Exhibit 12

CRITICAL AREAS STUDY
AND
MITIGATION PLAN

FOR

13209 BOTHELL EVERETT HWY
MUTTLEY SQUARE
SEATTLE, WA

Wetland Resources, Inc. Project #16263

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Original:
August 15, 2018

Revision:
November 28, 2018

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TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

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1.0 INTRODUCTION

The subject site is a 2.68-acre parcel located at 13209 Bothell Everett Highway in the City of Mill Creek, Washington, (parcel #: 28053100100400) within a portion of Section 31, Township 28N, Range 5E, W.M. Access to the subject site is from the northeast via 132nd Street SE. Surrounding land use consists primarily of large commercial centers and dense suburban residences within a heavily developed area. A PUD power substation lies immediately northeast of the site, a Lowes shopping center to the east, a detention pond to the south, and an automotive business to the west. On-site topography varies, sloping down to the southwest overall. However, a small depressional area is present near the center of the site, and a low swale is in the northwestern corner.

Currently the property is undeveloped scrub-shrub and forest. Some refuse is present near the property boundaries. The on-site vegetation is dominated by western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), Himalayan blackberry (*Rubus armeniacus*), salmonberry (*Rubus spectabilis*), bracken fern (*Pteridium aquilinum*), and false lily of the valley (*Maianthemum dilatatum*).

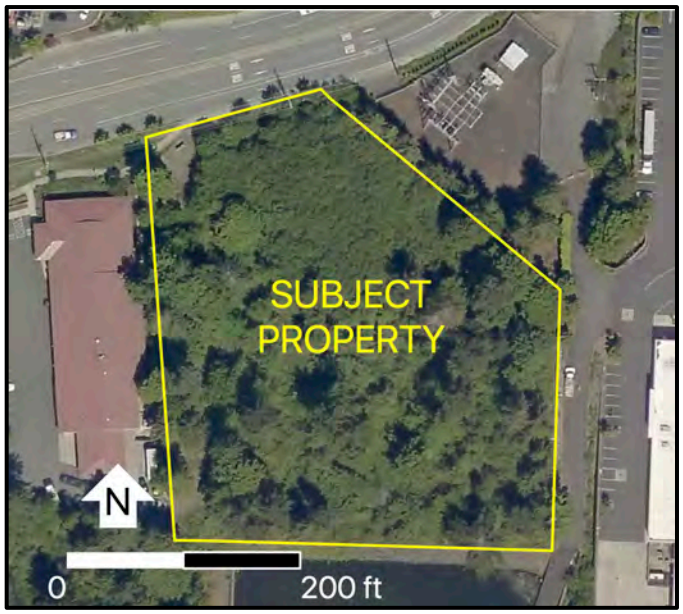

Figure 1: Aerial view of the subject property

Wetland Resources, Inc. (WRI) visited the subject property on September 28, 2016 to determine the presence of any jurisdictional critical areas that exist on or adjacent to the subject site. There is one Category III wetland (A) near the center of the subject property. A large off-site wetland is present to the south. Existing development is present between the site and the off-site wetland.

Wetland A receives an overall score of 16 points under the Department of Ecology's *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby 2014). In the City of Mill Creek, Category III wetlands typically require 100-foot standard buffers on sites with high-intensity land use, and 50-foot buffers for sites with low-intensity land uses [per Mill Creek Municipal Code (MCMC) 18.06.930(B)].

1.1 CRITICAL AREAS CLASSIFICATIONS

1.1.1 Cowardin System Classifications

According to the Cowardin System, as described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979), the classification for the on-site critical area is as follows:

Wetland A: Palustrine, Forested Wetland, Nontidal, Seasonally Flooded (PFOC).

Off-site Wetland: Palustrine, Scrub-shrub, Nontidal, Permanently Flooded (PSSH).

1.1.2 City of Mill Creek Classifications

Under Chapter 18.06 of the MCMC, the on-site critical area is classified as follows:

Wetland A

Category III wetland: This wetland scores a total of 16 points on the Wetland Rating Form (2014) for Western Washington, which equates to a Category III rating. Wetland A has two vegetation classes throughout its matrix, two hydroperiods, and has disturbed habitat connections. This wetland scores 4 points (low) for habitat functions. In the City of Mill Creek, Category III wetlands typically receive a standard buffer of 100 feet for high-intensity land uses and 50-foot buffers for low-intensity.

Off-site Wetland

Given the lack of off-site property access, we were not able to rate the wetland in question. From aerial photography it appears that the wetland is permanently flooded and is primarily vegetated with scrub-shrub vegetation. The buffer width for this wetland has not been determined, but does not extend onto the subject property due to intervening development that functionally and effectively disconnects the wetland from the subject site. This determination is consistent with the definition of "buffer" in MCMC 18.06.210. See *section 3.3.3* for more details,

1.2 PROJECT INFORMATION

Julie Nealey, hereafter referred to as the applicant, proposes to construct a canine boarding facility on the subject site. The development will consist of multiple dog lodging buildings, a main office, parking, pathways, and associated utilities and infrastructure. The overall footprint of the facility slightly extends into the standard buffer associated with Wetland A. In order to avoid potential buffer impacts related to project activities, the applicant further proposes to implement buffer averaging as stipulated in Mill Creek Municipal Code (MCMC) 18.06.930(C). The standard buffer will be modified to exclude a 2,117 square-foot area near and overlaying the proposed development. As compensation, an equal amount of buffer will be provided between two areas, one on either side of the buffer exclusion. This additional buffer area is of at least equal quality as that being reduced. As verified in a conversation with city staff, buffer averaging is being used to avoid impacts and no buffer mitigation (such as enhancement with native vegetation) is required. Per MCMC 18.06.80, the modified buffer edge will be demarcated by fencing and critical area signage.

