



**CRITICAL AREA STUDY
AND
BUFFER MITIGATION PLAN**

FOR

BRODIE PROPERTY
MARYSVILLE, WA

Wetland Resources, Inc. Project #22061

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Revision 3: April 26, 2023

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1.0 INTRODUCTION

Wetland Resources, Inc. (WRI) completed a site investigation on March 14, 2022, to locate and evaluate jurisdictional wetlands and streams on and near the subject property. The 9.85-acre site is composed of three tax parcels (3052500302300, 3052500303800, and 30052500303900), located northwest of the intersection of State Route 9 and 60th Street NE, in Marysville, Washington (Section 25, Township 30N, Range 5E, W.M.). The parcels are situated within the Allen Creek Sub-basin of the Snohomish River basin (WRIA 7).

1.1 SITE DESCRIPTION

The subject parcels are vacant with the exception of a cell tower located in the eastern portion of parcel 3052500303800. A gravel road extends north from 60th Street NE through the southern portion of the site before turning east and reaching the facility. Vegetation on site is comprised of two distinct communities. Regularly spaced silver fir and grand fir trees are located throughout the eastern and northern portions. Natural forest canopy and dense shrub vegetation dominates the southwestern portion of the assemblage. Surrounding land use is predominantly low-density residential development. Topography of the parcels slopes generally to the west. A large depression originates in the southwest corner of the site and extends off-site to the northwest.



Figure 1 – Aerial view of the subject property and surrounding area

WRI identified three on-site wetlands (Wetlands A-C) and one off-site wetland (Wetland D) during the site investigation. Wetlands were rated using the Washington Department of Ecology's Wetland Rating System for Western Washington (2014) pursuant to Marysville municipal code (MMC) 22E.010.060. Wetlands A and D are Category II wetlands that require 100-foot standard buffers per MMC 22E.010.100. Wetlands B and C are Category IV wetlands that require 35-foot standard buffers.

1.2 PROJECT DESCRIPTION

The applicant is proposing to construct a single-family residential development, stormwater management, and associated roads and infrastructure. The existing cell tower will remain on-site, however the gravel access road will be replaced. To accommodate the proposed development, the applicant proposes the following:

- 1.) Buffer width averaging will reduce and enlarge several areas of the wetland buffers along the west side of the access road to accommodate the access road, detention, and lots 27-28.
- 2.) Temporary buffer impacts are proposed in two locations to allow for necessary grading. These areas will be restored with native plants.
- 3.) Buffer conditions in the northwestern portion of the site do not meet the buffer criteria of MMC 22E.010.100, so buffer enhancement is proposed in that area.
- 4.) A pervious trail is proposed to provide access to a spreader trench along the west side of Tract 998. Buffer enhancement along the west side of the trail is proposed.

No direct impacts to wetlands are proposed. Full descriptions of buffer impacts, mitigation, and enhancement are provided in *Section 5* of this report.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regards to critical areas. The following information was examined:

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory: The National Wetland Inventory (NWI) identifies a narrow forested wetland that extends through the southwest corner of the site in approximately the same location as Wetland A. The depicted wetland extends the subject property to the northwest.
- USDA/Natural Resources Conservation Service (NRCS) Web Soil Survey: The Web Soil Survey maps the soils on site as Tokul gravelly medial loam (0 to 8 percent slopes), Tokul gravelly medial loam (8 to 15 percent slopes), Tokul gravelly medial loam (15 to 30 percent slopes), and Norma loam. Norma loam is identified by the NRCS as a hydric soil and Tokul is not.
- WDFW Priority Habitat and Species (PHS) Interactive Map: The PHS mapping tool depicts a similar wetland to the one shown by NWI, however the PHS wetland extends to the southeast. Based on the topography of the subject parcels and surrounding area, the wetland polygon mapped by PHS appears to be incorrect.

- Snohomish County Planning and Development Services (PDS) map: Snohomish County PDS identifies one wetland and an associated stream in the western portion of the property. The stream is mapped as a Type Ns water and is depicted flowing to the northwest. Approximately 2,400 feet northwest of the site, the stream converges with a second mapped watercourse and is then mapped as a Type F stream.
- WDFW SalmonScape: SalmonScape maps the headwaters of an unnamed stream immediately west of the site. The stream is identified as a Type Ns stream by SalmonScape.
- City of Marysville Critical Areas Map: The City of Marysville Critical Areas Map shows a large wetland in approximately the same location as Wetland A. A pair of wetlands are mapped south of the site near where Wetland D is mapped. The headwaters of an unnamed stream is mapped north of 64th Street NE, approximately 900 feet northwest of the site.

3.0 WETLAND DETERMINATION

3.1 METHODOLOGY

Wetland boundaries in western Washington are determined using the routine determination 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

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.

Soils Criteria and Mapped Description

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.

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.

3.2 WETLAND AND STREAM DETERMINATION FINDINGS

Three on-site wetlands (Wetlands A, B, and C) and one off-site wetland (Wetland D) were observed during the site investigation. These wetlands have been classified under the HGM (Brinson 1993) and Cowardin (Cowardin 1979) classification systems. Pursuant to MMC 22E.010.060, wetlands have been rated using the Washington Department of Ecology's Wetland Rating System for Western Washington (2014). Required buffers are pursuant to MMC 22E.010.100.

3.2.1 Wetland A

HGM class: Depressional

Cowardin classification: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

DOE Rating: Category II

City of Marysville buffer: 100 feet

Wetland A is a large, depressional system that originates in the western portion of the site. The wetland unit extends away from the assemblage to the northwest before discharging through a culvert beneath 64th Street NE. Vegetation observed in Wetland A includes red alder (*Alnus rubra*; FAC), Western red cedar (*Thuja plicata*; FAC), hardhack (*Spiraea douglasii*; FACW), Pacific willow (*Salix lasiandra*; FACW), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), creeping buttercup (*Ranunculus repens*; FAC), skunk cabbage (*Lysichiton americanus*; OBL), reed canarygrass (*Phalaris arundinacea*; FACW), and water parsley (*Oenanthe sarmentosa*; OBL). Dominant vegetation within the wetland is rated as facultative (FAC) or wetter and therefore comprises a hydrophytic plant community.



Figure 2 – Looking north at Wetland A from 60th Street NE.

The top layer of soil within Wetland A is typically black (10YR 2/1) sandy loam that extends to a depth of eight inches. Between eight and 16 inches below the soil surface, wetland soils are generally black (10YR 2/1) sandy loam with dark yellowish brown (10YR 3/4) redoximorphic concentrations present in the matrix. The sublayer is typically gray (10YR 5/1) sandy loam with dark yellowish brown (10YR 3/6) redoximorphic concentrations present in the matrix that extends to a depth of at least 20 inches. These conditions meet the criteria for the Hydric Soil Indicators “Redox Dark Surface” (F6) and “Thick Dark Surface” (A12). Soil within Wetland A near the wetland edge was saturated to the surface and the water table was present four inches beneath the surface during the March site investigation. These conditions meet the criteria for the Wetland Hydrology Indicators “High Water Table” (A2) and “Saturation” (A3).

3.2.2 Wetland B

HGM class: Depressional

Cowardin classification: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

DOE Rating: Category IV

City of Marysville buffer: 35 feet

Wetland B is a small, depressional wetland located in the northwestern portion of the site, east of Wetland A. Vegetation in Wetland B is dominated by salmonberry (*Rubus spectabilis*; FAC) and youth-on-age (*Tolmiea menziesii*; FAC). Dominant vegetation in Wetland B is rated as facultative (FAC) or wetter and therefore the plant community in the wetland is considered hydrophytic.



Figure 3 – Looking east at Wetland B

The top layer of soil in Wetland B is generally black (10YR 2/1) sandy loam that extends to a depth of six inches. Between six and 12 inches beneath the surface, the soil is generally black (10YR 2/1) sandy loam with very dark gray (10YR 3/1) depletions in the matrix. Between 12 and at least 17 inches below the surface, soils are typically light brownish gray (2.5Y 6/2) with dark yellowish brown (10YR 4/6) redoximorphic concentrations present in the matrix. These conditions meet the criteria for the Hydric Soil Indicator “Thick Dark Surface” (A12). Soils in Wetland B were saturated at the soil surface and the water table was present at a depth of two inches during the March site investigation. These conditions meet the criteria for the Wetland Hydrology Indicators “High Water Table” (A2) and “Saturation” (A3).

3.2.3 Wetland C

HGM class: Depressional

Cowardin classification: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

DOE Rating: Category IV

City of Marysville buffer: 35 feet

Wetland C is a small, depressional wetland located approximately southeast of Wetland B and east of Wetland A. Vegetation in Wetland C is dominated by red alder (*Alnus rubra*; FAC) and salmonberry (*Rubus spectabilis*; FAC). Dominant vegetation in Wetland C is rated as facultative (FAC) or wetter and therefore the plant community in the wetland is considered hydrophytic.



