



J. S. Jones and Associates, Inc.

***Critical Area Study
and
Watercourse and Wetland Buffer Reduction***
of the

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

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

Prepared for:
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1. Vicinity Map
2. Soils Map
3. Mercer Island Stream Inventory Map
4. Wetland Map
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6. DNR FPARS Map
7. Priority Habitats and Species Map
8. Wetland Routine Data Sheets
9. Wetland A Rating Form
10. Site Survey Map prepared by WA State Licensed Land Surveyor

2 Project Description

The applicant proposes 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 Study has been prepared in accordance with 19.07.050 of the Mercer Island City Code (MICC) for wetlands and watercourses. Shorelines and geological hazard areas are not addressed in this report. The temporary erosion and sediment control plan (TESCP) is not part of this critical area study.

3 Parcel Identification Nos. & Abbreviated Legal Descriptions

The tax parcel numbers are 004610-0150 and 004610-0151. 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:

1. 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
2. 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
 -

4 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 delineations were performed on November 24, 2016 and February 17, 2017. The weather was raining on both days. February 15, 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.

5 General Site Description

The two parcels adjoin one another. Parcel 004610-0151 is a vacant property with landscaping. Parcel 004610-0150 is a vacant property that is lawn, landscaping and beach. See attached photos and parcel map.

There is a partially piped stream 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.

6 Vegetation

6.1 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 Plant Indicator Status Table below).

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 in four sample locations. 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.

6.2 Vegetation Results

- J 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.
- J 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.
- J 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.
- J 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.

7 Hydrology

7.1 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.

7.2 Hydrology Results

- J SL-1 meets the hydrology criteria for wetlands. The upper soils profile was saturated to the soil surface.
- J SL-2 meets the hydrology criteria for wetlands. The upper soils profile was saturated to the soil surface.
- J SL-3 meets the hydrology criteria for wetlands. The upper soils profile was saturated at 10 inches below the soil surface.

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

8 Soils

8.1 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).

8.2 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.

8.3 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.

- J 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.
- J 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.
- J 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)
- J 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.

9 Wetland Determination, Rating and Buffer

The eastern portion of the lawn on parcel 004610-0150 is wetland, identified as Wetland A. 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 standard 35-foot buffer requirement, according to Section 19.07.080.C of the MICC.



Figure 1: Wetland

10 Stream Determination, Rating, and Buffer

The Mercer Island stream inventory identifies the potential presence of a stream on the subject parcel (see attached Mercer Island Stream Inventory Map). The stream is an open trench, from the 12” concrete pipe outfall to the lake. This was not the natural location of a stream, but was previously channelized, meaning the final section was trenched.

There is a rock drop at the lake. The water level of the lake rarely extends to the rock drop. Fish have never been observed in the trench, including during October of 2016 and February of 2017, which had peak precipitation events. Even if fish could enter this open trench, the trench is not a safe refuge, provides no habitat, and does not provide access to habitat upstream.

From the lowest pipe outlet, the stream is piped 80 feet; then there is a section that is 15 lineal feet long; immediately upstream 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.

The lower section may have been previously piped. The very highest rating would be a Type 2, because it is “not used by fish”. However, the City’s peer review rates the unpiped portion of the trench, as a Type 1 along the lower watercourse that is closest to Lake Washington. For buffer reduction purposes, a Type 1 rating for the lower watercourse will be assumed in this Critical Areas Study. The two open sections of the stream between the piped sections are Type 2, according to the city’s peer review. Type 1 watercourses require a 75-foot, Type 2 watercourses require a 50-foot and the piped sections require a 25-foot standard buffer width according to Section 19.07.070.B.1.b of the MICC. A Type 1 watercourse buffer can be reduced to 37 feet with vegetative enhancement. A Type 2 watercourse buffer can be reduced to not less than 25 feet with vegetative enhancement. A buffer for a restored or piped watercourse can be reduced from the standard 25 feet to an amount 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 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. The standard buffer for a restored or piped watercourse 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 25 feet, per MICC 9.07.110.E.1.Table C. Row A.

11 Critical Area Buffers

The critical areas serving the wetland and watercourse are mostly surrounded by lawn or landscaped areas. The north portion of the critical area buffer consists of trees forming a natural barrier to the adjacent property. Tree species include white paper birch, plum, western red cedar as well as pacific rhododendron, roses and holly. There is an English laurel hedge along this area. See picture below. The understory consists of English ivy and ornamental plantings. Closest to the lake there is a significant weeping willow. Existing buffer intrusions include a permanent coal-fired brick/stone/steel BBQ structure within the watercourse buffer and a 150 square feet large brick patio on top of the piped watercourse (See pictures below).



Figure 2: Natural Vegetation Barrier



Figure 3: Permanent coal-fired brick/stone/steel BBQ Structure



Figure 4: Brick Patio

12 Proposed Project, Wetland and Stream Buffers

The purpose of the project is to construct a single-family residence while at the same time increase protection of the critical areas. A proposed site plan has been designed with wetland and stream buffers reduced to:

-) Category IV wetland: 25 feet
-) Type 1 watercourse: 37 feet
-) Type 2 watercourse: 25 feet
-) Piped watercourse (limited 18 ft section of total 80 ft): 3 feet

The existing buffer along the watercourse and wetland consist mainly of large open , non-native grass areas and provide for almost nonexistent buffer or habitat functions. This is an opportunity to be enhanced. Any potential impacts of the project where buffer enhancement is not possible (such as drive way access) will be mitigated by using a combination of approved mitigation options (criterion for approval in 19.07.070.B.2.a and 19.07.080.C.2.

13 Buffer Reduction Criteria and Mitigation Measures

13.1 Buffer Reduction Criteria

A. Watercourse Buffer Reduction

MICC 19.07.070.B.2.a language (*in italics*) states the following for *the standard buffer width to be reduced to not less than the above listed minimum width*, within MICC 19.07.070.B.1, *in accordance with an approved critical area study when he/she determines that*
i) a smaller area is adequate to protect the watercourse,

Analysis:

The definition of buffer is “A designated area adjoining a critical area intended to protect the critical area from degradation.” The definition of “degrade” is “to wear down by erosion” (Merriam-Webster). The existing buffer consists almost entirely of lawn. The buffer will be enhanced with additional native vegetation. The enhanced vegetation will protect the watercourse from degradation, or erosion, by (a) slowing storm water, which allows infiltration into the soil mantle prior to reaching the existing bank of the watercourse. Additional storm water created by impervious surfaces will be directed into a storm water management system, which further prevents any degradation, or erosion, from occurring.

ii) the impacts will be mitigated by using combinations of the below mitigation options, and

Analysis:

MICC 19.07.070.B.2.b lists approved mitigation options to meet the criteria of approval. The proposal will meet the requirement with “habitat enhancement within the watercourse such as...creating enhanced wetlands,...”, and “habitat enhancement within the watercourse such as log structure placement...” These mitigation measures are options approved by MICC 19.07.070.B.2.b.ii & iv.

iii) the proposal will result in no net loss of watercourse and buffer functions.

Analysis:

MICC 19.16.010.N defines “no net loss” as “an ecological concept whereby conservation losses in one geographic or otherwise defined area are equaled by conservation gains in function in another area.”

The current functions of the watercourse buffers are limited to human, small migratory birds, small to medium size mammals, amphibians, and insects. No habitat features are present other than the stream.

The table below analyses the existing functions, proposed functions, and no net loss analysis of each function for the watercourse and wetland.

Table 2: Net Loss Analysis

FUNCTIONS OF CRITICAL AREA AND ASSOCIATE BUFFER	EXISTING CONDITIONS	PROPOSED CONDITIONS	NO NET LOSS ANALYSIS
Terrestrial Animalia Functions	Used for human activity, small migratory birds, small to medium size mammals, amphibians, and insects.	Native vegetation will reduce human activity, and increase use by migratory birds, small to medium size mammals, amphibians, and insects.	Planting native groundcover and tall shrubs will decrease the barriers of human activity, while increasing the use by native terrestrial animals.

			This results in a net increase in the native function.
Water Quality Functions	The current buffer provides little to no water quality functions and encourages the use of pesticides.	Native vegetation will be established in the critical area buffers through planting of native trees, shrubs, and groundcovers.	Establishing dense, rigid native vegetation will improve the ability to slow surface water flowing towards the stream and wetland. The slowing will help filter and capture nutrients and sediments that would enter the critical area. This reduction in nutrients reduces eutrophication and increases in water visibility. Therefore, there would be a net increase in the water quality functions.
Hydrology Functions	The current hydrologic function of the critical area buffers is limited by sparsely vegetated areas, non-native grass, and buffer intrusions.	Native vegetation will be established in the critical area buffers through planting of native trees, shrubs, and groundcovers.	The addition of trees, shrubs, and groundcover plants will help attenuate flood flow during heavy rain events.
Habitat Functions	The habitat function of the critical area buffers is limited by low understory vegetative density, low structural diversity, and prevalence on non-native plant species.	All non-native plant species will be removed. Native vegetative density will be established in the critical area buffers through planting of native trees, shrubs, and groundcovers. Woody debris to be installed along the watercourse. Logs to be placed within the watercourse.	Woody debris installation and understory planting of trees, shrubs, and groundcover plants will increase vegetative density and structural diversity, improving cover, forage opportunities for wildlife, and nutrients into the watercourse. Non-native plant species removed or significantly reduced.
Overall Functions	No to moderate functioning critical area buffers in the project area currently exist. Existing buffers are characterized by a relatively open or sparsely vegetated understory.	Planting of native trees, shrubs, and groundcovers in existing non-vegetated stream buffer areas. Installation of woody debris along and logs within the watercourse.	The proposed project is expected to improve ecological functions over existing conditions. This includes terrestrial habitat, hydrology, and water quality functions of the critical area buffers. Overall no net loss of functions is expected.

iv) *However, in no case shall a reduced buffer contain a steep slope.*

Analysis:

A steep slope is defined by MICC 19.16.010.L *as any slope of 40 percent or greater calculated by measuring the vertical rise over any 30-foot horizontal run.* Per the topographic map submitted with the application, no portion of the existing or proposed buffer would have a slope of 40 percent or greater calculated by measuring the vertical rise over any 30-foot horizontal run.

B. Wetland Buffer Reduction

MICC 19.07.080.C.2 language (*in italics*) states the following for *the standard wetland buffer width to be reduced to not less than the minimum buffer width in accordance with an approved critical area study when he/she determines that*

i) *a smaller area is adequate to protect the wetland functions,*

Analysis:

Please see Table: Net Loss Analysis for an analysis of the wetland functions.

ii) the impacts will be mitigated consistent with MICC 19.07.070(B)(2), and

Analysis:

MICC 19.07.070.B.2.b lists approved mitigation options to meet the criteria of approval. The proposal will meet the requirement with “habitat enhancement within the watercourse such as...creating enhanced wetlands,...”, and “habitat enhancement within the watercourse such as log structure placement...” These mitigation measures are options approved by MICC 19.07.070.B.2.b.ii & iv.

iii) the proposal will result in no net loss of wetland and buffer functions.