2.0 STATEMENT OF QUALIFICATIONS

The work for this Report was conducted by Jim Rothwell and Scott Walters.

Jim Rothwell holds a Bachelor of Science degree in Environmental Science. Additional training includes a post-Baccalaureate certificate in Wetland Science and Management from the University of Washington as well as numerous continuing education classes. Jim has been a wetland ecologist for over 15 years and became a certified Professional Wetland Scientist (PWS) in 2009.

Scott Walters holds a Bachelor of Science degree in Wildlife Conservation Biology and Applied Vertebrate Ecology. Additional training includes an advanced certificate in Aquarium and Aquatic Sciences, and a post-Baccalaureate certificate in Wetland Science and Management from the University of Washington. Scott has worked as an ecologist on projects across the country for over 10 years, including scientific study of wetlands, environmental restoration monitoring, endangered species monitoring, and shorebird population research.

3.0 CRITICAL AREAS DETERMINATION REPORT

3.1 PUBLICLY AVAILABLE DATA

Prior to conducting the site investigation, public resource information was reviewed to gather background information on the subject property and the surrounding area in regards to wetlands, streams, and other critical areas. These sources included *USDA/NRCS Web Soil Survey*, *DNR FPAMT Mapping Application*, *WDFW SalmonScape Interactive Mapping System*, *WDFW Priority Habitat and Species (PHS) Interactive Map*, *USFWS National Wetlands Inventory (NWI)*, *and Snohomish County SnoScape mapping application.*

USDA/NRCS Web Soil Survey
Soils on-site are mapped as Alderwood-Urban Land Complex, 2 to 8 percent slopes. A more detailed soil map unit description is provided in the *3.2.2 Soils Criteria* section below.

USFWS National Wetlands Inventory (NWI)
A relatively large scrub-shrub and forested wetland system is identified adjacent to the subject site to the southwest. No wetlands are shown on the subject property.

WDFW Priority Habitat and Species (PHS) Interactive Map
Depicts the same wetland system as identified on the NWI maps. Additionally, the site and the surrounding landscape are identified as potential little brown bat (*Myotis lucifugus*) habitat areas.

WDFW SalmonScape Interactive Mapping System
North Creek is located approximately 0.8 miles west of the subject site, and Penny Creek

approximately 1 mile to the southeast. Both of these stream systems support multiple runs of salmon species. However, there is no direct connection between these streams and the subject property.

DNR FPAMT Mapping Application
This public resource verifies the approximate location of the streams identified by S*almonScape.*

Snohomish County PDS Map Portal
Sitka Creek is located approximately a half-mile west of the subject site, and is designated as fish-bearing. This stream is a tributary of North Creek.

3.2 WETLAND DETERMINATION AND DELINEATION METHODOLOGY

Wetland boundaries were determined using the routine approach described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);

2.) Examination of the site for hydric soils;

3.) Determining the presence of wetland hydrology

The following criteria must be met in order to make a positive wetland determination:

3.2.1 Vegetation Criteria

The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as "the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence." Field indicators are used to determine whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.

3.2.2 Soils Criteria

The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils "that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

Alderwood-Urban land complex, 2-8 percent slopes, is about 60 percent Alderwood gravelly sandy loam and about 25 percent urban land. Included in this unit are small areas of McKenna

and Norma soils and Terric Medisaprists in depressional areas and drainage-ways on plains. Also included are small areas of soils that are very shallow over a hardpan; small areas of Everett, Indianola, and Ragnar soils on terraces and outwash plains; and soils that have a stony and bouldery surface layer. Included areas make up about 15 percent of the total acreage.

The Alderwood soil is moderately deep over a hardpan and is moderately well drained. It formed in glacial till. Typically the surface layer is very dark grayish brown gravelly sandy loam about 7 inches thick. The upper part of the subsoil is dark yellowish brown and dark brown very gravelly sandy loam about 23 inches thick. A weakly cemented hardpan is at a depth of about 35 inches. Permeability of this soil is moderately rapid above the hardpan and very slow through it. Available water capacity is low.

3.2.3 Hydrology Criteria

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively. The strongest indicators include the presence of surface water, a high water table, and/or soil saturation within at least 12 inches of the soil surface.

3.3 WETLAND BOUNDARY DETERMINATION FINDINGS

3.3.1 Wetland A

Dominant vegetation in this wetland is represented by Scouler's willow (*Salix scouleriana*; FAC), Pacific willow (*Salix lasiandra*; FACW), red alder (*Alnus rubra*; FAC), salmonberry (FAC), and hardhack (*Spiraea douglasii*; FACW). These observed species all rate as facultative or wetter, indicating a hydrophytic vegetation community.

Soils in Wetland A from 0 to 7 inches below the surface have a Munsell color of black (10YR 2/1) with distinct brown (7.5YR 3/3) redoximorphic features, and have a loam texture. From 7 to 10 inches below the surface, soils are very dark grayish brown (10YR 3/2) with distinct yellowish brown (10YR 5/4) and prominent yellowish red (5YR 4/6) redoximorphic features, and have a clay loam texture. From 10 to 18 inches below the surface, soils are light olive brown (2.5Y 5/3) with prominent dark reddish brown (2.5YR 2.5/3) and prominent dark yellowish brown (10YR 4/6) redoximorphic features, and have a silty clay loam texture.