Figure 4 – Looking east at Wetland C

The top layer of soil in Wetland C extends to a depth of approximately five inches and is typically very dark grayish brown (10YR 3/2) sandy loam. Between five and 15 inches beneath the surface, soils are dark grayish brown (10YR 3/2) sandy loam with dark yellowish brown (10YR 3/6) redoximorphic concentrations present in the matrix. The sublayer extends to a depth of at least 18 inches and is gray (10YR 5/1) sandy loam with strong brown (7.5YR 5/6) redoximorphic concentrations present in the matrix. These conditions meet the criteria for the Hydric Soil Indicator “Redox Dark Surface” (F6). Soils in Wetland C were saturated to the surface at the time of the site investigation and the water table was present four inches below the soil surface. These conditions meet the criteria for the Wetland Hydrology Indicators “High Water Table” (A2) and “Saturation” (A3).

3.2.4 Wetland D (Off-site)

HGM class: Depressional

Cowardin classification: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

DOE Rating: Category II

City of Marysville buffer: 100 feet

Wetland D is a large, depressional wetland located off-site to the south of Wetland A, south of 60th Street NE. Vegetation observed within Wetland D includes Sitka willow (*Salix sitchensis*; FAC), red alder (*Alnus rubra*; FAC), Western red cedar (*Thuja plicata*; FAC), salmonberry (*Rubus spectabilis*; FAC), hardhack (*Spiraea douglasii*; FACW) reed canarygrass (*Phalaris arundinacea*; FACW), skunk cabbage (*Lysichiton americanus*; OBL) and common ladyfern (*Athyrium filix-femina*; FAC). The majority of dominant vegetation observed in Wetland D is rated as facultative or wetter and therefore the plant community within the wetland is considered hydrophytic. Soils and hydrology could not be sampled within wetland D due to lack of legal access.



Figure 5 – Looking south at Wetland D from 60th Street NE

3.2.5 Non-wetland Areas

Non-wetland areas on site are comprised of two distinct plant communities. Vegetation in the eastern and northern portions is dominated by regularly spaced immature grand fir (*Abies grandis*; FACU) and silver fir (*Abies amabilis*; FACU). Sparse understory vegetation includes salmonberry (*Rubus spectabilis* FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), salal (*Gaultheria shallon*; FACU), and maintained grasses (*Agrostis* sp.; FAC). Non-wetland areas in the southern and western portions of the site are forested with a canopy of big leaf maple (*Acer macrophyllum*; FACU), Western red cedar (*Thuja plicata*; FAC), red alder (*Alnus rubra*; FAC), and Western hemlock (*Tsuga heterophylla*; FACU). The understory is comprised of dense shrub vegetation including Himalayan blackberry (*Rubus armeniacus*; FAC), vine maple (*Acer circinatum*; FAC), Oso-berry (*Oemleria cerasiformis*; FACU), and red elderberry (*Sambucus racemosa*; FACU). The majority of dominant vegetation in these areas

is rated as facultative upland (FACU) and therefore the plant community is not considered hydrophytic.

The top layer of soil in the non-wetland areas of the site is typically very dark brown (10YR 2/2) or dark brown (7.5YR 3/2) sandy loam that extends to a depth of three to six inches. The soil transitions to a dark yellowish brown (10YR 3/6 or 10YR 4/4) sandy loam sublayer and extends to a depth of 10 to 16 inches. Soils in non-wetland areas were generally dry during the March site investigation.

4.0 WILDLIFE

Species expected to use the site include Eastern cottontail rabbit (*Sylvilagus floridanus*), black-tailed deer (*Odocoileus hemionus columbianus*), shrews (*Sorex spp.*), moles (*Scapanus spp.*), bats (*Myotis spp.*), raccoon (*Procyon lotor*), skunks (*Mephitis spp.*), squirrels (*Sciurus carolinensis*, *Tamiasciurus douglasii*), deer mouse (*Peromyscus maniculatus*), Virginia opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). Amphibian species that may utilize the site include: pacific tree frog (*Hyla regilla*), bullfrog (*Rana catesbeiana*), and northwestern salamander (*Ambystoma gracile*). Bird species likely to utilize the site include various songbirds, such as Sparrow, Chickadee, Dark-eyed Junco, American Robin, Nuthatch, Woodpecker, Stellar's Jay, Crow, and a variety of waterfowl. This list is not meant to be all-inclusive of species that use the site, but is representative of common wildlife in the Marysville area. No threatened or endangered species are known to be associated with this site.

5.0 PROPOSED BUFFER MODIFICATIONS

To accommodate the proposed development, buffer averaging is proposed within the outer portion of the buffers associated with Wetlands A-C, as allowed by MMC 22E.010.100(5). Two areas of temporary buffer impacts are also proposed to accommodate a stormwater outfall and necessary grading at the entrance for the access road. Temporary buffer impacts will be restored in place following construction at a ratio of 1:1, as required by MMC 22E.010.100(9)(c)(iii). Additionally, a sparsely vegetated area in the buffer of Wetland A will be enhanced to bring the buffer condition into compliance with the standards of MMC 22E.010.100(3).

5.1 BUFFER AVERAGING

Buffer averaging is proposed within the buffers of each of the on-site wetlands. Buffer width averaging requirements are provided in MMC 22E.010.100(5)(a) and (5)(c). Text from the referenced code sections are below in italics with applicant responses following each in standard text.

(5)(a) Buffer width averaging shall be allowed only where the applicant demonstrates to the community development department that the averaging will not impair or reduce the habitat, water quality purification and enhancement, storm water detention, ground water recharge, shoreline protection and erosion protection and other functions of the wetland and buffer

The proposed buffer averaging plan will improve the functions and values provided by the on-site buffer areas. Buffer reduction is proposed within several sparsely vegetated areas along the buffer edge. Buffer addition is proposed in several areas that are dominated by more dense native vegetation. The densely vegetated buffer addition areas will provide greater water quality, hydrologic, and habitat functions compared to the sparsely vegetated areas in the north. A full description of the functions and values provided by the mitigation plan is below in Section 8 of this report.

... that lower-intensity land uses would be located adjacent to areas where buffer width is reduced...

Buffer reductions are proposed within the western portion of lots 27-28, a small area in Tract 999 near the plat entrance, and the stormwater facility in Tract 998. The reduction area along lots 27-28 is along the side of these lots, where the lower-intensity side yards will abut the reduced buffer. The small portions of Tract 998 that require reduced buffers are between the proposed improvements and a dense forested buffer. The sidewalk is considered a lower-intensity land use and the reduced buffer associated with the stormwater facility will be the lowest intensity land use associated with the proposed development.

...and that the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging;

A total of 4,224 square feet of buffer reduction and 4,287 square feet of buffer addition are proposed. The total on-site area within the buffer will be slightly larger under the buffer averaging proposal.

(5)(c) Notwithstanding the reductions permitted in subsections (5)(a) and (b) of this section, buffer widths shall not be reduced by more than 25 percent of the required buffer.

The maximum buffer width reduction proposed is 25 percent of the required buffer.

5.2 TEMPORARY BUFFER IMPACTS AND BUFFER RESTORATION

The applicant is proposing to install a stormwater dispersion trench within the on-site buffer area in the southwest corner of the site. Per MMC 22E.010.100(10), stormwater management facilities may be located within the outer 25 percent of wetland buffers if they will have no negative effect on the functions and purpose the buffers serve for the wetland. The dispersion trench located in the southwest corner of the site cannot be placed in the outer 25 percent of the buffer due to the close proximity of the wetland to the existing roadway and the need to treat and disperse runoff from the required road frontage improvements. It will result in temporary impacts to buffer vegetation during construction, but this area will be restored with native plants, resulting in no permanent negative impact to buffer functions. The dispersion trench will ensure that hydrology to Wetland A will be maintained after construction, resulting in no negative impacts to the wetland.

To mitigate for impacts associated with construction of the trench, the applicant proposes to plant native shrubs in all areas impacted by the trench installation. By restoring a dense native plant community within this area, the applicant will ensure that the hydrologic, water quality, and habitat functions provided by these portions of the buffers are maintained. The following plant list

represent the plants that will be installed in the temporary impact area. Willow whips will be installed along the downhill side of the dispersion trench and dense native shrubs will comprise the remainder of the restoration area. Please see the planting plan attached in Appendix C.

Buffer Restoration Area A (2,876 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	5'	20
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5'	20
Nootka rose	<i>Rosa nutkana</i>	1 gallon	5'	20
Vine maple	<i>Acer circinatum</i>	1 gallon	5'	20
Pacific willow	<i>Salix lasiandra</i>	3' stake	2'	48
Sitka willow	<i>Salix sitchensis</i>	3' stake	2'	48

A small area of grading is required in the buffer in the southeast corner of Tract 999 for the plat access road. This 922 square foot area will be temporarily impacted and restored with native vegetation. Please see the planting plan attached in Appendix C.