Analysis:

Previously mentioned, MICC 19.16.010.N defines “no net loss” as “an ecological concept whereby conservation losses in one geographic or otherwise defined area are equaled by conservation gains in function in another area.”

As provided in Table: Net Loss Analysis, there will be no net loss to the existing functions. The proposal will result in wetland and buffer functions improved by vegetative enhancement.

13.2 Mitigation Measures

Buffer function will be enhanced within the reduced 25 feet wetland buffer, the 25 feet Type 2 watercourse buffer and the 37 feet Type 1 watercourse buffer to offer equal or better protection than existing conditions. Because the buffer bisects the only ingress/egress, access to the property will not be possible to locate outside of the reduced buffers. However, our assessment is that the impact on the watercourse function will be minimal as this area is relatively small and adjacent to the closed piped section of the watercourse. To limit any impact and to mitigate for those impacts, the following mitigation actions will be implemented:

1. The permanent coal-fired brick/stone/steel BBQ structure that is currently within the watercourse buffer will be removed.
2. The 150 square feet large brick patio that is currently on top of the piped watercourse will be removed and replaced with native vegetation as part of the 4,816 square feet enhanced buffer.
3. Woody debris will be placed along the watercourse (see Appendix - Buffer Enhancement and Mitigation map).
4. Logs will be placed along the watercourse at the lower Type 1 watercourse section (see Appendix - Buffer Enhancement and Mitigation map)

14 Wetland and Stream Buffer Functions

The wetland and stream buffers are landscaping, lawn, shrubs, structures, walkways and pavement. The stream appears to be an excavated trench 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 (see Appendix - Buffer Enhancement and Mitigation map for details and planting schedule). 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 (see Section 15 below for details).

15 Buffer Enhancement and Mitigation Implementation & Maintenance Plan

15.1 Executive Summary

The applicant proposes to build a new single-family residence on the subject property. A regulated wetland and watercourse is present on the subject property. The applicant proposes to reduce the wetland and watercourse standard buffers per chapter 13 above. As a condition of the reduction, a 4,816 square feet of the remaining buffer and 1,968 square feet of wetland will be enhanced with native vegetation. Native plant species will increase plant diversity, improve wildlife habitat and prevent the establishment of invasive species. Furthermore, to address any negative impacts mitigation will be implemented to address an onsite permanent coal-fired brick/stone/steel BBQ structure, removal of brick patio and implementation of woody debris and logs along the watercourse.

15.2 Goals and Objectives

The goal of enhancement is to increase the functions and values of the existing watercourse buffer through enhancement. Currently the watercourse buffer is ornamental landscaping, mostly open lawn and hardscapes. Enhancements will provide greater protection for the watercourse and habitat diversity. The objectives necessary to meet the above stated goal are as follows:

-) Install native vegetation within the reduced watercourse buffer
-) Enhance the wetland with native vegetation
-) Remove ornamental landscaping, structures and hardscapes
-) Maintain and monitor the enhancement areas for a period of five years or until the site meets the specified performance standards
-) Record the sensitive area in a "Notice on Title"
-) If the enhancement area fails to meet performance standards provide a contingency plan to rectify the situation.

15.3 Project Location

Property is located directly East of current residence, 4346 East Mercer Way, Mercer Island, WA.

15.4 Responsible Parties

Applicant

Johan Valentin and Helena Kjellander Valentin
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Environmental Consultant

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15.5 Standards

All work and materials shall conform to City of Mercer Island standards and specifications, and to the specifications and details shown on these plans.

15.6 City of Mercer Island Contact

Certain actions within this enhancement/restoration plan require inspection or approval by City of Mercer Island staff. Requests for inspection/approval shall be coordinated through City of Mercer Island Development Services - Building & Land, (206) 275-7605

15.7 Contractor Information

When it is available, contact information shall be provided to the City of Mercer Island that includes names, addresses and phone numbers of persons/firms that will be responsible for the enhancement/restoration area, installing required plants, and performing required maintenance and monitoring.

15.8 Contractor's Qualifications

Contractor/Landscape Installer must be experienced in enhancement and restoration work. The Permittee shall provide that there is one person on the site at all times during work and installation who is thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work being performed under these specifications. This person shall be experienced in installing plant materials for native enhancement or restoration projects, unless otherwise allowed by the Wetland Biologist and City of Mercer Island staff.

15.9 Site Conditions

The Contractor shall immediately notify the Landscape Designer and Wetland Biologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Locations shall be as depicted on the approved plan set. The Wetland Biologist may adjust the locations of plantings shown on plans based on field conditions. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat. Changes should be documented and as-built drawings submitted to the City of Mercer Island upon request for formal construction approval.

15.10 Plants

Origin: Plant materials shall be Northwest native plants, nursery grown in the Puget Sound region of Washington.

Plant Names: Plant names shall comply with those generally accepted in the native plant nursery trade. All plant materials shall be true to species and variety.

Plant Substitutions: Plant substitutions are not permitted without the permission of the City of Mercer Island staff. Same species substitutions of larger size do not require permission. However, small plants often experience less transplant shock and adapt more quickly to site conditions, resulting in a higher success rate. As such, smaller plants will be approved as substitutions based on certain site-specific conditions (trees not less than 1-gallon size however).

Quality and Condition: Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases.

Damaged, diseased, pest-infested, scraped, bruised, dried-out, burned, broken, or defective plants will be rejected.

Intermediate Inspections: All plants shall be inspected prior to installation. Condition of roots of a random sample of plants will be inspected, as well as all above ground growth on all plants. Roots of any bare root plants, if permitted for use, will be inspected. Plant material may be approved at the source, but all material must be re-inspected and approved on the site prior to installation.

Handling: Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 1, and only with the permission of the Landscape Designer and City of Mercer Island staff. Bare root plants must have enough fibrous root to insure plant survival. Roots must be covered at all times with mud and wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Damaged Plants: Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Roots: All plants shall be balled and burlapped or containerized, unless explicitly authorized by the Wetland Biologist. Root bound plants or B&B plants with damaged, cracked or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and twisted) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material is allowed only with permission from the Wetland Biologist, and City of Mercer Island staff.

Sizes: Plant sizes shall be the size indicated in the plant schedule. Larger stock may be acceptable provided that it has not been cut back to size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and under some circumstances preferable, based on site-specific conditions. Measurements, caliper, ratching and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form: Shrubs shall have multiple stems and be well-branched.

Planting: Planting shall be done in accordance with illustrated details in the enhancement/restoration plan set and accepted industry standards. Plant locations shall also be inspected and approved prior to planting.

Timing of Planting: Unless otherwise approved by City of Mercer Island staff, all planting shall occur between September 1 and March 31, unless irrigation is provided.

Planting in Pits: Planting pits shall be circular or square with vertical sides, and shall be 6" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits, as illustrated in planting detail. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting soils.

Soil Amendments: Unless otherwise specified and approved by City of Mercer Island, native soil will be incorporated into the planting pits.

Mulch: The entire mitigation area shall receive no less than 1"-4" of medium bark mulch after planting. Mulch shall be kept well away (at least 2") from the trunks and stems of woody plants.

Fertilizer: Slow release fertilizer may be used if pre-approved by City of Mercer Island staff. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No fertilizers will be placed in planting holes.

Water: Plants shall be watered upon completion of backfilling. Plants shall be watered a second time within 24-48 hours after installation. The earthen rim/dam should be leveled prior to the second growing season.

Weeding: Existing and exotic vegetation in the enhancement and buffer areas will be hand weeded from around all newly installed plants on routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is allowed without the written permission of City of Mercer Island staff.

15.11 Maintenance

Maintenance shall be required in accordance with City of Mercer Island guidelines and approved plans.

15.12 Duration and Extent

In order to achieve performance standards, the Permittee shall have the enhancement/restoration area maintained for the duration of the monitoring period, **5** years. All maintenance shall include:

-) watering (see 15.18 for details)
-) weeding around base of installed plants
-) pruning
-) replacement (see 15.14 for details)
-) restaking
-) removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-7150-005) as well as Himalayan blackberry
-) any other measures needed to insure plant survival (see 15.19 for details)
-) general maintenance activities which include the replacement of any vandalized or damaged signs, habitat features, fences or other structural component of the enhancement site.

15.13 Survival

The Permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by City of Mercer Island staff (see Performance Standards). A growing season for these purposes is defined as occurring from spring to spring (March 15 to October 15, following year). The Permittee shall replace any plants that are failing, weak, defective in a manner of growth, or dead during this growing season.

15.14 Installation Timing for Replacement Plants

Replacement plants shall be installed between September 1 and March 31, unless otherwise determined by City of Mercer Island staff.

15.15 Standards for Replacement Plants

Replacement plants shall meet the same standards for size and type as those specified for original installation unless otherwise directed by the City of Mercer Island staff. Replacement plants shall be inspected as described above for the original installation.

15.16 Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted as directed by City of Mercer Island staff.

15.17 Herbicides/Pesticides

Chemical controls shall not be used in the enhancement/restoration area, sensitive areas or their buffers. However, limited use of herbicides may be approved depending on site specific conditions, only if approved by City of Mercer Island staff.

15.18 Irrigation/Watering

Water may be necessary during the dry season (June 1-October 15) for the first two years after installation to ensure plant survival and establishment. Water should be provided by a temporary above ground or permanent below ground irrigation system. It is the responsibility of the applicant to have the temporary irrigation designed, installed and maintained so that the necessary water amounts are provided. Water should be applied at a rate of 1" of water two times a week for Year 1 and 1" of water one time a week during Year 2.

15.19 Performance Standards - Plant Cover and Survival

Plant survival and cover standards are established to measure enhancement success as follows:

Year 1 Year 3 Year 5

- | | | | | |
|---|-------------------------------|------|------|------|
|) | Shrub and Herbaceous Cover* | 30% | 50% | 75% |
|) | Shrub and Herbaceous Survival | 100% | >90% | >80% |

- * Includes beneficial native plants in that category that are naturally recruiting volunteers
- Less than 10% invasive vegetation during any monitoring event.
- The establishment of **5** species of native shrubs and **3** species of native groundcovers at the end the 5 years of monitoring.

15.20 Monitoring

Monitoring shall be conducted annually for **five** years in accordance with the approved enhancement/restoration monitoring plan. Monitoring reports shall be submitted to the City of Mercer Island.

Vegetation Monitoring

Sample plots will be established for vegetation monitoring, and photo-points established from which photos will be taken throughout the monitoring period. Permanent plot location(s) must be identified on enhancement/restoration site plans in the first monitoring report (they may be drawn on approved enhancement/restoration plans by hand). Plots shall detail herb, shrub, and tree aerial cover at radii of 1m, 5m, and 10m respectively, using the Braun-Blanquet releve method or other acceptable field method. Monitoring of vegetation transects shall occur annually between August 1 and October 30 (prior to leaf drop), unless otherwise specified.