The topographic depression has multiple hydrology indicators present, including Geomorphic Position (D2). Additionally, administration of a FAC-neutral test (where "facultative" vegetation species are not considered) leaves only Pacific willow (FACW) and hard hack (FACW), thus meeting the FAC-Neutral Test (D5) secondary wetland hydrology indicator.Soils were dry at the time of our September 2016 site visit.

Field observations indicate that the area mapped as Wetland A is flooded, ponded, or saturated long enough during the growing season to develop anaerobic conditions in the upper part of the

soils. The approximate location of Wetland A is depicted on the map associated with this report (*Appendix C*).

3.3.2 Non-wetland Areas Adjacent to Wetland A

The subject site is relatively undisturbed and is vegetated with an assemblage commonly associated with upland areas. The dominant on-site vegetation adjacent to Wetland A (Data Site S2) consists of western red cedar (FAC), black cottonwood (*Populus balsamifera*; FAC), salmonberry (FAC), salal (*Gaultheria shallon*; FAC), and bracken fern (FACU). The majority of the on-site vegetation is facultative or wetter, indicating a hydrophytic vegetation community.

Typical soils on the subject site, which is mapped as non-wetland, have a Munsell color of very dark brown (7.5YR 2.5/3), with a loam texture, extending at least 17 inches below the surface. These soil characteristics do not meet any hydric soil indicators. Soils were dry at the time of our July 2016 site investigation.

Although hydrophytic vegetation is technically present, hydric soils show no indication of sustained inundation, and direct hydrologic indicators are lacking. Therefore, field observations indicate that the on-site area mapped as non-wetland is not flooded, ponded, or saturated long enough during the growing season to develop anaerobic conditions in the upper part of the soils.

3.3.3 Off-site Wetland

The off-site wetland located southwest of the subject site is a large forested and scrub-shrub system that appears to be permanently flooded. Lack of access prevented us from delineating or rating this critical area. An existing automotive repair facility and large stormwater detention pond (fenced) bisect the area between the subject parcel and the off-site wetland. Only a very small (<50 foot) gap is between these intervening structures. However, even the gap area is highly disturbed with a dirt roadway between the wetland and the proposed development area. Given these existing conditions, the subject site is not contiguous with the off-site critical area and is unable to provide functions or protections. As such, it has been determined that any buffer associate with the off-site wetland does not extend into the project area. This is consistent with the definition of buffer in MCMC 18.06.210, which is provided below. Therefore, the wetland category is not germane to this project.

> *MCMC 18.06.210*
> *"Buffer" or "buffer area" means the area or zone contiguous to a critical area that protects the integrity or functions and values of a critical area from potential adverse impacts. Buffers shall not include areas that are functionally and effectively disconnected from the wetland by a road or other substantial developed surface.*

Figure 2: Photo taken from stormwater pond, facing the automotive facility

3.3.4 Wildlife

The on-site critical areas are of poor habitat quality, and are only suitable to support wildlife species commonly present in heavily developed urban areas. Nevertheless, Wetland A and its buffer do provide important habitat elements in the form of resources such as food, water, perches, thermal cover, and hiding cover.

Burrows created by small burrowing animals, such as mountain beaver (*Aplodontia rufa*) and cottontail rabbit (*Sylvilagus floridanus*) are present throughout much of the site. Other mammalian species expected to occur on the subject site include gray squirrels (*Sciurus* spp.), Douglas squirrels (*Tamiasciurus douglasii*), and raccoon (*Procyon lotor*). Given the habitat available, it is expected that the following avian species use the area: American Crow (*Corvus brachyrhynchos),* American Robin (*Turdus migratorius*), Steller's Jay (*Cyanocitta stelleri*), Black-capped Chickadee (*Poecile atricapilla)*, Golden-crowned Kinglet (*Regulus satrapa*), Ruby-crowned Kinglet (*Regulus calendula*), Dark-eyed Junco (*Junco hyemalis*), and Song Sparrow (*Melospiza melodia*).

Although the WDFW PHS map identifies the site and the surrounding landscape as potential little brown bat (*Myotis lucifugus*) habitat areas, this priority habitat is applied broadly (over a quarter section) and appropriate habitat features are not present on the subject site. Little brown bats generally use mature forest areas with copious tree cavities available for roosting. The on-site forest age is too young to provide such habitat. Therefore, use by this species is unlikely.

4.0 COMPLIANCE WITH MCMC 18.06.930(C) [BUFFER AVERAGING]

Pursuant to MCMC 18.06.930(C), development of the proposed project follows buffer averaging guidelines as detailed below. Portions of the MCMC are provided in *italics*, with responses provided in normal text underneath:

C. The director shall have the authority to "average" buffer widths on a case-by-case basis where a qualified professional demonstrates to the director's satisfaction that all the following criteria are met:

1. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer;

The total area of proposed buffer reduction (2,117 square feet) is equal to that proposed as additional buffer. The compensatory area of buffer being provided is divided into two areas (1,418 and 699 square feet), one on either side of the buffer reduction area.

