April 2015

Federal Way Link Extension

Draft Environmental Impact Statement

ECOSYSTEMS TECHNICAL REPORT

Appendix G2

SOUNDTRANSIT
Central Puget Sound
Regional Transit Authority

U.S. Department of Transportation
Federal Transit Administration

This page intentionally left blank.

SOUNDTRANSIT

Federal Way Link Extension

Ecosystems Technical Report

Prepared for:
Sound Transit

Prepared by:
HDR Engineering, Inc. and
CH2M HILL

April 2015

This page intentionally left blank.

Appendix A

Wetland Delineation Methodology

This page intentionally left blank.

Appendix A

Wetland Delineation Methodology

Wetlands are defined as areas saturated or inundated by surface water or groundwater at a frequency and duration sufficient to support, and which under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. The methods used to delineate the onsite wetlands conform to methods described in the *Washington State Wetlands Identification and Delineation Manual* (Washington State Department of Ecology [Ecology], 1997), the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE, 2010). To be considered a wetland, an area must have hydrophytic vegetation, hydric soils, and wetland hydrology. Sound Transit collected data on these parameters in areas representative of typical site conditions. Staff collected additional data in associated uplands, as needed, to confirm wetland and stream boundaries. Wetland boundaries and wetland data plot locations in the study area were marked with sequentially numbered flagging. All delineated wetlands were instrument-surveyed and mapped on project base maps.

A.1 Vegetation

The dominant plants and their wetland indicator status were evaluated to determine if the vegetation was hydrophytic. To determine which plants were dominant at a sample plot, biologists applied the 50/20 rule per USACE recommendations. Under this guidance, absolute cover estimates were made for each species found rooted within the sample plot, for each vegetative stratum found in the habitat (tree, sapling/shrub, herb, and woody vine). The species that had the most cover was included along with the next species until the absolute cover of these totaled more than 50 percent of the total absolute cover. Any other species that represented at least 20 percent of the total absolute cover was also included as a dominant species for that vegetative stratum.

Sample plots varied in size depending on site topography and habitat complexity. The objective of establishing a plot was to depict particular plant associations that reflect specific water regimes or other ecological factors. For example, on steep-sided riparian areas a plot may consist of a narrow strip along the water's edge, and within a floodplain a plot may be a standard 30-foot circle.

Hydrophytic vegetation is defined as vegetation adapted to wetland conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants in each stratum must be Facultative, Facultative Wetland, or Obligate, based on the wetland indicator category assigned to each plant species by the USACE (USACE, 2014). Table A-1 lists the definitions of the indicator categories.

TABLE A-1
Definitions of Wetland Plant Indicator Categories used to Determine the Presence of Hydrophytic Vegetation

Wetland Indicator Category	Symbol	Definition
Obligate Wetland Plants	OBL	Plants that almost always (>99% of the time) occur in wetlands, but which may rarely (<1% of the time) occur in non-wetlands.
Facultative Wetland Plants	FACW	Plants that often (67 to 99% of the time) occur in wetlands, but sometimes (1 to 33% of the time) occur in non-wetlands.
Facultative Plants	FAC	Plants with a similar likelihood (34 to 66% of the time) of occurring in both wetlands and non-wetlands.
Facultative Upland Plants	FACU	Plants that sometimes (1 to 33% of the time) occur in wetlands, but occur more often (67 to 99% of the time) in non-wetlands.
Upland Plants	UPL	Plants that rarely (<1% of the time) occur in wetlands, and almost always (>99% of the time) occur in non-wetlands.

Source: Lichvar, et al. (2012).

Sound Transit identified plants to the species level in the field and estimated percent cover of dominant plants. Scientific and common plant names follow currently accepted nomenclature. Most names are consistent with *Flora of the Pacific Northwest* (Hitchcock and Cronquist, 1973) and the PLANTS Database (U.S. Department of Agriculture Natural Resources Conservation Service [NRCS], 2013). During the field investigation, staff observed and recorded the dominant plant species on data sheets (Appendix B) for each data plot.

A.2 Soils

Generally, an area must contain hydric soils to be a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper 12 inches. Biological activities in saturated soil result in reduced oxygen concentrations and organisms turn to anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as indicators of hydric soil. Typically, low-chroma colors are formed in the soil matrix, and bright-colored redoximorphic features form within the matrix. Other important hydric soil indicators include organic matter accumulations in the surface horizon, reduced sulfur odors, and organic matter staining in the subsurface (NRCS, 2010).

Sound Transit examined soils by excavating sample pits to a depth of 20 inches to observe soil profiles, colors, and textures. In some cases, a shallower soil pit was adequate to document hydric soil indicators. Munsell color charts (Munsell Color Company, 2009) were used to describe soil colors.

A.3 Hydrology

Project staff examined the potential wetland areas for evidence of hydrology. Wetland hydrology criteria were considered satisfied if it appeared that the soil was seasonally inundated or saturated to the surface for a consecutive number of days greater than or equal to 12.5 percent of the growing season. The growing season for the area was determined based on the period in which temperatures are above 28 degrees Fahrenheit for 5 out of 10 years (Ecology, 1997) using the long-term climatological data collected by the NRCS (2014). Using the NRCS (2002) WETS table for the nearest

station (Sea-Tac Airport, Washington), the growing season was approximated to be typically between February 6 and December 9, or a total of 305 days.

Wetland hydrology indicators are divided into two categories, primary and secondary indicators (USACE, 2010). Primary indicators of hydrology include surface inundation, high water table, and saturated soils. The presence of one primary indicator is sufficient to conclude that wetland hydrology is present. In the absence of a primary indicator, observation of two or more secondary indicators is required to conclude that wetland hydrology is present. Secondary indicators of hydrology include drainage patterns, water-stained leaves, and geomorphic setting (USACE, 2010).

A.4 References

Hitchcock, L.H., and A. Cronquist. 1973. *Flora of the Pacific Northwest: An Illustrated Manual.* University of Washington Press. Seattle, Washington.

Munsell Color Company. 2009. Munsell Soil Color Charts. Grand Rapids, Michigan.

U.S. Army Corps of Engineers (USACE). 2014. National Wetland Plant List. U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory, Remote Sensing and Geographic Information System. http://rsgisias.crrel.usace.army.mil/NWPL/. Accessed February 2014.

U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0). U.S. Army Corps of Engineers, Research and Development Center, Vicksburg, MS.

U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers, Environmental Laboratory, Waterways Experiment Station, Vicksburg, MS.

U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2014. Climate Information for Seattle-Tacoma Airport in the State of Washington. http://agacis.rcc-acis.org/53033/wets/results. Created May 15, 2014.

U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2013. PLANTS Database. http://plants.usda.gov. National Plant Data Team, Greensboro, North Carolina 27401-4901 USA. Accessed December 2013.

U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. G.W. Hurt and L.M. Vasilas (eds.). NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Washington State Department of Ecology (Ecology). 1997. *Washington State Wetlands Identification and Delineation Manual*. https://fortress.wa.gov/ecy/publications/summarypages/9694.html. March 1997.

This page intentionally left blank.

Appendix B

Wetland Determination Data Forms

This page intentionally left blank.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-1-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%) <1

Subregion (LRR): A Lat: 47.403173 Long: -122.293134 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

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

Remarks:
Upland sample plot located north of Wetland 5-1. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation) resulted in wetland hydrology indicators; however, vegetation and soils do not meet criteria.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Acer macrophyllum	50	Y	FACU
	50	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Symphoricarpos albus	2	Y	FACU
	2	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Ilex Aquifolium	1	N	
	1	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	62	x 4 =	248
UPL species	0	x 5 =	0
Column Totals:	62 (A)		248 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 05-1-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 13	7.5YR 3 / 2	100					Gravely Sandy Loam	
13 to 19	10YR 3 / 4	100					Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):	11"	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	8"	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3). However, because of abnormally high precip, this is not considered a wetland.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-1-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%) <1

Subregion (LRR): A Lat: 47.403233 Long: -122.293178 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: ---

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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

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

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

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

Remarks:
Upland sample plot located just north of Wetland 5-1. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation); however, vegetation and soils do not meet criteria.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Populus balsamifera	50	Y	FAC
	50	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Symphoricarpos albus	65	Y	FACU
Cornus alba	15	N	FACW
	80	=Total Cover	
Herb Stratum			
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	50	x 3 =	150
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)

Prevalence Index = B/A= 3.38

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet dominance or prevalence test for hydrophytic vegetation.

SOIL

Sampling Point: SP 05-1-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 11	10YR 2 / 2	100					Gravely Sandy Loam	
11 to 18	7.5YR 3 / 4	100					Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-1-3

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.403158 Long: -122.293184 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PSS1 / PFO1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
This plot meets the criteria for a wetland. Sample plot located in Wetland 5-1. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Populus balsamifera	55	Y	FAC
	55	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Cornus alba	60	Y	FACW
	5	N	
	65	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	55	x 3 =	165
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	125 (A)		325 (B)

Prevalence Index = B/A= 2.60

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 05-1-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 7	10YR 2 / 1	100	none				FINE SANDY LOAM	
7 to 16	10YR 2.5 / 2	85	7.5YR 4/6	15	C	M	FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
This area meets hydric soil indicator for depleted matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes X	No	Depth (inches):	7"	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	5"	

Wetland Hydrology Present? Yes X No

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

Remarks:

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-1E-1

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 9 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Toe of Slope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.402896 Long: -122.293134 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PEM1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation) Edge of wetland 5-1. This plot meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Rumex obtusifolius	5	Y	FAC
Veronica americana	5	Y	OBL
	10	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	25	Y	FACU
	25	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	35 (A)		120 (B)

Prevalence Index = B/A= 3.43

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample plot meets dominance test

SOIL

Sampling Point: SP 05-1E-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 2 / 2	100	None				Gravely Sandy Loam	
8 to 15	10YR 2 / 4.5	90	7.5YR 4/6	10	C	M	FINE SANDY LOAM	
15 to 18	10YR 4 / 3	90	7.5YR 4/6	10	C	M	FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:
Soils do not technically meet hydric soil criteria; no redoximorphic features observed in upper 8", likely since soils were saturated. Presence of wetland hydrology and hydrophytic vegetation indicate hydric soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 3

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: SeaTac Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-1E-2

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 9 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.402860 Long: -122.293109 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This plot does not meet all wetland indicators. Upland sample plot south of Wetland 5-1.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Taraxacum officinale	1	Y	FACU
	1	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	50	Y	FACU
	50	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	51	x 4 =	204
UPL species	0	x 5 =	0
Column Totals:	51 (A)		204 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 05-1E-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 7	10YR 3 / 2	100	None				FINE SANDY LOAM	
7 to 15	2.5Y 4 / 2	99	10YR 5/8	1	C	M	Very Gravely Sandly Loam	Compacted layer

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☑ **Restrictive Layer (if observed):**

Type: Gravel

Depth (inches): 15"

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators. Shovel refusal at 15".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 05-2-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: Long: Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: None

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes No X

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

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

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

Remarks:
This plot does not meet all wetland indicators. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). Verification plot in area identified during desktop inventory as Wetland 5-2.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Populus balsamifera	50	Y	FAC
	50	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Symphoricarpos albus	65	Y	FACU
Cornus sericea	15	N	FACW
	80	=Total Cover	
Herb Stratum			
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	50	x 3 =	150
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)

Prevalence Index = B/A= 3.38

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 05-2-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 11	10YR 2 / 2	100	None				Gravely Sandy Loam	
11 to 18	7.5YR 3 / 4	100	None				Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	0	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-2-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394813 Long: -122.297269 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PSS1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation) This site meets the criteria for a wetland. Sample plot located in Wetland 6-2.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	5	Y	FAC
	5	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	60	Y	FACU
Hedera helix	5	N	FACU
	65	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	70 (A)		275 (B)

Prevalence Index = B/A= 3.93

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Himalayan blackberry is acting as an aggressive invasive. Presence of hydric soils and hydrology indicate hydrophytic vegetation.

SOIL

Sampling Point: SP 06-2-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 13	10YR 2 / 2	100					FINE SANDY LOAM	
13 to 17	10YR 5 / 2	95	10YR 3/4	5	C	M	LOAMY SAND	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
This area meets hydric soil indicator with a Sandy Redox (S5).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):	5"	
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):	Surface	

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-2-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394837 Long: -122.297177 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This site does not meet the criteria to be classified as a wetland. Paired upland plot for Wetland 6-2.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	40	Y	FAC
	40	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Polygonum cuspidatum	45	Y	FACU
	45	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	45	Y	FACU
	45	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	130 (A)		480 (B)

Prevalence Index = B/A= 3.69

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 06-2-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 18	10YR 3 / 3	100	None				LOAMY SAND	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):	17"	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):		

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-3-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394419 Long: -122.297155 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This site does not meet the criteria to be classified as a wetland. Paired upland plot for Wetland 6-3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	25	Y	FAC
	25	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	85	Y	FAC
Ilex aquifolium L.	5	N	
	90	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	5	Y	FACU
	5	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	110	x 3 =	330
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	115 (A)		350 (B)

Prevalence Index = B/A= 3.04

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 06-3-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 18	10YR 3 / 3	100	None				FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	>18"	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-3-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394430 Long: -122.297119 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PSS1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation) This site meets the criteria for a wetland. Sample plot in Wetland 6-3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	80	Y	FAC
	80	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	90 (A)		280 (B)

Prevalence Index = B/A= 3.11

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Himalayan blackberry is aggressive invasive in the sample plot.