Buffer Restoration Area B (922 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	5'	10
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5'	10
Nootka rose	<i>Rosa nutkana</i>	1 gallon	5'	10
Vine maple	<i>Acer circinatum</i>	1 gallon	5'	10

5.3 BUFFER ENHANCEMENT PLAN

5.3.1 Buffer vegetation standards

Pursuant to MMC 22E.010.100(3), where existing buffer area vegetation provides minimal vegetative cover and cannot provide the minimum water quality or habitat cover or in areas where invasive species provide the dominant cover, buffer enhancement shall be provided. A portion of the on-site buffer area in the northwestern corner of the site has been historically maintained and is vegetated with immature coniferous species. The understory in this area is sparse and provides minimal value to hydrologic and water quality functions typically provided by a buffer. Where shrub vegetation is present, it is often dominated by invasive Himalayan blackberry. Therefore, buffer enhancement is required in the northern portion of the Wetland A buffer.

A total of 13,504 square feet of buffer enhancement is proposed to bring the buffer into compliance with buffer standards. Buffer enhancement will be comprised of removing invasive species such as Himalayan blackberry from the enhancement area and installing a diverse array of native trees and shrubs. The coniferous species planted in the maintained area are native to Western Washington and will be retained during the enhancement process. The following plant list represents the plants that will be installed for buffer enhancement. Plant spacing and quantities have been modified to account for the presence of growing coniferous species in the buffer.

Buffer Enhancement Area A (13,504 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Big leaf maple	<i>Acer macrophyllum</i>	1 gallon	20'	17
Western red cedar	<i>Thuja plicata</i>	1 gallon	20'	17
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	8'	36
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	8'	36
Nootka rose	<i>Rosa nutkana</i>	1 gallon	8'	36
Vine maple	<i>Acer circinatum</i>	1 gallon	8'	36
Thimbleberry	<i>Rubus parvifolium</i>	1 gallon	8'	36

5.3.2 Pervious Trail in Buffer

A five-foot wide, private, pervious trail is proposed in the buffer of Wetlands A and C to provide pedestrian access to the level spreader trench west of the detention vault in Tract 998. The trail will be located in the outer 25 percent of the buffer, will be less than 10 feet wide, and will be composed of permeable materials, as required by MMC 22E.010.100(8). Buffer enhancement within a ten foot strip along the west side of the trail is proposed to remove invasive species and replace with native trees and shrubs.

Buffer Enhancement Area B (3,258 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Big leaf maple	<i>Acer macrophyllum</i>	1 gallon	20'	8
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	8'	11
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	8'	11
Nootka rose	<i>Rosa nutkana</i>	1 gallon	8'	11
Thimbleberry	<i>Rubus parvifolium</i>	1 gallon	8'	11

5.4 FENCING AND SIGNAGE

Pursuant to MMC 22E.010.370, split-rail fencing and signs designating the presence of a critical area will be constructed along the perimeter of the buffer. A split-rail fence will be installed along the perimeter of buffer on the subject property. Native Growth Protection Area (NGPA) signs will be affixed to the fence, as shown on the attached map(s). A fence and sign detail is provided below.

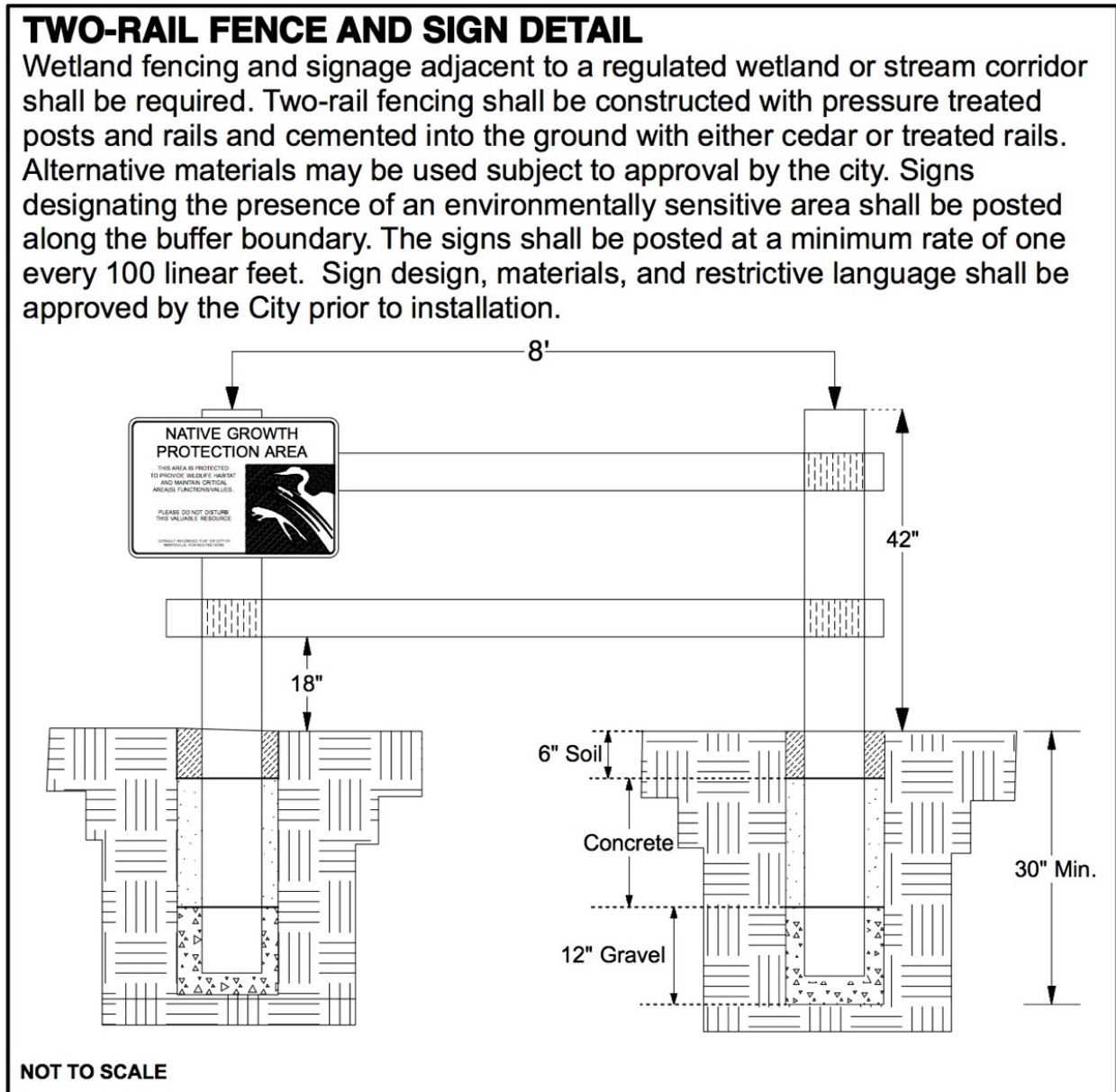


Figure 6 – Two-rail Fence and NGPA Sign Detail

6.0 PROJECT MONITORING PROGRAM

6.1 INSPECTION AND REPORTING REQUIREMENTS

1. Initial compliance/as-built report at completion of construction
2. Inspection and brief status report 30 days after planting
3. Inspection and monitoring report early in the first growing season
4. Inspection and monitoring report at the end of the first growing season
5. Inspection and monitoring report early in the second growing season
6. Inspection and monitoring report at the end of the second growing season
7. Annual site inspection and monitoring report thereafter

Purpose for Monitoring

The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows that the definitions of success stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscape and/or wetland specialist and City of Marysville staff during the monitoring period, until the project is evaluated as successful.

Monitoring

Monitoring shall be conducted in accordance with the approved Mitigation Plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff issues approval of the installation. The monitoring period is proposed to last for three to five years, however, if the site meets the Year 5 performance standards in earlier years, the monitoring program can be completed early. If the site does not meet the Year 5 performance standards at the end of Year 5, contingency actions may be necessary and monitoring may be extended one year at a time until the Year 5 performance standards are met.

Vegetation Monitoring

Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points shall be identified in the field and on the monitoring map in the first monitoring report. Each sampling point or transect shall detail tree, shrub, and herbaceous aerial coverage. During Years 3 through 5, vegetation monitoring shall occur between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

Photo points

At least one photo point shall be established in each buffer restoration area and at least four permanent photo points shall be established within each buffer enhancement area. Photographs will be taken from these points to visually record the condition of the restoration/enhancement area. Photos shall be taken between May 15 and September 30 (prior to leaf drop), unless otherwise specified. Photo points shall be identified on the monitoring map in the first monitoring report.

Monitoring Report Contents

As applicable, monitoring reports must include descriptions / data for:

1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
5. Observed wildlife, including amphibians, avians, and others
6. Assessment of nuisance / exotic biota and recommendations for management
7. Descriptions of any structural repair or replacement (i.e. fencing, signs, etc.)
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

6.2 PROJECT SUCCESS & COMPLIANCE

Criteria for Success

Upon completion of the proposed mitigation project, an inspection by a qualified wetland professional shall be made to determine plan compliance. An as-built report will be supplied to the City of Marysville to show compliance with the mitigation plan. The qualified wetland professional will perform condition monitoring of the plantings and provide reports according to the approved schedule.