2. The buffer averaging does not reduce the functions or values of the wetland;

Areas provided as additional buffer are of higher quality compared to that being removed. The area of buffer proposed for reduction through averaging is degraded by human refuse, low habitat heterogeneity, and invasive vegetation such as Himalayan blackberry (see figure 3). In contrast, the portion of the buffer being provided through averaging is a complex, multi-story forest community with little to no invasive plant cover (see figure 4). Overall vegetation structure and habitat complexity within the wetland buffer will be increased through the proposed buffer averaging, and buffer functionality is expected to be improve. Photographs of these areas are provided below.

3. The portion of the buffer reduced through buffer averaging is less than 25 percent of the total buffer length on a project site;

A length of 175 linear feet of the standard buffer perimeter being is proposed for reduction through buffer averaging. Given that the total length of the perimeter is 797 linear feet, the portion of the buffer being reduced is less than 25 percent of the total buffer length.

4. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation; and

The on-site wetland varies in sensitivity due to the proximity of multiple surrounding disturbances beyond the buffer. Additionally, vegetation within the standard buffer is not consistent in its composition or structure throughout the entire buffer. However, the area being averaged do not differ significantly. These conditions meet the requirements of this stipulation.

5. The buffer width is not reduced to less than 50 percent of the standard width, except that no buffer dimension shall be less than 25 feet.

The averaged buffer will be 77 feet wide at its narrowest point, leaving a width of over 50-percent throughout the 100-foot standard buffer.

Figure 3: Degraded conditions in the proposed buffer averaging reduction area.

Figure 4: Healthy, multi-story forest conditions in the proposed buffer averaging addition area.

5.0 USE OF THIS REPORT

This Critical Area Study and Mitigation Plan is supplied to Capital Architects Group as a means of determining on-site critical area conditions as required by the City of Mill Creek during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report conforms to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

Scott Walters
Associate Ecologist

Jim Rothwell
Senior Ecologist

6.0 REFERENCES

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APPENDIX A

DEPARTMENT OF ECOLOGY WETLAND RATING FORM

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Wetland name or number **A**

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: Sept 29, 2016

Rated by S. Walters & J. Rothwell Trained by Ecology? ✔ Yes ___No Date of training March 2015

HGM Class used for rating DEPRESSIONAL 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 ESRI World Imagery

OVERALL WETLAND CATEGORY III (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	
	Circle the appropriate ratings			
Site Potential	H [M] L	H [M] L	H M [L]	
Landscape Potential	H [M] L	H [M] L	H M [L]	
Value	H [M] L	H [M] L	H [M] L	TOTAL
Score Based on Ratings	**6**	**6**	**4**	**16**

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**
None of the above	✔

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	A1
Hydroperiods	D 1.4, H 1.2	A1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	A1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	A1
Map of the contributing basin	D 4.3, D 5.3	A2
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	A2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	A3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	A4

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 *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	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**

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☑ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**3**
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 [No = 0]	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☑ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > ½ of area points = 3 ☐ Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area points = 1 ☐ Wetland has persistent, ungrazed plants < $^{1}/_{10}$ of area points = 0	**5**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☑ Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**8**

Rating of Site Potential If score is: ___ **12-16 = H** ✔ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? [Yes = 1] No = 0	**1**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 [No = 0]	**0**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 [No = 0]	**0**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 [No = 0]	**0**
Total for D 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ✔ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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

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**

DEPRESSIONAL AND FLATS WETLANDS

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

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

D 4.1. Characteristics of surface water outflows from the wetland:

- [✔] Wetland is a depression or flat depression with no surface water leaving it (no outlet) — points = 4
- [ ] Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet — points = 2
- [ ] Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch — points = 1
- [ ] Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing — points = 0

4

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

- [ ] Marks of ponding are 3 ft or more above the surface or bottom of outlet — points = 7
- [ ] Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet — points = 5
- [ ] Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet — points = 3
- [ ] The wetland is a "headwater" wetland — points = 3
- [ ] Wetland is flat but has small depressions on the surface that trap water — points = 1
- [✔] Marks of ponding less than 0.5 ft (6 in) — points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

- [ ] The area of the basin is less than 10 times the area of the unit — points = 5
- [✔] The area of the basin is 10 to 100 times the area of the unit — points = 3
- [ ] The area of the basin is more than 100 times the area of the unit — points = 0
- [ ] Entire wetland is in the Flats class — points = 5

3

Total for D 4 — Add the points in the boxes above — **7**

Rating of Site Potential If score is: ___ **12-16 = H** ✔ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

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

D 5.1. Does the wetland receive stormwater discharges? [Yes = 1] No = 0 — **1**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 [No = 0] — **0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 [No = 0] — **0**

Total for D 5 — Add the points in the boxes above — **1**

Rating of Landscape Potential If score is: ___ **3 = H** ✔ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- [ ] • Flooding occurs in a sub-basin that is immediately down-gradient of unit. — points = 2
- [✔] • Surface flooding problems are in a sub-basin farther down-gradient. — points = 1
- [ ] Flooding from groundwater is an issue in the sub-basin. — points = 1
- [ ] The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ — points = 0
- [ ] There are no problems with flooding downstream of the wetland. — points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above — **1**

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**

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 ft^2.