Photopoints

Two permanent photo points will be established within the enhancement/restoration area. Photographs will be taken from these points to visually record the condition of the enhancement/restoration area. Photos shall be taken annually between August 1 and October 30 (prior to leaf drop), unless otherwise specified.

Reports

Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include description/data for:

-) Site plan and location map
-) Historic description of project, including date of installation, current year of monitoring, restatement of enhancement/restoration goals, and performance standards
-) Plant survival, vigor, and aerial coverage from every plant community (transect data), and explanation of monitoring methodology in the context of assessing performance standards
-) Buffer conditions, e.g. surrounding land use, use by humans, wild and domestic creatures
-) Observed wildlife, including amphibians, avians and others
-) Assessment of nuisance/exotic biota and recommendations for removal
-) Receipts for off-site disposal of any dumping, weeds, or invasive plants
-) Receipts for any structural repair or replacement
-) 4"x6" color photograph taken from permanent photo-points as shown on Monitoring/Restoration plan.
-) Summary of maintenance and contingency measures proposed for next season and completed for past season

Deficiencies

Any deficiency discovered during any monitoring or inspection visit must be corrected within 60 days of approval by City of Mercer Island.

Contingency Plan

Should any monitoring report reveal the enhancement has failed in whole or in part, and should that failure be beyond the scope of routine maintenance, a Contingency Plan will be submitted. The Contingency Plan may range in complexity from a list of plants substituted, to cross-sections of proposed engineered structures. Once approved, it may be installed and will replace the approved enhancement/restoration plan. If the failure is substantial, the City of Mercer Island may extend the monitoring period for that enhancement.

15.21 Bond

Prior to beginning any work, the Permittee must provide a enhancement/restoration bond or assignment of funds per City of Mercer Island procedures. A bond quantity worksheet has been completed based on all elements of the enhancement/restoration plan. The total cost, plus contingency fees, have been determined to be \$7,500, which will be the amount of the enhancement/restoration bond the Permittee is required to provide.

16 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 660 feet of the site, per the city's on-line Eagle nest buffers. Therefore, state requirements for nest buffers and seasonal construction restrictions do not apply.

17 Conclusion

The proposed buffer enhancement and mitigation measures will improve the functions of the wetland, watercourse and associated buffers. Wildlife habitat and the lake shoreline will benefit from the establishment of a native plant community.

18 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.

19 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

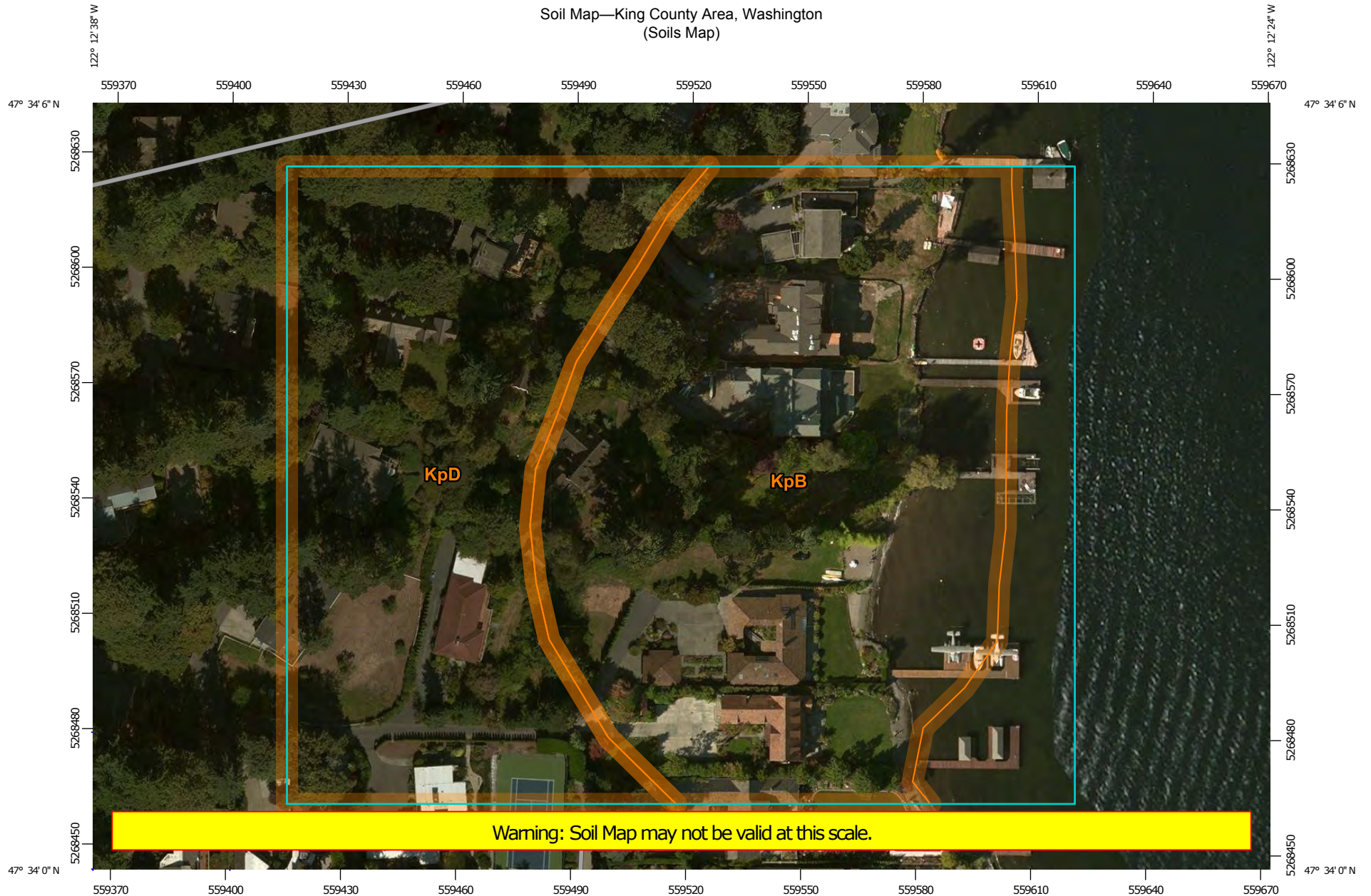
The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This 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:

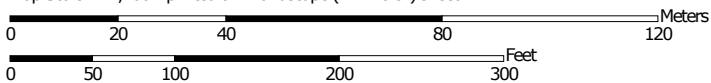


Soil Map—King County Area, Washington
(Soils Map)



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

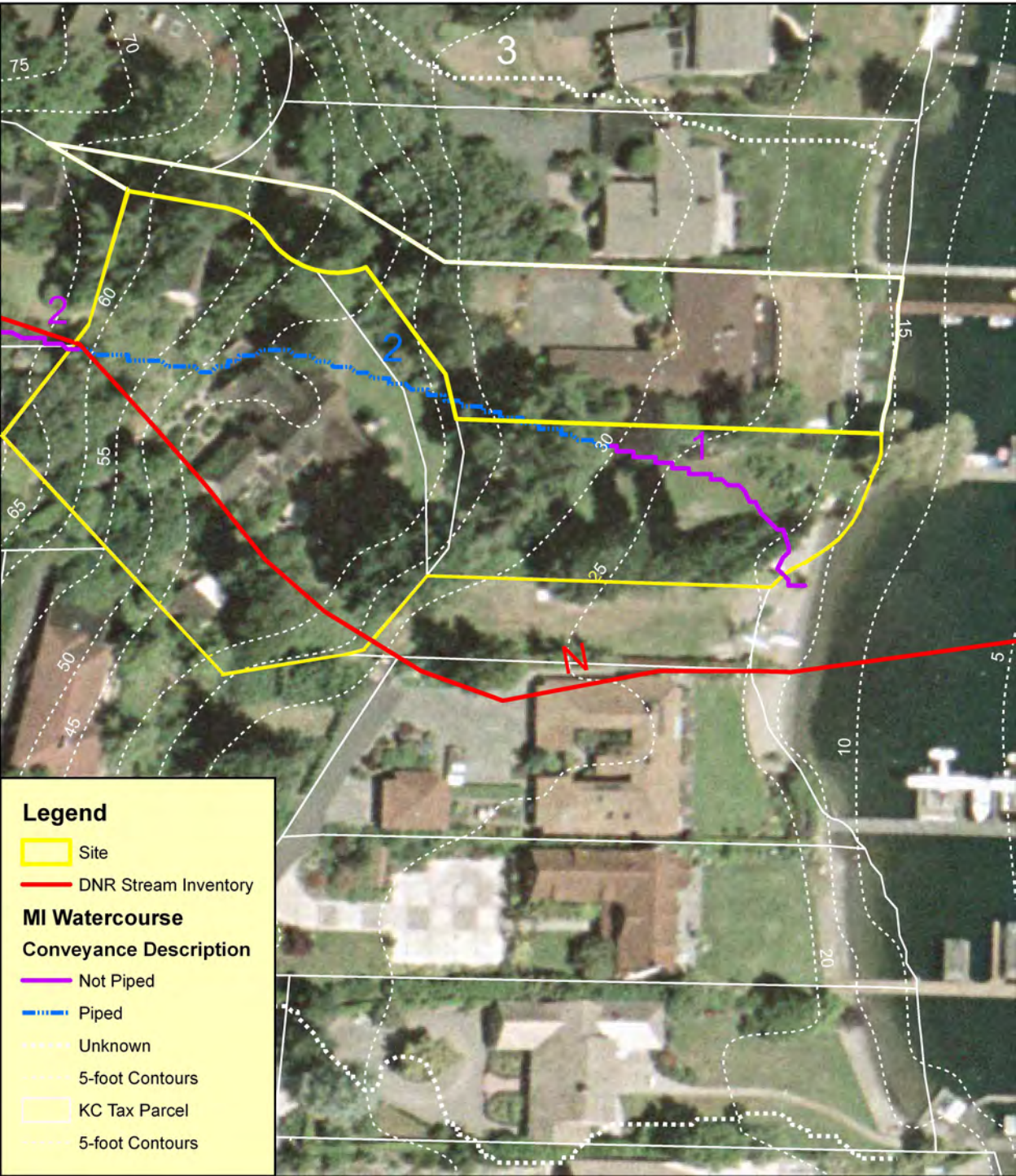
King County Area, Washington (WA633)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KpB	Kitsap silt loam, 2 to 8 percent slopes	4.3	51.1%
KpD	Kitsap silt loam, 15 to 30 percent slopes	3.2	38.3%
Totals for Area of Interest		8.5	100.0%