SOIL

Sampling Point: SP 06-3-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 14	10YR 2 / 1	100	None				Silty loam	
14 to 17	10YR 2 / 1	100	None				SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Problematic soils. Too saturated to meet criteria requiring redoximorphic features. Hydric soils assumed based on presence of wetland hydrology/hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Kent Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-3-3

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 16 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394415 Long: -122.296996 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PFO1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This plot meets the criteria for a wetland. Sample Plot located in Wetland 6-3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	65	Y	FAC
Populus balsamifera	25	Y	FAC
	90	=Total Cover	
Shrub Stratum			
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	50	Y	FACU
	50	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	140 (A)		470 (B)

Prevalence Index = B/A= 3.36

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 06-3-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 6	10YR 3 / 2	100	None				SANDY LOAM	
6 to 12	10YR 4 / 2	85	7.5YR 4/6	15	C	M	SANDY LOAM	
12 to 16	2.5YR 5 / 2	100					Gravely Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): ---
Water Table Present?	Yes	X	No	_____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 10

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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

Project/Site: FWLE / I-5 City/County: Kent Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-3-4

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 16 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Toe of Slope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394445 Long: -122.296989 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record precipitation in region. This plot does not meet all wetland indicators. Paired upland plot for Wetland 6-3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	10	Y	FAC
	10	=Total Cover	
Shrub Stratum			
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	65	Y	FACU
	65	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	75 (A)		290 (B)

Prevalence Index = B/A= 3.87

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample plot does not meet dominance or prevalence tests.

SOIL

Sampling Point: SP 06-3-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 2	10YR 3 / 2	100					Gravely Sandy Loam	
2 to 5	10YR 4 / 2	98	2.5YR 4/6	2	C	M	Gravely Sandy Loam	
5 to 11	10YR 4 / 2	95	2.5YR 4/6	5	C	M	LOAMY SAND	
11 to 16	10YR 4 / 3	2	7.5YR 4/6	20	C	M	Gravely sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:
This area meets hydric soil indicator for depleted matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/12/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-4-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.394205 Long: -122.297340 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PFO1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

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

Remarks:
Record precipitation in region. Area meets criteria for wetland indicators. Edge of Wetland 6-4.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	45	Y	FAC
	45	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Oemleria cerasiformis	5	Y	FACW
	5	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Hedera helix	2	Y	FACU
	2	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	52 (A)		153 (B)

Prevalence Index = B/A= 2.94

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes ____ No X**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets dominance and prevalence test.

SOIL

Sampling Point: SP 06-4-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 2 / 2	100	None				FINE SANDY LOAM	
8 to 22	10YR 3 / 1	60	2.5Y 4/3	20	C	M	Gravely sandy loam	
11 to 22	/		2.5Y 5/6	20	C	M	Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:
Meets redox dark surface indicator

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches):	_____	
Water Table Present?	Yes X	No _____	Depth (inches):	10"	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches):	2"	

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-4-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.394177 Long: -122.297307 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). Area does not meet criteria for wetland indicators. Paired upland plot for Wetland 6-4.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	80	Y	FAC
	80	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Oemleria cerasiformis	10	Y	FACU
Rubus spectabilis	10	Y	FAC
	20	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	110 (A)		350 (B)

Prevalence Index = B/A= 3.18

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 06-4-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 5	10YR 3 / 2	100	None				FINE SANDY LOAM	
5 to 10	10YR 3 / 3	93	10YR 3/6	7	C	M	Gravely Sandy Loam	
10 to 18	10YR 4 / 4	100	None				Very Gravely sandy loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-5-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.393882 Long: -122.298389 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This plot meets wetland indicators. Plot located in Wetland 6-5 (merged with Wetland 6-4).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	20	Y	FAC
	20	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Hedera helix	85	Y	FACU
Rubus armeniacus	2	N	FACU
	87	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	87	x 4 =	348
UPL species	0	x 5 =	0
Column Totals:	107 (A)		408 (B)

Prevalence Index = B/A= 3.81

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes No X**

Remarks: (Include photo numbers here or on a separate sheet.)

H.helix is acting as an aggressive invasive plant causing problematic vegetation. Vegetation does not meet dominance or prevalence test, however is considered hydrophytic because hydric soil and hydrology are present.

SOIL

Sampling Point: SP 06-5-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 2 / 2	100					FINE SANDY LOAM	
8 to 16	2.5Y 4 / 2	85	10YR 4/6	15	C	M	Very gravelly loamy sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
This area meets hydric soil indicator with a Sandy Redox (S5).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	11	
Water Table Present?	Yes X	No	Depth (inches):	surface	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	surface	

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and surface water (A1), and saturation

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-5-2

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.393876 Long: -122.298246 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: None

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Area does not meet wetland indicators. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). Paired upland plot for Wetland 6-5 (merged with Wetland 6-4).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	40	Y	FAC
	40	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Hedera helix	55	Y	FACU
Ilex aquifulium	5	N	FACU
	60	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	100 (A)		360 (B)

Prevalence Index = B/A= 3.60

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 06-5-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 19	10YR 2 / 2	100	None				FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
Moist, but not saturated. This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/12/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-5-3

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.393966 Long: -122.297438 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record precipitation in region. This site does not meet the criteria to be classified as a wetland and is an upland plot. Paired upland plot for Wetland 6-5 (merged with 6-4)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	10	Y	FAC
	10	=Total Cover	
Shrub Stratum			
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	80	Y	FACU
	80	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		350 (B)

Prevalence Index = B/A= 3.89

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 06-5-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 17	10YR 4 / 3	100	None				Gravelly Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 17"

Hydric Soil Present? Yes ____ No X

Remarks:

Hit an impassable rock at 17". This sample does not meet any hydric soil indicators; soil chroma of 3 is too bright to meet any criteria for hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	____	No	X	Depth (inches): --
Water Table Present?	Yes	X	No	____	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes	____	No	X	Depth (inches): 14

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

This sample does not meet any hydrology indicators. Saturation/water table too deep after heavy rainfall to meet primary hydrologic indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 06-5-4

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.393963 Long: -122.297440 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PFO1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation). This plot meets the criteria for a wetland. Located in Wetland 6-5 (merged with Wetland 6-4).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	50	Y	FAC
	50	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Carex obnupta	10	Y	OBL
	10	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	30	Y	FACU
	30	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	90 (A)		280 (B)

Prevalence Index = B/A= 3.11

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 06-5-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 7	10YR 2 / 2	100					Gravelly sandy lam	
7 to 16	2.5Y 5 / 3	80	10YR 4/6	20			LOAMY SAND	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Problematic soils; soils too saturated to see redoximorphic features. Hydric soils assumed based on presence of hydrology and hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes X	No	Depth (inches):	4"	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	Surface	

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-1

Investigators: Lisa Danielski Ian Welch Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Toe of Slope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.368142 Long: -122.294777 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Upland sample plot east of Wetland 12-1. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).This site does not meet the criteria to be classified as a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	10	Y	FAC
	10	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Ranunculus repens	50	Y	FAC
	50	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	70 (A)		220 (B)

Prevalence Index = B/A= 3.14

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation

SOIL

Sampling Point: SP 12-1-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 10	10YR 2 / 1	100	None				very gravely sandy loam	
10 to 22	2.5YR 3 / 2	97	10YR 4/6	30	C	M	Gravely loamy sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
No primary or secondary hydrology.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-2

Investigators: Lisa Danielski Ian Welsh Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.366344 Long: -122.295397 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).Upland sample point on down slope on east side of Wetland 12-1. This site does not meet the criteria to be classified as a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Sambucus racemosa	10	Y	FACU
	10	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Urtica dioica	3	Y	FAC
	3	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus spectabilis	25	Y	FAC
	25	=Total Cover	

% Bare Ground in Herb Stratum

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: 66.7% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	28	x 3 =	84
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	38 (A)		124 (B)

Prevalence Index = B/A= 3.26

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-1-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 20	10YR 2 / 1	100	None				FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators; soils do not meet thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-3

Investigators: Lisa Danielski Ian Welch Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.366491 Long: -122.295092 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches). Upland sample plot in suspicious PHAR/RUSP community east of Wetland 12-1.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	10	Y	FAC
	10	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Phalaris arundinacea	80	Y	FACW
Urtica dioica	2	Y	FAC
	82	=Total Cover	
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	92 (A)		196 (B)

Prevalence Index = B/A= 2.13

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-1-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0 to 20	10YR 2 / 1	100	None				FINE SANDY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
Damp soils. This sample does not meet any hydric soil indicators; does not meet thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-4

Investigators: Lisa Danielski Ian Welsh Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Toe of Slope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.366846 Long: -122.295243 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

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

Remarks:
Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches). Sample plot upslope and east of Wetland 12-1. This site does not meet the criteria to be classified as a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Athyrium filix-femina	5	Y	FAC
	5 =Total Cover		
Vine Stratum (Plot size: 30 Ft)			
Rubus ursinus	5	Y	FACU
	5 =Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	10 (A)		35 (B)

Prevalence Index = B/A= 3.50

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 12-1-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 11	10YR 2 / 1	100					FINE SANDY LOAM	
11 to 17	10YR 4 / 1	100					gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators. **Soils too saturated for redox**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes X	No ____	Depth (inches):	13"	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	12"	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Wetland hydrology meets indicators for saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-5

Investigators: Lisa Danielski Ian Welsh Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.366811 Long: -122.295289 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Upland paired sample plot less than 10ft upslope of 12-1-4. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Tsuga heterophylla	30	Y	FACU
	30	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	10	Y	FAC
	10	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Dryopteris expansa	5	Y	FACW
Polystichum munitum	5	Y	FACU
	10	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus ursinus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	60 (A)		220 (B)

Prevalence Index = B/A= 3.67

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet dominance or prevalence test.

SOIL

Sampling Point: SP 12-1-5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 7	10YR 3 / 2	100					LOAMY SAND	
7 to 17	2.5Y 4 / 3	98	10yr 4/6	2	C	M	LOAMY SAND	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Shovel Refusal at 17" due to dense roots. This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-6

Investigators: Lisa Danielski Ian Welch Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.367295 Long: -122.294916 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PFO1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
This site meets the criteria for a wetland. Sample plot in east portion of Wetland 12-1. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	45	Y	FAC
	45	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	15	Y	FAC
	15	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Polystichum munitum	5	Y	FACU
	5	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Hedera helix	80	Y	FACU
	80	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	145 (A)		520 (B)

Prevalence Index = B/A= 3.59

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Problematic due to invasive species. Vegetation is considered hydrophytic.`

SOIL

Sampling Point: SP 12-1-6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 3 / 1	100					Gravely Sandy Loam	
8 to 12	5Y 6 / 2	95	10yr 4/6	5	C	M	Very Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: cobbles

Depth (inches): 12"

Hydric Soil Present? Yes X No

Remarks:
Shovel Refusal after 12" due to cobbles. This area meets hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes	X	No		Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches): 8

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-7

Investigators: Lisa Danielski Ian Welch Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Top of Slope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.367264 Long: -122.294896 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Upland paired sample plot with SP 12-6. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Alnus rubra	50	Y	FAC
Thuja plicata	10	N	FAC
	60	=Total Cover	
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	20	Y	FAC
	20	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Polystichum munitum	10	Y	FACU
	10	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Hedera helix	80	Y	FACU
	80	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	170 (A)		600 (B)

Prevalence Index = B/A= 3.53

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 12-1-7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 9	10YR 4 / 2	100					Gravely Sandy Loam	
9 to 16	10YR 5 / 2	100					Very Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Shovel Refusal at 16". This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
Saturation starts at 16". This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-8

Investigators: Lisa Danielski Ian Welsh Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.367996 Long: -122.294780 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification: PEM1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
This site meets the criteria for a wetland. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches). Sample plot located in north portion of Wetland 12-1 on east side of wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Scirpus microcarpus	85	Y	OBL
Phalaris arundinacea	15	N	FACW
Equisetum telmateia	3	N	FACW
	103	=Total Cover	
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	18	x 2 =	36
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	103 (A)		121 (B)

Prevalence Index = B/A= 1.17

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-1-8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 2 / 1	100	None				Gravely Sandy Loam	
8 to 10	2.5YR 5 / 1	93	10YR 4/6	7	C	M	Gravely Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Shovel refusal at 10" due to highly compacted gravelly sand. This area meets hydric soil indicator with a depleted matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes X	No	Depth (inches):	7	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	10	

Wetland Hydrology Present? Yes X No

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

Remarks:
Wetland hydrology meets indicators for high water table (A2) and saturation (A3).