Goal

To mitigate the impacts to functions and values from the proposed development.

Objectives

Objective 1: To establish a diverse, native plant community in the buffer that will persist and create an appropriate vegetative matrix.

Objective 2: To have significant native vegetative cover throughout the buffer.

Objective 3: To remove and replace existing invasive species and limit the establishment and spread of those species in the buffer.

Definition of Success

The mitigation project goal will be deemed successful when objectives are met, as evidenced through the observation of set performance standards.

Performance Standards

The objectives will be considered successfully met when the following performance standards are observed in all enhancement and restoration areas:

Performance Standard 1

End of Year 1: 90 percent survival of installed species and no more than 5 percent cover by invasive plant species.

Performance Standard 2

End of Year 2: at least 80 percent survival of installed plant species and no more than 10 percent cover by invasive plant species.

Performance Standard 3

End of Year 3: at least 30 percent aerial coverage by native species and groundcover, and no more than 10 percent cover by invasive plant species.

Performance Standard 4

End of Year 4: at least 40 percent aerial coverage by native species and groundcover, and no more than 10 percent cover by invasive plant species.

Performance Standard 5

End of Year 5*: at least 50 percent aerial coverage by native species and groundcover, and no more than 10 percent cover by invasive plant species.

When assessing areal coverage, native volunteer plants may be included when making calculations. However, for the purpose of assessing survival of installed plant species, only installed plantings shall be considered. Installed plantings shall be clearly marked with flagging during installation, as described in the *Flagging* section of Section 6.6 “Planting Notes.”

In the event that a performance standard is not met by the time specified, maintenance and/or contingency actions shall be implemented promptly to work toward meeting the standard.

*If Year 5 performance standards are met prior to the end of Year 5, the City may consider the project to be successful and terminate the monitoring period at that time.

6.3 MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans. Maintenance may include, but will not be limited to: removal of competing grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch for each maintenance period. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent

In order to achieve performance standards, the permittee shall be responsible for maintaining the mitigation area for the duration of the five-year monitoring period. Maintenance will include: watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, cutting down competing grasses, and any other measures needed to ensure plant survival.

Survival

The permittee shall be responsible for the health of 100 percent of all newly installed plants for one growing season after installation has been accepted by the City of Marysville. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 14 of the following year). For fall installation (if required), the growing season will begin the following spring. The permittee shall replace any plants that are failing, weak, defective in manner of growth, dead, or missing during the first growing season.

Installation Timing for Replacement Plants

Replacement plants shall be installed between November 1 and March 15, unless otherwise determined.

Standards for Replacement Plants

Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by a qualified professional.

Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.

Herbicides / Pesticides

Unless deemed absolutely necessary by the consulting biologist and/or the City, chemical controls shall not be used in the mitigation area, critical areas, or their buffers. Any chemical controls used shall be applied by a licensed applicator following all label instructions.

Irrigation / Watering

Water shall be provided during the dry season (July 1 through October 15) for the first two years after installation to ensure plant survival and establishment. A temporary above-ground irrigation system shall provide water at a rate of one inch (1”) of water twice per week for year one and one inch (1”) per week during year two. Adjustments to this schedule may be recommended by the wetland professional during the monitoring period.

General

The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

6.4 CONTINGENCY PLAN

If 20% of the plants are severely stressed during any of the inspections, or it appears 20% may not survive, contingency actions may be necessary. Elements of a contingency plan may include, but are not be limited to: replacing plants, more aggressive weed and invasive species control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

6.5 PROJECT NOTES

Pre-Construction Meeting

Mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a wetland professional for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There shall be a pre-construction meeting on this site between the Permittee, consulting wetland professional, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections

A wetland professional shall be contracted to periodically inspect the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A City of Marysville representative and/or the consulting professional will make these decisions during construction and any changes will be reflected in the As-built report.

6.6 PLANTING NOTES

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some species substitution may be allowed due to the availability of plants, only with the agreement of the wetland professional and/or City staff.

Pre-Planting Meeting

Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting wetland professional shall occur to discuss the intent of the project and resolve any questions. During this meeting, a discussion regarding plant spacing and locations of plant species shall occur.

Storage

Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the wetland professional prior to installation.

Damaged plants

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

Plant Names

Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape designer, wetland professional, or City staff. All plant materials shall be true to species and variety and legibly tagged.

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. Plants with pruning wounds over 1" in diameter will be rejected.

Roots

All plants shall be containerized or balled and burlapped (B&B), unless explicitly authorized by the wetland professional. Rootbound 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 / or twisted roots) 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 are allowed only with permission from the wetland professional and/or City staff.

Sizes

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

Form

Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single-trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Flagging

All mitigation plantings shall be clearly flagged with highly visible flagging tape at the time of the installation. Clear identification of mitigation plants will aid in future assessments of performance standards during monitoring visits.

Timing of Planting

Unless otherwise determined by the consulting biologist and City staff, initial planting shall occur between October 15 and March 15. Overall, the earlier plants go into the ground during the dormant period the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Weeding

Existing and exotic vegetation in the mitigation areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is recommended.

Site conditions

The contractor shall immediately notify the wetland professional of drainage or soil conditions likely to be detrimental to the growth or survival of plants. 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.

Planting Pits

Planting pits shall be circular or square with vertical sides, and shall be 6” deeper and 12” 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. 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.

Fertilizer

Slow release fertilizer may be used if pre-approved by the City of Marysville. 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 soil amendment or fertilizers will be placed in planting holes.

Staking

Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location

Colored surveyors ribbon or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing

The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the wetland professional and/or City staff.

Inspection(s)

A wetland professional shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Mulch

All landscaped areas denuded of vegetation and soil surface surrounding all planting pit areas shall receive no less than 2 to 4 inches of organic compost or certified weed free straw after planting. A layer of woodchips will be placed around the base of each plant in a 3-foot radius and at a depth of 2 to 4 inches. Mulch and woodchips shall not be allowed to contact plant stems in order to avoid plant decay and rot.

7.0 PERFORMANCE AND MAINTENANCE BONDING

Performance and/or maintenance bonds, or other assurance device, shall be provided to the City of Marysville, in an amount to be determined by the City. The following is an estimate of the cost to install the mitigation measures.

One-gallon plants	386 x \$15.00/plant, installed	\$5,790.00
Willow stakes	96 x \$5.00/plant, installed	\$480.00
Split rail fencing	\$10/foot x 1,676 feet	\$16,760.00
Critical area signage	\$30/sign x 16 signs	\$480.00
Mulch	\$50.00/CY x 10.5 CY	\$525.00
Monitoring	\$2,000.00/year x 5 years	\$10,000.00
<u>Maintenance</u>	<u>\$2,500.00/year x 5 years</u>	<u>\$12,500.00</u>
Total Estimated Cost		\$46,535.00

8.0 WETLAND FUNCTIONS AND VALUES ASSESSMENT

8.1 METHODOLOGY

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the on-site wetland, but is typical for assessments of similar systems common to western Washington.

Functions and Values Components

Wetlands in western Washington perform a variety of ecosystem functions. Included among the most important functions provided by wetlands are stormwater storage and flood flow attenuation, water quality improvement, and fish and wildlife habitat. An assessment of these functions for the project site is provided below.

8.2 EXISTING BUFFER CONDITIONS

The existing on-site buffer area is comprised of two distinct plant communities. In the northern portion, the buffer is vegetated with a maintained stand of immature coniferous trees. The understory in this area is sparse, and where vegetation is present, it contains invasive Himalayan blackberry. The buffer in the southern portion consists mostly of native forest with a dense shrubby understory. Some blackberry occurs in the outer portion of the buffer along the access road. The dense and diverse native vegetation in the southern portion performs water quality, hydrologic, and habitat functions at a high level. Dense shrubby plants reduce hydrologic flow rates and filter pollutants from the water column as water moves through the buffer. The mixture of a native forested canopy and dense understory also provides opportunities such as hiding, foraging, and resting to wildlife that utilize the site. The more sparsely vegetated buffer in the north performs these functions at a lower level than the native forest in the south.

8.3 POST MITIGATION FUNCTIONS AND VALUES

The applicant is proposing buffer modifications including buffer width averaging, temporary buffer impacts, and buffer enhancement. The buffer width averaging plan will remove buffer from areas in and around the maintained area in the north and provide significant buffer addition in natively forested areas. The buffer enhancement plan includes removing invasive plants and installing trees and diverse shrub vegetation within historically maintained portions of the wetland buffer. The end result of the buffer averaging and buffer enhancement plans will be that a greater portion of the on-site buffer area is comprised of dense native forested vegetation. These areas will increase the structural and species diversity within the buffer and thus the water quality, hydrologic, and habitat functions performed by the buffer as will be improved.

