence test is ≤ 3.0 *																								
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)																								
	Wetland Non-Vascular Plants *																								
	Problematic Hydrophytic Vegetation * (explain)																								
2. <b>Hedera helix</b>	<b>15</b>																								
_____ = Total Cover																									
* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																									
% Bare Ground in Herb Stratum <b>15</b>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																					
Remarks:																									

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	10YR 2/2	100	none				sandy loam	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>**

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)
- 

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

Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric soil present?

Yes

No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A & 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

**Field Observations**

- |  |                              |  |             |
|--|------------------------------|--|-------------|
| Surface Water Present?                             | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Water Table Present?                               | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |

Wetland Hydrology Present?

Yes

No

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

Remarks: **Totally dry soil  
Rained yesterday**



**WETLAND DETERMINATION DATA FORM**  
 Western Mountains, Valleys, and Coast Supplement to the  
 1987 COE Wetlands Delineation Manual

750 Sixth Street South  
 Kirkland, Washington 98033  
 (425) 822-5242  
 watershedco.com

**DP- 3**

Project Site: <b>402 Slater Street South</b>		Sampling Date: <b>7/21/14</b>	
Applicant/Owner: <b>Hiller</b>		Sampling Point: <b>DP- 3</b>	
Investigator: <b>M. Foster, C. Muters</b>		City/County: <b>Kirkland</b>	
Sect., Township, Range S                      T                      R		State: <b>WA</b>	
Landform (hillslope, terrace, etc)	Slope (%)	Local relief (concave, convex, none)	
Subregion (LRR) <b>A</b>	Lat	Long	Datum
Soil Map Unit Name		NW1 classification	
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)	
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil, <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks: Located adjacent to ditch north of driveway	

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

Tree Stratum (Plot size 5m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1.				Number of Dominant Species that are OBL, FACW, or FAC: <b>3</b> (A)	
2.					
3.					
4.					
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <b>4</b> (B)	
_____ = Total Cover				Percent of Dominant Species that are OBL, FACW, or FAC: <b>75</b> (A/B)	
Sapling/Shrub Stratum (Plot size 3m diam. )				Prevalence Index Worksheet	
Total % Cover of					Multiply by
1.					OBL species   x 1 =
2.					FACW species   x 2 =
3.					FAC species   x 3 =
4.					FACU species   x 4 =
5.				UPL species   x 5 =	
_____ = Total Cover				Column totals (A) (B)	
Herb Stratum (Plot size 1m diam. )				Prevalence Index = B / A =	
1.	<b>15</b>		<b>FACU</b>		
2.	<b>20</b>	<b>x</b>	<b>OBL</b>		
3.	<b>25</b>	<b>x</b>	<b>FAC</b>		
4.	<b>20</b>	<b>x</b>	<b>NI</b>		
5.	<b>10</b>		<b>FACW</b>		
6.	<b>5</b>		<b>FACU</b>		
7.	<b>20</b>	<b>x</b>	<b>FAC</b>		
8.					
9.					
10.					
11.					
_____ = Total Cover				Hydrophytic Vegetation Indicators x      Dominance test is > 50% Prevalence test is ≤ 3.0 * Morphological Adaptations * (provide supporting data in remarks or on a separate sheet) Wetland Non-Vascular Plants * Problematic Hydrophytic Vegetation * (explain)	
<b>100+</b> = Total Cover					* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic Vegetation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Woody Vine Stratum (Plot size )					
1.					
2.					
_____ = Total Cover					
% Bare Ground in Herb Stratum					
Remarks:					

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-11	10YR 3/3	50	none				Sandy loam	
0-11	2.5Y 5/3	35	7.5YR 4/6	15	C	M	Sandy loam	
11-18	10YR 4/1	85	5Y 3/4	15	C	M	Loamy sand	

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>**

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)

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

Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric soil present?