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 1/28/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-1-9

Investigators: Lisa Danielski Ian Welsh Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Top of Slope Local Relief (concave, convex, none): Convex Slope(%)

Subregion (LRR): A Lat: 47.368011 Long: -122.294795 Datum: NAD83

Soil Map Unit Name: Arents, Alderwood material, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Paired upland sample plot in emergent area of Wetland 12-1. This site does not meet the criteria to be classified as a wetland. Below-normal rainfall in November and December (3.79 and 1.66 inches, respectively). Rainfall nearly below normal in January (3.7 inches).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	5	Y	FAC
	5	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Phalaris arundinacea	100	Y	FACW
	100	=Total Cover	
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		215 (B)

Prevalence Index = B/A= 2.05

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-1-9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 17	10YR 2 / 2	100	None				Very Gravely Sandy Loam	
17 to 21	10YR 3 / 2	98	7.5YR 4/4				Very Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
This sample does not meet any hydric soil indicators; 17-21" soils are too deep to meet redox dark surface and do not constitute a depleted matrix layer.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Des Moines Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-2-1

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.365811 Long: -122.305703 Datum: NAD83

Soil Map Unit Name: Everett gravelly sandy loam, 0 to 5 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Paired upland plot for Wetland 12-2. This plot does not meet all hydrology indicators. Record rainfall during previous month (6.5 inches in February and over 1.5 inches in the week prior to wetland delineation)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Acer circinatum	2	Y	FAC
	2	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Festuca rubra	50	Y	FAC
Holcus lanatus	30	Y	FAC
Bryopsida spp.	15	N	FAC
Medicago lupulina	1	N	FACU
Taraxacum officinale	1	N	FACU
Vicia americana	1	N	FAC
	98	=Total Cover	
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	98	x 3 =	294
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	100 (A)		302 (B)

Prevalence Index = B/A= 3.02

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

Shrubs recently outplanted. Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-2-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 7	10YR 3 / 2	97	5YR 4/6	3	C	M	FINE SANDY LOAM	
7 to 11	10YR 3 / 4	93	2.5yr 4/6	2	C	M	SANDY LOAM	
7 to 11	/		7.5YR 5/8	5	C	M	SANDY LOAM	
11 to 14	10YR 2 / 2	97	10YR 5/6	2	C	M	LOAM	Sandy Inclusions
11 to 14	/		5YR 3/4	10	P	L	LOAM	
14 to 15	2.5Y 5 / 2	100						Diatomaceous earth
15 to 19	10YR 3 / 1	100					SANDY CLAY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators. Paired upland plot for Wetland 12-2.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Des Moines Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 12-2-2

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: -122.305683 Long: 47.365848 Datum: NAD83

Soil Map Unit Name: Everett gravelly sandy loam, 0 to 5 percent slopes NWI Classification: PEM1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
This plot meets the criteria for a wetland. Record rainfall during previous month (6.5 inches in February and over 1.5 inches in the week prior to wetland delineation). Sample plot is in Wetland 12-2.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5 Ft)			
Glyceria elata	40	Y	FACW
Phalaris arundinacea	40	Y	FACW
Juncus effusus	10	N	FACW
Holcus lanatus	5	N	FAC
Ranunculus repens	5	N	FAC
Rumex obtusifolius	2	N	FAC
	102	=Total Cover	
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	102 (A)		216 (B)

Prevalence Index = B/A= 2.12

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: SP 12-2-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 6	10y 3 / 2	100					FINE SANDY LOAM	
6 to 15	10YR 4 / 1	98	10YR 5/8	20	C	M	SANDY LOAM	Some cobbles

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes X	No	Depth (inches):	4"	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	0"	

Wetland Hydrology Present? Yes X No

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

Remarks:

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

Project/Site: FWLE / I-5 City/County: Kent Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 20-2-1

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 22 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.385223 Long: -122.290897 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 percent slopes NWI Classification:

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

Are Vegetation X, Soil , Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Sample plot to verify that Wetland 20-2 does not extend into WSDOT ROW. This plot does not meet all wetland indicators. Record rainfall during previous month (6.5 inches in February and over 1.5 inches in the week prior to wetland delineation).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Spiraea douglasii	5	Y	FACW
	5	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	75	Y	FACU
	75	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	80 (A)		310 (B)

Prevalence Index = B/A= 3.88

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet any vegetative indicators.

SOIL

Sampling Point: SP 20-2-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 14	2.5y 2 / 1	100					LOAM	
14 to 16	10YR 6 / 6	100					Diatomacoius Earth	
16 to 20	2.5Y 2 / 1						LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
This sample does not meet any hydric soil indicators; chroma 2 soils do not meet depleted matrix criteria; no redoximorphic features to meet redox dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):	20	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	18	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
This sample does not meet any hydrology indicators; free water/saturation too deep after heavy rainfall in early part of growing season to meet hydrologic indicators.

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

Project/Site: FWLE / I-5 City/County: Bellevue Sampling Date: 3/11/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 27-1-1

Investigators: Lisa Danielski Dangelei Fox Section, Township, Range S 4 T 21 N R 4 E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%)

Subregion (LRR): A Lat: 47.337719 Long: -122.293853 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 6 percent slopes NWI Classification:

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

Remarks:
Upland sample plot west of WL 27-1. This plot does not meet all wetland indicators. Record rainfall during previous month (6.5 inches in February and over 3 inches in the week prior to wetland delineation)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Oemleria cerasiformis	40	Y	FACU
	40	=Total Cover	
Herb Stratum (Plot size: 5 Ft)			
Polystichum munitum	1	N	FACU
	1	=Total Cover	
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	10	Y	FACU
	10	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	126	x 4 =	504
UPL species	0	x 5 =	0
Column Totals:	126 (A)		504 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

This sample does not meet dominance or prevalence test.

SOIL

Sampling Point: SP 27-1-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 6	10YR 2 / 2	100					FINE SANDY LOAM	
6 to 15	10YR 4 / 4	95	7.5YR 4/6	5	C	M	FINE SANDY LOAM	
15 to 20	7.5YR 4 / 4	93	5YR 4/6	7	C	M	SANDY CLAY LOAM	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
This sample does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
This sample does not meet any hydrology indicators.

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

Project/Site: FWLE / I-5 City/County: Federal Way Sampling Date: 3/26/2014

Applicant/Owner: Sound Transit State: WA Sampling Point: SP 27-1-2

Investigators: Lisa Danielski Brendan Baughn Section, Township, Range S 28 T 22 N R 4 E

Landform (hillslope, terrace, etc.): Local Relief (concave, convex, none): Slope(%)

Subregion (LRR): A Lat: 47.337755 Long: -122.293916 Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS1

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

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

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

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

Remarks:
Wetland sample plot at edge of Wetland 27-1. This plot meets the criteria for a wetland. Record rainfall during previous month (6.5 inches in February and over 1.5 inches in the week prior to wetland delineation)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 50 Ft)			
Rubus spectabilis	5	Y	FAC
	5	=Total Cover	
Herb Stratum			
Vine Stratum (Plot size: 30 Ft)			
Rubus armeniacus	5	Y	FACU
	5	=Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	10 (A)		35 (B)

Prevalence Index = B/A= 3.50

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

Himalayan blackberry is acting as an aggressive invasive. Presence of hydric soils and hydrology indicate hydrophytic vegetation.

SOIL

Sampling Point: SP 27-1-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 13	10YR 3 / 1	100	None				Gravely Sandy Loam	
13 to 19	7.5YR 4 / 1	97	5YR 4/6	30	C	M	Gravely Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils: [3]

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

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
This area meets hydric soil indicator for depleted below dark surface (A11).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes X	No	Depth (inches):	13"	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	5"	

Wetland Hydrology Present? Yes X No

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

Remarks:
Sample plot has indicators for water table and saturation

Appendix E

Wetland and Stream Impacts

This page intentionally left blank.

Appendix E

Wetland and Stream Impacts

TABLE E-1
Summary of Temporary Construction Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a]
SR 99 Alternative			
	Wetland 6-2	IV	0
	Wetland 6-3	IV	0
	Wetland 6-4	IV	0
	Wetland 11-1	III	0
	Wetland 12-1	II	<0.1
	Wetland 12-2	III	<0.1
	Wetland 17-1	III/NA	<0.1
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Kent/Des Moines Station Options			
Kent/Des Moines HC Campus Station Option	Wetland 6-2	IV	+ <0.1
	Wetland 6-3	IV	+ <0.1
	Wetland 6-4	IV	+ <0.1
Kent/Des Moines HC from S 216th West Station Option	Wetland 6-2	IV	+ 0.1
	Wetland 6-4	IV	+ <0.1
Kent/Des Moines SR 99 Median Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	No change in impacts		
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ <0.1
	Wetland 12-1	II	+ 0.1
S 260th Station East Option	Wetland 12-1	II	+ 0.3
	Wetland 12-2	III	- <0.1
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.2
	Wetland 12-2	III	- <0.1
	Wetland 17-1	III/NA	- <0.1

TABLE E-1
Summary of Temporary Construction Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a]
Federal Way SR 99 Station Option			
	No change in impacts		
I-5 Alternative			
	Wetland 12-1	II	<0.1
	Wetland 25-2	III/III	0.2
	Wetland 25-2a	IV/NA	<0.1
Kent/Des Moines Station Options			
Kent/Des Moines At-Grade Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	No change in impacts		
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	No change in impacts		
SR 99 to I-5 Alternative			
	Wetland 12-1	II	<0.1
	Wetland 25-2	III/III	0.2
	Wetland 25-2a	IV/NA	<0.1
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	No change in impacts		
I-5 to SR 99 Alternative			
	Wetland 11-1	III	0
	Wetland 12-1	II	<0.1
	Wetland 12-2	III	<0.1
	Wetland 17-1	III/NA	<0.1

TABLE E-1

Summary of Temporary Construction Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a]
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ <0.1
	Wetland 12-1	II	+ 0.1
S 260th Station East Option	Wetland 12-1	II	+ 0.3
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.2
	Wetland 17-1	III/NA	- <0.1
Federal Way SR 99 Station Option			
	No change in impacts		

[a] Totals for each alternative rounded to the nearest 0.1 acre.

TABLE E-2
Summary of Temporary Construction Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
SR 99 Alternative			
	Wetland 11-1	III	0.1
	Wetland 12-1	II	0.1
	Wetland 12-2	III	0.1
	Wetland 12-3	IV	<0.1
	Wetland 13-1	IV	<0.1
	Wetland 15-1	II/II	<0.1
	Wetland 16-1	IV/III	0
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Kent/Des Moines Station Options			
Kent/Des Moines HC Campus Station Option	No change in impacts		
Kent/Des Moines HC from S 216th West Station Option	No change in impacts		
Kent/Des Moines SR 99 Median Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	No change in impacts		
S 260th Station Options			
S 260th West Station Option	No change in impacts		
S 260th Station East Option	Wetland 12-1	II	+ 0.3
	Wetland 12-2	III	- 0.1
	Wetland 12-3	IV	- <0.1
	Wetland 13-1	IV	- <0.1
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.1
	Wetland 12-2	III	- 0.1
	Wetland 12-3	IV	- <0.1
	Wetland 13-1	IV	- <0.1
	Wetland 16-1	IV/III	+ <0.1
Federal Way SR 99 Station Option			
	No change in impacts		

TABLE E-2
Summary of Temporary Construction Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
I-5 Alternative			
	Wetland 12-1	II	0.7
	Wetland 20-2	III	0.3
	Wetland 25-2	III/III	0.1
	Wetland 27-1	III/III	0.2
	Wetland 5-1	III/III	<0.1
Kent/Des Moines Station Options			
Kent/Des Moines At-Grade Station Option	Wetland 20-2	III	- 0.1
Kent/Des Moines SR 99 East Station Option	Wetland 20-2	III	- 0.3
Landfill Median Alignment Option			
	Wetland 20-2	III	- 0.1
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	No change in impacts		
SR 99 to I-5 Alternative			
	Wetland 12-1	II	0.7
	Wetland 25-2	III/III	0.1
	Wetland 27-1	III/III	0.2
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	No change in impacts		
I-5 to SR 99 Alternative			
	Wetland 11-1	III	0.1
	Wetland 12-1	II	0.1
	Wetland 12-2	III	0.1
	Wetland 12-3	IV	<0.1
	Wetland 13-1	IV	<0.1

TABLE E-2
Summary of Temporary Construction Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
	Wetland 15-1	II/II	<0.1
	Wetland 16-1	IV/III	0
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	- 0.1
S 260th Station East Option	Wetland 12-1	II	+ 0.3
	Wetland 12-2	III	- 0.1
	Wetland 12-3	IV	- <0.1
	Wetland 13-1	IV	- <0.1
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.1
	Wetland 12-2	III	- 0.1
	Wetland 12-3	IV	- <0.1
	Wetland 13-1	IV	- <0.1
	Wetland 16-1	IV/III	+ <0.1
Federal Way SR 99 Station Option			
	No change in impacts		

[a] Totals for each alternative rounded to the nearest 0.1 acre.

TABLE E-3
Summary of Long-Term Direct Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a,b]
SR 99 Alternative			
	Wetland 6-2	IV	0
	Wetland 6-3	IV	0
	Wetland 6-4	IV	0
	Wetland 11-1	III	0
	Wetland 12-1	II	<0.1
	Wetland 16-1	IV/III	0
	Wetland 17-1	III/NA	<0.1
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Kent/Des Moines Station Options			
Kent/Des Moines HC Campus Station Option	Wetland 6-2	IV	+ 0.2
	Wetland 6-4	IV	+ <0.1
Kent/Des Moines HC from S 216th West Station Option	Wetland 6-2	IV	+ 0.1
	Wetland 6-3	IV	+ <0.1
	Wetland 6-4	IV	+ <0.1
Kent/Des Moines SR 99 Median Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	No change in impacts		
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ 0.1
S 260th Station East Option	Wetland 12-1	II	+ 0.4
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.4
	Wetland 16-1	IV/III	+ 0.1
	Wetland 17-1	III/NA	- <0.1
Federal Way SR 99 Station Option			
	No change in impacts		
I-5 Alternative			
	Wetland 12-1	II	<0.1
	Wetland 20-2	III	0.6
	Wetland 25-2	III/III	0.1
	Wetland 25-2a	IV/NA	<0.1
	Wetland 27-1	III/III	0.3

TABLE E-3
Summary of Long-Term Direct Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a,b]
	Wetland 30-3	III/III	0
Kent/Des Moines Station Options			
Kent/Des Moines At-Grade Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	Wetland 20-2	III	- 0.6
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	Wetland 30-3	III/III	+ 0.1
SR 99 to I-5 Alternative			
	Wetland 12-1	II	<0.1
	Wetland 20-2	III	0
	Wetland 25-2	III/III	0.1
	Wetland 25-2a	IV/NA	<0.1
	Wetland 27-1	III/III	0.3
	Wetland 30-3	III/III	0
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	Wetland 20-2	III	+ 0.6
	Wetland 30-3	III/III	+ 0.1
I-5 to SR 99 Alternative			
	Wetland 11-1	III	0
	Wetland 12-1	II	<0.1
	Wetland 16-1	IV/III	0
	Wetland 17-1	III/NA	<0.1
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ 0.1
S 260th Station East Option	Wetland 12-1	II	+ 0.4

TABLE E-3

Summary of Long-Term Direct Impacts on Wetlands by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Area Affected (acres)[a,b]
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.4
	Wetland 16-1	IV/III	+ 0.1
	Wetland 17-1	III/NA	- <0.1
Federal Way SR 99 Station Option			
	No change in impacts		

[a] Totals for each alternative rounded to the nearest 0.1 acre.
[b] Long-term footprints would bisect Wetlands 16-1, 20-2, and 27-1. Because of the small size of these wetlands (under one acre) and likely substantial degradation of wetland functions, the entirety of these wetlands were included in impact calculations.

