



J. S. Jones and Associates, Inc.

**Critical Area Study
and
Stream Buffer Functional Assessment
of the**

Valentin Property
4346 E. Mercer Island Way
Mercer Island, WA 98046

*Tax Parcel Numbers: 004610-0150, 004610-0151, and 004610-0159
Southeast Quarter of the Northeast Quarter of Section 18,
Township 24N, Range 5E*

Prepared for:
Johan & Helena Valentin
4346 E. Mercer Island Way
Mercer Island, WA 98046
Johan.valentin@gmail.com
1-214-228-0536

Dated:
February 21, 2017

Prepared by:
Jeffery S. Jones, Professional Wetland Scientist

P. O. B O X 1 9 0 8
I S S A Q U A H, W A S H I N G T O N 9 8 0 2 7
2 5 3 - 9 0 5 - 5 7 3 6

Table of Contents

1.0 Project Description.....	1
2.0 Parcel Identification Nos. & Abbreviated Legal Descriptions	1
3.0 Methodology	2
4.0 General Site Description	2
5.0 Vegetation	3
5.1 Vegetation Methodology	3
5.2 Vegetation Results	3
6.0 Hydrology	4
6.1 Hydrology Methodology.....	4
6.2 Hydrology Results	4
7.0 Soils.....	5
7.1 Soils Methodology	5
7.2 Soil Series	5
7.3 Soils Results.....	5
8.0 Wetland Determination, Rating and Buffer	6
9.0 Stream Determination, Rating, and Buffer	6
10.0 Proximity to Wildlife Habitat Conservation Areas and Priority Species	7
11.0 Impacts to Wetland and Stream Buffers	7
12.0 Buffer Reduction Criteria and Mitigation Measures	7
13.0 Wetland and Stream Buffer Functions.....	8
14.0 Conclusion	8
15.0 Limitations	8
16.0 References.....	9

Tables

1.0 Plant Indicator Status	3
----------------------------------	---

Attachments

Vicinity Map
Soils Map
Figure 3: Mercer Island Stream Inventory Map
Wetland Map
National Wetland Inventory Map
DNR FPARS Map
Priority Habitats and Species Map
Wetland Routine Data Sheets
Wetland A Rating Form
Site Survey Map prepared by WA State Licensed Land Surveyor
Photos

1.0 Project Description

The applicant proposes to replace the existing concrete pipeline with a pipe of adequate capacity for the existing stormwater runoff, and to construct a single-family residence on parcel 004610-0150. Parcel 0150 is within the shoreline of Lake Washington. The existing single-family residence and detached garage will not be modified. The applicants are the owner of the subject properties.

This Critical Area Report has been prepared in accordance with Title 19 of the Mercer Island City Code (MICC) for wetlands, watercourses, and wildlife habitat conservation areas. Shorelines and geological hazard areas are not addresses in this report. A mitigation plan will be submitted as a separate document. The temporary erosion and sediment control plan (TESCP) is not part of this critical area study.

2.0 Parcel Identification Nos. & Abbreviated Legal Descriptions

The tax parcel numbers are 004610-0150, 004610-0151, and 004610-0159. The subject study area is located in the northeast quarter Section 18, Township 24 North, Range 5 East, of the Willamette Meridian. The parcel locations are shown on Figure 1. The private paved access road, off of East Mercer Way, is unnamed.

The subject properties are legally described as follows:

004610-0150

ADAMS LAKE WASHINGTON TRS POR OF N 20 FT OF 3 & S 55 FT OF 2 ELY OF TR OF LAND DESC IN CONT RECD 9/10/49 IN VOL 2873 OF DEEDS PG 423 & 2ND C SH LDS ADJ

004610-0151

ADAMS LAKE WASHINGTON TRS POR WLY OF LN BEG AT NW COR OF 2 TH E 1239.90 FT TH S 80 DEG 14 MIN 00 SEC E 465.90 FT TH S 16 DEG 58 MIN 00 SEC W 15.11 FT TH S 80 DEG 14 MIN 00 SEC E 42.54 FT TH ON CURVE TO RT RAD 36.15 FT DIST OF 31.78 FT TH ON CURVE TO LFT RAD 38 FT DIST OF 53.86 FT WH IS SLY LN OF TURN AROUND TO TPOB TH S 36 DEG 48 MIN 30 SEC E 65.05 FT TH S 14 DEG 51 MIN 30 SEC E 36.77 FT TH S 08 DEG 30 MIN 00 SEC W 46.75 FT TH S 39 DEG 38 MIN 00 SEC W & ELY OF LN BEG AT PT ON SLY MGN OF TURN AROUND S 10 DEG 53 MIN 34 SEC W 38 FT FR CEN OF SD TURN AROUND TH S 36 DEG 52 MIN 13 SEC E 72.74 FT TH S 14 DEG 55 MIN 13 SEC E 38.66 FT TH S 01 DEG 14 MIN 23 SEC W 50.01 FT TO ELY LN FIRST DESC & SLY OF SLY LN OF TURN AROUND

004610-0159

ADAMS LAKE WASHINGTON TRS POR 2-3 BEG AT NW COR OF 2 TH E 1239.90 FT TH S 80 DEG 14 MIN 00 SEC E 465.90 FT TH S 16 DEG 58 MIN 00 SEC W 15.11 FT TO TPOB TH S 16 DEG 48 MIN 00 SEC W 68.39 FT TH S 37 DEG 24 MIN 00 SEC W 67.65 FT TH S 43 DEG 29 MIN 00 SEC E 156.48 FT TH N 80 DEG 15 MIN 30 SEC E 67.75 FT TH N 39 DEG 38 MIN 00 SEC E 66.30 FT TH N 08 DEG 30 MIN 00 SEC E 46.75 FT TH N 14 DEG 51 MIN 30 SEC W 36.77 FT TH N 36 DEG 48 MIN 30 SEC W 65.05 FT TH WLY RAD 38 FT THRU 81 DEG 12 MIN 40 SEC OF ARC 53.86 FT TH ON CURVE TO LFT RAD 36.15 FT DIST OF 31.78 FT TH N 80 DEG 14 MIN 00 SEC W 42.54 FT TO TPOB LESS POR ELY OF LN BEG AT PT ON SLY MGN OF TURN AROUND S 10 DEG 53 MIN 34 SEC W 38 FT FR CENTER SD TURN AROUND TH S 36 DEG 52 MIN 13 SEC E 72.74 FT TH S 14 DEG 55 MIN 13 SEC E 38.66 FT TH S 01 DEG 14 MIN 23 SEC W 50.01 FT TO ELY LN ABOVE DESC TR TGW UND 1/21 INT IN POR OF TRACT 3 OF ADAMS LAKE WASHINGTON TRACTS LY NLY OF A LN DAF -- BEG AT MON ON NORTH LN OF TRACT 2 SD PLAT AAP 1240.00 FT M/L ELY OF NW COR TH S 01-00-16 E 446.31 FT TH S 89-04-24 E 360.80 FT TH N 08-21-11 E 15.13 FT TH S 89-04-24 E 91.66 FT TH ON CRV TO LFT WITH A RAD OF 75.00 AN ARC DIST OF 75.39 FT TO PT OF TANGENCY TH N 33-20-06 E 0.23 FT TO PT "A" & TPOB OF SD LN TH S 89-04-24 E 262.67 FT M/L TO WATER LN OF LAKE WASHINGTON & ELY OF LN

BEG A SD PT "A" & TERM OF SD DESC LN -- BEG AT SD PT "A" TH N 33-20-06 E 106.39 FT TH N 88-26-16 W 27.99 FT TH N 80-15-30 E 11.32 FT TH N 39-38-00 E 66.30 FT TH N 08-30-00 E TO NORTH LN OF SD TRACT 3-LESS POR ON NORTH 20.00 FT (AS DESC UNDER VOL 2873 PAGE 423-09/10/1949) - AND LESS BEG AT SD PT "A" TH S 89-04-24 E TO OUTER LIMITS OF SH LDS TH NLY TAP 60.00 FT SOUTH OF NORTH LN SD TRACT 3 PROD EAST TH N 88-26-16 W TAP N 33-20-06 E OF BEG TH S 33-20-06 W TO BEG

3.0 Methodology

The wetland assessment and delineation were performed using the 1997 Washington State Wetlands Identification and Delineation Manual (DOE, 1997); and U.S. Army Corps of Engineers, Technical Report Y-87-1 (on-line edition), Corps of Engineers Wetlands Delineation Manual by Environmental Laboratory January 1987 - Final Report (COE, 1987); and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), Environmental Laboratory U.S. Army Corps of Engineers May 2010 (COE, 2010). The wetland determination was based on the presence of the three criteria for jurisdictional wetlands, hydric soils, wetland hydrology, and hydrophytic vegetation. All three criteria must be present in order to classify an area as wetland. Wetlands were rated with the Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology (Hruby, T., 2014).