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

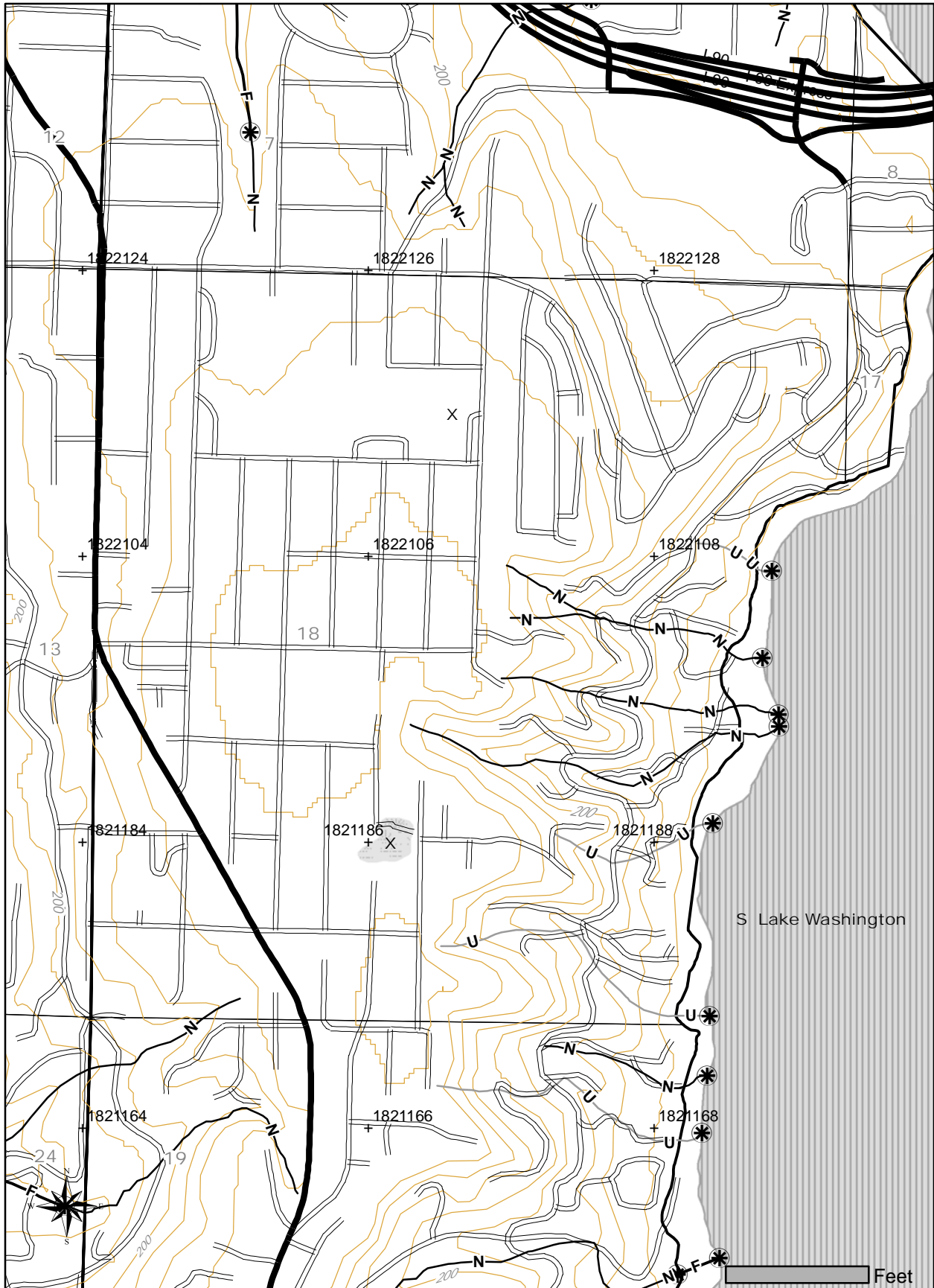
- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Forested/Shrub Wetland |  Other |
|  Estuarine and Marine Wetland |  Freshwater Pond |  Riverine |
|  Freshwater Emergent Wetland |  Lake | |

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

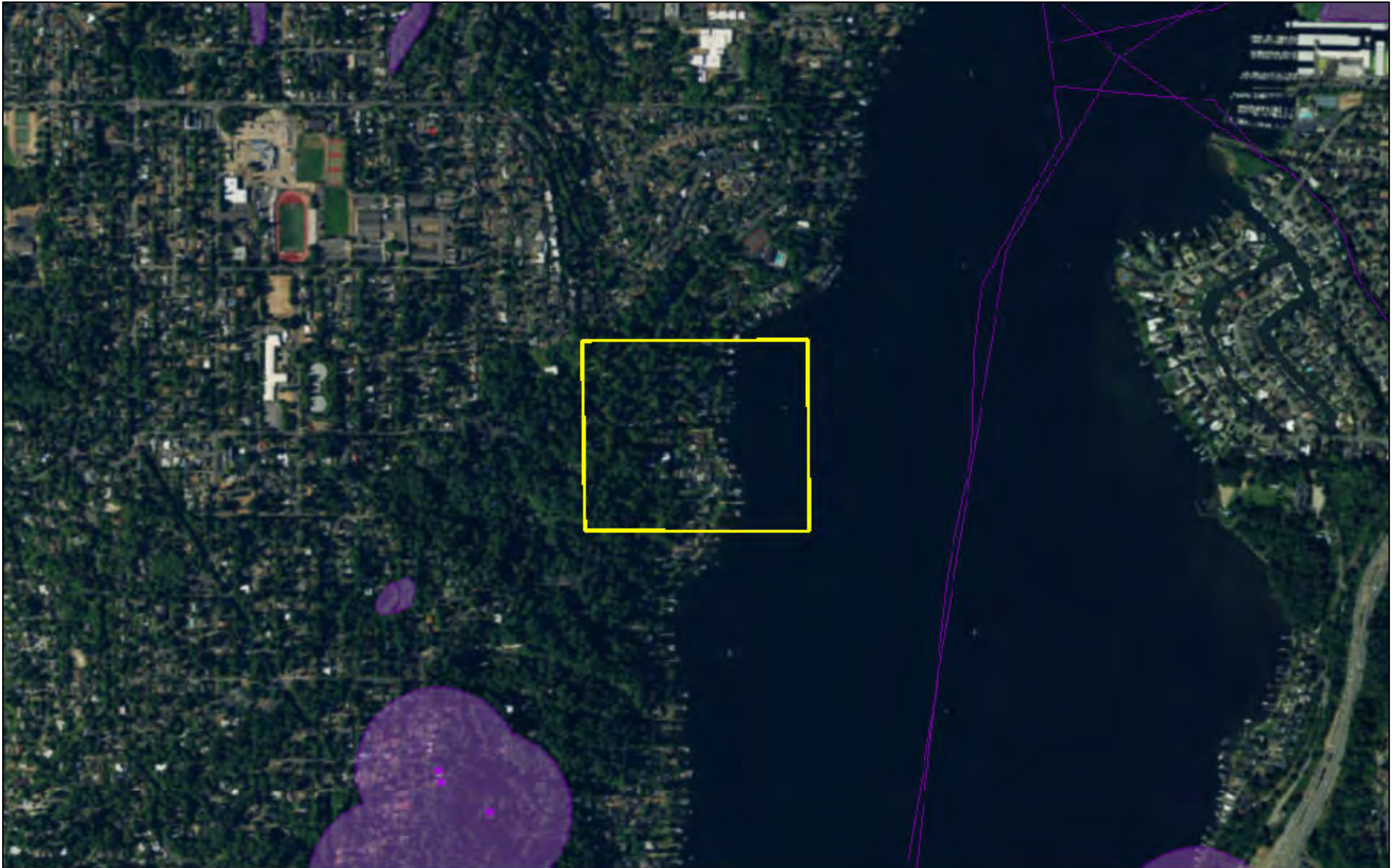
SOURCE DATASET: PHSPublic
REPORT DATE: 11/22/2016 9.44

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				

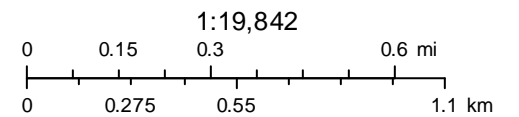
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents 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>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
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>)				
1. <u>Red Osier Dogwood</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	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 = _____
2. <u>Nootka Rose</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>45</u> = Total Cover				
Herb Stratum (Plot size: <u>10'</u>)				
1. <u>Small Fruited Bullrush</u>	<u>5</u>	_____	<u>FACW</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Grass</u>	<u>50</u>	_____	<u>FAC</u>	
3. <u>Morning Glory</u>	<u>20</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>25%</u>				
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-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	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	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 = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				
Herb Stratum (Plot size: <u>16'</u>)				
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: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>50</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

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 checked="" 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 = _____
= Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>10'</u>)				Column Totals: _____	(A) _____ (B) _____
1. <u>Grass</u>	<u>50</u>	<u>YES</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
6. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
9. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
11. _____	_____	_____	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum _____					
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 <u>points = 2</u> 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	<u>0</u>
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 <u>points = 0</u>
Total for S 1	Add the points in the boxes above <u>2</u>

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?	<u>Yes = 1</u> No = 0 <u>1</u>
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 <u>No = 0</u> <u>0</u>
Total for S 2	Add the points in the boxes above <u>1</u>

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?	<u>Yes = 1</u> No = 0 <u>1</u>
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>	<u>Yes = 1</u> No = 0 <u>1</u>
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>	<u>Yes = 2</u> No = 0 <u>2</u>
Total for S 3	Add the points in the boxes above <u>4</u>

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

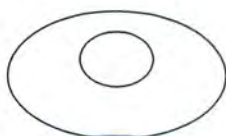
1

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:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><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)</p> <p><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>)</p> <p><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>)</p> <p><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>).</p> <p>Calculate: % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>> 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>< 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat > 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p>Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>> 50% of 1 km Polygon is high intensity land use points = (-2)</p> <p>≤ 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</p> <ul style="list-style-type: none"> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> 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>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>		0

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.