TABLE E-4
Summary of Long-Term Direct Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
SR 99 Alternative			
	Wetland 11-1	III	0.1
	Wetland 12-1	II	0.2
	Wetland 12-2	III	<0.1
	Wetland 12-3	IV	<0.1
	Wetland 6-2	IV	0
	Wetland 6-3	IV	0
	Wetland 6-4	IV	0
	Wetland 15-1	II/II	0
	Wetland 16-1	IV/III	0
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Kent/Des Moines Station Options			
Kent/Des Moines HC Campus Station Option	Wetland 6-2	IV	+ <0.1
	Wetland 6-3	IV	+ <0.1
	Wetland 6-4	IV	+ 0.1
Kent/Des Moines HC from S 216th West Station Option	Wetland 6-2	IV	+ 0.1
	Wetland 6-3	IV	+ <0.1
	Wetland 6-4	IV	+ 0.1
Kent/Des Moines SR 99 Median Station Option	No change in impacts		
Kent/Des Moines SR 99 East Station Option	No change in impacts		
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ 0.2
S 260th Station East Option	Wetland 12-1	II	+ 0.2
	Wetland 12-2	III	- <0.1
	Wetland 12-3	IV	- <0.1
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.3
	Wetland 12-2	III	- <0.1
	Wetland 12-3	IV	- <0.1
	Wetland 15-1	II/II	+ 0.1
	Wetland 16-1	IV/III	+ 0.1

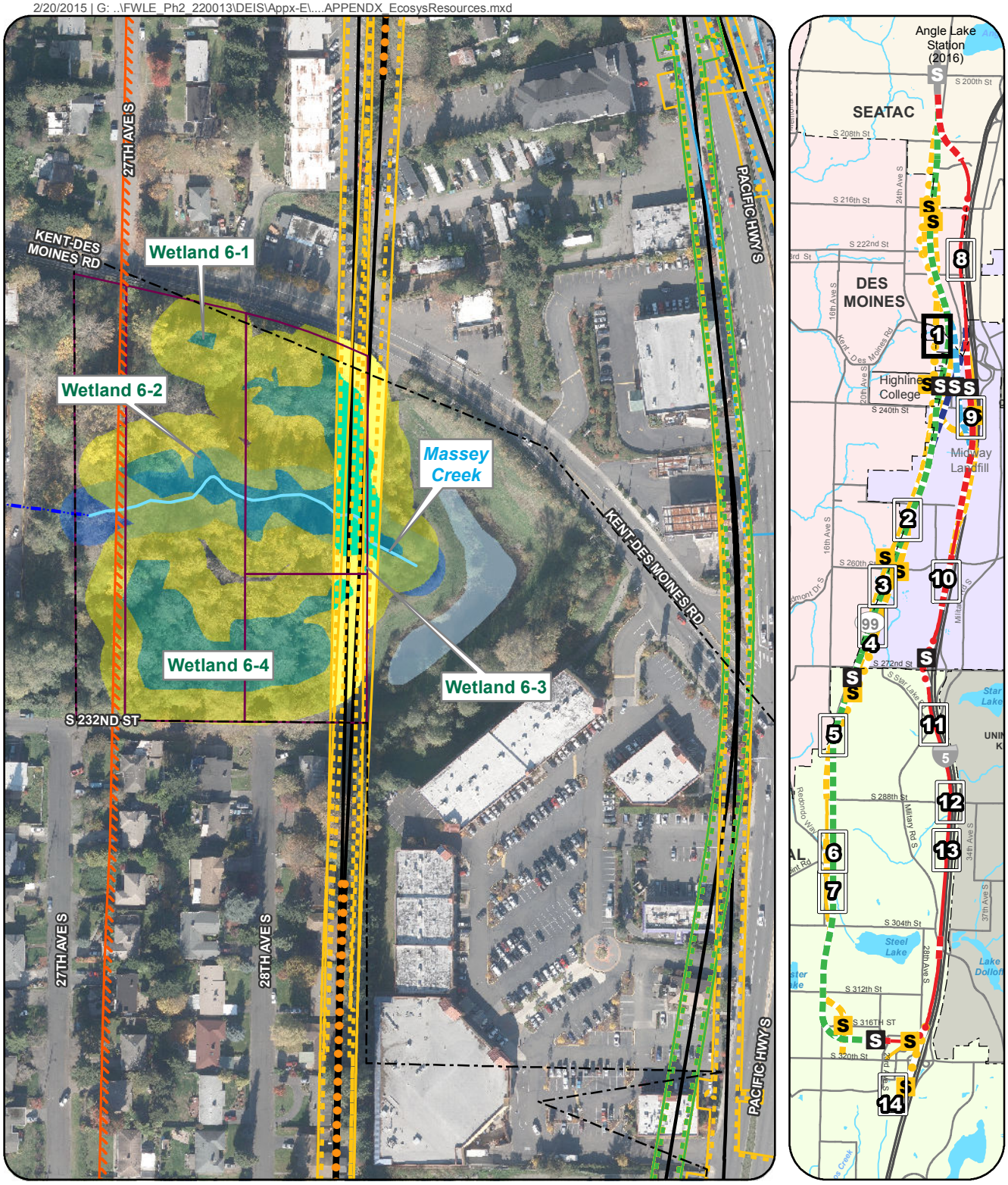
TABLE E-4
Summary of Long-Term Direct Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
Federal Way SR 99 Station Option			
	No change in impacts		
I-5 Alternative			
	Wetland 12-1	II	0.5
	Wetland 20-2	III	0.2
	Wetland 25-2	III/III	<0.1
	Wetland 27-1	III/III	0.3
	Wetland 30-3	III/III	0
Kent/Des Moines Station Options			
Kent/Des Moines At-Grade Station Option	Wetland 20-2	III	+ 1.0
Kent/Des Moines SR 99 East Station Option	Wetland 20-2	III	- 0.2
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	Wetland 30-3	III/III	+ 0.2
SR 99 to I-5 Alternative			
	Wetland 12-1	II	0.5
	Wetland 20-2	III	0
	Wetland 25-2	III/III	<0.1
	Wetland 27-1	III/III	0.3
	Wetland 30-3	III/III	0
S 216th Station Options			
S 216th West Station Option	No change in impacts		
S 216th East Station Option	No change in impacts		
Landfill Median Alignment Option			
	No change in impacts		
Federal Way City Center Station Options			
Federal Way I-5 Station Option	No change in impacts		
Federal Way S 320th Park-and-Ride Station Option	Wetland 20-2	III	+ 0.2
	Wetland 30-3	III/III	+ 0.2

TABLE E-4
Summary of Long-Term Direct Impacts on Wetland Buffers by FWLE Alternative and Option

Alternative	Wetland Name	Wetland Category	Wetland Buffer Area Affected (acres)[a]
I-5 to SR 99 Alternative			
	Wetland 11-1	III	0.1
	Wetland 12-1	II	0.2
	Wetland 12-2	III	<0.1
	Wetland 12-3	IV	<0.1
	Wetland 15-1	II/II	0
	Wetland 16-1	IV/III	0
S 260th Station Options			
S 260th West Station Option	Wetland 11-1	III	+ 0.2
S 260th Station East Option	Wetland 12-1	II	+ 0.2
	Wetland 12-2	III	- <0.1
	Wetland 12-3	IV	- <0.1
S 272nd Redondo Trench Station Option			
	Wetland 12-1	II	+ 0.3
	Wetland 12-2	III	- <0.1
	Wetland 12-3	IV	- <0.1
	Wetland 15-1	II/II	+ 0.1
	Wetland 16-1	IV/III	+ 0.1
Federal Way SR 99 Station Option			
	No change in impacts		

[a] Totals for each alternative rounded to the nearest 0.1 acre.



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

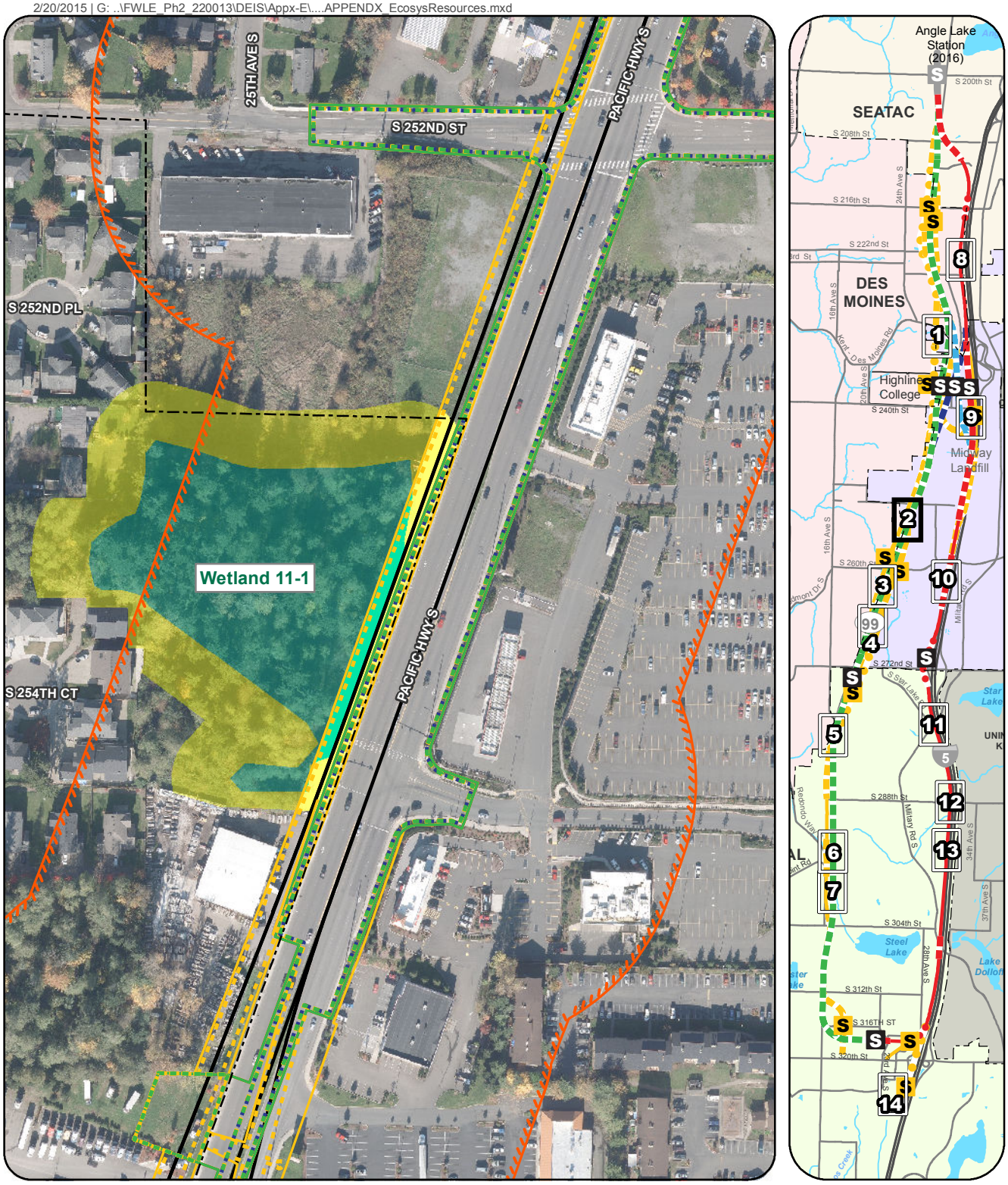
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 1 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