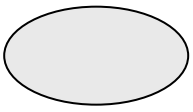
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

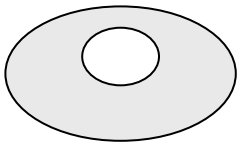
1

H 1.4. Interspersion of habitats

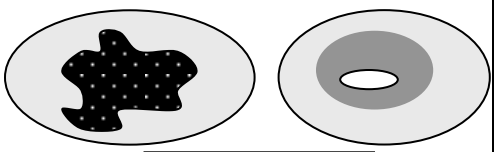
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

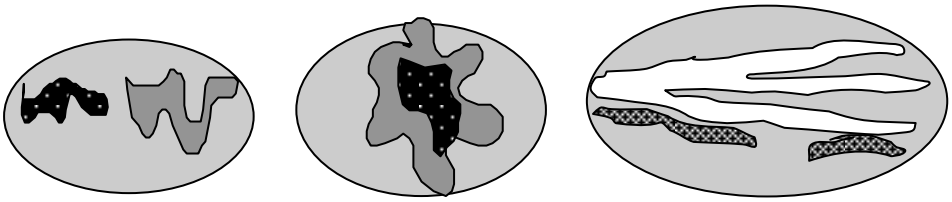


Low = 1 point



[**Moderate** = 2 points]

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



2

Wetland name or number **A**

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ____Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ____Standing snags (dbh > 4 in) within the wetland ____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) ____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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* __✔__Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	**1**
Total for H 1 Add the points in the boxes above	**6**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 4 **+** [(% moderate and low intensity land uses)/2] 0 **=** 4 % If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☑ < 10% of 1 km Polygon points = 0	**0**
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 15 **+** [(% moderate and low intensity land uses)/2] 3 **=** 18 % ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☑ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: If ☑ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	**-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*

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

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

Wetland name or number **A**

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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 *Spartina*, 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? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** 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**

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). ☐ 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 is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**N/A**

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16263 CAPITAL ARCHITECTS - NEALEY SITE
WETLAND RATING FIGURE A1 - WETLAND A

LEGEND

- FORESTED VEGETATION
- SCRUB-SHRUB
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY

Scale 1" = 100'

0 100 200

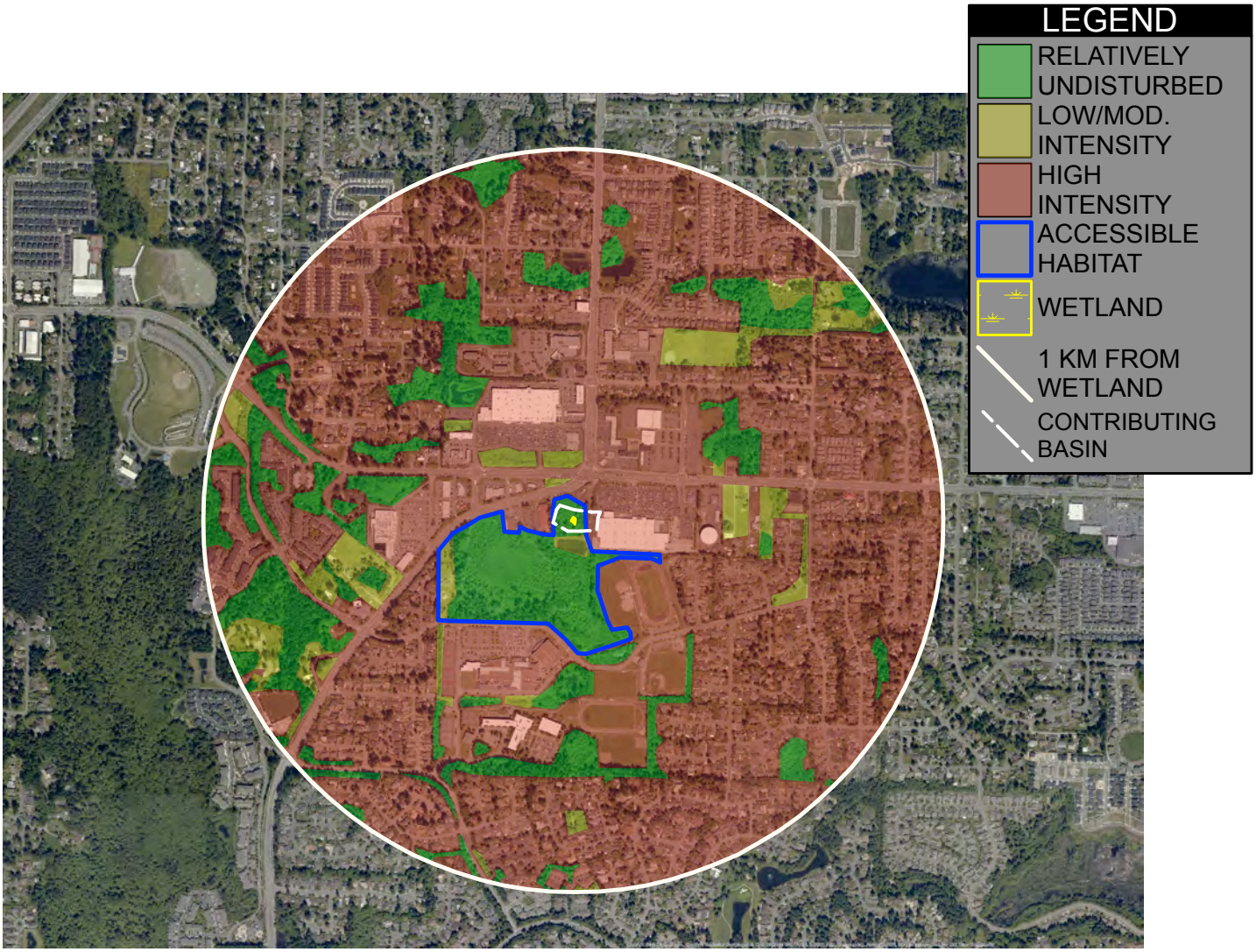
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources .com