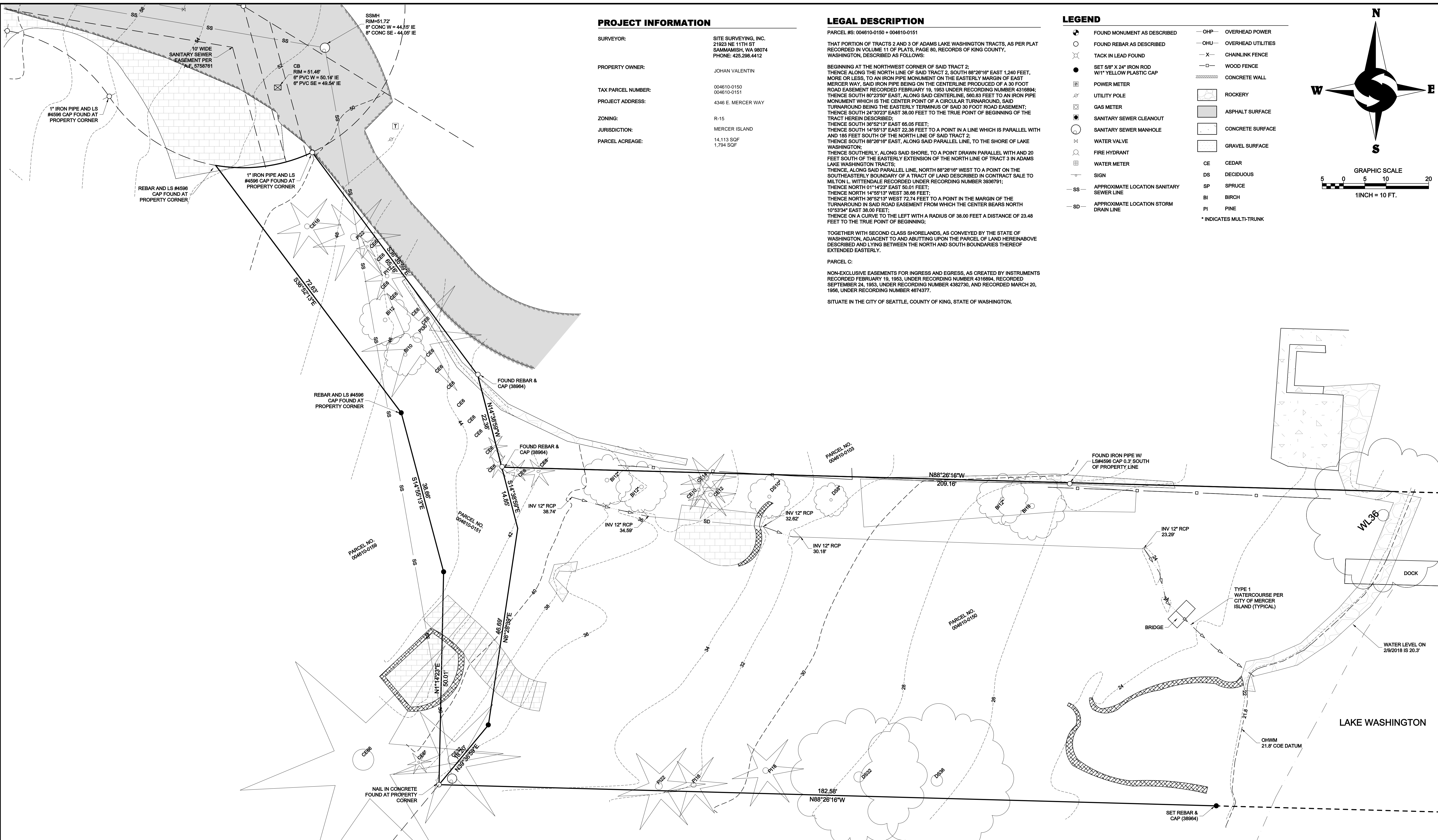
Wetland name or number A

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 un-mowed 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

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PROJECT INFORMATION

SURVEYOR: SITE SURVEYING, INC.
21923 NE 11TH ST
SAMMAMISH, WA 98074
PHONE: 425.298.4412

PROPERTY OWNER: JOHAN VALENTIN

TAX PARCEL NUMBER: 004610-0150
004610-0151

PROJECT ADDRESS: 4346 E. MERCER WAY

ZONING: R-15

JURISDICTION: MERCER ISLAND

PARCEL ACREAGE: 14,113 SQF
1,794 SQF

LEGAL DESCRIPTION

PARCEL #S: 004610-0150 + 004610-0151

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°29'50" EAST, ALONG SAID CENTERLINE, 580.83 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 38°52'13" EAST 85.05 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 38°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 HEREINAFORE DESCRIBED AND LYING BETWEEN THE NORTH AND SOUTH BOUNDARIES THEREOF EXTENDED EASTERLY.

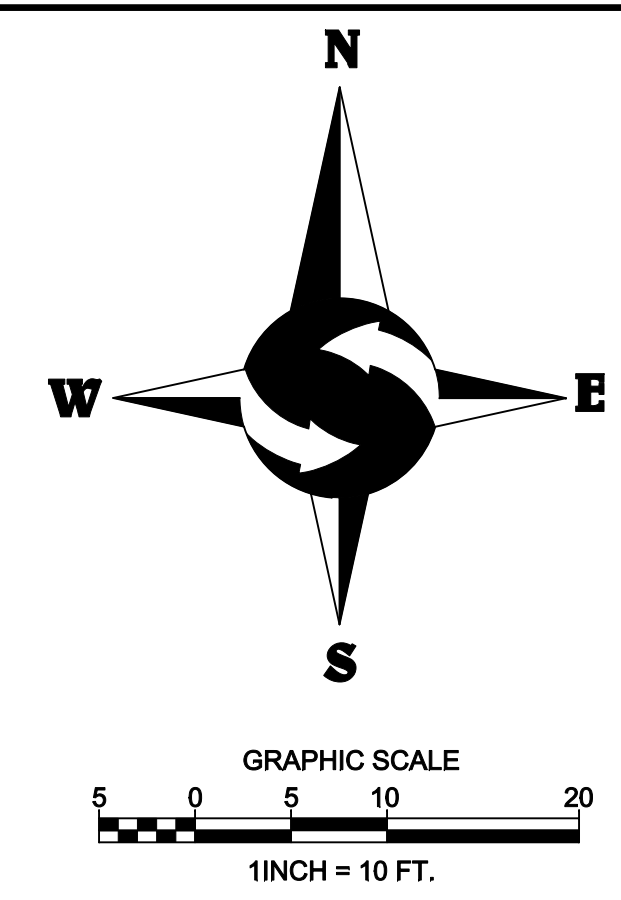
PARCEL C:

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 432730, AND RECORDED MARCH 20, 1956, UNDER RECORDING NUMBER 4674377.

SITUATE IN THE CITY OF SEATTLE, COUNTY OF KING, STATE OF WASHINGTON.

LEGEND

- FOUND MONUMENT AS DESCRIBED
- FOUND REBAR AS DESCRIBED
- ⊗ TACK IN LEAD FOUND
- SET 5/8" X 24" IRON ROD W/1" YELLOW PLASTIC CAP
- ⊠ POWER METER
- ⊞ UTILITY POLE
- ⊞ GAS METER
- ⊞ SANITARY SEWER CLEANOUT
- ⊞ SANITARY SEWER MANHOLE
- ⊞ WATER VALVE
- ⊞ FIRE HYDRANT
- ⊞ WATER METER
- SS— SIGN
- SS— APPROXIMATE LOCATION SANITARY SEWER LINE
- SD— APPROXIMATE LOCATION STORM DRAIN LINE
- OHP— OVERHEAD POWER
- OHU— OVERHEAD UTILITIES
- X— CHAINLINK FENCE
- WOOD FENCE
- ▨ CONCRETE WALL
- ▨ ROCKERY
- ▨ ASPHALT SURFACE
- ▨ CONCRETE SURFACE
- ▨ GRAVEL SURFACE
- CE CEDAR
- DS DECIDUOUS
- SP SPRUCE
- BI BIRCH
- PI PINE
- * INDICATES MULTI-TRUNK



VERTICAL DATUM & CONTOUR INTERVAL

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM INFORMATION PROVIDED BY US CORPS OF ENGINEERS AND ARE ON USCE CHITTENDEN LOCKS DATUM

WATER LEVEL = 20.00' ON 02/09/2018

2.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO 1/2 THE CONTOUR INTERVAL OR PLUS / MINUS 1.0' FOR THIS PROJECT.

BASIS OF BEARINGS

THE PLAT OF CROWN ADDITION TO THE CITY OF SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS, PAGE 38, RECORDS OF KING COUNTY, WASHINGTON.

GENERAL NOTES

- THIS SURVEY WAS COMPLETED WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST ON THIS PROPERTY THAT ARE NOT SHOWN HEREON.
- INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND NIKON NIVO 5.C TOTAL STATION. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.
- THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN FEBRUARY 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
- UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.
- ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

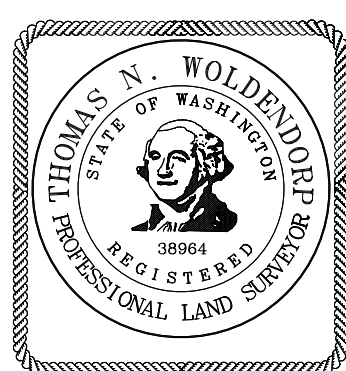
PROJECT NO.	18-023
DRAWN BY:	EFJ
CHECKED BY:	TNW
DATE:	2/13/18
SHEET	1 OF 2

TOPOGRAPHIC SURVEY

JOHAN VALENTIN
4346 E MERCER WAY
MERCER ISLAND, WA
98040

DATE	REVISION	DRN

SE 1/4, NE 1/4, SEC 18, TWP 24N, RNG 5E, W.M.