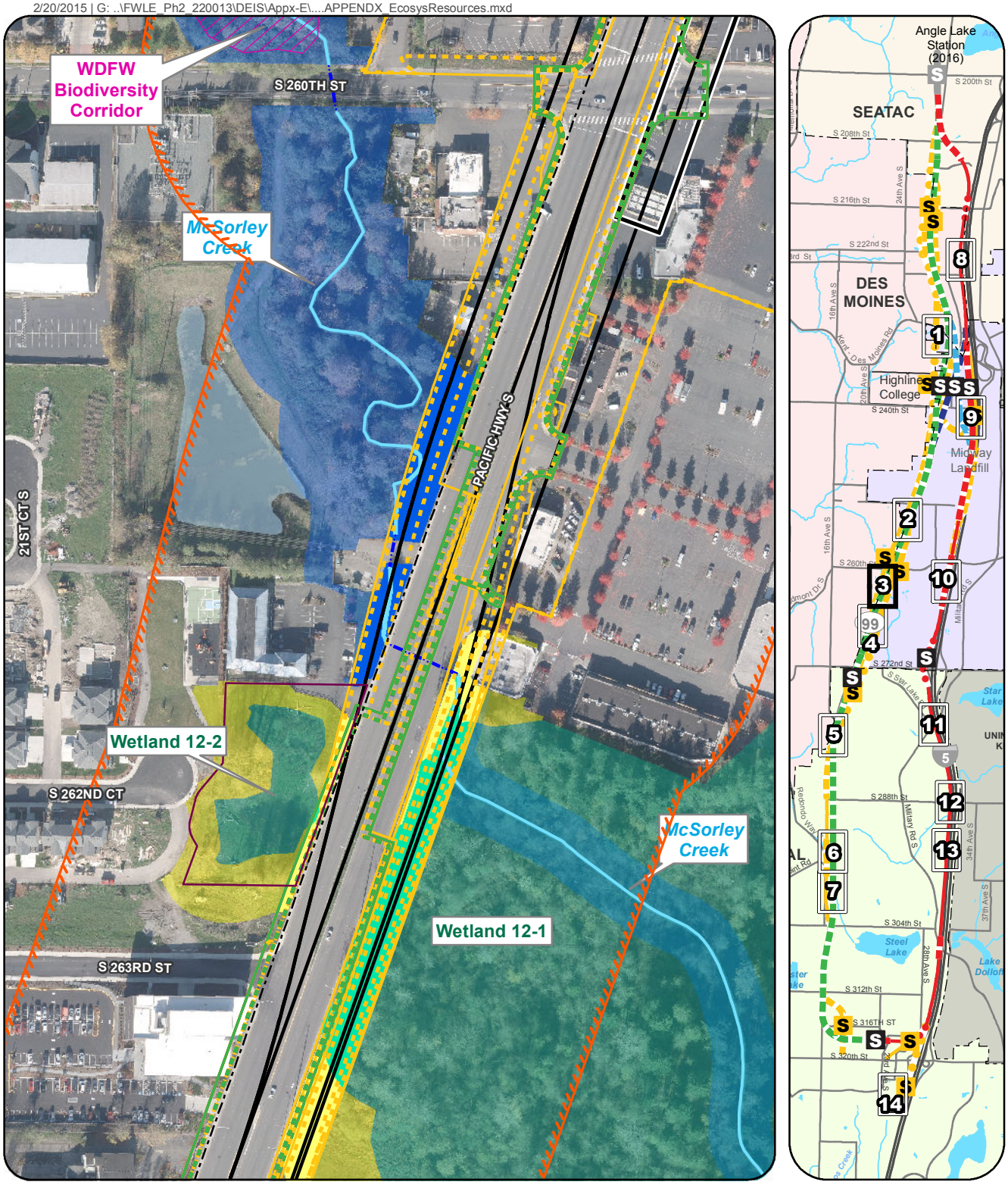
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 2 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

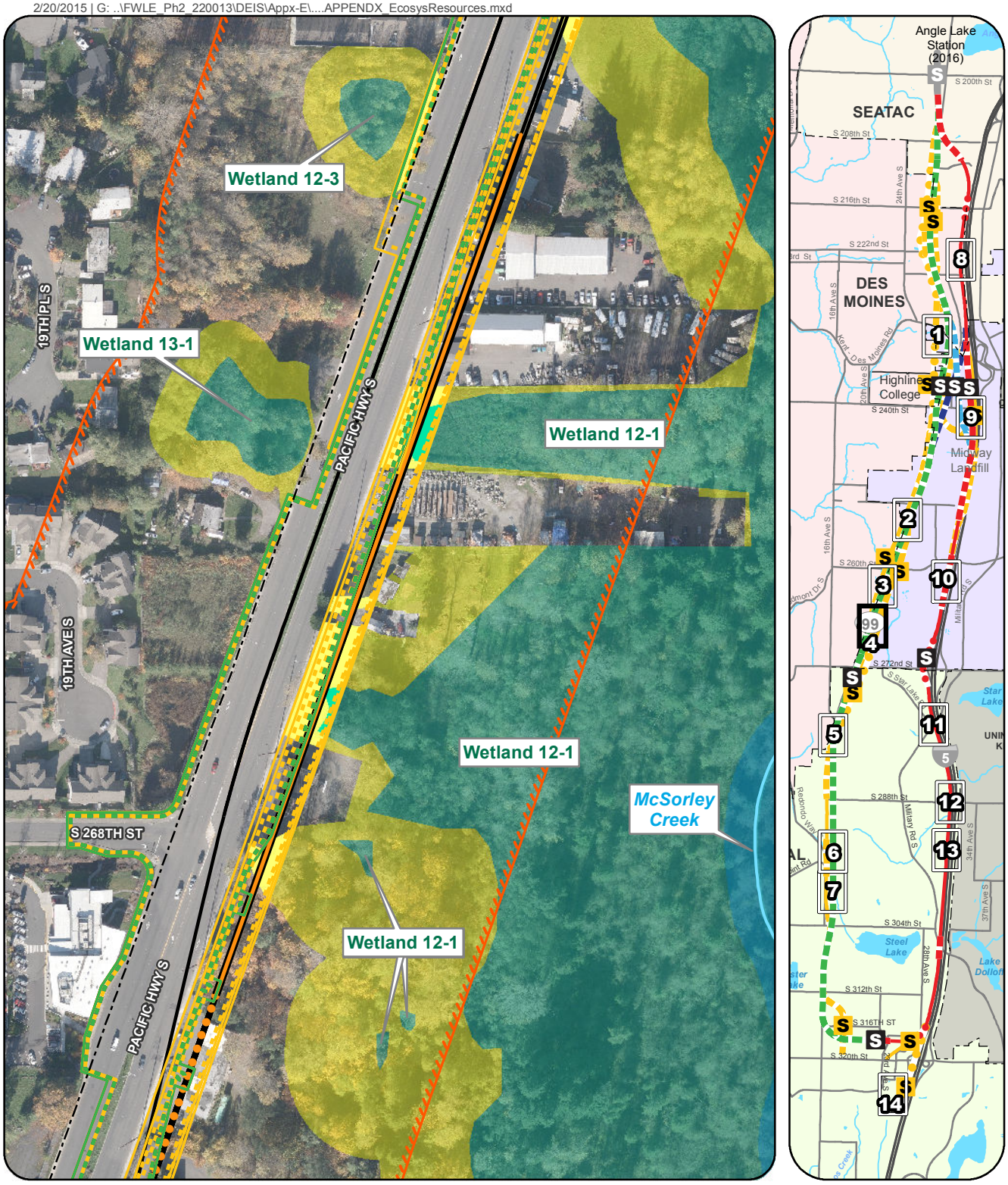
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 3 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

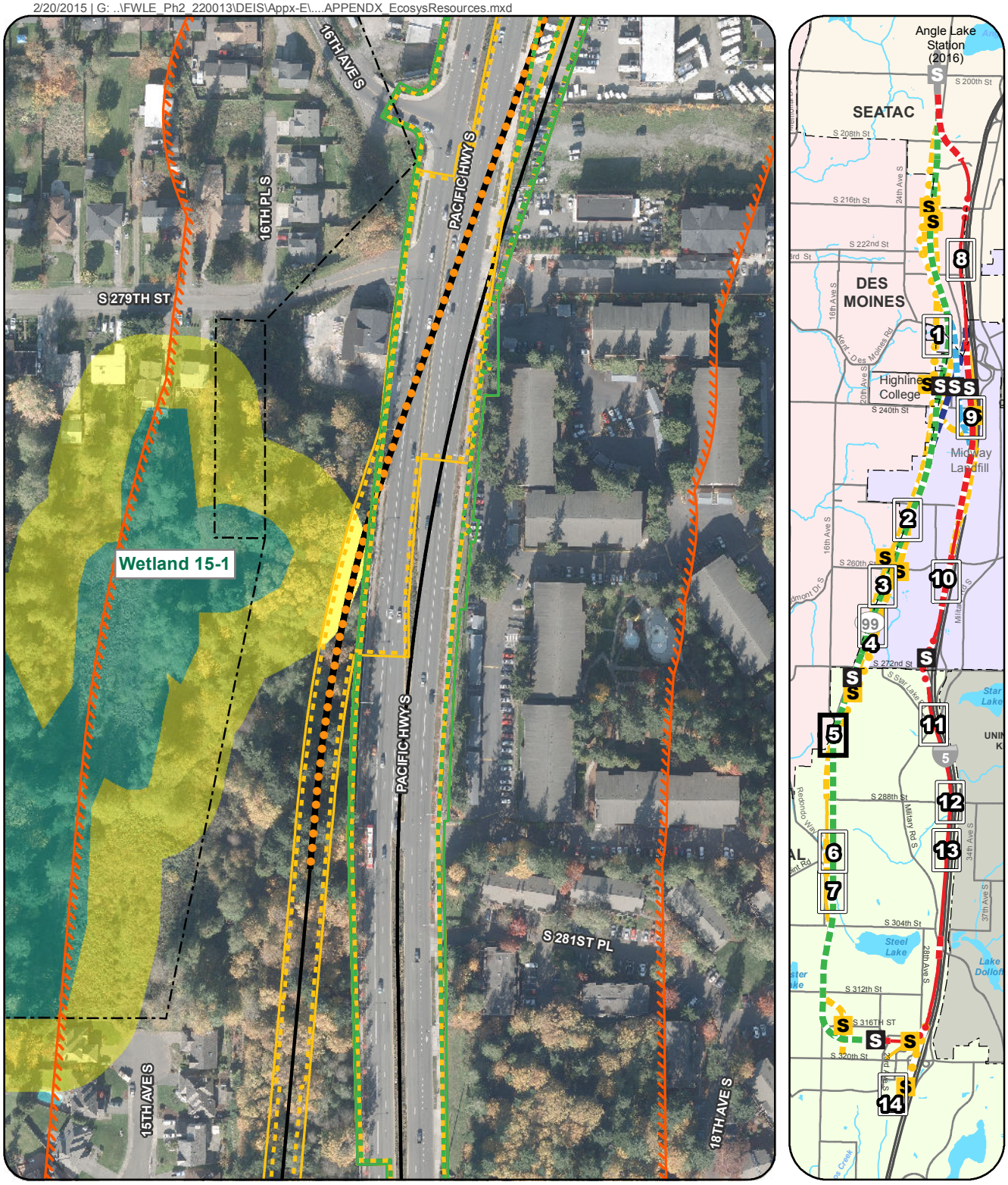
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 4 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

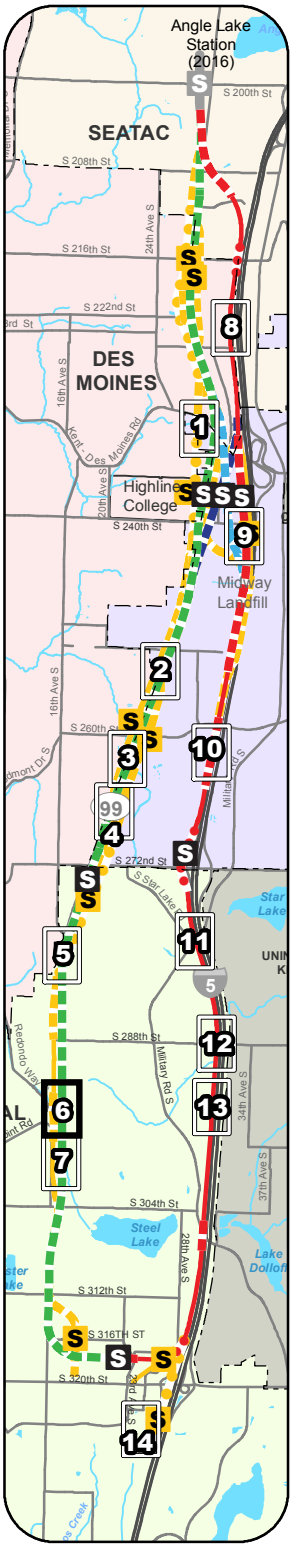
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 5 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