WETLAND RATING
Wetland A

Capital Architects Group
Attn: Sandra Martin
2813 Rockefeller Ave
Everett, WA 98201

Figure A1
WRI Job # 16263
Drawn by: SW

16263 CAPITAL ARCHITECTS - NEALEY SITE
WETLAND RATING FIGURE A2 - WETLAND A



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 47:1

Scale 1" = 1,500'

0 1,500 3,000

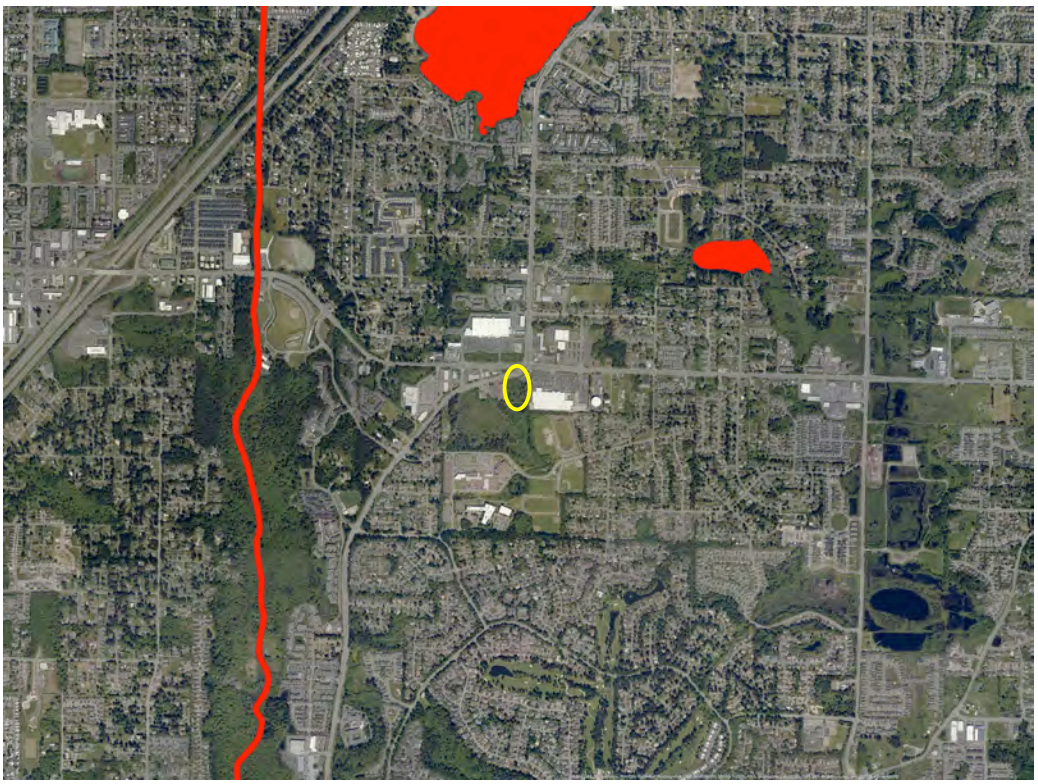
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources .com

WETLAND RATING
Wetland A

Capital Architects Group
Attn: Sandra Martin
2813 Rockefeller Ave
Everett, WA 98201

Figure A2
WRI Job # 16263
Drawn by: SW

16263 CAPITAL ARCHITECTS - NEALEY SITE
WETLAND RATING FIGURE A3 - WETLAND A



Scale 1" = 3,000'

0 3,000 6,000

LEGEND

WETLAND LOCATION

AQUATIC RESOURCES ON THE 303(d) LIST

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
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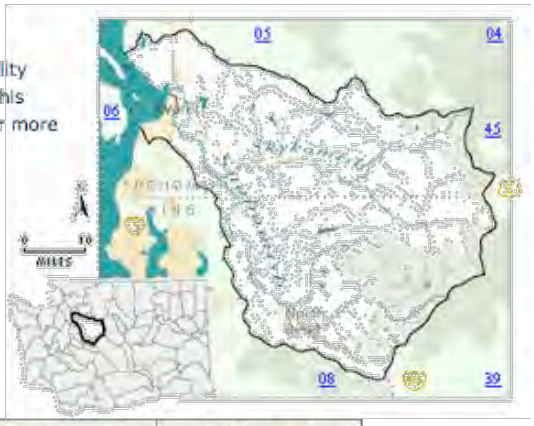
Figure A3
WRI Job # 16263
Drawn by: SW

16263 CAPITAL ARCHITECTS - NEALEY SITE
WETLAND RATING FIGURE A4 - WETLAND A

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland A

Capital Architects Group
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Everett, WA 98201

Figure A4
WRI Job # 16263
Drawn by: SW

APPENDIX B

CORPS OF ENGINEERS WETLAND
DETERMINATION DATA FORMS

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

Project/Site: Nealey Site - 13209 Bothell Everett Hwy City/County: Mill Creek Sampling Date: Sept 28, 2016

Applicant/Owner: Capital Architects Group State: WA Sampling Point: S1

Investigator(s): J. Rothwell & S. Walters Section, Township, Range: S31, T28N, R05E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%