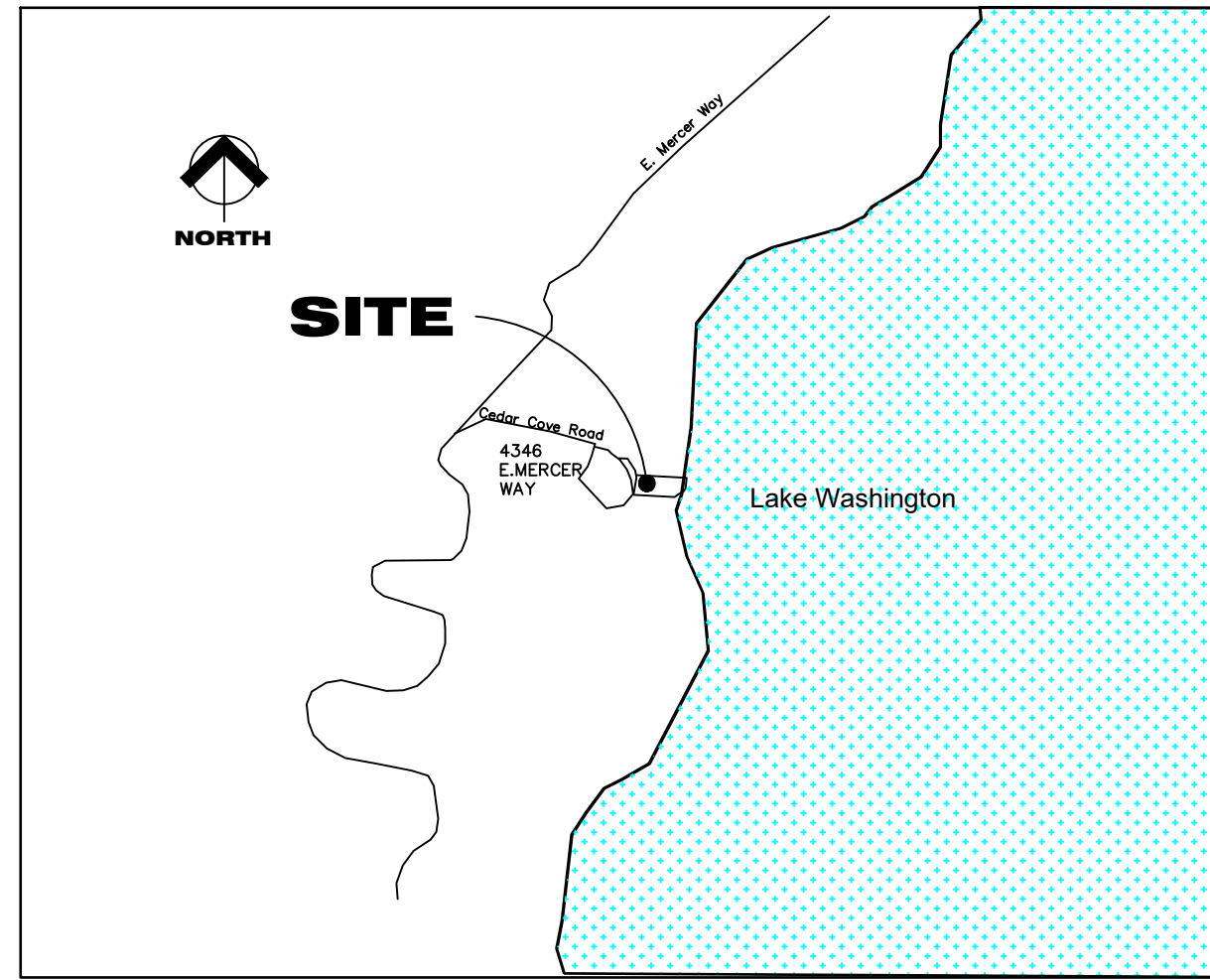


Valentin Mitigation Plan - Existing Condition

EAST OF 4346 EAST MERCER WAY, MERCER ISLAND, WASHINGTON 98040

SE 1/4 OF NE 1/4 OF SEC. 18, TWP. 24 N, RGE. 05 E, W.M.

TAX PARCEL ID NUMBERS: 004610-0150 & 004610-0151



VICINITY MAP
NOT TO SCALE

CONTACT INFORMATION

APPLICANT:
JOHAN VALENTIN & HELENA KJELLANDER VALENTIN
4346 E MERCER WAY
MERCER ISLAND, WASHINGTON 98040
214-228-0536/johan.valentin@gmail.com

ENVIRONMENTAL CONSULTANT:
J. S. JONES AND ASSOCIATES, INC.
ATTN: JEFFERY S. JONES, PWS
P.O. BOX 1908, ISSAQUAH, WA 98027
253-905-5736/jeff.jstones@comcast.net

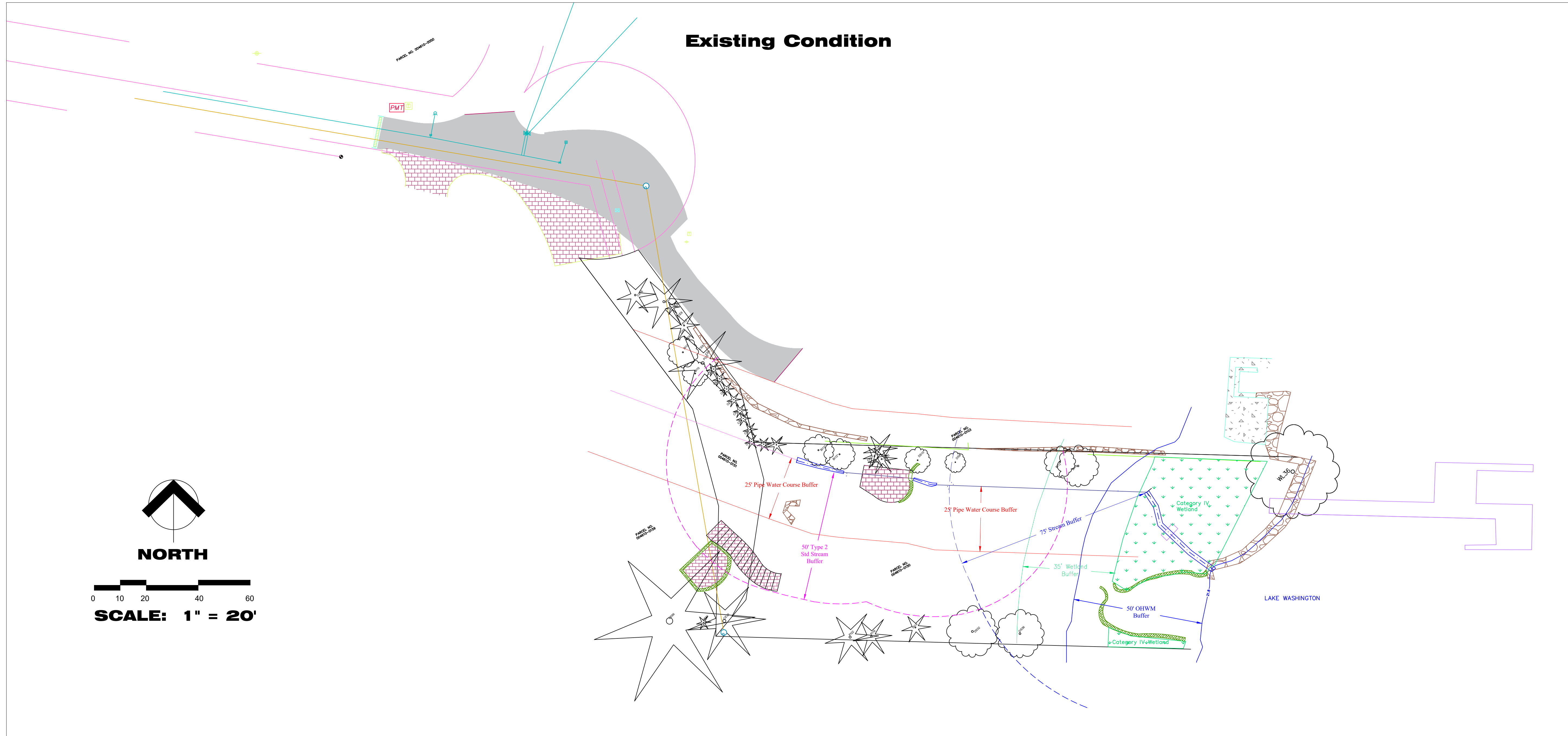
FULL LEGAL DESCRIPTIONS

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 TGV 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 ML ELY OF NW COR TH S 01-00-16 E 446.31 FT TH S 89-04-24 E 380.80 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 ML 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 108.39 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

Existing Condition



SCALE: 1" = 20'

CONSULTANT:

J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027

JOHAN & HELENA VALENTIN
4346 E. Mercer Island Way, Mercer Island, WA 98040
1-214-228-0536 Johan.valentin@gmail.com

Existing Condition

STREAM BUFFER ENHANCEMENT PLAN

TAX PARCEL ID NO.: 004610-0150, 004610-0151, & 004610-0159

DESIGNED BY: Jeff Jones	CHECKED BY: Jeff Jones	APPROVED BY:	DATE: 3/23/2018
DRAWN BY: Jeff Jones	PROJECT:		

SCALE
1"=20'

SHEET
1 of 4

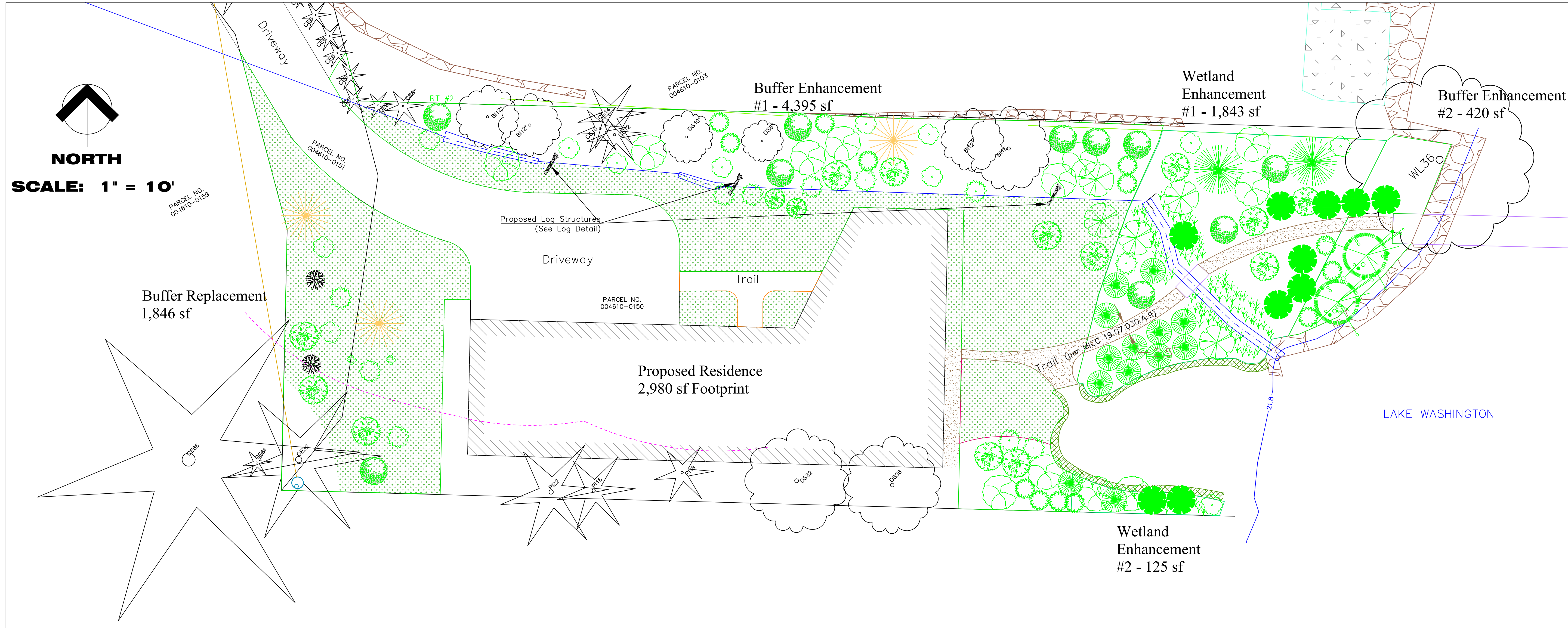
NO.	DATE	BY	REVISION
2			
1			

VALENTIN PROPERTY - BUFFER REDUCTION MITIGATION PLAN

EAST OF 4346 EAST MERCER WAY, MERCER ISLAND, WASHINGTON 98040

SE 1/4 OF NE 1/4 OF SEC. 18, TWP. 24 N, RGE. 05 E, W.M.