The assessment included a review of the National Wetland Inventory, the Department of Natural Resources Forest (DNR) FPARS stream mapping, the City of Mercer Island Critical Area Maps, and the USDA National Resource Conservation Service's online soil survey, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

The field delineation was performed on November 24, 2016 and February 17, 2017. The weather was raining on both days. February 15th, 2017 was the wettest Feb 15th on record. The delineator was Jeffery S. Jones, SWS Professional Wetland Scientist No. 1025. The wetland boundary was flagged with consecutive numbered orange survey flagging. The wetland flag numbers are A-1 to A-6 (see Critical Area Map). There are four sample locations identified as SL-1, SL-2, SL-3, and SL-4.

4.0 General Site Description

The three parcels adjoining one another. Parcel 004610-0159 has an existing single-family residence and detached two-car garage. The house and garage were constructed in 1926. Parcel 004610-0151 is a vacant property with landscaping. Parcel 004610-0150 is a vacant property that is lawn, landscaping and beach. See the attached photos and parcel map.

There is a partially piped stream, with several eroded open section, broken by the previous owner, and landscaped drops, running from near the west property line to Lake Washington. The pipeline is a 12-inch diameter concrete pipe. The location of the pipe and open sections are provided on the site plan.

Adjacent properties to the north and west have single-family residences. The property to the south is community property. The properties are served by sewer, water, gas, cable and electricity.

5.0 Vegetation

5.1 Vegetation Methodology

Hydrophytic vegetation has adaptations that allow these species to survive in saturated or inundated environments. These environments are classified according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979). The probability of species being found in wetland environments has been determined by the 2016 National Wetland Plant List, v. 3.3 (http://wetland-plants.usace.army.mil/nwpl_static/index.html) (COE, 2016). An indicator status was applied to each species according to its probability of occurring in wetlands (see Table 1).

Table 1. Plant Indicator Status

Indicator Category	Symbol	Occurrence in Wetlands
Obligate Wetland	OBL	> 99%
Facultative Wetland	FACW	67-99%
Facultative	FAC	34-67%
Facultative Upland	FACU	1-33%
Upland	UPL	< 1%

Vegetation data was recorded at one sample location. At each sample location, the dominant species were assessed by indicator status to determine if the plant community was predominantly hydrophytic. Rules for determining dominant species are from the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACOE, 2008). Dominants were determined using the 50/20 rule. Using this rule, percent cover for each stratum was added by order of descending cover until 50% cover was reached. These species were considered dominants. The next most common species was also included as a dominant if it had over 20% cover.

5.2 Vegetation Results

Sample location-1 (SL-1) is situated 6 feet northeast of the flag pole, above the bulkhead. At sample location 1 (SL-1), the plant community is dominated by Nootka rose (*Rosa nutkana*, FAC), yellow iris (*Iris pseudacorus*, OBL) and unidentified lawn grasses (*Gramineae* spp., FAC). The plant community is hydrophytic because 50% or more of the dominant species are OBL, FACW, or FAC.

SL-2 is situated 24 feet northwest of the flag pole, above the bulkhead. The plant community is dominated by red-osier dogwood (*Cornus nuttalli*, FACW), Nootka rose (*Rosa nutkana*, FAC), small-fruited bulrush (*Scirpus microcarpus*, OBL), unidentified lawn grasses (*Gramineae* spp., FAC) and morning glory (*Ipomoea* spp., FACW-FACU). The plant community is hydrophytic because 50% or more of the dominant species are OBL, FACW, or FAC.

SL-3 is situated 30 feet southeast of the flag pole, above the bulkhead. The plant community is dominated by unidentified lawn grasses (*Gramineae* spp., FAC). The plant community is hydrophytic because 50% or more of the dominant species are OBL, FACW, or FAC.

SL-4 is situated 15 feet east of a large Douglas fir tree between the existing house and bulkhead, approximately 100 feet west of the shoreline. The plant community is dominated by Douglas fir (*Pseudotsuga menziesii*, FACU), and unidentified lawn grasses (*Gramineae* spp., FAC). The plant

community is hydrophytic because 50% or more of the dominant species are OBL, FACW, or FAC.

6.0 Hydrology

6.1 Hydrology Methodology

The *Corps of Engineers Wetlands Delineation Manual* (USACOE, 1987) and the *Washington State Wetlands Identification and Delineation Manual* (WADOE, 1997) require inundation, flooding, or saturation to the surface for at least 5% of the growing season to satisfy the hydrology requirements for jurisdictional wetlands. Areas that are saturated between 5% and 12.5% of the growing season may or may not be wetlands. The growing season can either be defined by the number of frost-free days (temperatures above 28°F), or the period during which the soil temperature at a depth of 19.7 inches is above biological zero (41°F). The presence of primary and secondary wetland hydrologic indicators was determined at each sample location by evaluating a variety of direct and indirect indicators. In addition to direct visual observation of inundation or saturation, secondary hydrologic indicators were used to infer wetland hydrology. Secondary indicators include oxidized channels (rhizospheres) associated with living roots and rhizomes, water marks on vegetation or fixed objects, drift lines, water-borne sediment deposits, water stained leaves, surface scoured areas, wetland drainage patterns, morphological plant adaptations, and hydric soil characteristics.

6.2 Hydrology Results

SL-1 meets the hydrology criteria for wetlands. The upper soils profile was saturated to the soil surface.

SL-2 meets the hydrology criteria for wetlands. The upper soils profile was saturated to the soil surface.

SL-3 meets the hydrology criteria for wetlands. The upper soils profile was saturated at 10 inches below the soil surface.

SL-4 does not meet the hydrology criteria for wetlands. The upper soils profile, 0-18", was not saturated.

7.0 Soils

7.1 Soils Methodology

The procedures for soil sampling are provided in the Corps of Engineers Wetlands Delineation Manual (USACOE, 1987) and the Washington State Wetlands Identification and Delineation Manual (WADOE, 1997).

Hydric soils are soils that are “saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (U.S. Army COE, 1987)”. They are either organic soils (peats and mucks), or are mineral soils that are saturated long enough to produce soil properties associated with a reducing environment. These soils have hydric characteristics such as a reduced matrix (a matrix that changes color when exposed to air), redox depletions (gleying), or redox concentrations (mottles).

7.2 Soil Series

The USDA Soil Conservation Service (SCS) mapped the on-site soils as Kitsap silt loam, 2 to 8 percent slopes (Kb) and Kitsap silt loam, 15 to 30 percent slopes (Kd) (see attached Soils Map). Kitsap silt loam is not a hydric soil series.

7.3 Soils Results

The soils on the lake side of the residence have been altered by grading and landscaping activities that occurred prior to critical area regulations. Investigation of the soils found a texture and profile most like the Kitsap soil series and sandy loams that are fill material adjacent the bulkhead.

SL-1 is a sandy loam fill material placed above the rock bulkhead. From 0 to 16+ inches, the soil is a very dark brown (10YR 3/2) sandy loam. The soil is non-hydric because it is not a one chroma or a two-chroma with mottles.

SL-2 is a sandy loam fill material placed above the rock bulkhead. From 0 to 16+ inches, the soil is a very dark brown (10YR 2/2–10YR 3/2) sandy loam. From 12 to 18+ inches, the soil is non-hydric because it is not a one chroma or a two-chroma with mottles.