Subregion (LRR): LRR A Lat: 47.877354 Long: -122.207437 Datum: WSG 84

Soil Map Unit Name: Alderwood Urban Land Complex, 2 to 8 percent slopes 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 ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑ No ☐	
Wetland Hydrology Present?	Yes ☑ No ☐	

Remarks:

Soil indicator not present; hydric condition determination based on surrounding environmental conditions.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 meter radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	12	Y	FAC
2. Alnus rubra	10	Y	FAC
3. Salix lasiandra	9	Y	FACW
4. Populus balsamifera	3	N	FAC
	24	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 meter radius)			
1. Spiraea douglasii	80	Y	FACW
2. Rubus spectabilis	20	Y	FAC
3.			
4.			
5.			
	100	= Total Cover	
Herb Stratum (Plot size: 1 meter radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	99	2.5YR 2.5/4	1	C	M	Loam	
7-9	10YR 5/6	70	2.5YR 2.5/3	30	C	M	Si Cl Lo	
9-18	2.5Y 4/3	100	-	-	-	-	Cl Lo	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Nearly meets F6 indicator, but abundance of redoximorphic features in the upper horizon was below the threshold. Despite direct presence of a specific indicator, this data site is located within an area determined to most likely be wetland due to strong signs of hydrology and hydrophytic vegetation. The soil is presumed hydric.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (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:

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

Project/Site: Nealey Site - 13209 Bothell Everett Hwy City/County: Mill Creek Sampling Date: Sept 28, 2016

Applicant/Owner: Capital Architects Group State: WA Sampling Point: S2

Investigator(s): J. Rothwell & S. Walters Section, Township, Range: S31, T28N, R05E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%

Subregion (LRR): LRR A Lat: 47.877354 Long: -122.207437 Datum: WSG 84

Soil Map Unit Name: Alderwood Urban Land Complex, 2 to 8 percent slopes 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 ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 meter radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	25	Y	FAC
2. Populus balsamifera	20	Y	FAC
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3 meter radius)			
1. Rubus spectabilis	60	Y	FAC
2. Spiraea douglasii	15	N	FACW
3. Malus fusca	5	N	FACW
4. Vaccinium parvifolium	2	N	FACU
5.			
	82 = Total Cover		
Herb Stratum (Plot size: 1 meter radius)			
1. Gaultheria shallon	20	Y	FAC
2. Pteridium aquilinum	20	Y	FACU
3. Rubus ursinus	10	N	FACU
4. Polystichum munitum	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-17	7.5YR	2.5/3	-	-	-	-	Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (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:

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

Project/Site: Nealey Site - 13209 Bothell Everett Hwy City/County: Mill Creek Sampling Date: Sept 28, 2016

Applicant/Owner: Capital Architects Group State: WA Sampling Point: S3

Investigator(s): J. Rothwell & S. Walters Section, Township, Range: S31, T28N, R05E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%

Subregion (LRR): LRR A Lat: 47.877354 Long: -122.207437 Datum: WSG 84

Soil Map Unit Name: Alderwood Urban Land Complex, 2 to 8 percent slopes 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 ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 meter radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	16	Y	FAC
2. Salix lasiandra	9	Y	FACW
3. Alnus rubra	8	Y	FAC
4. Populus balsamifera	4	N	FAC
	37	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 meter radius)			
1. Spiraea douglasii	85	Y	FACW
2. Vaccinium parvifolium	18	N	FACU
3. Rubus spectabilis	10	N	FAC
4.			
5.			
	113	= Total Cover	
Herb Stratum (Plot size: 1 meter radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	99	7.5YR 3/3	1	C	M	Loam	
7-10	10YR 3/2	50	10YR 5/4	30	C	M	Cl Lo	
-	-	-	5YR 4/6	20	C	M	-	
10-18	2.5Y 5/3	84	2.5YR 2.5/3	1	C	M	Si Cl Lo	
-	-	-	10YR 4/6	15	C	M	-	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Nearly meets F6 indicator, but thickness of the low chroma horizon with redoximorphic features (from 7 to 10 inches) is too thin. Despite direct presence of a specific indicator, this data site is located within an area determined to most likely be wetland due to strong signs of hydrology and hydrophytic vegetation. The soil is presumed hydric.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (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:

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

Project/Site: Nealey Site - 13209 Bothell Everett Hwy City/County: Mill Creek Sampling Date: Sept 28, 2016

Applicant/Owner: Capital Architects Group State: WA Sampling Point: S4

Investigator(s): J. Rothwell & S. Walters Section, Township, Range: S31, T28N, R05E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%

Subregion (LRR): LRR A Lat: 47.877354 Long: -122.207437 Datum: WSG 84

Soil Map Unit Name: Alderwood Urban Land Complex, 2 to 8 percent slopes 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 ☑ No ☐ Hydric Soil Present? Yes ☐ No ☑ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 meter radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	80	Y	FAC
2. Pseudotsuga menziesii	14	N	FACU
3. Prunus emarginata	3	N	FACU
4.			
	97	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 meter radius)			
1. Rubus armeniacus	40	Y	FAC
2. Lonicera involucrata	7	N	FAC
3. Phalaris arundinacea	5	N	FACW
4. Spiraea douglasii	5	N	FACW
5.			
	57	= Total Cover	
Herb Stratum (Plot size: 1 meter radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100	-	-	-	-	Loam	
5-10	10YR 3/3	95	5YR 4/6	5	C	M	Sa Lo	
10-17	10YR 3/4	95	5YR 4/6	5	C	M	Sa Lo	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Water ponds in the area surrounding this data site, but does not appear to accumulate for a sufficient duration to develop hydric soil conditions; possibly due to high sand content and irregular hydrologic inputs.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Hydrology clearly collects in this area, but does not appear to persist for significant periods of time.