TAX PARCEL ID NUMBERS: 004610-0150 & 004610-0151

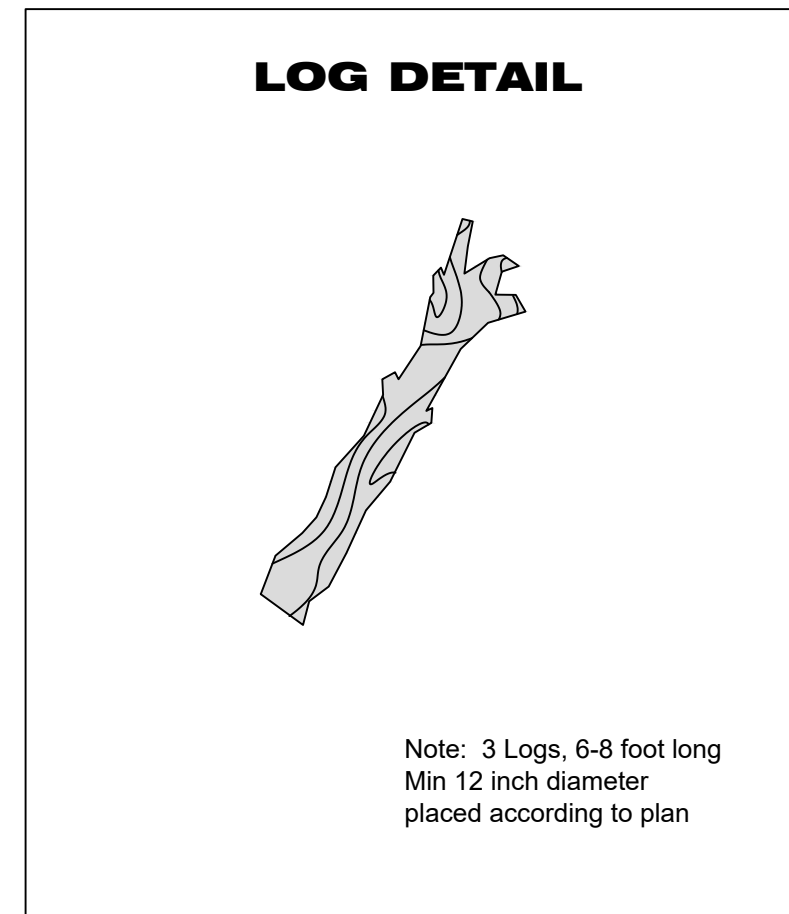
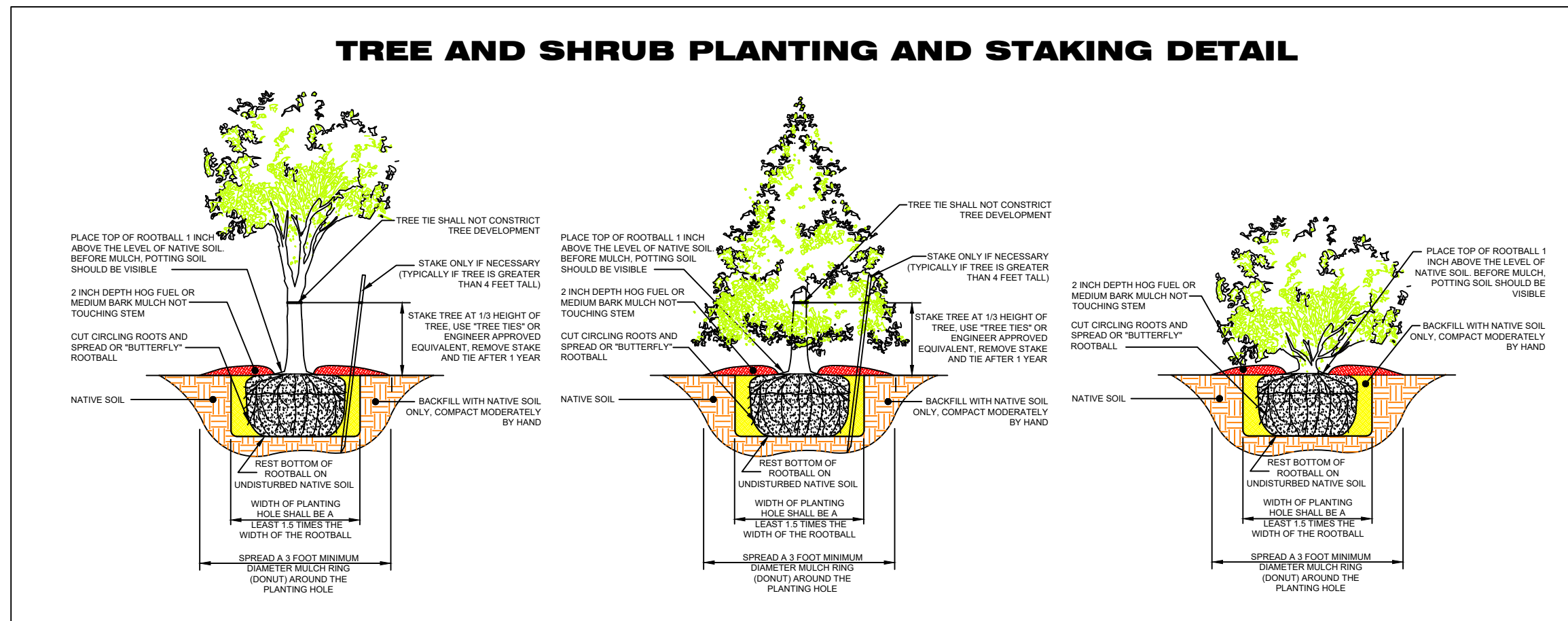


CLEARING AND GRADING STANDARD NOTES

1. A COPY OF THE APPROVED PLANS MUST BE ON-SITE DURING CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.
2. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND TO AVOID UTILITIES WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
3. A REINFORCED EROSION CONTROL FENCE MUST BE INSTALLED IN ACCORDANCE WITH THE TESP PLAN.
4. TO REDUCE THE POTENTIAL FOR EROSION OF EXPOSED SOILS, BEST MANAGEMENT PRACTICES (BMPs) MUST BE FOLLOWED ACCORDING TO THE TESP PLAN.

CONSTRUCTION SEQUENCE:

1. HOLD THE PRE-CONSTRUCTION MEETING
2. STAKE CLEARING LIMITS
3. INSTALL PERIMETER EROSION CONTROL FENCING
4. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S)
5. REMOVE EXISTING PLANT MATERIALS
6. INSTALL PIPELINE
7. RECONSTRUCT STREAM CHANNEL
8. INSTALL ROCK SPLASH POOL
9. INSTALL PLANT MATERIALS
10. MULCH PLANT MATERIALS
11. INSTALL TEMPORARY IRRIGATION SYSTEM
12. STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS
13. UPON COMPLETION OF THE PROJECT, REMOVE BMP'S AS APPROPRIATE



PLANT SCHEDULE									
SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	Dry Wetland Area #1	Dry Wetland Area #2	Dry Buffer Area #1	Dry Buffer Area #2	Dry Buffer Repl. Area	TOTAL
	OREGON ASH	FRAXINUS LATIFOLIA	2 GAL	0	0	0	2	0	2
	SITKA SPRUCE	PICEA SITCHENSIS	2 GAL	1	0	0	0	0	2
	PAPER BIRCH	BETULA PAPPYRIFERA	2 GAL	3	0	4	0	1	8
	PACIFIC DOGWOOD	CORNUS NUTTALLII	2 GAL	3	0	4	0	0	6
	DOUGLAS FIR	PSEUDOTSUGA MENZIESII	2 GAL	0	0	1	0	2	2
	BIG LEAF MAPLE	ACER MACROPHYLLUM	2 GAL	0	0	0	0	2	2
	MOCK ORANGE	PHILADELPHUS LEWISII	1 GAL	2	0	8	1	2	11
	OCEAN SPRAY	HOLDRICHUS DISCOLOR	1 GAL	2	2	8	0	0	10
	RHODODENDRON	RHODODENDRON MACROPHYLLUM	1 GAL	4	0	8	0	3	13
	NOOTKA ROSE	ROSA NUTKANANA	1 GAL	0	2	8	3	0	11
	VINE MAPLE	ACER CIRCINATUM	1 GAL	0	0	8	0	3	11
	OVAL LEAVED BLUEBERRY	VACCINIUM OVALIFOLIUM	1 GAL	12	2	0	2	0	16
	HUCKLEBERRY	VIBURNUM TRELLEBOM	1 GAL	6	2	0	2	0	10
	KINNIKINICK	ARCTOSTAPHYLOS UVA-URSINA	4 INCH	0	0	180	24	72	276
	SLOUGH SEDGE	CAREX OBSPATA	PLUGS	38	16	0	0	0	52

DESIGNED BY: Jeff Jones		DRAWN BY: Jeff Jones		CHECKED BY: Jeff Jones		APPROVED BY:		DATE: 3/21/18	
CLIENT: JOHAN & HELENA VALENTIN 4346 E. Mercer Island Way, Mercer Island, WA 98040 1-214-228-0536 Johan.valentin@gmail.com		PROJECT: VALENTIN PROPERTY STREAM BUFFER ENHANCEMENT PLAN		TAX PARCEL ID NO.: 004610-0150, 004610-0151, & 004610-0159		NO.		DATE	
SCALE 1"=10'		SHEET 3 of 4		CONSULTANT: J. S. Jones and Associates, Inc. Environmental Consultants Wetlands, Streams, and Wildlife P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027		NO.		REVISION	

VALENTIN PROPERTY - BUFFER REDUCTION MITIGATION PLAN

EAST OF 4346 EAST MERCER WAY, MERCER ISLAND, WASHINGTON 98040
SE 1/4 OF NE 1/4 OF SEC. 18, TWP. 24 N, RGE. 05 E, W.M.

TAX PARCEL ID NUMBERS: 004610-0150 & 004610-0151

1.1 Executive Summary

The applicant proposes to build a new single-family residence on the subject property. A regulated wetland and watercourse is present on the subject property. The applicant proposes to reduce the wetland and watercourse standard buffers. As a condition of the reduction, 4,395 square feet of the remaining buffer will be enhanced with native vegetation. Native plant species will increase plant diversity, improve wildlife habitat and prevent the establishment of invasive species. Furthermore, to address any negative impacts mitigation will be implemented to address an onsite permanent coal-fired brick/stone/steel BBQ structure, removal of brick patio and implementation of large woody debris along the watercourse and placement of logs within the watercourse.