Temporary impacts to shrub vegetation are required to install two dispersion trenches in the outer 25 percent of the on-site buffer area. No trees will be impacted as part of the temporary impacts. These impacts will be restored following installation of the stormwater system. Native shrub species will be planted throughout the disturbed areas which will return the buffer to its pre-construction condition. Installation is necessary to maintain the hydrologic regime of the site but will result in a discountable temporal loss in functions provided by the buffer. Once the restoration plants establish, buffer functions will be fully restored. Overall, the buffer averaging, buffer enhancement,

and buffer restoration plan will improve the functions and values provided by the on-site buffer areas.

9.0 USE OF THIS REPORT

This Critical Area Study and Buffer Mitigation Plan is supplied to JM1 Holdings, LLC, as a means of determining on-site wetland conditions, as required by the City of Marysville 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 has conformed 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.



Eamonn Collins
Associate Ecologist



John Laufenberg
Principal Ecologist
Professional Wetland Scientist

10.0 REFERENCES

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**APPENDIX A:
CORPS WETLAND DETERMINATION DATA FORMS**

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

Project/Site: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S1
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam NWI classification: PFOC

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: Data taken in Wetland A near WRA19	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: 5m radius)					
1. <u>Thuja plicata</u>	30	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. <u>Alnus rubra</u>	15	Y	FAC		
3. <u>Acer macrophyllum*</u>	10	N	FACU		
4. _____					
45 = Total Cover					
Sapling/Shrub Stratum (Plot size: 3m radius)					
1. <u>Rubus spectabilis</u>	50	Y	FAC	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: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____	
2. <u>Ribes lacustre</u>	5	N	FAC		
3. _____					
4. _____					
5. _____					
55 = Total Cover					
Herb Stratum (Plot size: 1m radius)					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
0 = Total Cover					
Woody Vine Stratum (Plot size: 3m ²)					
1. _____					
2. _____					
0 = Total Cover					
% Bare Ground in Herb Stratum <u>100</u>					

Remarks:
 *Rooted outside of wetland

SOIL

Sampling Point: S1

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		
0-8	10YR 2/1	100					Sandy Loam	
8-16	10YR 2/1	98	10YR 3/4	2	C	M	Sandy Loam	
16-20	10YR 5/1	92	10YR 3/6	8	C	M	Sandy Loam	

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)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input checked="" 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)	

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

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 4"	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): Surface	

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: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S2
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam NWI classification: N/A

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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data taken outside of Wetland A near WRA19	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 5m radius)					
1. <u>Thuja plicata</u>		50	Y	FAC	
2. <u>Alnus rubra</u>		15	N	FAC	
3. <u>Acer macrophyllum</u>		15	N	FACU	
4. _____					
		80	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m radius)					
1. <u>Rubus spectabilis</u>		50	Y	FAC	
2. <u>Oemleria cerasiformis</u>		5	N	FACU	
3. _____					
4. _____					
5. _____					
		55	= Total Cover		
Herb Stratum (Plot size: 1m radius)					
1. <u>Athyrium filix-femina</u>		10	Y	FAC	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		10	= Total Cover		
Woody Vine Stratum (Plot size: 3m ²)					
1. _____					
2. _____					
		0	= Total Cover		
% Bare Ground in Herb Stratum <u>90</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

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		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-3	7.5YR 2.5/2	100					Sandy Loam	
3-10	10YR 3/6	100					Sandy Loam	
10-16	10YR 3/4	100					Sandy Loam	

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.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S3
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam 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: Data taken in Wetland B near WRB5	

VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Notes
Tree Stratum (Plot size: 5m radius)				
1. <u>Acer macrophyllum*</u>	<u>20</u>	<u>N</u>	<u>FACU</u>	
2. <u>Alnus rubra*</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Thuja plicata*</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____				
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m radius)				
1. <u>Rubus spectabilis</u>	<u>95</u>	<u>Y</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>95</u>	= Total Cover		
Herb Stratum (Plot size: 1m radius)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>0</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3m ²)				
1. _____				
2. _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>				

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

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = 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 ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 *Rooted outside of wetland

SOIL

Sampling Point: S3

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-6	10YR 2/1	100					Sandy Loam	
6-12	10YR 2/1	70	10YR 3/1	30	D	M	Sandy Loam	
12-17	2.5Y 6/2	75	10YR 4/6	25	C	M	Sandy Loam	

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)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" 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)	

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

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2" Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): Surface (includes capillary fringe)
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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: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S4
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam 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: Data taken outside of Wetland B near WRB5	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 5m radius)					
1. <u>Alnus rubra</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Acer macrophyllum</u>		<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Prunus emarginata</u>		<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____					
		<u>32</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m radius)					
1. <u>Rubus spectabilis</u>		<u>90</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Sambucus racemosa</u>		<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Oemleria cerasiformis</u>		<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____					
5. _____					
		<u>97</u>	= Total Cover		
Herb Stratum (Plot size: 1m radius)					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		<u>0</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3m ²)					
1. _____					
2. _____					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (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 ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 *Rooted outside of wetland

SOIL

Sampling Point: S4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-5	7.5YR 2.5/2	100					Sandy Loam	
5-12	10YR 4/4	100					Sandy Loam	
12-16	10YR 3/3	100					Sandy Loam	

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.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S5
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam 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: Data taken inside of Wetland C near WRC4	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 5m radius)					
1. <u>Alnus rubra</u>		40	Y	FAC	
2. <u>Thuja plicata*</u>		30	N	FAC	
3. <u>Acer macrophyllum*</u>		10	N	FACU	
4. _____					
		40	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m radius)					
1. <u>Rubus spectabilis</u>		30	Y	FAC	
2. <u>Oemleria cerasiformis*</u>		20	N	FACU	
3. _____					
4. _____					
5. _____					
		30	= Total Cover		
Herb Stratum (Plot size: 1m radius)					
1. <u>Polystichum munitum*</u>		20	N	FACU	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		0	= Total Cover		
Woody Vine Stratum (Plot size: 3m ²)					
1. _____					
2. _____					
		0	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

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 ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 *Rooted outside of wetland

SOIL

Sampling Point: S5

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-5	7.5YR 3/2	100					Sandy Loam	
5-15	7.5YR 3/2	95	10YR 3/6	5	C	M	Sandy Loam	
15-18	10YR 5/1	60	7.5YR 5/6	40	C	M	Sandy Loam	

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)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" 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)	

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

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 4	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): Surface	

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: 22061JM1 Holdings - Brodie Property City/County: City of Marysville Sampling Date: 3/14/22
 Applicant/Owner: JM1 Holdings, LLC State: WA Sampling Point: S6
 Investigator(s): EC, SS Section, Township, Range: S25, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR-A Lat: 48.050832 Long: -122.113938 Datum: NAD83
 Soil Map Unit Name: Norma Loam NWI classification: N/A

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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data taken outside of Wetland C near WRC4	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 5m radius)					
1. <u>Alnus rubra</u>		50	Y	FAC	
2. <u>Thuja plicata</u>		20	Y	FAC	
3. <u>Acer macrophyllum</u>		10	N	FACU	
4. <u>Populus balsamifera</u>		5	N	FAC	
		85	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m radius)					
1. <u>Rubus spectabilis</u>		40	Y	FAC	
2. <u>Oemleria cerasiformis</u>		25	Y	FACU	
3. <u>Gaultheria shallon</u>		5	N	FACU	
4. _____					
5. _____					
		70	= Total Cover		
Herb Stratum (Plot size: 1m radius)					
1. <u>Athyrium filix-femina</u>		20	Y	FAC	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		20	= Total Cover		
Woody Vine Stratum (Plot size: 3m ²)					
1. _____					
2. _____					
		0	= Total Cover		
% Bare Ground in Herb Stratum <u>80</u>					

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 ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: S6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-3	10YR 3/6	100					Sandy Loam	
3-16	7.5YR 4/6	100					Sandy Loam	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Histosol (A1)</td> <td><input type="checkbox"/> Sandy Redox (S5)</td> </tr> <tr> <td><input type="checkbox"/> Histic Epipedon (A2)</td> <td><input type="checkbox"/> Stripped Matrix (S6)</td> </tr> <tr> <td><input type="checkbox"/> Black Histic (A3)</td> <td><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</td> </tr> <tr> <td><input type="checkbox"/> Hydrogen Sulfide (A4)</td> <td><input type="checkbox"/> Loamy Gleyed Matrix (F2)</td> </tr> <tr> <td><input type="checkbox"/> Depleted Below Dark Surface (A11)</td> <td><input type="checkbox"/> Depleted Matrix (F3)</td> </tr> <tr> <td><input type="checkbox"/> Thick Dark Surface (A12)</td> <td><input type="checkbox"/> Redox Dark Surface (F6)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Mucky Mineral (S1)</td> <td><input type="checkbox"/> Depleted Dark Surface (F7)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Gleyed Matrix (S4)</td> <td><input type="checkbox"/> Redox Depressions (F8)</td> </tr> </table>	<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input 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)	<p>Indicators for Problematic Hydric Soils³:</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> 2 cm Muck (A10)</td> </tr> <tr> <td><input type="checkbox"/> Red Parent Material (TF2)</td> </tr> <tr> <td><input type="checkbox"/> Very Shallow Dark Surface (TF12)</td> </tr> <tr> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> </table> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>	<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Red Parent Material (TF2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	<input type="checkbox"/> Other (Explain in Remarks)
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:																																
<p>Primary Indicators (minimum of one required; check all that apply)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Salt Crust (B11)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Aquatic Invertebrates (B13)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<p>Secondary Indicators (2 or more required)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Frost-Heave Hummocks (D7)</td> </tr> </table>	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>																															
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																
Remarks:																																