Yes

No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A & 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

**Field Observations**

- |  |                              |  |             |   |
|--|------------------------------|--|-------------|---|
| Surface Water Present?                             | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |   |
| Water Table Present?                               | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): | 8 |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): | 0 |

Wetland Hydrology Present?

Yes

No

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

Remarks: **Damp but no saturation**

**WETLAND FIELD DATA FORM – Hiller property located at 402 Slater Street South Kirkland, WA 98033.**

**Rating done on July 21, 2014 by The Watershed Company.**



**WETLAND FIELD DATA FORM**

BEGIN BY CHECKING ANY OF THE FOLLOWING (a. – e.) THAT APPLY:

- a. The wetland is contiguous to Lake Washington;
- b. The wetland contains at least 1/4 acre of organic soils, such as peat bogs or mucky soils;
- c. The wetland is equal to or greater than 10 acres in size and having three or more wetland classes, as defined by the U.S. Fish & Wildlife Service (Cowardin et al., 1979), one of which is open water;
- d. The wetland has significant habitat value to state or federally listed threatened or endangered wildlife species; or
- e. The wetland contains state or federally listed threatened or endangered plant species.

IF ANY OF THE CRITERIA LISTED ABOVE ARE MET, THEN THE WETLAND IS CONSIDERED TO BE TYPE 1. IF THAT IS THE CASE, PLEASE CONTINUE TO COMPLETE THE ENTIRE FORM, BUT DO NOT ASSIGN POINTS.

IF THE WETLAND DOES NOT MEET THE CRITERIA LISTED ABOVE FOR TYPE 1, COMPLETE THE ENTIRE FORM, USING THE ASSIGNED POINTS TO DETERMINE IF IT IS A TYPE 2 OR TYPE 3 WETLAND.

Type 2 wetlands typically have at least two wetland vegetation classes, are at least partially surrounded by buffers of native vegetation, connected by surface water flow (perennial or intermittent) to other wetlands or streams, and contain or are associated with forested habitat.

**1. Total wetland area**

Estimate wetland area and score from choices Acres	Point Value	<u>Points</u>
>20.00	= 6	
10-19.99	= 5	
5-9.99	= 4	
1-4.99	= 3	
0.1-0.99	= 2	
<0.1	= 1	

**(2 points)**

**2. Wetland classes: Determine the number of wetland classes that qualify, and score according to the table.**

	# of Classes	Points
<b>Open Water:</b> if the area of open water is >1/3 acre or >10% of the total wetland area	1	= 1
<b>Aquatic Beds:</b> if the area of aquatic beds is >10% of the <b>open water</b> area <b>or</b> >1/2 acre	2	= 3
<b>Emergent:</b> if the area of emergent class is >1/2 acre <b>or</b> >10% of the total wetland area	3	= 5
<b>Scrub-Shrub:</b> if the area of scrub-shrub class is >1/2 acre <b>or</b> >10% of the total wetland area	4	= 7
<b>Forested:</b> if the area of forested class is >1/2 acre or >10% of the total wetland area	5	= 10

**(3 points)**

**3. Plant species diversity.**

For all wetland classes which qualified in 2 above, count the number of different plant species and score according to the table below. You do not have to name them.

e.g., if a wetland has an aquatic bed class with 3 species, and emergent class with 4 species and a scrub-shrub class with 2 species, you would circle 2, 2, and 1 in the second column (below).

Class	# of Species	Point Value	Class	# of Species	Point Value
Aquatic Bed	1-2	= 1	Scrub-Shrub	1-2	= 1
	3	= 2		3-4	= 2
	>3	= 3		>4	= 3
Emergent	1-2	= 1	Forested	1-2	= 1
	3-4	= 2		3-4	= 2
	>4	= 3		>4	= 3

**(6 points)**

**4. Structural diversity.**

If the wetland has a forested class, add 1 point for each of the following attributes present:

Trees >50' tall	= 1
Trees 20' to 49' tall	= 1
shrubs	= 1
Herbaceous ground cover	= 1