SL-3 is a sandy loam fill material placed above the rock bulkhead. From 0 to 4 inches, the soil is a very dark brown (10YR 2/2) sandy loam. From 4 to 16+ inches, the soil is a gray (10YR 6/1) sandy loam with prominent (10YR 5/8) mottles. The soil is hydric because has a one chroma matrix and prominent mottling (WADOE, 1997)

SL-4 is a Kitsap gravel silt loam. From 0 to 6 inches, the soil is black (10YR 2/1) gravelly sandy loam. From 6 to 16+ inches, the soil is a dark grayish brown (10YR 2/2) gravelly sandy loam. The soil is non-hydric because it lacks a two-chroma with mottling.

8.0 Wetland Determination, Rating and Buffer

The lowest portion of the lawn on parcel 0150 is wetland. Soils were observed to be saturated with a shallow perched water table. Prominent mottling and gleyed soils was observed at SL-3. The plant community is dominated by grasses, red-osier dogwood, and non-native shrubs. SL-1 and SL-2 lack hydric soils characteristics. The wetland boundary is defined by the extent of saturated soils, topography and a low rock bulkhead. Below the bulkhead is a sand beach.

The wetland is rated as a Category IV, with a 35-foot buffer requirement, according to Section 19.07.070.C of the MICC. The wetland buffer can be reduced to not less than 25 feet with vegetative enhancement.

9.0 Stream Determination, Rating, and Buffer

The Mercer Island stream inventory identifies a stream on the subject parcel (see attached Figure 3). The stream is an open two-foot wide eroded trench, from the 12” concrete pipe outfall to the lake, approximately 65 feet. This was not the natural location of a stream, but was previously channelized, meaning the final section was trenched.

There is a two-foot rock drop at the beach, which makes the stream inaccessible to juvenile fish, see Photo 24. The water level of the lake rarely extends to the rock drop. The bottom of the drop is above the elevation of the OHWL of Lake Washington. The rock drop is impassable to fish, channel flows rates are about 1 inch depth, except in peak storm events when the velocity of the stream is high. Fish have never been observed in the ditch, including during October of 2016 and February of 2017, which had peak precipitation events. Even if fish could enter this open eroding ditch, the ditch is not a safe refuge, provides no habitat, and does not provide access to habitat upstream. Stream flows are intermittent some years.

From the lowest pipe outlet, the stream is piped 65 feet; then there is a pool that is 15 lineal feet long; immediately upstream of the pool there is a 3-foot vertical concrete drop structure; upstream from the vertical drop the stream is mostly piped with an open section between the garage and house entry walkway, see photos.

It is our opinion that the stream should be rated a Type 4 because it was previously channelized and created. The lower section may have been previously piped. The very highest rating would be a Type 2, because it is “not used by fish”. The City’s inventory rates the stream as a Type 1 along the lower watercourse, and a Type 2 above the lower watercourse on open and piped sections (see Figure 3). The Department of Natural Resources FPARS mapping identifies two diverging streams, but in fact there is only one channel (see DNR FPARS Map attachment). Type 2 watercourses require a 50-foot and Type 4 a 25-foot standard base buffer width, according to Section 19.07.070.B.1.b of the MICC. A Type 2 stream buffer can be reduced to not less than 25 feet with vegetative enhancement. A Type 4 buffer can be reduced, but the amount of allowed reduction is to be determined by the code official.

The 12 inch concrete pipeline constitutes a piped watercourse, although there are several short concrete rocked open sections and two eroded short open sections. The pipe is not fish passable. The high velocity of flows in the pipe during peak runoff events, drop structures, and small pipe diameter are significant impediments to fish passage. The Mercer Island City Code, Section

19.07.070.B.4.a, does not allow piped conveying watercourses to be removed that may result in an increased threat of erosion. Short sections of the concrete pipe have been broken open to remove root plugs, causing visible erosion. Removal of the pipeline will increase the potential for flooding, erosion and sediment movement to the lake. The standard buffer width for a piped watercourse is 25 feet. The standard buffer for a pipe section is 25 feet, according to Section 19.07.070.B.1.b of the MICC.

Lake Washington is a shoreline of the state. The required setback from the ordinary high water mark is 50 feet.

10.0 Proximity to Wildlife Habitat Conservation Areas and Priority Species

According to MICC, Section 19.07.090, bald eagles are the only protected non-aquatic wildlife species to inhabit Mercer Island. The city defines “wildlife habitat conservation areas” as “those areas used by these species for nesting, breeding, feeding, and survival”. “The provisions of this section do not apply to any habitat areas which come under the jurisdiction of the city’s shoreline master program.” The city’s wetlands, watercourses and shorelines are protected under other sections of the code.

Bald eagles have been delisted federally, but their nests are still provided protection by the state. No bald eagle stick nests were observed within 600 feet of the site. Therefore, state requirements for nest buffers and seasonal construction restrictions do not apply.

11.0 Impacts to Wetland and Stream Buffers

A proposed site plan has been designed with wetland and stream buffers reduced to 25 feet. A 15-foot building setback (bsbl) will apply to the structure unless a variance is obtained to reduce it.

The stream will be reconfigured to provide adequate capacity, water quality benefits, and functions with minimal erosion. A trail to the existing dock will be incorporated into the buffer enhancement. The square footage of vegetative buffer enhancement will be equal to or greater than the proposed buffer impact.

12.0 Buffer Reduction Criteria and Mitigation Measures

The applicant’s proposal complies with the decision criteria for approval of a buffer reduction. The proposal will not result in a net loss of watercourse and buffer functions. A smaller reduced buffer is adequate because the standard buffer widths do not provide additional protection to the stream. A standard stream buffer width does not improve water quality in the stream, because the direction of surface and subsurface water movement is towards the lake and not the stream.

Lawn and landscaping within the buffer will be removed and replanted with native vegetation equal to the square footage of the proposed stream buffer impact. The restoration of a portion of the buffer will improve habitat functions. Native plant communities provide the best habitat for native wildlife.

Erosion and sediment control will be implemented during construction to prevent sediment from entering the stream and lake. The buffer reduction does not contain steep slopes.

Impacts will be mitigated by the following actions:

- 1) Restoration of buffer, equal to the square footage of buffer impact
- 2) Best management construction practices will be used to protect water quality during construction of the residence. These practices include, but are not limited to, silt fencing, placement of temporary erosion control materials, temporary grass seedings, and the designation of a construction manager responsible for implementing erosion and sediment control measures.

13.0 Wetland and Stream Buffer Functions

The wetland and stream buffers are landscaping, lawn, shrubs, structures, walkways and pavement. A portion of the pipeline is broken and eroding. The stream appears to be an excavated ditch to control the location of surface water flow. Wildlife use in the buffer is limited by human activities and a lack of a native plant community. Wildlife species include common passiformes (small migratory birds), small to medium size mammals, amphibians, and insects. No habitat features are present other than the stream.

Wetland and stream buffer functions will be improved by vegetative enhancement. Existing trees and shrubs along the property lines of the buffer will be retained. Non-native plants, in the proposed enhancement, will be removed. Native trees, shrubs and groundcovers will be planted and maintained. The new stream channel will be planted with an emergent groundcover to provide water quality benefits.

14.0 Conclusion

The proposed mitigation measures will improve the functions of the wetland and stream buffers and stream. Wildlife habitat and the lake shoreline will benefit from the establishment of a native plant community. Replacement of the pipeline will improve drainage for the community and lower the risk of flooding, particularly for the existing residences. A buffer enhancement plan will be prepared and submitted.

15.0 Limitations

Stream and wetland determinations and delineations are not final until approved by regulatory agencies and/or local jurisdictions. *J. S. Jones and Associates, Inc.* does not guarantee acceptance or approval by regulatory agencies, or that any intended use will be achieved.

16.0 References

City of Mercer Island, Mercer Island City Code.

<http://www.codepublishing.com/wa/mercerisland/>

COE. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS.

COE, 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), Environmental Laboratory U.S. Army Corps of Engineers May 2010.