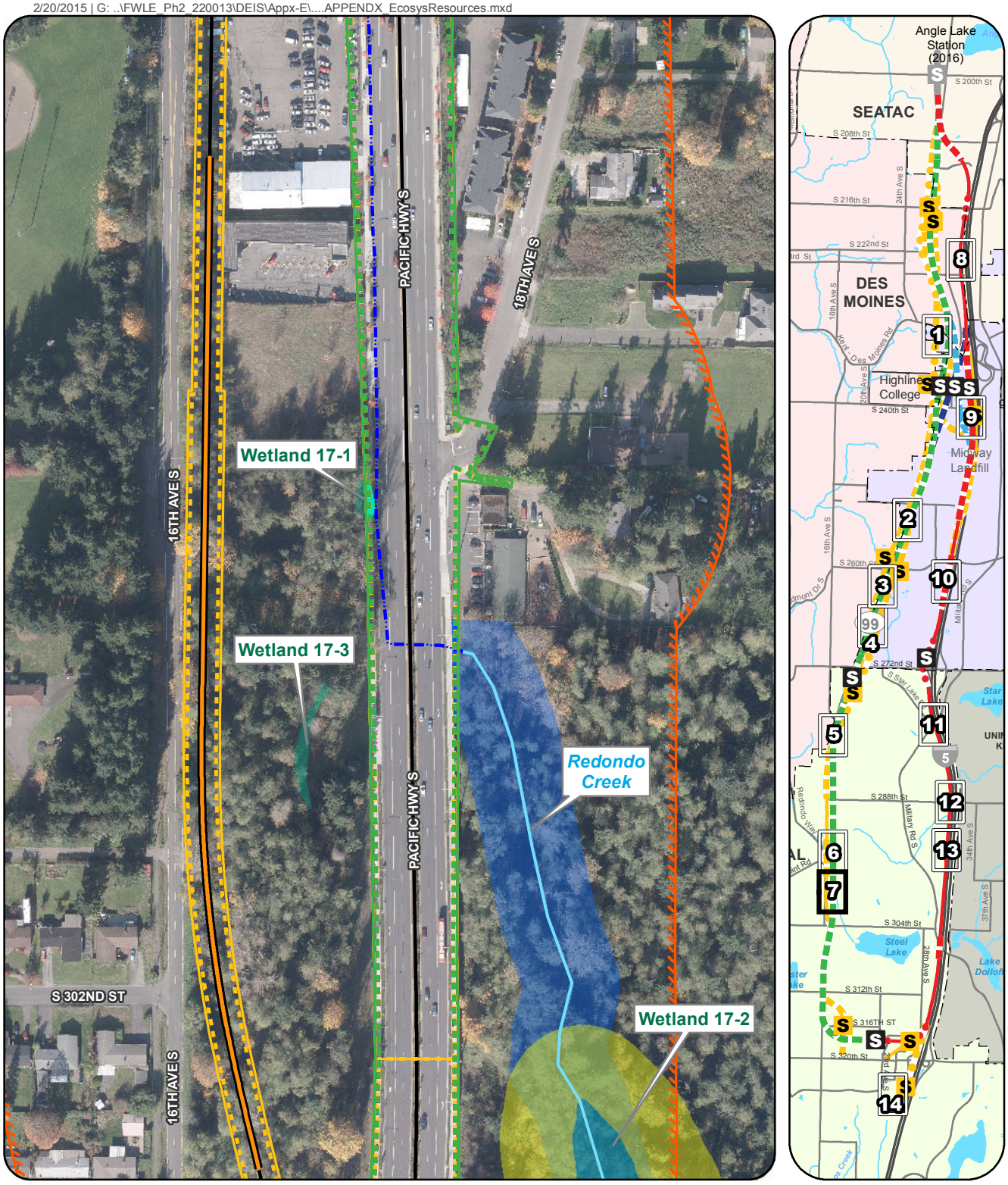
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 6 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

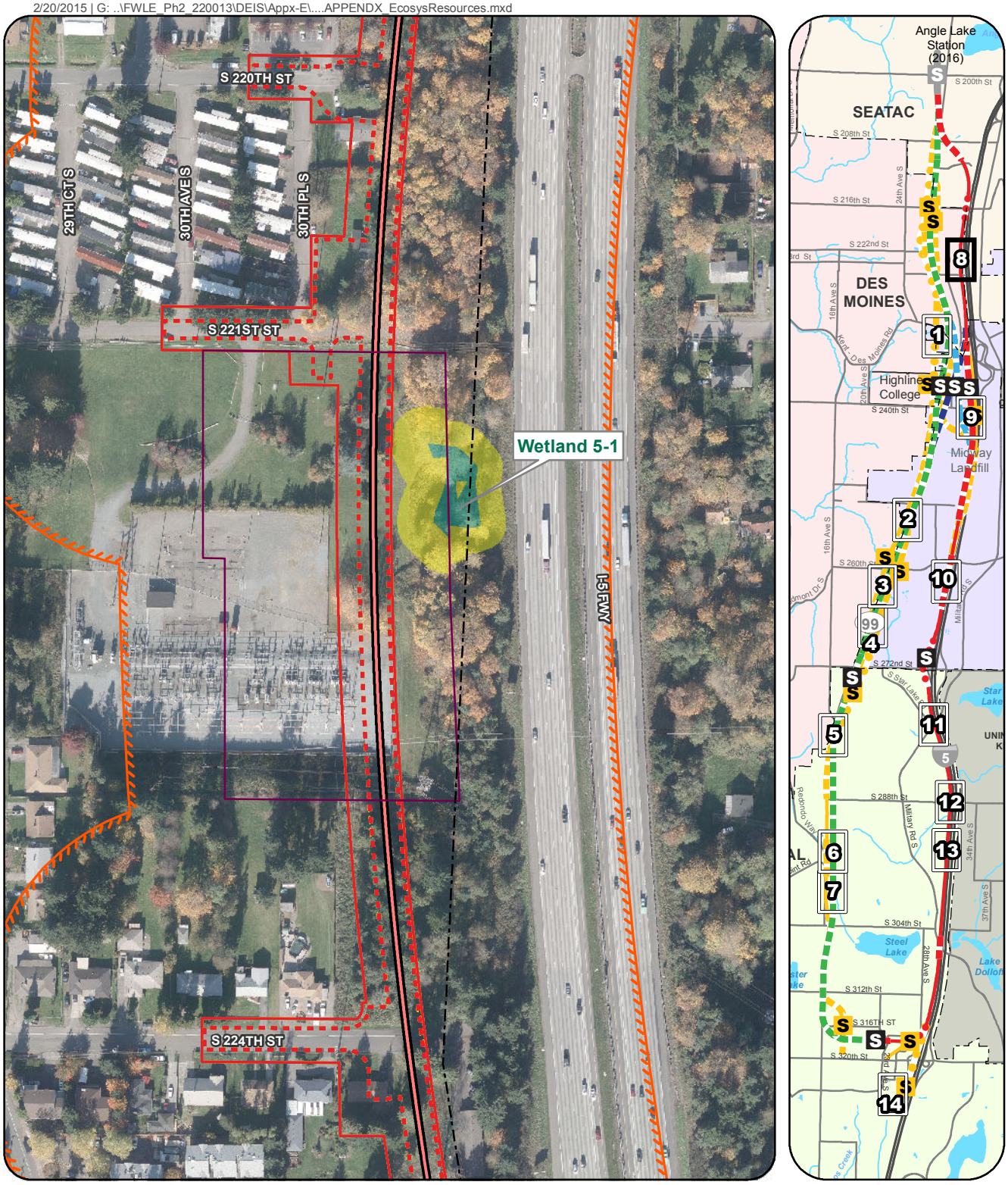
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 7 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station	Construction Footprints	Permanent Footprint (colors vary by alternative / option)	Piped Stream
Elevated Centerline	I-5	City Boundary	Stream
At-Grade I-5 Centerline	SR 99	Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014	Stream Buffer
Trench I-5 Centerline	I-5 to SR 99	300' Wetland Study Area	Wetland
At-Grade Option Centerline	SR 99 to I-5		Wetland Buffer
Trench Option Centerline	Options		Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