1.2 Goals and Objectives

The goal of enhancement is to increase the functions and values of the existing watercourse buffer through enhancement. Currently the watercourse buffer is ornamental landscaping, mostly open lawn and hardscapes. Enhancements will provide greater protection for the watercourse and habitat diversity. The objectives necessary to meet the above stated goal are as follows:

- Install native vegetation within the reduced watercourse buffer
- Enhance the wetland with native vegetation
- Remove ornamental landscaping, structures and hardscapes
- Maintain and monitor the enhancement areas for a period of five years or until the site meets the specified performance standards
- Record the sensitive area in a "Notice on Title"
- If the enhancement area fails to meet performance standards provide a contingency plan to rectify the situation.

1.3 Project Location

Property is located directly East of current residence, 4346 East Mercer Way, Mercer Island, WA.

1.4 Responsible Parties

Applicant

Johan Valentin and Helena Kjellander Valentin
4346 East Mercer Way, Mercer Island, WA 98040
(214) 228-0536

Environmental Consultant

J. S. Jones and Associates, Inc.
Attn: Jeffery S. Jones, PWS
P.O. Box 1908, Issaquah WA 98027
(253) 905-5736

1.5 Standards

All work and materials shall conform to City of Mercer Island standards and specifications, and to the specifications and details shown on these plans.

1.6 City of Mercer Island Contact

Certain actions within this enhancement/restoration plan require inspection or approval by City of Mercer Island staff. Requests for inspection/approval shall be coordinated through City of Mercer Island Development Services - Building & Land, (206) 275-7605.

1.7 Contractor Information

When it is available, contact information shall be provided to the City of Mercer Island that includes names, addresses and phone numbers of persons/firms that will be responsible for the enhancement/restoration area, installing required plants, and performing required maintenance and monitoring.

1.8 Contractor's Qualifications

Contractor/Landscape Installer must be experienced in enhancement and restoration work. The Permittee shall provide that there is one person on the site at all times during work and installation who is thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work being performed under these specifications. This person shall be experienced in installing plant materials for native enhancement or restoration projects, unless otherwise allowed by the Wetland Biologist and City of Mercer Island staff.

1.9 Site Conditions

The Contractor shall immediately notify the Landscape Designer and Wetland Biologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Locations shall be as depicted on the approved plan set. The Wetland Biologist may adjust the locations of

plantings shown on plans based on field conditions. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat. Changes should be documented and as-built drawings submitted to the City of Mercer Island upon request for formal construction approval.

1.10 Plants

Origin: Plant materials shall be Northwest native plants, nursery grown in the Puget Sound region of Washington.

Plant Names: Plant names shall comply with those generally accepted in the native plant nursery trade. All plant materials shall be true to species and variety.

Plant Substitutions: Plant substitutions are not permitted without the permission of the City of Mercer Island staff. Same species substitutions of larger size do not require permission. However, small plants often experience less transplant shock and adapt more quickly to site conditions, resulting in a higher success rate. As such, smaller plants will be approved as substitutions based on certain site-specific conditions (trees not less than 1-gallon size however).

Quality and Condition: Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried-out, burned, broken, or defective plants will be rejected.

Intermediate Inspections: All plants shall be inspected prior to installation. Condition of roots of a random sample of plants will be inspected, as well as all above ground growth on all plants. Roots of any bare root plants, if permitted for use, will be inspected. Plant material may be approved at the source, but all material must be re-inspected and approved on the site prior to installation.

Handling: Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 1, and only with the permission of the Landscape Designer and City of Mercer Island staff. Bare root plants must have enough fibrous root to insure plant survival. Roots must be covered at all times with mud and wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Damaged Plants: Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Roots: All plants shall be balled and burlapped or containerized, unless explicitly authorized by the Wetland Biologist. Root bound plants or B&B plants with damaged, cracked or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and twisted) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material is allowed only with permission from the Wetland Biologist, and City of Mercer Island staff.

Sizes: Plant sizes shall be the size indicated in the plant schedule. Larger stock may be acceptable provided that it has not been cut back to size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and under some circumstances preferable, based on site-specific conditions. Measurements, caliper, ratching and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form: Shrubs shall have multiple stems and be well-branched.

Planting: Planting shall be done in accordance with illustrated details in the enhancement/restoration plan set and accepted industry standards. Plant locations shall also be inspected and approved prior to planting.

Timing of Planting: Unless otherwise approved by City of Mercer Island staff, all planting shall occur between September 1 and March 31, unless irrigation is provided.

Planting in Pits: Planting pits shall be circular or square with vertical sides, and shall be 6" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits, as illustrated in planting detail. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting soils.

Soil Amendments: Unless otherwise specified and approved by City of Mercer Island, native soil will be incorporated into the planting pits.

Mulch: The entire mitigation area shall receive no less than 1"-4" of medium bark mulch after planting. Mulch shall be kept well away (at least 2") from the trunks and stems of woody plants.

Fertilizer: Slow release fertilizer may be used if pre-approved by City of Mercer Island staff. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No fertilizers will be placed in planting holes.

Water: Plants shall be watered upon completion of backfilling. Plants shall be watered a second time within 24-48 hours after installation. The earthen rim/dam should be leveled prior to the second growing season.

Weeding: Existing and exotic vegetation in the enhancement and buffer areas will be hand weeded from around all newly installed plants on routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is allowed without the written permission of City of Mercer Island staff.

1.11 Maintenance

Maintenance shall be required in accordance with City of Mercer Island guidelines and approved plans.

1.12 Duration and Extent

In order to achieve performance standards, the Permittee shall have the enhancement/restoration area maintained for the duration of the monitoring period, 5 years. All maintenance shall include:

- watering
- weeding around base of installed plants
- pruning
- replacement
- restaking
- removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-7150-005) as well as Himalayan blackberry
- any other measures needed to insure plant survival
- general maintenance activities which include the replacement of any vandalized or damaged signs, habitat features, fences or other structural component of the enhancement site.

1.13 Survival

The Permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by City of Mercer Island staff (see Performance Standards). A growing season for these purposes is defined as occurring from spring to spring (March 15 to October 15, following year). The Permittee shall replace any plants that are failing, weak, defective in a manner of growth, or dead during this growing season.

1.14 Installation Timing for Replacement Plants

Replacement plants shall be installed between September 1 and March 31, unless otherwise determined by City of Mercer Island staff.

1.15 Standards for Replacement Plants

Replacement plants shall meet the same standards for size and type as those specified for original installation unless otherwise directed by the City of Mercer Island staff. Replacement plants shall be inspected as described above for the original installation.

1.16 Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted as directed by City of Mercer Island staff.

1.17 Herbicides/Pesticides

Chemical controls shall not be used in the enhancement/restoration area, sensitive areas or their buffers. However, limited use of herbicides may be approved depending on site specific conditions, only if approved by City of Mercer Island staff.

1.18 Irrigation/Watering

Water may be necessary during the dry season (June 1-October 15) for the first two years after installation to ensure plant survival and establishment. Water should be provided by a temporary above ground or permanent below ground irrigation system. It is the responsibility of the applicant to have the temporary irrigation designed, installed and maintained so that the necessary water amounts are provided. Water should be applied at a rate of 1" of water two times a week for Year 1 and 1" of water one time a week during Year 2.

1.19 Performance Standards - Plant Cover and Survival

Plant survival and cover standards are established to measure enhancement success as follows:

- | | Year 1 | Year 3 | Year 5 |
|---------------------------------|--------|--------|--------|
| • Shrub and Herbaceous Cover* | 30% | 50% | 75% |
| • Shrub and Herbaceous Survival | 100% | >90% | >80% |

- * Includes beneficial native plants in that category that are naturally recruiting volunteers

- Less than 10% invasive vegetation during any monitoring event.

The establishment of 5 species of native shrubs and 3 species of native groundcovers at the end the 5 years of monitoring.

1.20 Monitoring

Monitoring shall be conducted annually for five years in accordance with the approved enhancement/restoration monitoring plan. Monitoring reports shall be submitted to the City of Mercer Island.

Vegetation Monitoring

Sample plots will be established for vegetation monitoring, and photo-points established from which photos will be taken throughout the monitoring period. Permanent plot location(s) must be identified on enhancement/restoration site plans in the first monitoring report (they may be drawn on approved enhancement/restoration plans by hand). Plots shall detail herb, shrub, and tree aerial cover at radii of 1m, 5m, and 10m respectively, using the Braun-Blanquet releve method or other acceptable field method. Monitoring of vegetation transects shall occur annually between August 1 and October 30 (prior to leaf drop), unless otherwise specified.

Photopoints

Two permanent photo points will be established within the enhancement/restoration area. Photographs will be taken from these points to visually record the condition of the enhancement/restoration area. Photos shall be taken annually between August 1 and October 30 (prior to leaf drop), unless otherwise specified.

Reports

Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include description/data for:

- Site plan and location map
- Historic description of project, including date of installation, current year of monitoring, restatement of enhancement/restoration goals, and performance standards
- Plant survival, vigor, and aerial coverage from every plant community (transect data), and explanation of monitoring methodology in the context of assessing performance standards
- Buffer conditions, e.g. surrounding land use, use by humans, wild and domestic creatures

- Observed wildlife, including amphibians, avians and others
- Assessment of nuisance/exotic biota and recommendations for removal
- Receipts for off-site disposal of any dumping, weeds, or invasive plants
- Receipts for any structural repair or replacement
- 4"x6" color photograph taken from permanent photo-points as shown on Monitoring/Restoration plan.
- Summary of maintenance and contingency measures proposed for next season and completed for past season

Deficiencies

Any deficiency discovered during any monitoring or inspection visit must be corrected within 60 days of approval by City of Mercer Island.

Contingency Plan

Should any monitoring report reveal the enhancement has failed in whole or in part, and should that failure be beyond the scope of routine maintenance, a Contingency Plan will be submitted. The Contingency Plan may range in complexity from a list of plants substituted, to cross-sections of proposed engineered structures. Once approved, it may be installed and will replace the approved enhancement/restoration plan. If the failure is substantial, the City of Mercer Island may extend the monitoring period for that enhancement.

1.21 Bond

Prior to beginning any work, the Permittee must provide a enhancement/restoration bond or assignment of funds per City of Mercer Island procedures. A bond quantity worksheet has been completed based on all elements of the enhancement/restoration plan. The total cost, plus contingency fees, have been determined to be \$7,500, which will be the amount of the enhancement/restoration bond the Permittee is required to provide.

DESIGNED BY: Jeff Jones	CLIENT: JOHAN & HELENA VALENTIN 4346 E. Mercer Island Way, Mercer Island, WA 98040 1-214-228-0536 Johan.valentin@gmail.com	CONSULTANT: J. S. Jones and Associates, Inc. Environmental Consultants Wetlands, Streams, and Wildlife P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027
DRAWN BY: Jeff Jones	PROJECT: VALENTIN PROPERTY STREAM BUFFER ENHANCEMENT PLAN TAX PARCEL ID NO.: 004610-0150, 004610-0151, & 004610-0159	NO.
CHECKED BY: Jeff Jones		DATE
APPROVED BY:		BY
DATE: 3/21/18		REVISION