COE, 2016. 2016 National Wetland Plant List, v. 3.3.

http://wetland-plants.usace.army.mil/nwpl_static/index.html

Cowardin, Lewis M. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service. Jamestown, North Dakota.

DOE 1997. Washington State Wetlands Identification and Delineation Manual. Publication # 96-94.

Federal Register. 1980. 40 CFR Part 230: Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Vol. 45, No. 249, 85352-85353. U.S. Government Printing Office, Washington D.C.

Federal Register. 1982. Title 33: Navigation and Navigable Waters; Chapter II, Regulatory Programs of the Corps of Engineers. Vol. 47, No. 138, p 31810. U.S. Government Printing Office, Washington D.C.

Hruby, T., 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

MacBeth. 2000. Munsell Soil Color Charts-Revised Washable Edition. 617 Little Britain Road, New Windsor, NY 12553. 10p + 9 charts.

Attachments

Vicinity Map



King County

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

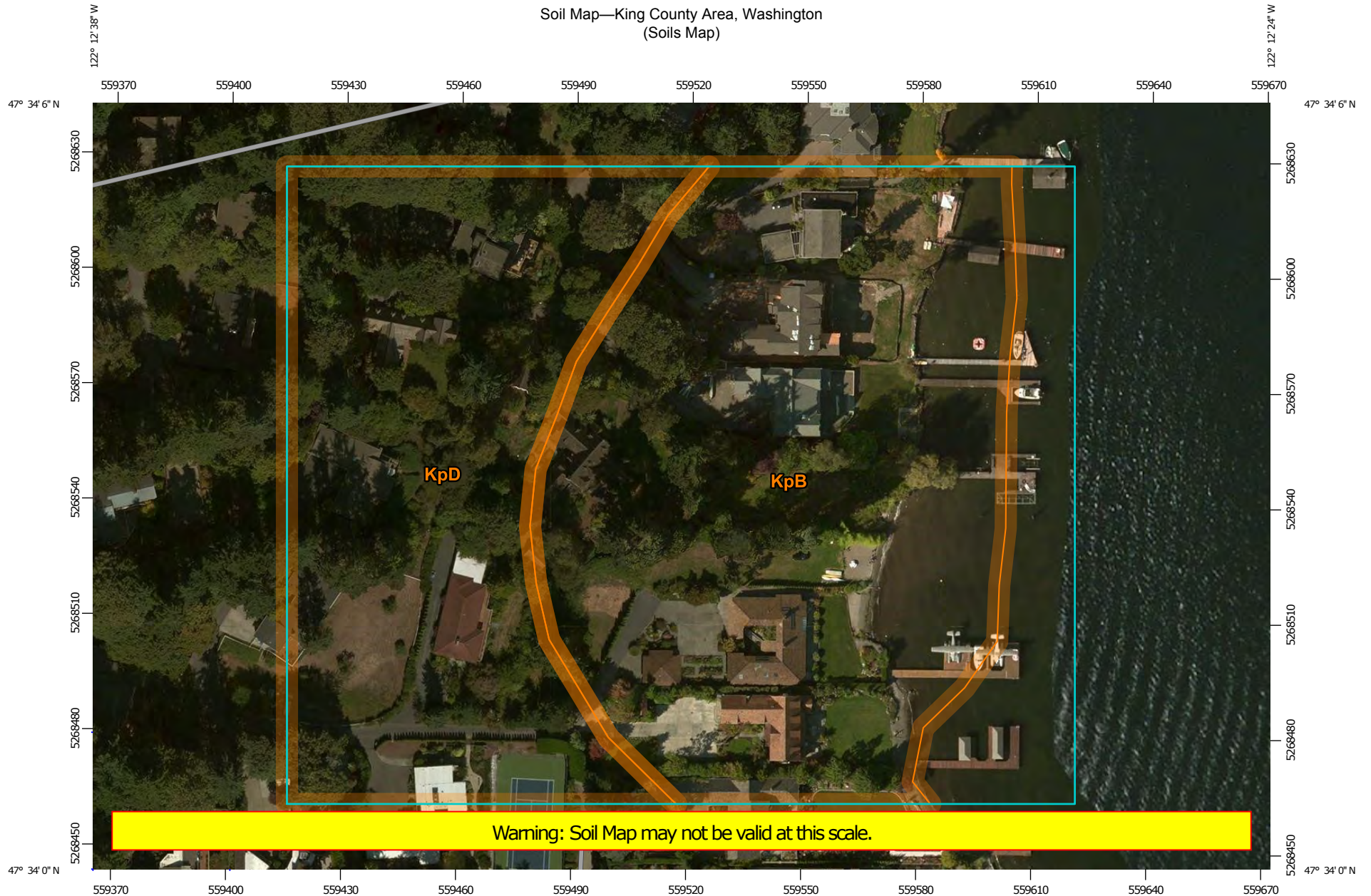
Date: 11/22/2016

Notes:



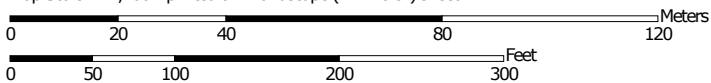
 **King County**
GIS CENTER

Soil Map—King County Area, Washington
(Soils Map)



Warning: Soil Map may not be valid at this scale.


Map Scale: 1:1,400 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 12, Sep 8, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2011—Oct 6, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

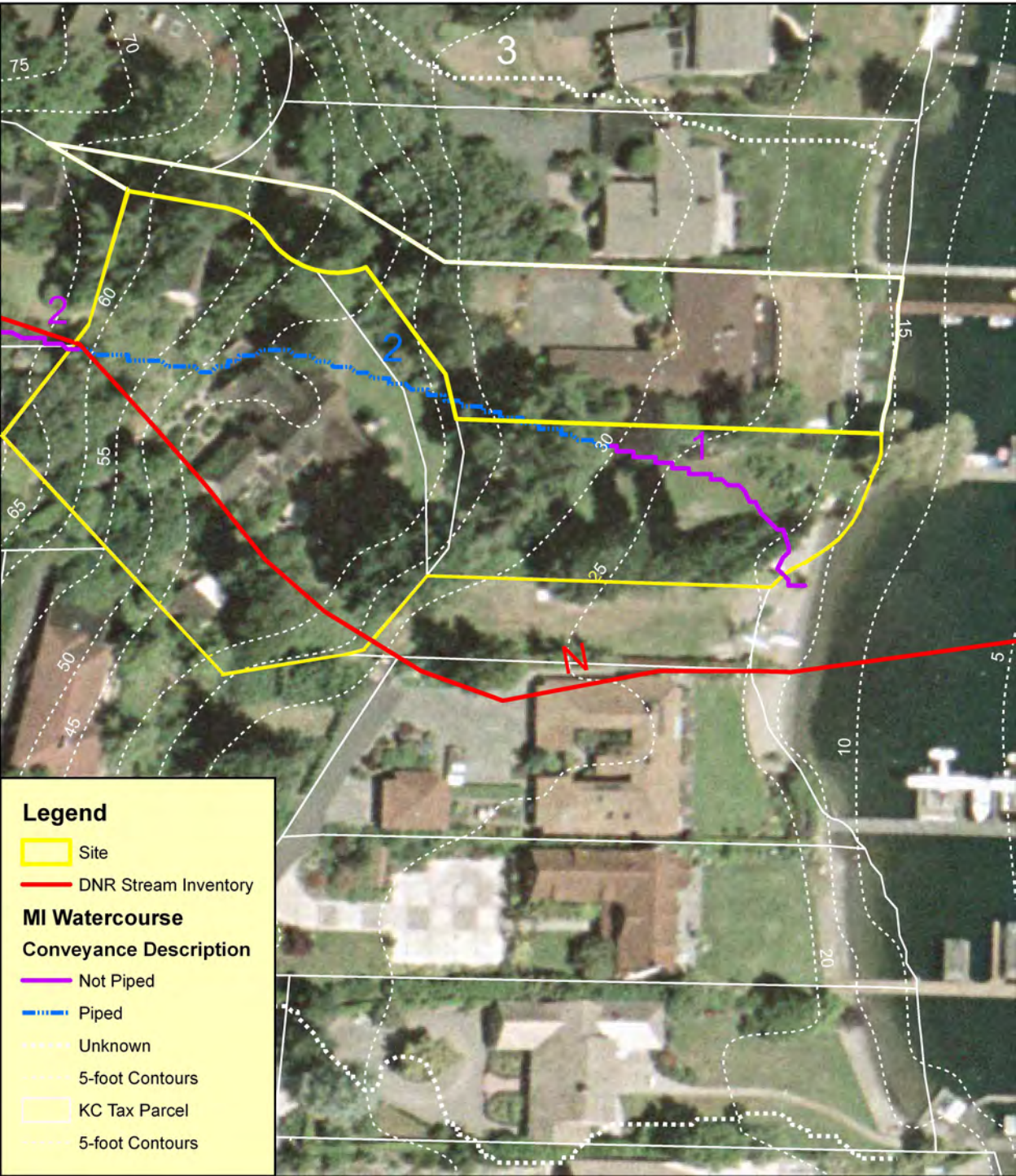
King County Area, Washington (WA633)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KpB	Kitsap silt loam, 2 to 8 percent slopes	4.3	51.1%
KpD	Kitsap silt loam, 15 to 30 percent slopes	3.2	38.3%
Totals for Area of Interest		8.5	100.0%