**(3 points)**

**5. Interspersion between wetland classes.**

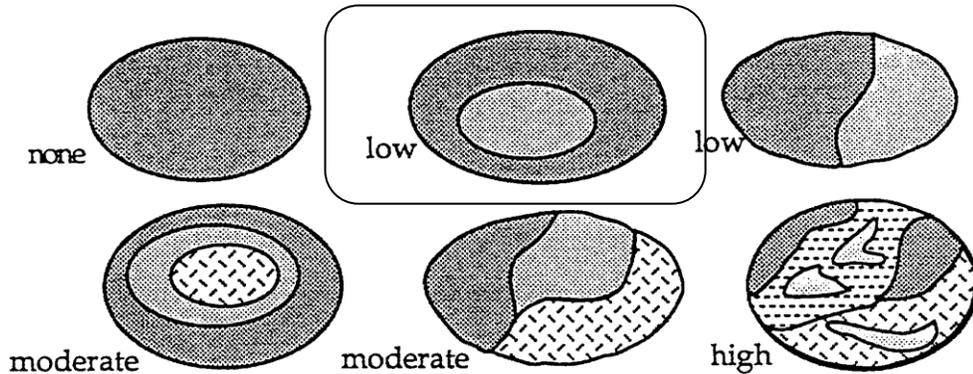
Decide from the diagrams below whether interspection between wetland classes is high, moderate, low or none

3 = High

2 = Moderate

1 = Low

0 = None



(1 points)

**6. Habitat features**

Add points associated with each habitat feature listed:

- Is there evidence of current use by beavers? = 3
- Is a heron rookery located within 300'? = 2
- Are raptor nest(s) located within 300'? = 1
- Are there at least 2 standing dead trees (snags) per acre? = 1
- Are there any other perches (wires, poles, or posts)? = 1
- Are there at least 3 downed logs per acre? = 1

(0 points)

**7. Connection to streams**

Is the wetland connected at any time of the year via surface water? (score one answer only)

Is the wetland connected at any time of the year via surface water?

- To a perennial stream or a seasonal stream *with* fish = 5
- To a seasonal stream *without* fish = 3
- Is not connected to any stream = 0

(3 points)

**8. Buffers**

Step 1: Estimate (to the nearest 5%) the percentage of each buffer or land-use type (below) that adjoins the wetland boundary. Then multiply these percentages by the factor(s) below and enter result in the column to the right.

	% of Buffer	Step 1	Width Factor	Step 2
Roads, buildings or parking lots	33 %	X 0 = 0	_____ =	_____
Lawn, grazed pasture, vineyards or annual crops	_____ %	X 1 = _____	_____ =	_____
Ungrazed grassland or orchards	_____ %	X 2 = _____	_____ =	_____
Open water or native grasslands	_____ %	X 3 = _____	_____ =	_____
Forest or shrub	67 %	X 4 = 268	1 =	268
			Add buffer <u>268</u>	

Step 2: Multiply result(s) of step 1:

- By 1 if buffer width is 25-50'
- By 2 if buffer width is 50-100'
- By 3 if buffer width is >100'

Enter results and add subscores

Step 3: Score points according to the following table:

Buffer Total

900-1200 =	4
600-899 =	3
300-599 =	2
100-299 =	1

**(1 points)**

**9. Connection to other habitat areas:**

Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor >100' wide with good forest or shrub cover to any other habitat area? = 5

Is there a narrow corridor <100' wide with good cover or a wide corridor >100' wide with low cover to any other habitat area? = 3

Is there a narrow corridor <100' wide with low cover or a significant habitat area within 0.25 mile but no corridor? = 1

Is the wetland and buffer completely isolated by development and/or cultivated agricultural land? = 0

**(1 points).**

**10. Scoring**

Add the scores to get a total: 20

Question: Is the total greater than or equal to 22 points?

Answer:

Yes = Type 2

No = Type 3