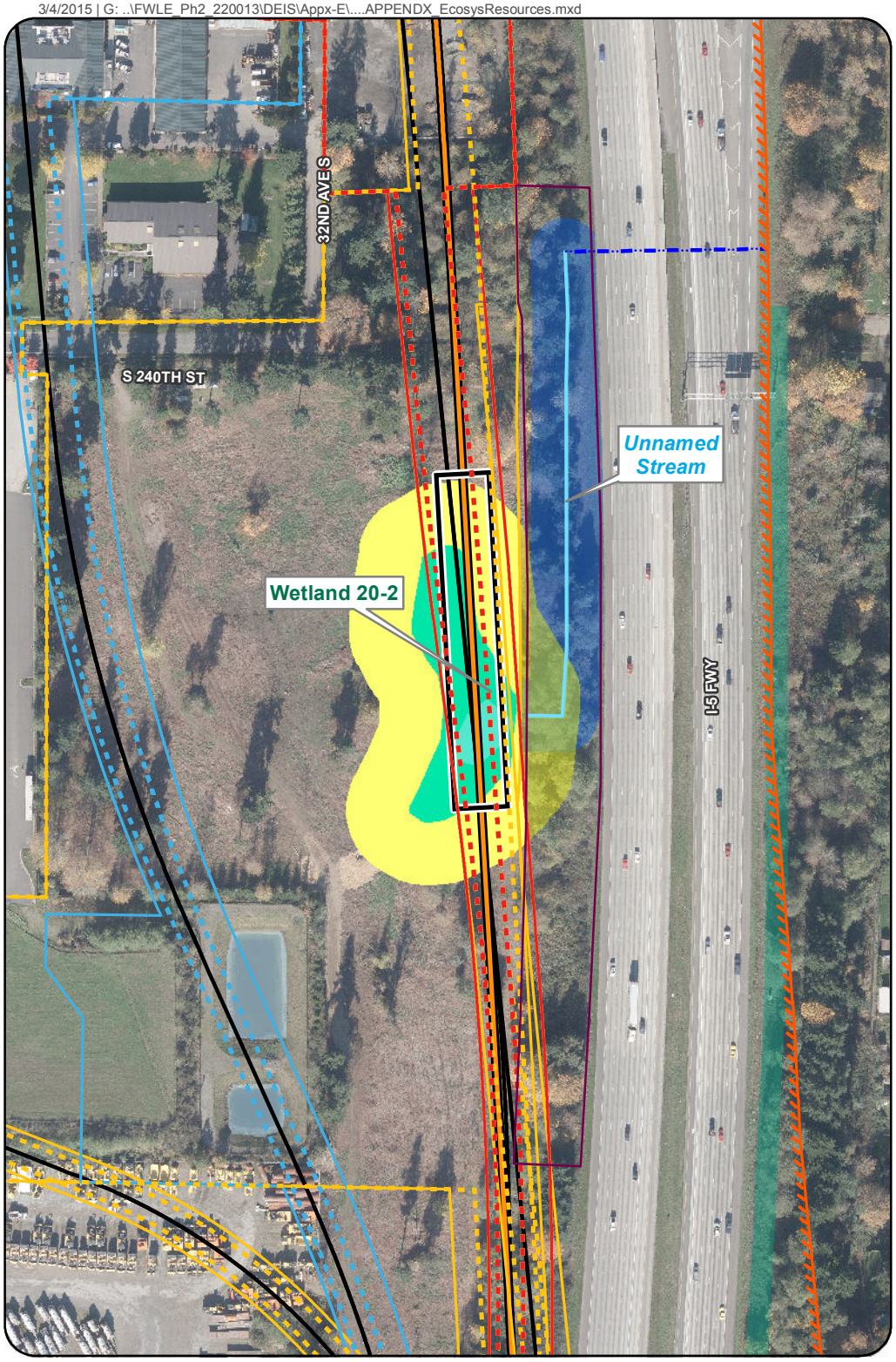
0 100 200 300 Feet

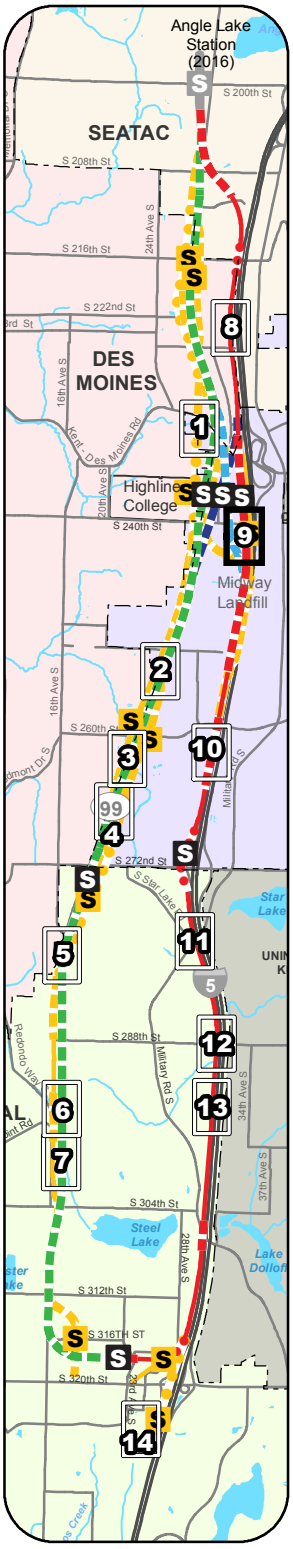
Appendix E: 8 of 14

Ecosystems Resources

Wetland and Stream Impacts within the Study Area

Federal Way Link Extension





Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

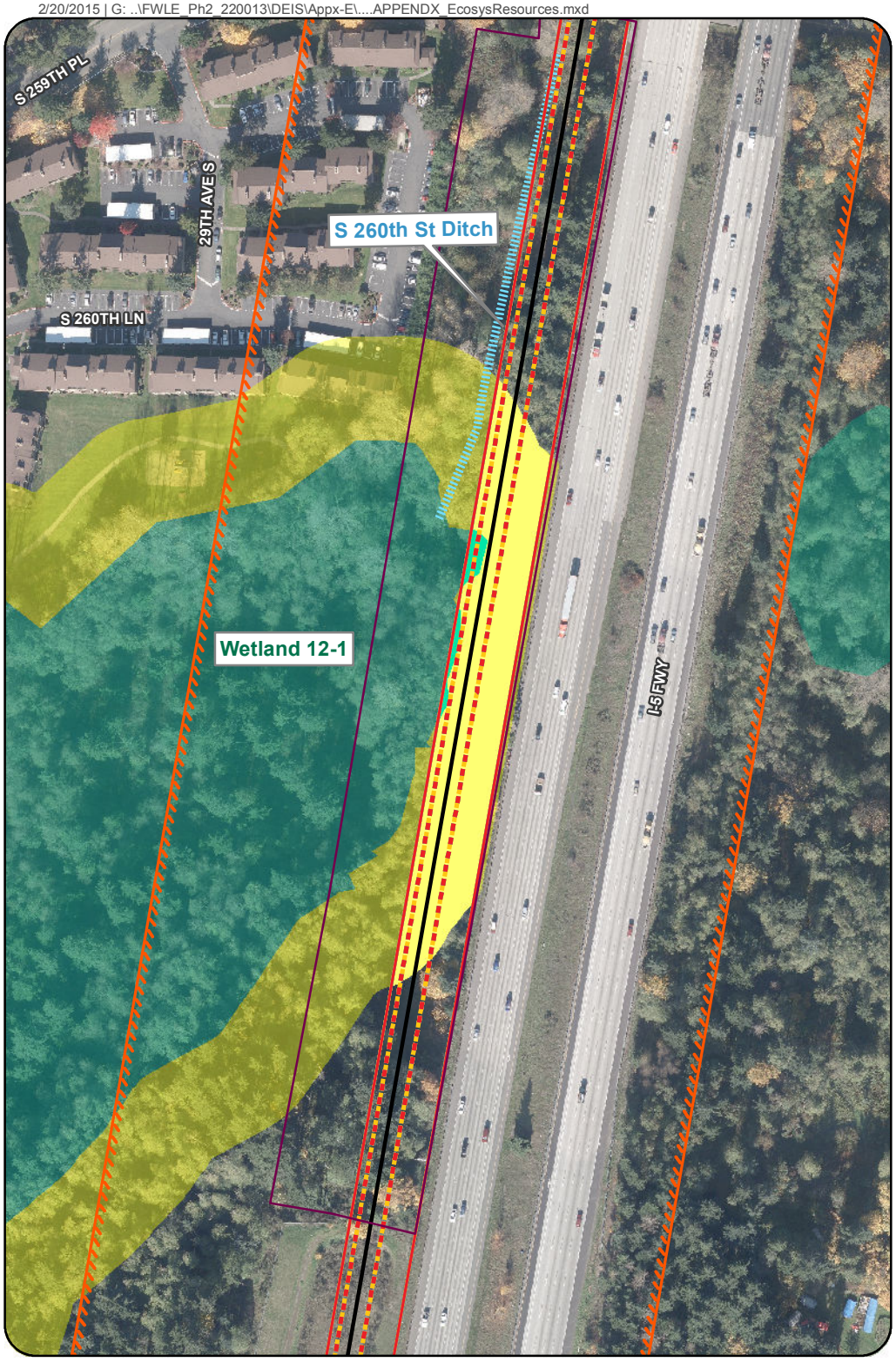
Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

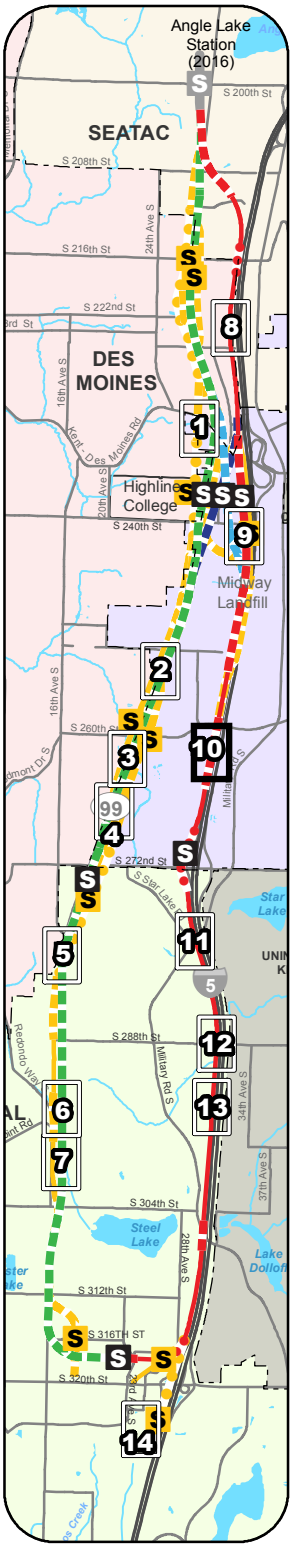
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N
0 100 200 300 Feet

Appendix E: 9 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension





Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

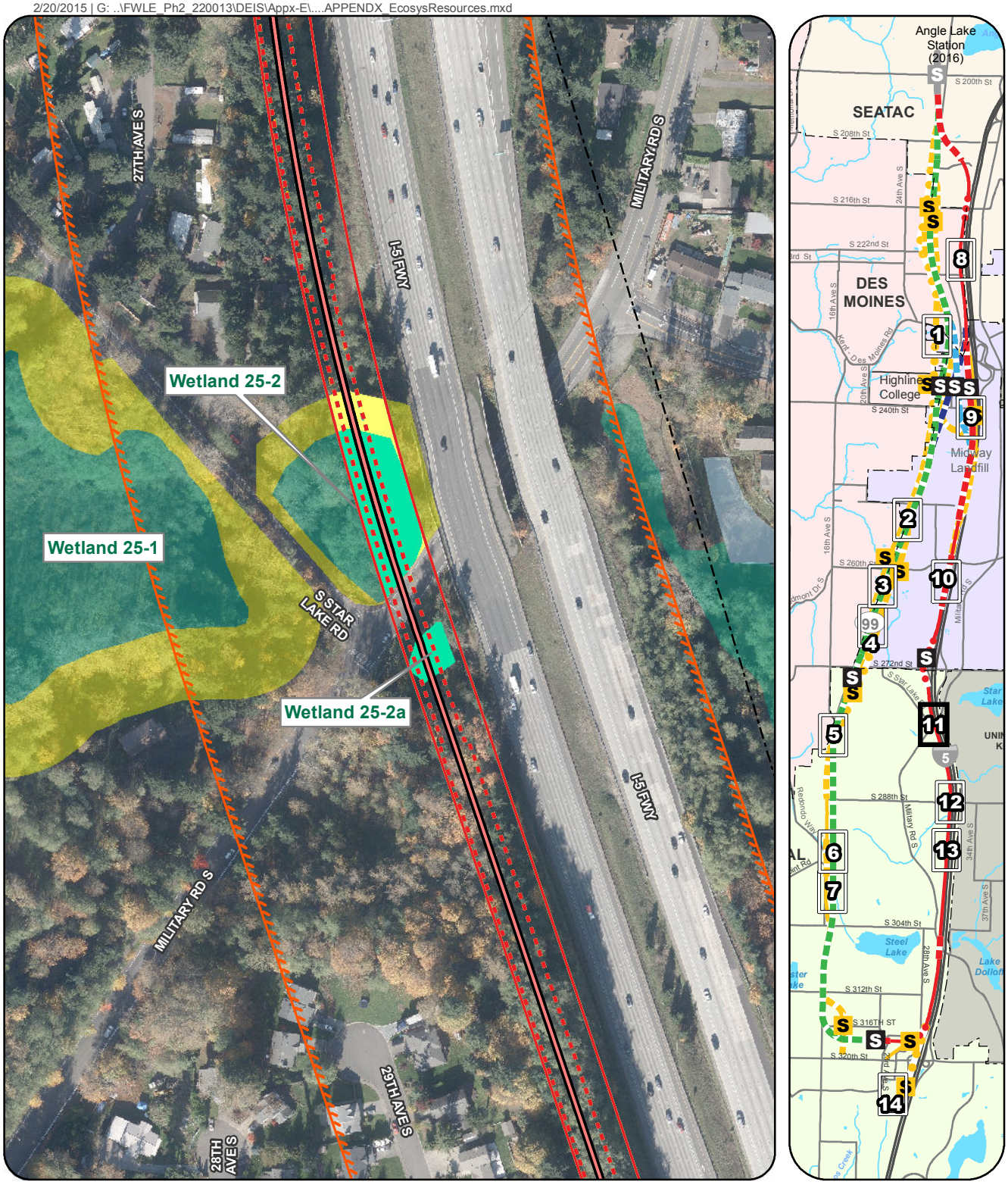
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 10 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

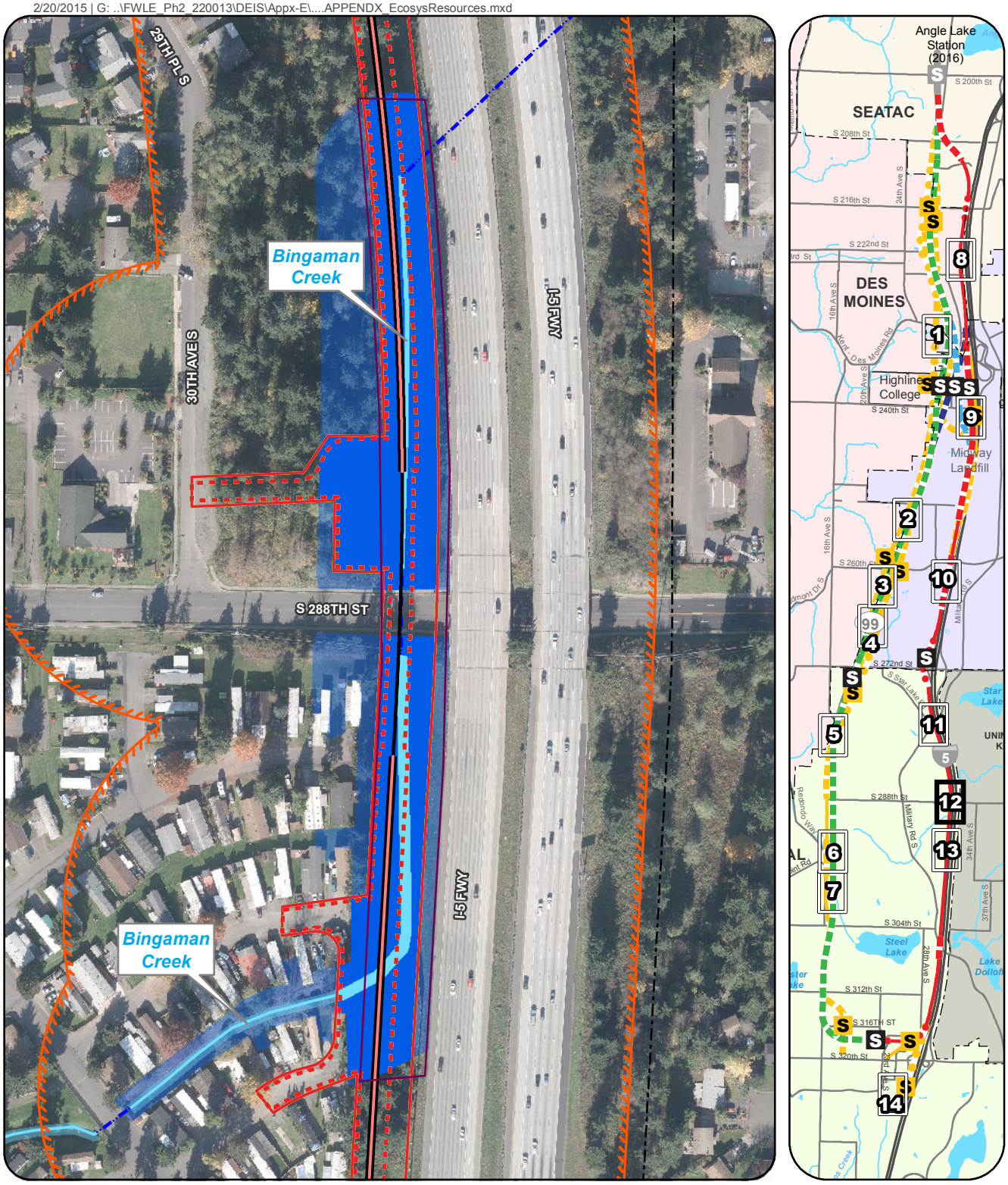
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 11 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

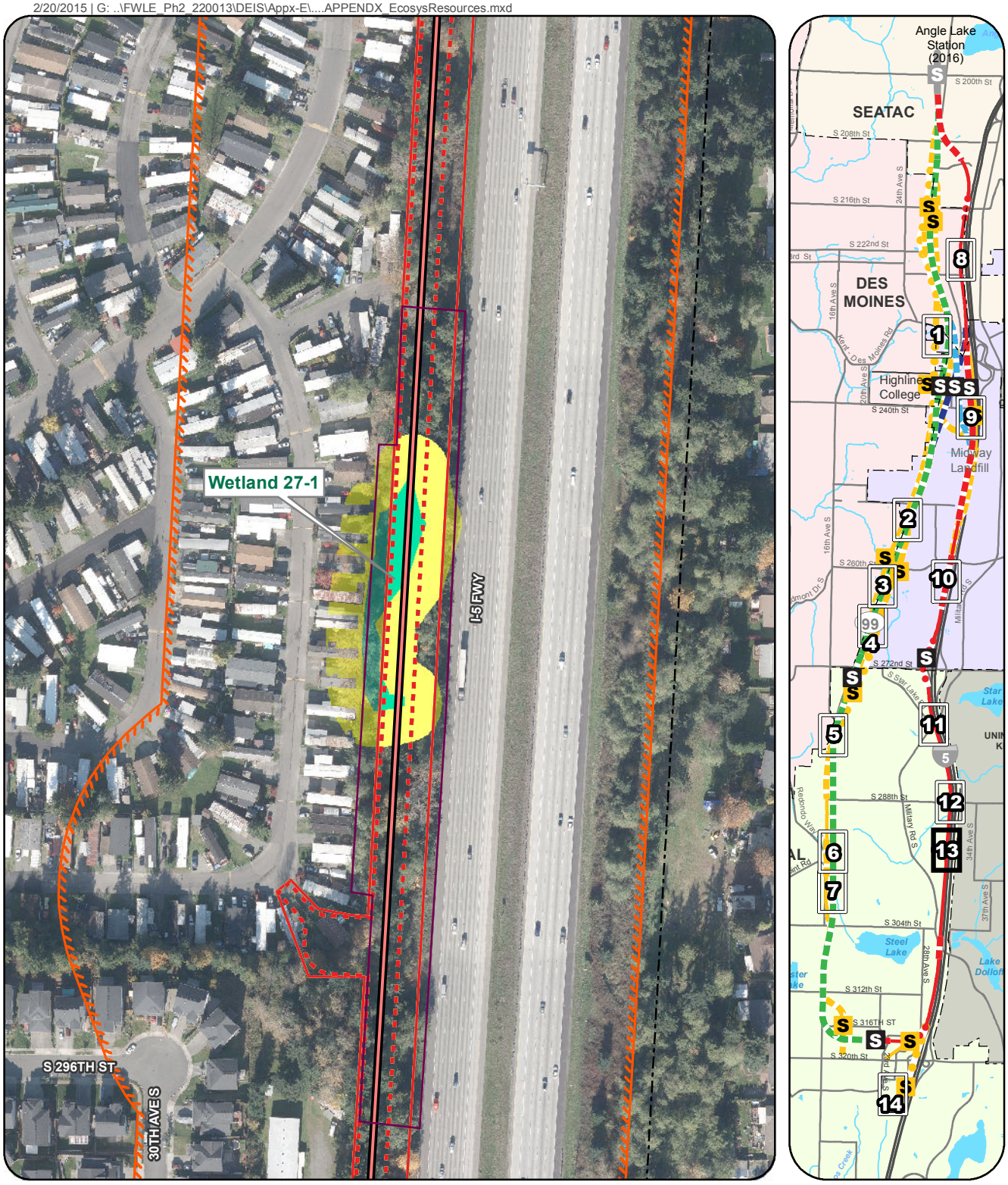
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 12 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension



Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

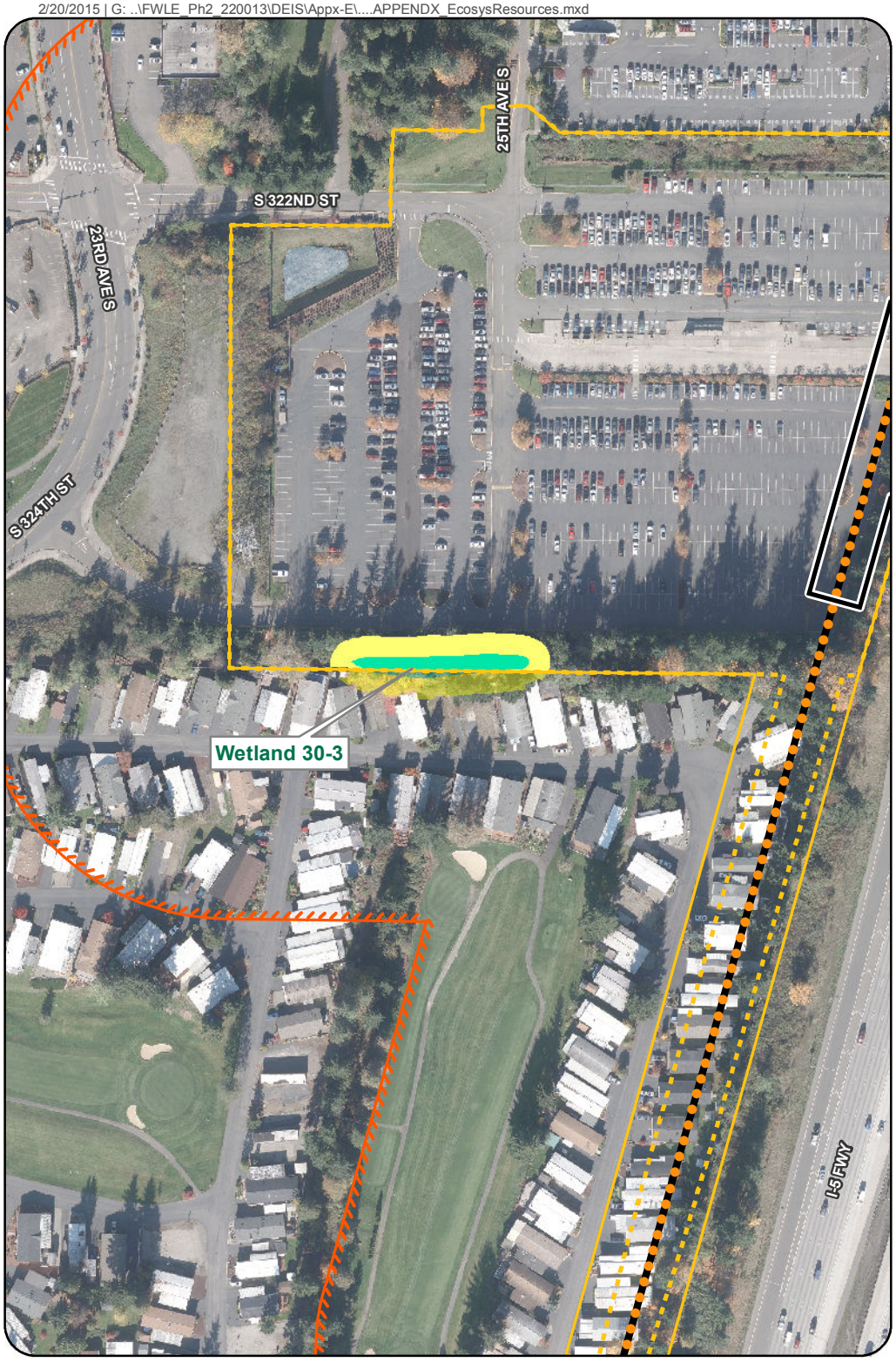
Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

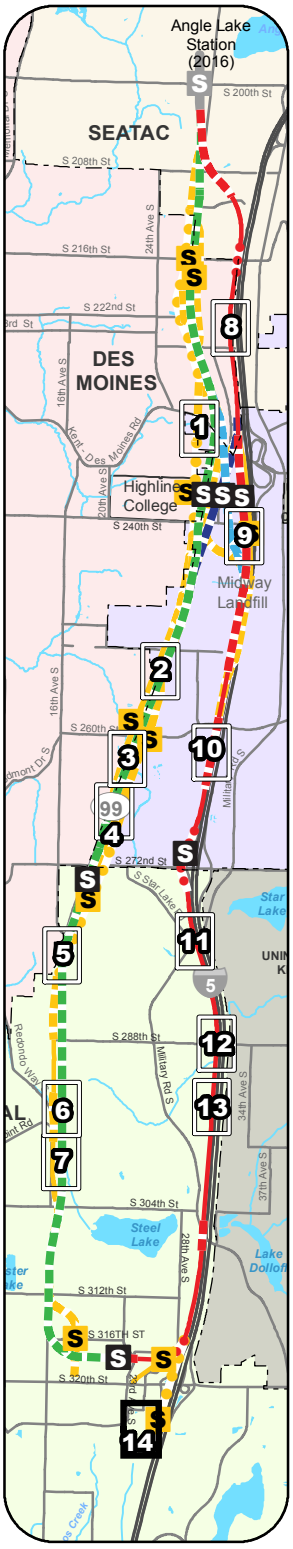
Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 13 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension





Station
Elevated Centerline
At-Grade I-5 Centerline
Trench I-5 Centerline
At-Grade Option Centerline
Trench Option Centerline

Construction Footprints
I-5
SR 99
I-5 to SR 99
SR 99 to I-5
Options

Permanent Footprint (colors vary by alternative / option)
City Boundary
Parcels / ROW Accessed During Field Reconnaissance Survey 2013-2014
300' Wetland Study Area

Piped Stream
Stream
Stream Buffer
Wetland
Wetland Buffer
Waterbody

Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, AeroMetric (2013). WDFW (2014).

N

0 100 200 300 Feet

Appendix E: 14 of 14
Ecosystems Resources
Wetland and Stream Impacts within the Study Area
Federal Way Link Extension

Appendix F

Best Management Practices for Ecosystems Resources

This page intentionally left blank.

Appendix F

Best Management Practices for Ecosystems Resources

The following list of measures is a compilation of best management practices (BMPs) that can be used to avoid and minimize short- and long-term impacts on ecosystem resources during design, construction, and post-construction activities for the Federal Way Link Extension (FWLE). These BMPs are either required by federal, state, or local agencies to obtain permits necessary for the project, or they may be required in order to comply with typical permit conditions. They are based on Sound Transit's knowledge of permit requirements and experience with conducting environmental compliance and permitting for numerous other projects in the Puget Sound Region.

F.1 Design and Operation BMPs

F.1.1 Wetlands and Streams

Sound Transit would avoid and minimize adverse long-term effects of the FWLE on wetlands through design to the greatest extent practicable. Design aspects that would be incorporated into the project include elevated guideways, siting support columns and other elevated guideway features to span and avoid direct impacts on wetlands, and using retaining walls to reduce the footprint of at-grade guideway sections, thus reducing the extent of fill in wetlands.

Sound Transit would also design permanent stormwater treatment facilities and flow-control measures to minimize impacts on stream water quality and flow. The proposed stormwater management for the FWLE follows the Sound Transit *Link Design Criteria Manual* (Sound Transit, 2012), which requires stormwater design for Sound Transit projects to conform to the requirements of the local jurisdictions.

Mitigation for unavoidable impacts on streams and stream buffers that are protected under federal, state, and local regulations would also be provided in accordance with requirements. With the exception of Bingaman Creek, the project design would avoid impacts on existing streams, but some unavoidable impacts on stream riparian areas would be mitigated by improving stream habitat and riparian function by replanting affected areas with native vegetation.

F.1.2 Upland Vegetation and Wildlife Resources

Project effects on vegetation, wildlife, and wildlife habitat would be minimized to the greatest extent practicable by minimizing the footprint of light rail alignments through large blocks of forests and connected riparian corridors.

F.2 Construction-Related BMPs

Sound Transit would implement construction BMPs that would apply to all work in or around valued habitats and sensitive areas. Prior to construction, Sound Transit would mark work limits with

perimeter fencing and signage to prevent unintended impacts on ecosystems designated for protection (for example, riparian vegetation, wetlands, woodlands and other sensitive sites).

Sound Transit would implement a Stormwater Pollution Prevention Plan (SWPPP) and develop a temporary erosion and sediment control plan to assure that turbidity plumes and pollutants from equipment and runoff would not enter streams and wetlands. If discharge of treated construction or process water to a sanitary sewer were proposed, approval would be obtained from the King County Industrial Waste Division and the local jurisdiction. For construction within and over streams or other water bodies, a Hydraulic Project Approval would be obtained from the Washington Department of Fish and Wildlife before work began. Through compliance with these requirements, an approved construction SWPPP would be developed and implemented for the project. The SWPPP would serve as the overall construction stormwater mitigation plan by describing overall procedural and structural pollution prevention and flow control BMPs, including location, size, maintenance requirements and monitoring. In addition, the SWPPP would include each of the following plans:

- Temporary Erosion and Sediment Control Plan – This plan would outline the design and construction specifications for BMPs to be used to identify, reduce, eliminate or prevent sediment and erosion problems.
- Spill Prevention, Control, and Countermeasures Plan – This plan would outline requirements for and implementation of spill prevention, inspection protocols, equipment, material containment measures, and spill response procedures.
- Concrete Containment and Disposal Plan – This plan would outline the management, containment, and disposal of concrete debris, slurry, and dust, and would discuss BMPs that would be used to reduce high pH.
- Dewatering Plan – This plan would outline procedures for pumping groundwater away from the construction area and for storing (as necessary), testing, treating (as necessary), and discharging or disposing of the dewatering water.

Seasonal work restrictions (i.e., work windows) would apply to work conducted below the ordinary high water mark of certain fish-bearing streams and for certain clearing activities during the migratory bird nesting season. If any culverts needed to be installed or extended on fish-bearing or potentially fish-bearing streams, design and construction methods would comply with Washington Administrative Code (WAC) 220-110-070 regarding fish passage. Any stream beds and stream banks affected by construction would be restored after in-water work.

Potential BMPs include the following:

- Minimizing the amount of cleared area at a construction site
- Washing truck tires at construction entrances, as necessary
- Constructing silt fences downslope from exposed soils
- Protecting catch basins from sediment

- Containing and controlling concrete and hazardous materials onsite
- Installing temporary ditches to route runoff around or through construction sites, with periodic straw bales or rock check dams to slow and settle runoff
- Using straw wattles to reduce the length of unbroken slopes and minimize runoff concentration
- Using temporary erosion-control blankets or mulch on exposed steep slopes to minimize erosion before vegetation is established
- Constructing temporary sedimentation ponds to remove solids from concentrated runoff, and dewatering them before they are discharged
- Conducting vehicle fueling and maintenance activities no closer than 100 feet from a water body or ditch

Examples of avoidance and minimization measures that would be implemented before and during project construction include minimizing vegetation clearing, restoring temporarily affected areas, preparing and implementing a revegetation plan, and preventing injury to migratory birds. In accordance with the Migratory Bird Treaty Act, Sound Transit would consult with the U.S. Fish and Wildlife Service on measures to conserve migratory birds and their nests. Sound Transit would also implement a weed control plan to minimize the risk of introducing and spreading noxious and invasive species, including restoring temporarily disturbed areas immediately following construction.

F.3 References

Sound Transit. 2012. *Link Design Criteria Manual.* Revision 1. February.

This page intentionally left blank.