Figure 3 - Stream Inventory Map



0 37.5 75 150 Feet

1 inch equals 75 feet



Legend

- Site
- DNR Stream Inventory
- MI Watercourse**
- Conveyance Description**
- Not Piped
- Piped
- Unknown
- 5-foot Contours
- KC Tax Parcel
- 5-foot Contours

Wetland Map



King County

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Date: 11/28/2016









Notes:



 **King County**
GIS CENTER



November 22, 2016

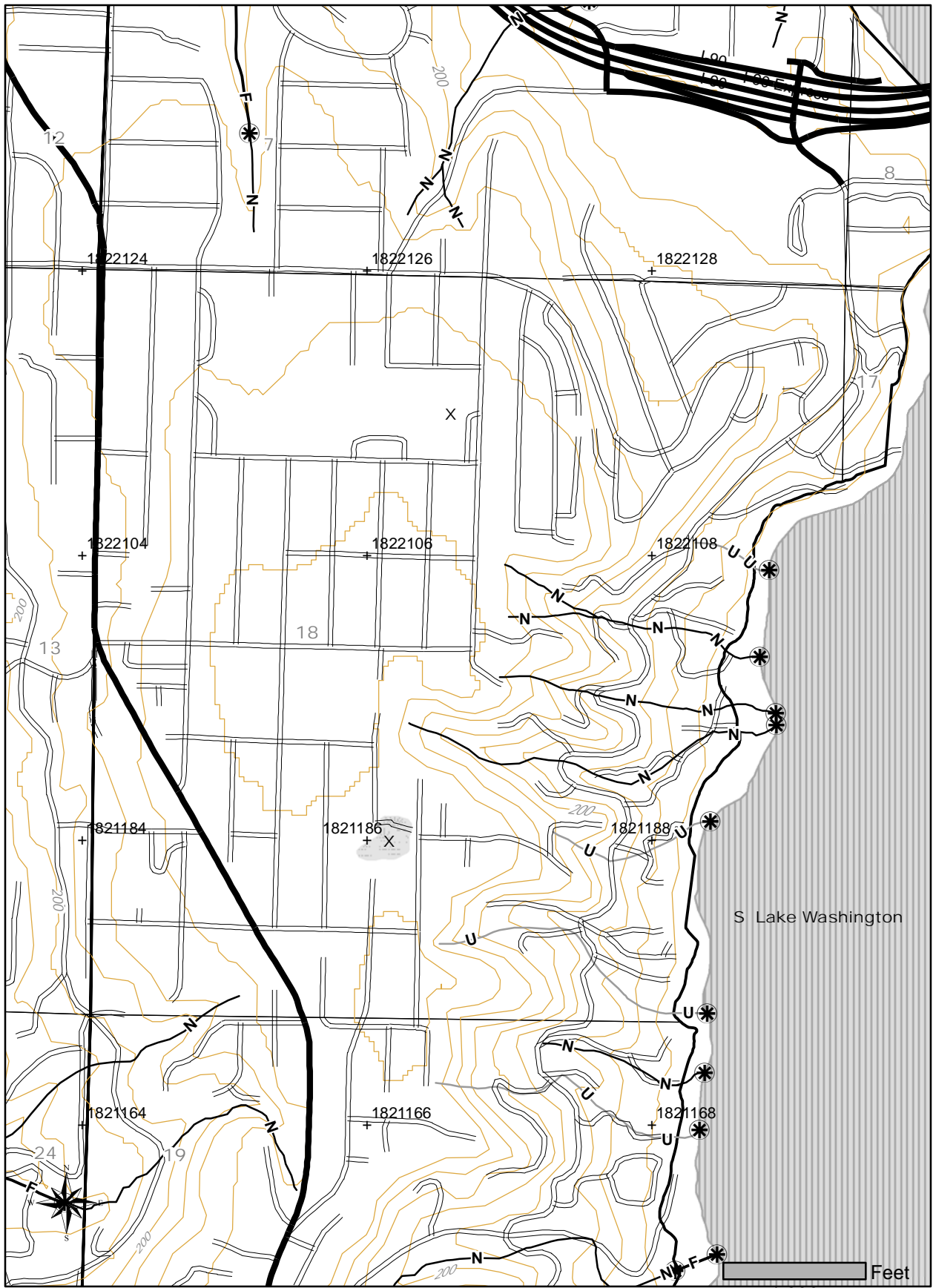
- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Forested/Shrub Wetland |  Other |
|  Estuarine and Marine Wetland |  Freshwater Pond |  Riverine |
|  Freshwater Emergent Wetland |  Lake | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

FOREST PRACTICE ACTIVITY MAP

TOWNSHIP 24 NORTH HALF 0, RANGE 05 EAST (W.M.) HALF 0, SECTION 18

Application #: _____



Please use the legend from the FPA Instruction or provide a list of symbols used.