APPENDIX B:
DOE WETLAND RATING FORMS

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 22061 - Wetland A Date of site visit: 3/14/2022
 Rated by EC Trained by Ecology? Yes No Date of training 10/18
 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 Snohomish County GIS

OVERALL WETLAND CATEGORY II (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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Landscape Potential	<input checked="" type="checkbox"/> M L	<input checked="" type="checkbox"/> M L	H <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	H <input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> M L	TOTAL
Score Based on Ratings	8	7	7	22

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	<input checked="" type="checkbox"/>

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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

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	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input checked="" type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	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:		
<input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 <input type="checkbox"/> No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		3
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3		
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. Characteristics of seasonal ponding or inundation: <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		2
<input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
Total for D 1	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 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?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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 <input type="checkbox"/> No = 0	0
Total for D 2	Add the points in the boxes above	3

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?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
Total for D 3	Add the points in the boxes above	4

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

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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:		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
<input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
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.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input checked="" type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 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.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	3
<input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4	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 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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.)?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
Total for D 5	Add the points in the boxes above	3

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):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	1
<input checked="" type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="checkbox"/> 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

4

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**

2

H 1.3. Richness of plant species

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

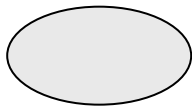
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

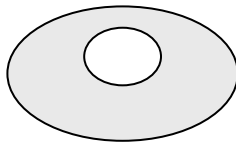
2

H 1.4. Interspersion of habitats

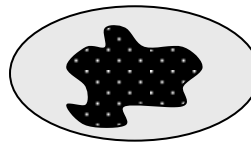
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



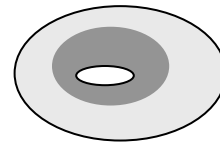
None = 0 points



Low = 1 point



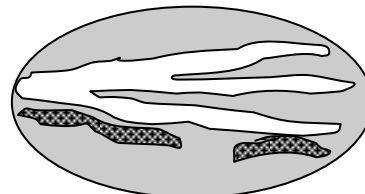
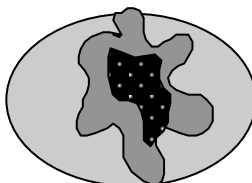
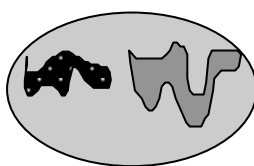
Moderate = 2 points



3

All three diagrams in this row are

HIGH = 3points



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 checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input checked="" 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 checked="" 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>		3
Total for H 1	Add the points in the boxes above	14

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?			
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>1</u> + [(% moderate and low intensity land uses)/2] <u>1</u> = <u>2</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 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 <u>18</u> + [(% moderate and low intensity land uses)/2] <u>20</u> = <u>38</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> 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><input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>			0
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?			
<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> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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> <p><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>			2

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.

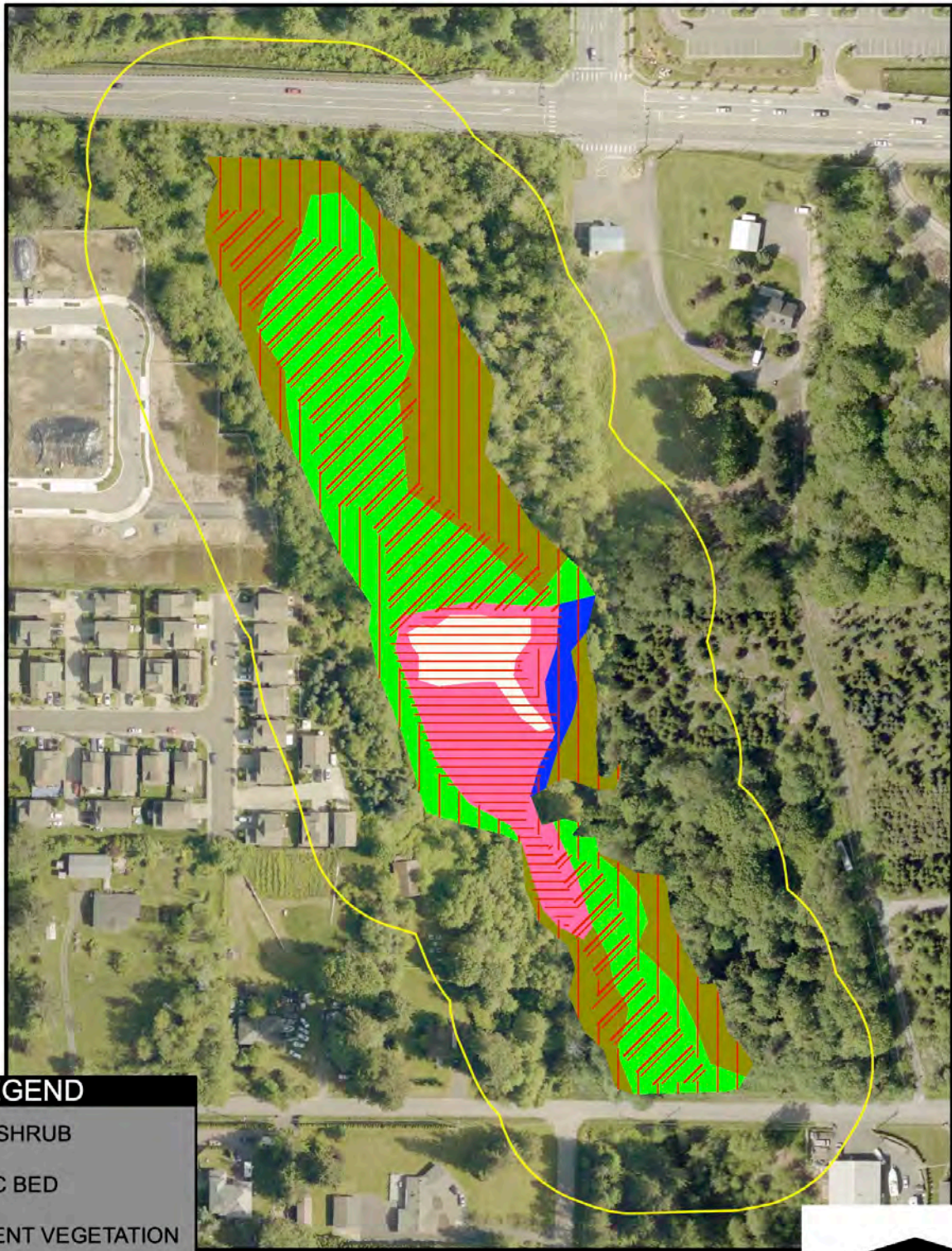
Wetland name or number A**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> 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? <input type="checkbox"/> 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) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> 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

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> 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 (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>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</p> <p>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</p> <p>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</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 1- WETLAND A

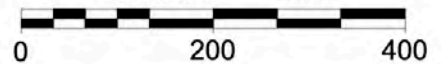


LEGEND

-  SCRUB-SHRUB
-  AQUATIC BED
-  EMERGENT VEGETATION
-  FORESTED VEGETATION
-  OPEN WATER
-  SATURATED ONLY
-  SEASONALLY FLOODED
-  PERMANENTLY FLOODED
-  150' FROM WL BOUNDARY



Scale 1" = 200'