APPENDIX C

CRITICAL AREAS STUDY AND
MITIGATION PLAN MAP (SHEET 1/1)

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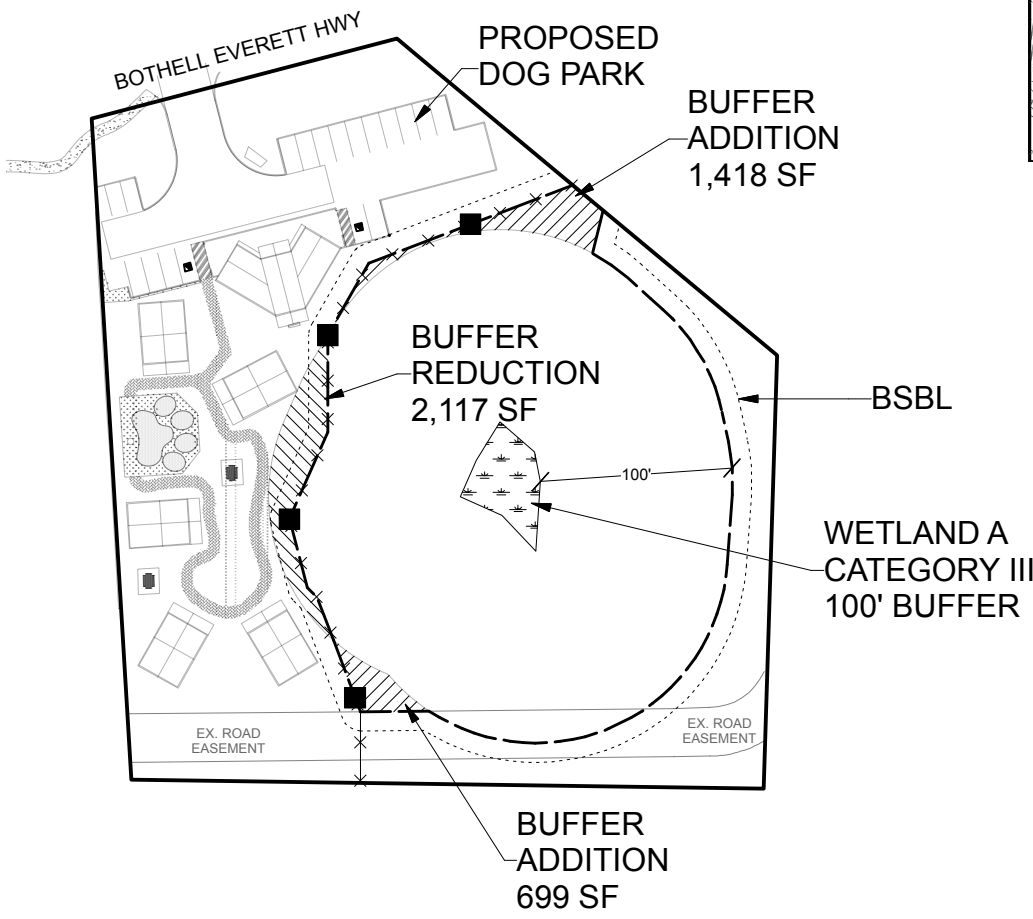
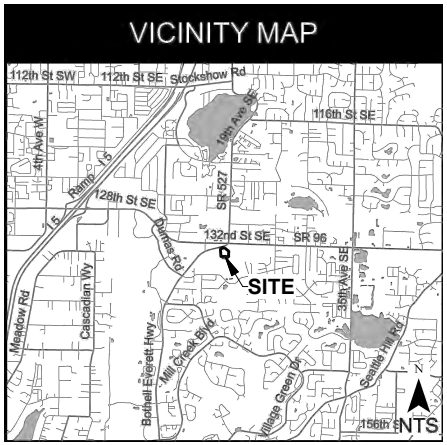
CRITICAL AREAS REPORT AND BUFFER MITIGATION PLAN MAP

13209 BOTHELL EVERETT HIGHWAY

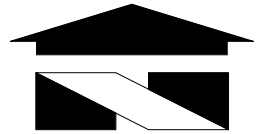
PORTION OF SECTION 31, TOWNSHIP 28N, RANGE 05E, W.M.





LEGEND

- WETLAND
- BUFFER
- 10-FOOT BSBL
- CRITICAL AREA SIGNAGE
- SPLIT-RAIL FENCING
- BUFFER REDUCTION
- BUFFER ADDITION
- PROPERTY BOUNDARY



Scale 1" = 100'

0 50 100 150 200

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett,Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

CRITICAL AREAS REPORT AND MITIGATION PLAN MAP
13209 Bothell Everett Highway
Mill Creek, Washington

Julie Nealey
c/o Capital Architects Group, PC
Attn: Sandra Martin
2813 Rockefeller Avenue
Mill Creek, WA 98201

Sheet 1/1
WRI Job#: 16263
Drawn by: S. Walters
Orig. Date: Aug 15, 2018
Rev. Date: Nov 28, 2018