Date: 11/22/2016 Time: 9:47:33 AM
NAD 83
Contour Interval: 40 Feet



WASHINGTON DEPARTMENT OF FISH AND WILDLIFE PRIORITY HABITATS AND SPECIES REPORT

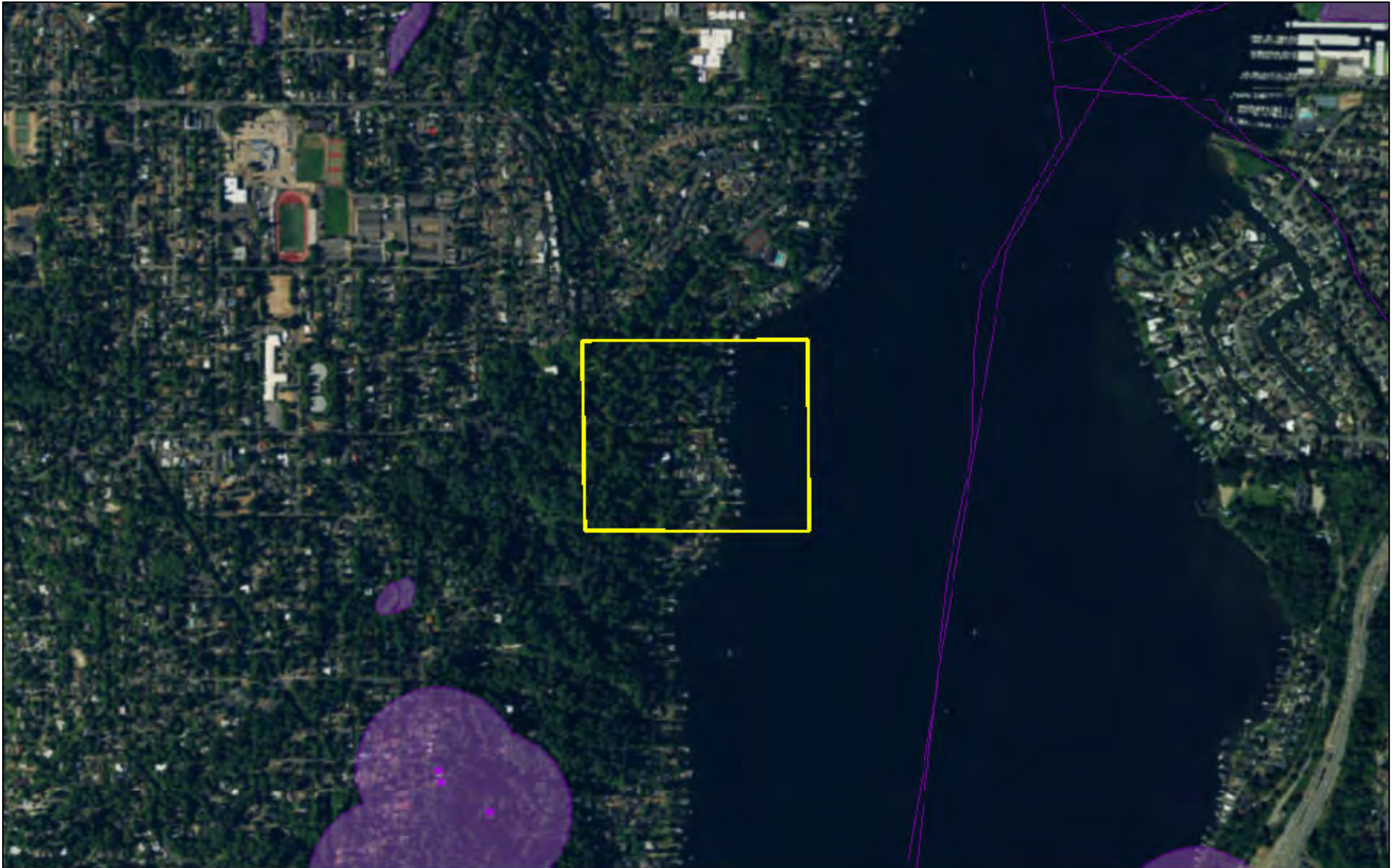
SOURCE DATASET: PHSPublic
REPORT DATE: 11/22/2016 9.44

Query ID: P161122094439








Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				

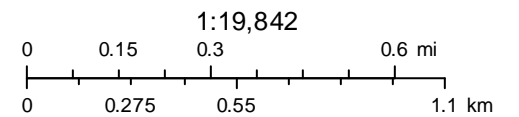
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

WDFW Test Map



November 22, 2016

- | | | | | | |
|---|----------------------|---|---|---|----------|
|  | PHS Report Clip Area | POLY |  | QTR-TWP | |
|  | PT |  | AS MAPPED |  | TOWNSHIP |
|  | LN |  | SECTION | | |



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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

Project/Site: 4346 E Mercer Way City/County: Mercer Island Sampling Date: 11/23/16
 Applicant/Owner: Johan Valentin State: WA Sampling Point: SL-1
 Investigator(s): Jeff Jones Section, Township, Range: S18, T24N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): NW Forests Lat: 47.568 Long: -122.208 Datum: NAVD83
 Soil Map Unit Name: Kitsap NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <u>6 Feet NE of Flagpole</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>10'</u>)				Prevalence Index worksheet:	
1. <u>Nootka Rose</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
= Total Cover <u>20</u>				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>10'</u>)				Column Totals: _____ (A) _____ (B)	Prevalence Index = B/A = _____
1. <u>Lawn Grasses</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2. <u>Yellow Iris</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
3. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
4. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 ¹	
5. _____	_____	_____	_____	___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____	_____	_____	_____	___ 5 - Wetland Non-Vascular Plants ¹	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)	
8. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
= Total Cover <u>40</u>					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover _____					
% Bare Ground in Herb Stratum <u>60</u>					
Remarks:					

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

Project/Site: 4346 E Mercer Way City/County: Mercer Island Sampling Date: 11/23/16
 Applicant/Owner: Johan Valentin State: WA Sampling Point: SL-2
 Investigator(s): Jeff Jones Section, Township, Range: S18, T24N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): NW Forests Lat: 47.568 Long: -122.208 Datum: NAVD83
 Soil Map Unit Name: Kitsap NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>24' NW of Flagpole</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Red Osier Dogwood</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Nootka Rose</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
<u>45</u> = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Small Fruited Bullrush</u>	<u>5</u>	_____	<u>FACW</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Grass</u>	<u>50</u>	_____	<u>FAC</u>	<input type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Morning Glory</u>	<u>20</u>	_____	<u>FACU</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	_____	_____	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>25%</u>				
Remarks:				

SOIL

Sampling Point: SL-2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16+	10YR	2 1/2 - 3 1/2	100				sl	stratified sand

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

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

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

Wetland Hydrology Present? Yes No _____

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

Remarks:

Not Saturated

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

Project/Site: 4346 E Mercer Way City/County: Mercer Island / King Sampling Date: 11/23/16
 Applicant/Owner: Johan Valentin State: WA Sampling Point: SL-3
 Investigator(s): Jeff Jones Section, Township, Range: S18, T24N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): NW Forests Lat: 47.568 Long: -122.208 Datum: NAVD83
 Soil Map Unit Name: Kitsap NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <u>30' SE of Flagpole</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>16'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>grasses</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>50</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>50</u>				
Remarks:				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

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

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: SL-3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					sl	
4-16	10YR 6/1	95	10YR 5/8	5	D	M	sl	prom. mottling

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>10</u>	

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: 4346 E. Mercer Way City/County: Mercer Island/King Sampling Date: 11/23/16
 Applicant/Owner: Johan Valentin State: WA Sampling Point: SL-4
 Investigator(s): Jeff Jones Section, Township, Range: S18, T24N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8
 Subregion (LRR): NW Forests Lat: 47.568 Long: -122.209 Datum: NAVD83
 Soil Map Unit Name: Kitsap NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <u>15' E of Doug Firs</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Doug Fir</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u>	(A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of: _____	Multiply by: _____
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
Herb Stratum (Plot size: <u>10'</u>)				UPL species _____	x 5 = _____
1. <u>Grass</u>	<u>50</u>	<u>YES</u>	<u>FAC</u>	Column Totals: _____	(A) _____ (B) _____
2. _____	_____	_____	_____	Prevalence Index = B/A = _____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	
4. _____	_____	_____	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
5. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
6. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
7. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
8. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
9. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
10. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
11. _____	_____	_____	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
% Bare Ground in Herb Stratum _____				= Total Cover	
Remarks: <u>Assume Grasses Are FAC</u>					

SOIL

Sampling Point: SL-4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
<u>0-6</u>	<u>10YR 2/1</u>	<u>100</u>					<u>grsl</u>	
<u>6-14+</u>	<u>10YR 2/2</u>	<u>100</u>					<u>grsl</u>	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

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

Remarks:

Dry

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/23/16

Rated by Jeff Jones Trained by Ecology? Yes No Date of training 12/14

HGM Class used for rating Slope Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

_____ Category I – Total score = 23 - 27

_____ Category II – Total score = 20 - 22

_____ Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<u>L</u>	H	M	<u>L</u>	H	M	<u>L</u>	
Landscape Potential	H	<u>M</u>	L	H	<u>M</u>	L	H	M	<u>L</u>	
Value	<u>H</u>	M	L	H	M	<u>L</u>	H	M	<u>L</u>	TOTAL
Score Based on Ratings	<u>6</u>			<u>4</u>			<u>3</u>			<u>13</u>

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY			
Estuarine	I	II		
Wetland of High Conservation Value	I			
Bog	I			
Mature Forest	I			
Old Growth Forest	I			
Coastal Lagoon	I	II		
Interdunal	I	II	III	IV
<u>None of the above</u>				

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number A

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO - go to 2

YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO - **Saltwater Tidal Fringe (Estuarine)**

YES - **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

YES - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is **Lake Fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO - go to 5

YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number A

NO - go to 6

YES - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7

YES - The wetland class is **Depressional**

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

NO - go to 8

YES - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A

SLOPE WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i> Slope is 1% or less Slope is > 1%-2% Slope is > 2%-5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i> Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ¼ of area Does not meet any of the criteria above for plants	points = 6 points = 3 points = 2 points = 1 points = 0
Total for S 1	Add the points in the boxes above 2

Rating of Site Potential If score is: 12 = H 6-11 = M 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?	Yes = 1 No = 0 1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____	Yes = 1 No = 0 0
Total for S 2	Add the points in the boxes above 1

Rating of Landscape Potential If score is: 1-2 = M 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0 1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>	Yes = 1 No = 0 1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>	Yes = 2 No = 0 2
Total for S 3	Add the points in the boxes above 4

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number A

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

<p>S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.</i></p> <p>Dense, uncut, rigid plants cover > 90% of the area of the wetland</p> <p>All other conditions</p>	<p>points = 1</p> <p>points = 0</p>
---	-------------------------------------

Rating of Site Potential If score is: 1 = M 0 = L *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

<p>S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?</p>	<p>Yes = 1 No = 0</p>
--	-----------------------

Rating of Landscape Potential If score is: 1 = M 0 = L *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

<p>S 6.1. Distance to the nearest areas downstream that have flooding problems:</p> <p>The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2</p> <p>Surface flooding problems are in a sub-basin farther down-gradient points = 1</p> <p>No flooding problems anywhere downstream points = 0</p>	<p>0</p>
<p>S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</p>	<p>Yes = 2 No = 0</p>
<p>Total for S 6</p>	<p>Add the points in the boxes above</p> <p>0</p>

Rating of Value If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- If you counted: > 19 species points = 2
- 5 - 19 species points = 1
- < 5 species points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points



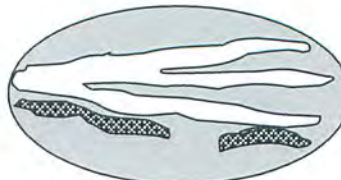
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3points



1

Wetland name or number A

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		0
Total for H 1	Add the points in the boxes above	4

Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>			
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___ % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0</p>			0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___ % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0</p>			1
<p>H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>			-2
Total for H 2	Add the points in the boxes above	-1	

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p>		
<p>Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p>		0
<p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0</p>		

Rating of Value If score is: 2 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✓ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ✓ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A

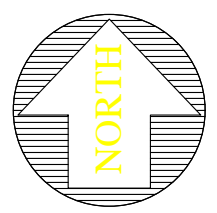
CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No = Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No = Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	Cat. I

Wetland name or number A

This page left blank intentionally

S.E. 1/4 OF N.E. 1/4 OF SECTION 18, T. 24 N., R. 05 E., W.M.
CITY OF MERCER ISLAND, STATE OF WASHINGTON



SCALE 1" = 20'

LEGAL DESCRIPTION

PARCEL A: T.L. 0046100159

THAT PORTION OF TRACTS 2 AND 3 OF ADAMS LAKE WASHINGTON TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 11 OF PLATS, PAGE 80, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF TRACT 2 OF SAID ADDITION;
THENCE SOUTH 88°26'44" EAST, ALONG THE NORTH LINE OF SAID TRACT 2, 1,239.90 FEET TO AN INTERSECTION WITH THE CENTERLINE OF KRISTOFERSON'S ROAD EXTENDED;
THENCE SOUTH 80°14'00" EAST ALONG THE CENTERLINE OF SAID ROAD, 465.90 FEET;
THENCE SOUTH 16°58'00" WEST 15.11 FEET TO A CEMENT MONUMENT AND THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION;
THENCE SOUTH 16°48'00" WEST 68.39 FEET TO A CEMENT MONUMENT;
THENCE SOUTH 37°24'00" WEST 67.65 FEET TO A CEMENT MONUMENT;
THENCE SOUTH 43°29'00" EAST 156.48 FEET TO A CEMENT MONUMENT;
THENCE NORTH 80°15'30" WEST 67.75 FEET TO A CEMENT MONUMENT;
THENCE NORTH 39°38'00" EAST 66.30 FEET TO A CEMENT MONUMENT;
THENCE NORTH 08°30'00" EAST 46.75 FEET TO A CEMENT MONUMENT;
THENCE NORTH 14°51'30" WEST 36.77 FEET;
THENCE NORTH 36°48'30" WEST 65.05 FEET TO A CEMENT

MONUMENT IN THE SOUTH MARGIN OF THE TURNAROUND CIRCLE; THENCE ON THE ARC OF SAID CIRCLE, WESTERLY, HAVING A RADIUS OF 38.00 FEET, SAID RADIUS BEARING NORTH 24°26'40" WEST, AND THROUGH A CENTRAL ANGLE OF 81°12'40" AND AN ARC DISTANCE OF 63.86 FEET TO A POINT OF REVERSE CURVE; THENCE ON THE ARC OF SAID CURVE TO THE LEFT HAVING A RADIUS OF 36.15 FEET, THROUGH A CENTRAL ANGLE OF 47°00'00" AND ARC DISTANCE OF 31.78 FEET TO A POINT OF TANGENCY; THENCE NORTH 80°14'00" WEST 42.54 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THAT PORTION THEREOF LYING EASTERLY AND NORTHERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT IN THE SOUTHERLY MARGIN OF A ROAD DESCRIBED IN DOCUMENT RECORDED UNDER RECORDING NUMBER 4316894, OF SAID COUNTY, SAID POINT BEING SOUTH 10°53'34" WEST 38.00 FEET FROM THE CENTER OF SAID TURNAROUND;
THENCE SOUTH 36°52'13" EAST 72.74 FEET;
THENCE SOUTH 14°55'13" EAST 38.66 FEET;
THENCE SOUTH 01°14'23" WEST 50.01 FEET TO A POINT IN SAID EASTERLY BOUNDARY OF THE ABOVE TRACT AND THE TERMINUS OF SAID LINE.

PARCEL B: T.L. 0046100150

THAT PORTION OF TRACTS 2 AND 3 OF ADAMS LAKE WASHINGTON TRACTS, AS PER PLAT RECORDED IN VOLUME 11 OF PLATS, PAGE 80, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID TRACT 2; THENCE ALONG THE NORTH LINE OF SAID TRACT 2, SOUTH 88°26'16" EAST 1,240 FEET, MORE OR LESS, TO AN IRON PIPE MONUMENT ON THE EASTERLY MARGIN OF EAST MERCER WAY, SAID IRON PIPE BEING ON THE CENTERLINE PRODUCED OF A 30 FOOT ROAD EASEMENT RECORDED FEBRUARY 19, 1953 UNDER RECORDING NUMBER 4316894;
THENCE SOUTH 80°23'50" EAST, ALONG SAID CENTERLINE, 560.83 FEET TO AN IRON PIPE MONUMENT WHICH IS THE CENTER POINT OF A CIRCULAR TURNAROUND, SAID TURNAROUND BEING THE EASTERLY TERMINUS OF SAID 30 FOOT ROAD EASEMENT;

THENCE SOUTH 24°30'23" EAST 38.00 FEET TO THE TRUE POINT OF BEGINNING OF THE TRACT HEREIN DESCRIBED;
THENCE SOUTH 36°52'13" EAST 65.05 FEET;
THENCE SOUTH 14°55'13" EAST 22.38 FEET TO A POINT IN A LINE WHICH IS PARALLEL WITH AND 185 FEET SOUTH OF THE NORTH LINE OF SAID TRACT 2;
THENCE SOUTH 88°26'16" EAST, ALONG SAID PARALLEL LINE, TO THE SHORE OF LAKE WASHINGTON;
THENCE SOUTHERLY, ALONG SAID SHORE, TO A POINT DRAWN PARALLEL WITH AND 20 FEET SOUTH OF THE EASTERLY EXTENSION OF THE NORTH LINE OF TRACT 3 IN ADAMS LAKE WASHINGTON TRACTS;
THENCE, ALONG SAID PARALLEL LINE, NORTH 88°26'16" WEST TO A POINT ON THE SOUTHEASTERLY BOUNDARY OF A TRACT OF LAND DESCRIBED IN CONTRACT SALE TO MILTON L. WITTENDALE RECORDED UNDER RECORDING NUMBER 3936791;
THENCE NORTH 01°14'23" EAST 50.01 FEET;
THENCE NORTH 14°55'13" WEST 38.66 FEET;
THENCE NORTH 36°52'13" WEST 72.74 FEET TO A POINT IN THE MARGIN OF THE TURNAROUND IN SAID ROAD EASEMENT FROM WHICH THE CENTER BEARS NORTH 10°53'34" EAST 38.00 FEET; THENCE ON A CURVE TO THE LEFT WITH A RADIUS OF 38.00 FEET; A DISTANCE OF 23.48 FEET TO THE TRUE POINT OF BEGINNING;

TOGETHER WITH SECOND CLASS SHORELANDS, AS CONVEYED BY THE STATE OF WASHINGTON, ADJACENT TO AND ABUTTING UPON THE PARCEL OF LAND HEREINABOVE DESCRIBED AND LYING BETWEEN THE NORTH AND SOUTH BOUNDARIES THEREOF EXTENDED EASTERLY.