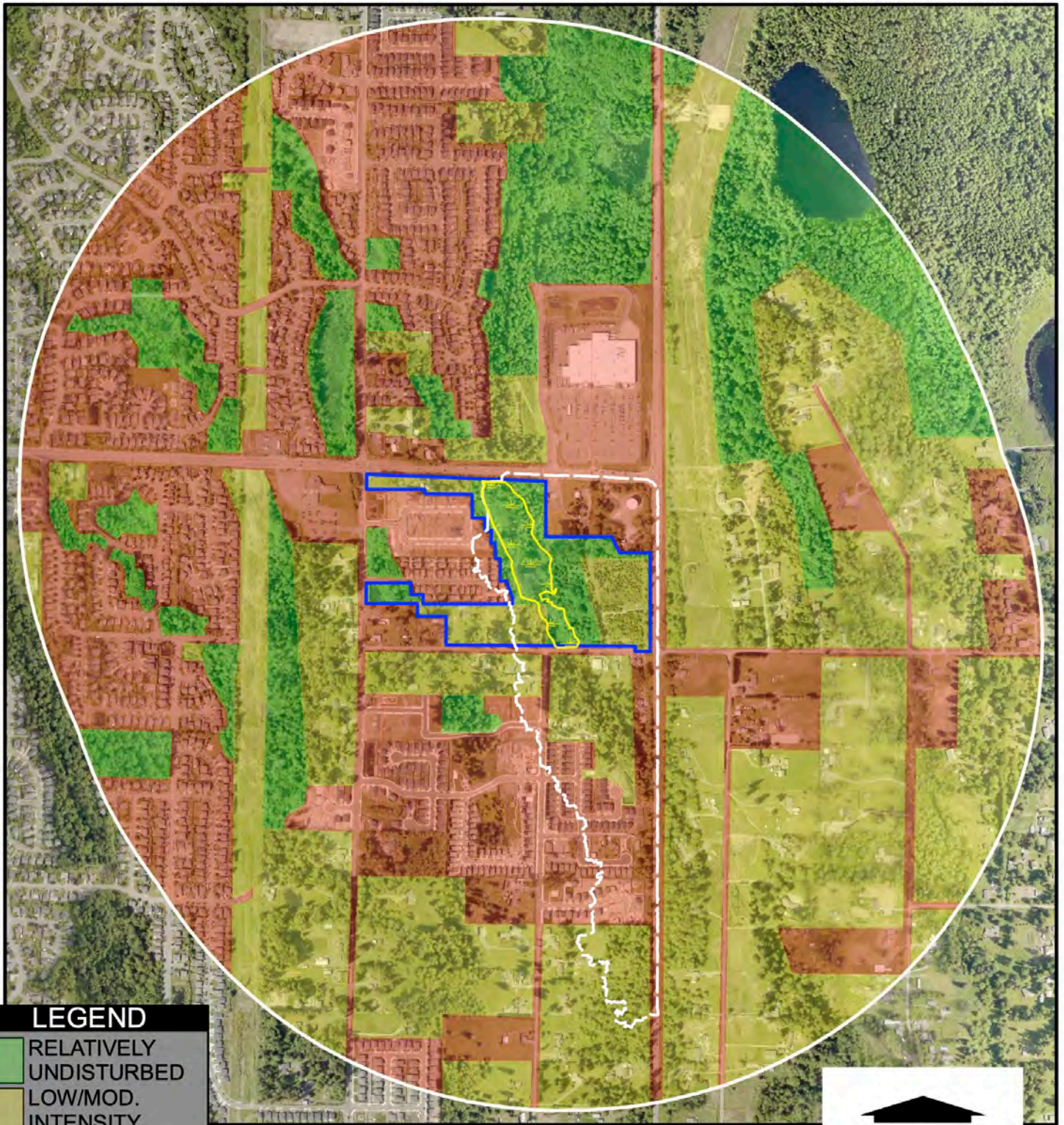
Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E., Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure A-1
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 2- WETLAND A

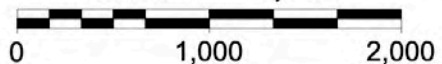


LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN



Scale 1" = 1,000'



**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 11.7:1**

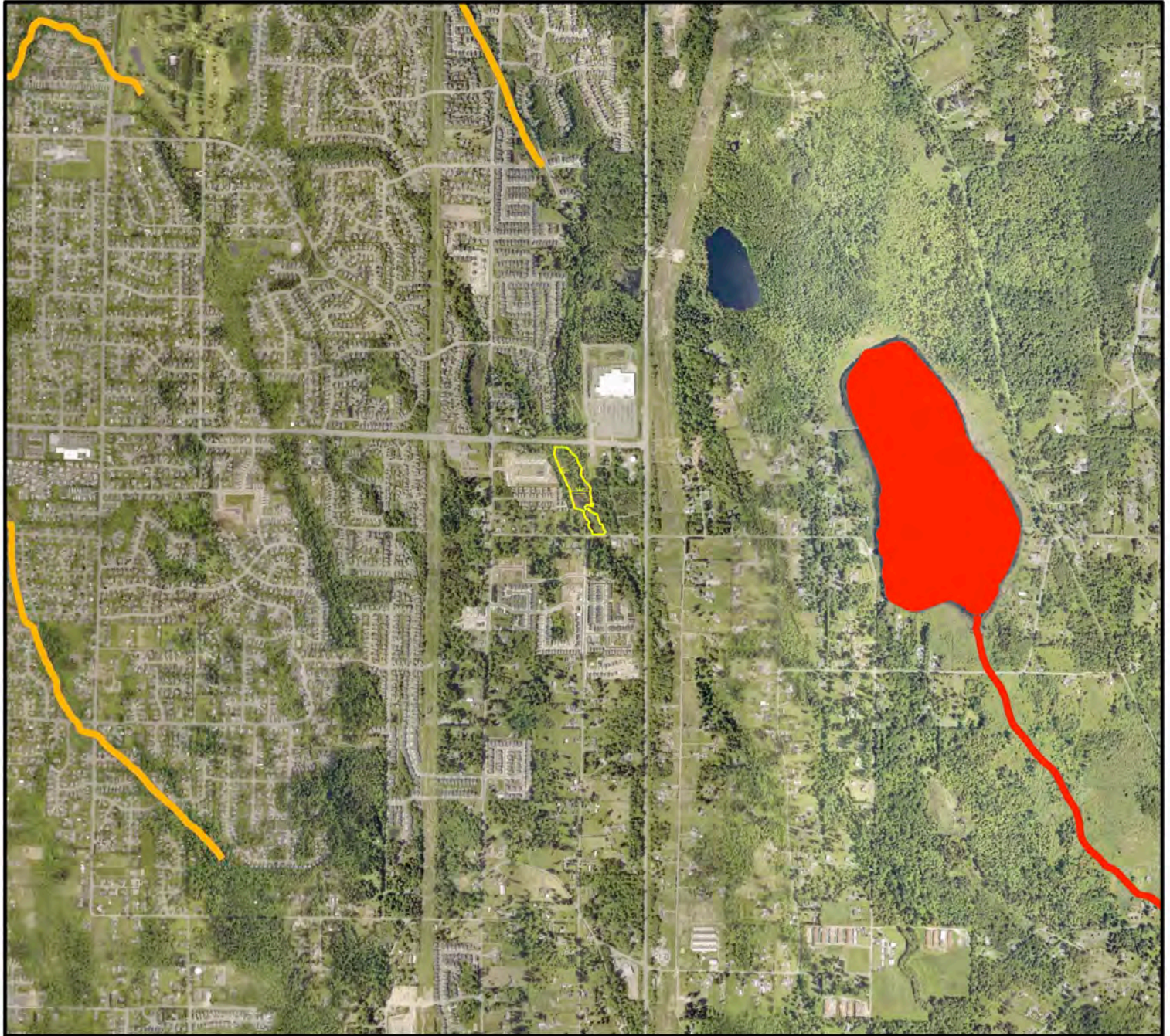
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland A**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure A-2
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 3- WETLAND A



LEGEND



WETLAND



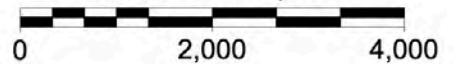
AQUATIC RESOURCES
 ON THE 303(d) LIST



AQUATIC RESOURCES
 WITH TMDL LISTING



Scale 1" = 2,000'



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**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202
 Lake Stevens, WA 98258

Figure A-3
 WRI Job # 22061
 Rated by: EC

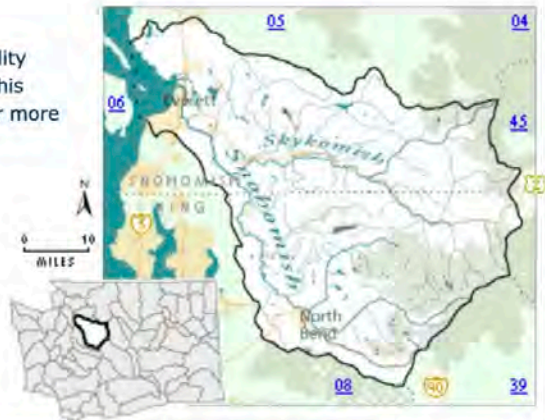
**JM1 HOLDINGS - BRODIE PROPERTY
WETLAND RATING FIGURE 4- WETLAND A**

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	Under development	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svrcek 425-649-7165
	Estuary	EPA approved	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	<ul style="list-style-type: none"> • Fecal Coliform 	EPA approved	Ralph Svrcek 425-649-7165
	Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 		
Snoqualmie River	<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform 	EPA approved	Ralph Svrcek 425-649-7165
	Temperature	EPA approved Has an implementation plan	

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

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 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland A**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure A-4
 WRI Job # 22061
 Rated by: EC

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 22061 - Wetland B Date of site visit: 3/14/22

Rated by EC Trained by Ecology? Yes No Date of training 10/18

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 Snohmish County

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 <input type="checkbox"/> <input checked="" type="checkbox"/> L	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	
Landscape Potential	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	H <input checked="" type="checkbox"/> L	H <input checked="" type="checkbox"/> L	TOTAL
Score Based on Ratings	6	4	5	15

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	<input checked="" type="checkbox"/>

Wetland name or number B

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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

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 **B**_____

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 B**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	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input checked="" type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	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 B