PARCEL C:

NON-EXCLUSIVE EASEMENTS FOR INGRESS AND EGRESS, AS CREATED BY INSTRUMENTS RECORDED FEBRUARY 19, 1953, UNDER RECORDING NUMBER 4316894, RECORDED SEPTEMBER 24, 1953, UNDER RECORDING NUMBER 4382730, AND RECORDED MARCH 20, 1956, UNDER RECORDING NUMBER 4674377.

DATUM

NAVD 88

BENCHMARK

WGS SURVEY DATA WAREHOUSE DESIGNATION 4084
2" BRASS DISC AT THE INTERSECTION OF E. MERCER WAY AND FERNBROOK DRIVE
ELEVATION=140.753 FEET

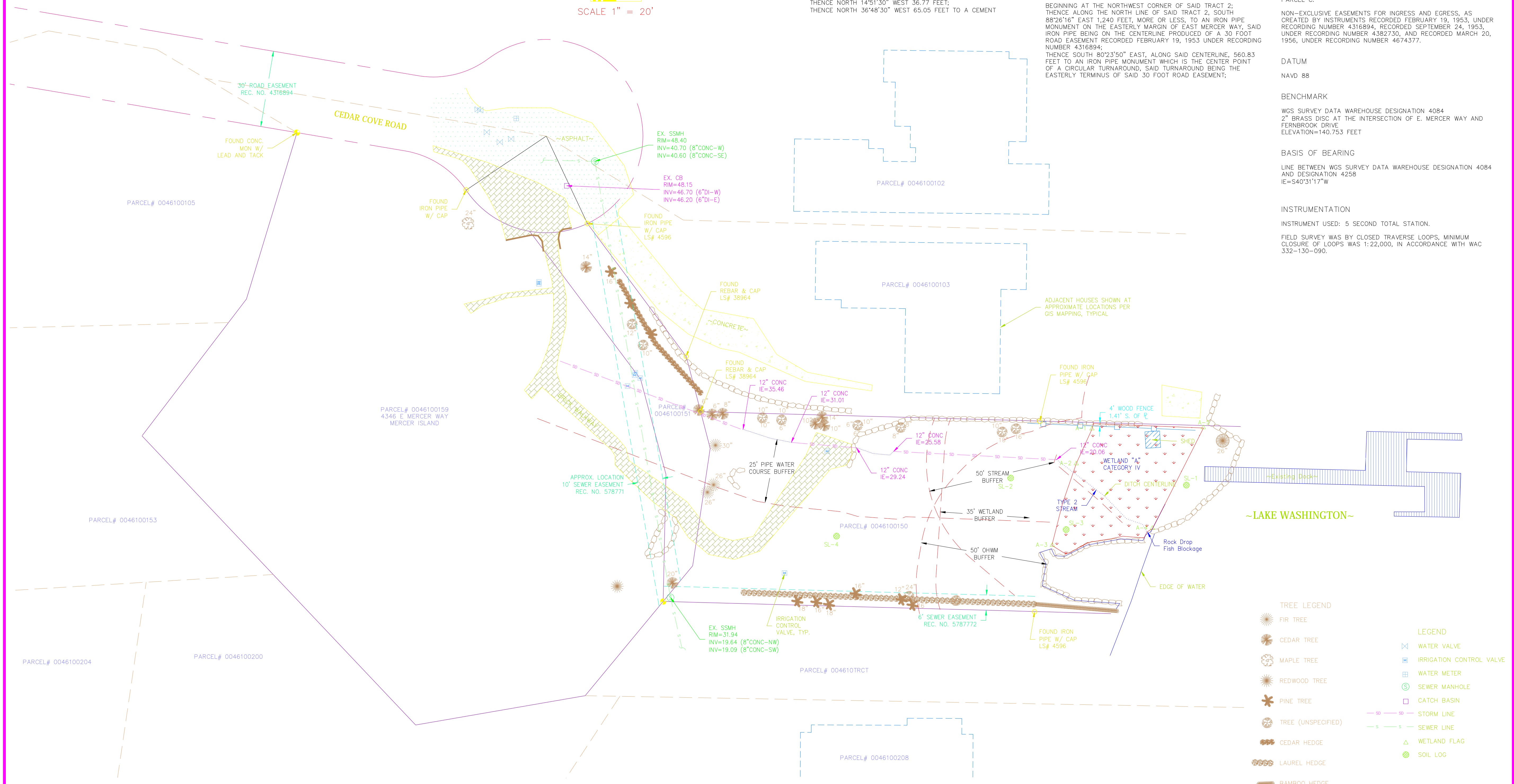
BASIS OF BEARING

LINE BETWEEN WGS SURVEY DATA WAREHOUSE DESIGNATION 4084 AND DESIGNATION 4258
IE=S40°31'17"W

INSTRUMENTATION

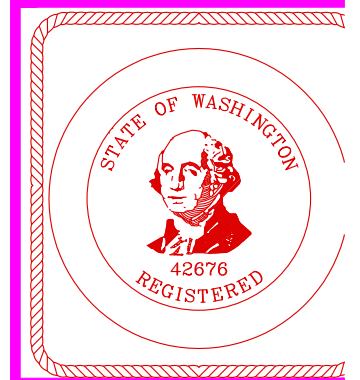
INSTRUMENT USED: 5 SECOND TOTAL STATION.

FIELD SURVEY WAS BY CLOSED TRAVERSE LOOPS, MINIMUM CLOSURE OF LOOPS WAS 1:22,000, IN ACCORDANCE WITH WAC 332-130-090.



- | | | | |
|--|--------------------|--|--------------------------|
| | FIR TREE | | WATER VALVE |
| | CEDAR TREE | | IRRIGATION CONTROL VALVE |
| | MAPLE TREE | | WATER METER |
| | REDWOOD TREE | | SEWER MANHOLE |
| | PINE TREE | | CATCH BASIN |
| | TREE (UNSPECIFIED) | | STORM LINE |
| | CEDAR HEDGE | | SEWER LINE |
| | LAUREL HEDGE | | WETLAND FLAG |
| | BAMBOO HEDGE | | SOIL LOG |

REVISIONS	DESCRIPTION	BY	DATE
1	ADDED WETLAND FLAGS & BUFFERS	DBM	12/13/16



JOHAN VALENTIN
T.L. 0046100150, 0046100151 & 0046100159
BOUNDARY - TOPOGRAPHY PLAN

ENCOMPASS
ENGINEERING & SURVEYING
Western Washington Division
165 NE Juniper Street, Suite 201 • Issaquah, WA 98027 • Phone: (425) 882-4455
108 East 2nd Street • Cle Elum, WA 98922 • Phone: (509) 674-7433 • Fax: (509) 674-7433

JOB NO.	16583
DATE	09/07/16
SCALE	1"=20'
DESIGNED	SDM
DRAWN	JEF
CHECKED	SDM
APPROVED	SDM

SHEET 1 OF 1

These photos were taken in sequence, approximately every 25 ft. upstream,
from where the stream flows into Lake Washington



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24 – Fish Blockage at OHWL