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. <u>Characteristics of surface water outflows from the wetland:</u>			
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3	
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2			
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1			
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1			
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <input type="checkbox"/> No = 0		0	
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u>			
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		5	
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3			
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1			
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0			
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>			
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		0	
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2			
<input checked="" type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 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 <input type="checkbox"/> No = 0	0	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 <input type="checkbox"/> No = 0	0	
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <input type="checkbox"/> 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 <input type="checkbox"/> No = 0	0	
Total for D 2		Add the points in the boxes above	0

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 <input type="checkbox"/> 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?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2	
Total for D 3		Add the points in the boxes above	3

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

--

Wetland name or number B**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:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
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.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input checked="" type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 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.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	0
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	4

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 <input type="checkbox"/> No = <input type="text" value="0"/>	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 <input type="checkbox"/> No = <input type="text" value="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 <input type="checkbox"/> No = <input type="text" value="0"/>	0
Total for D 5	Add the points in the boxes above	0

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):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	1
<input checked="" type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="checkbox"/> No = <input type="text" value="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 B**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.*

- | | | |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> 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 | | |

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*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

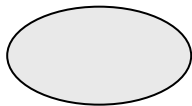
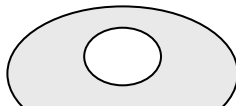
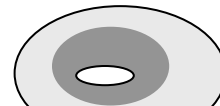
Count the number of plant species in the wetland that cover at least 10 ft².

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

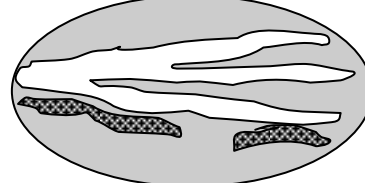
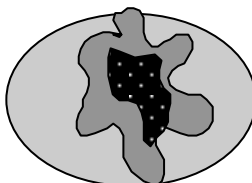
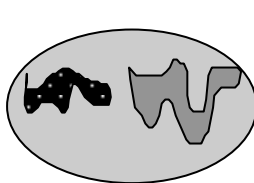
- | | | |
|------------------------------|-------------------|----------|
| If you counted: > 19 species | points = 2 | 0 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

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****0**

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



Wetland name or number B

<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 checked="" 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 checked="" 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>		2
Total for H 1	Add the points in the boxes above	2

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?			
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>2</u> + [(% moderate and low intensity land uses)/2] <u>1</u> = <u>3</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 10% of 1 km Polygon points = 0</p>			0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>17</u> + [(% moderate and low intensity land uses)/2] <u>21</u> = <u>38</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> 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><input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>			0
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?			
<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> <p><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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> <p><input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>			1

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

Record the rating on the first page

Wetland name or number B

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 B**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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> 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? <input type="checkbox"/> 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) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> 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

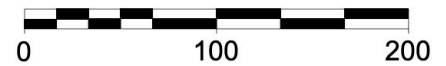
Wetland name or number B

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> 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 (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>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</p> <p>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</p> <p>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</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A


JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 1- WETLAND B





Scale 1" = 100'



LEGEND

 SCRUB-SHRUB

 SATURATED ONLY

 150' FROM WL BOUNDARY

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 B

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure B-1
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 2- WETLAND B



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 86.9:1**



Scale 1" = 1,000'



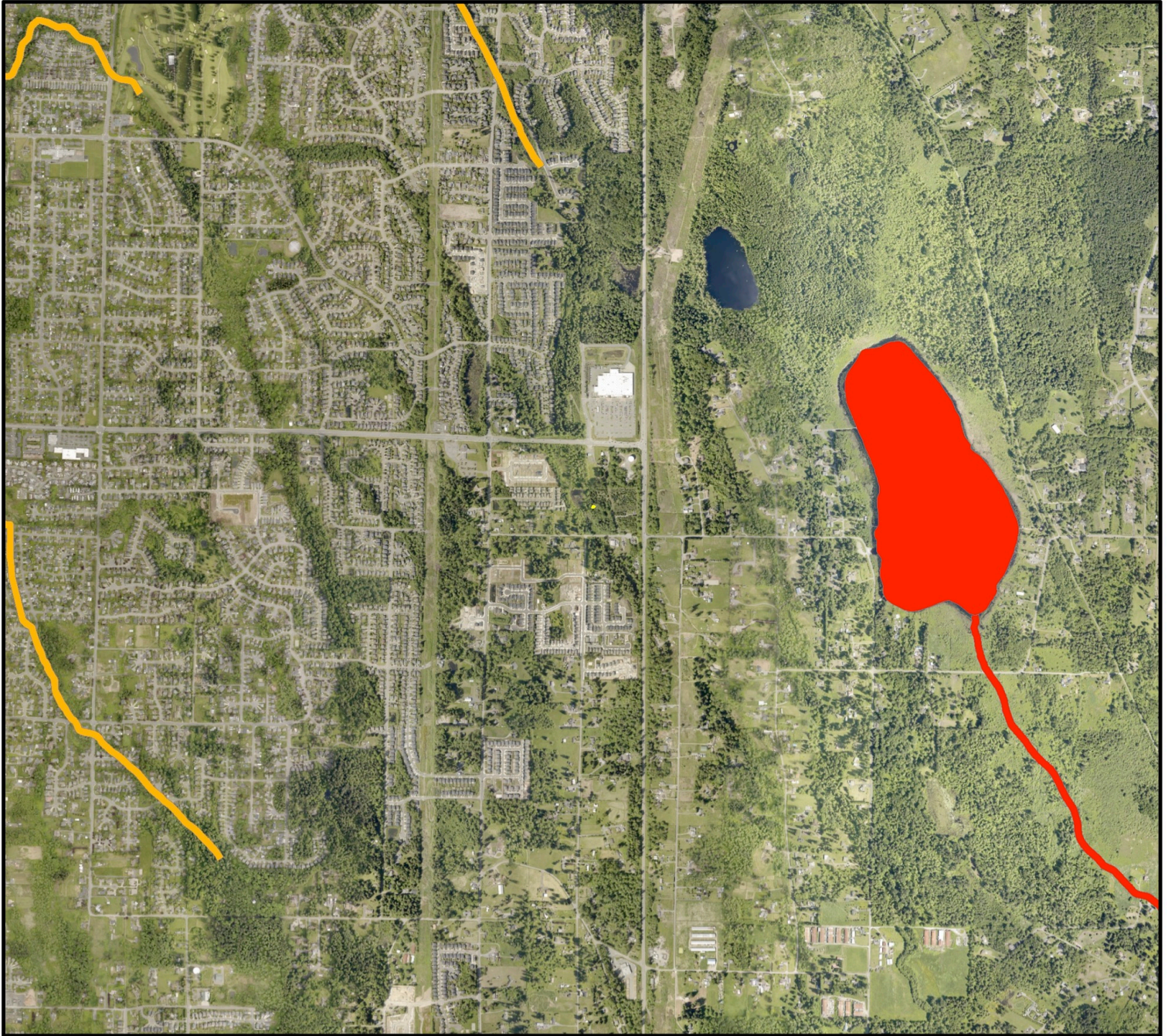
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E., Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
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**WETLAND RATING
 Wetland B**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure B-2
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 3- WETLAND B



LEGEND



WETLAND



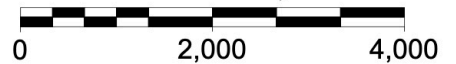
AQUATIC RESOURCES
 ON THE 303(d) LIST



AQUATIC RESOURCES
 WITH TMDL LISTING



Scale 1" = 2,000'



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
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WETLAND RATING
Wetland B

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Figure B-3
 WRI Job # 22061
 Rated by: EC

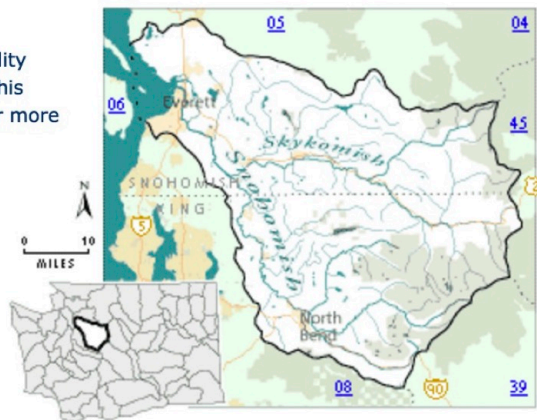
**JM1 HOLDINGS - BRODIE PROPERTY
WETLAND RATING FIGURE 4- WETLAND B**

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	Under development	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svrcek 425-649-7165
	Estuary	EPA approved	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Fecal Coliform Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 			
Snoqualmie River	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved Has an implementation plan		

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

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 B**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure B-4
 WRI Job # 22061
 Rated by: EC

Wetland name or number C

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 22061 - Wetland C Date of site visit: 3/14/22

Rated by EC Trained by Ecology? Yes No Date of training 10/18

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 Snohmish County

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 <input type="checkbox"/> <input checked="" type="checkbox"/> L	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	
Landscape Potential	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	H <input checked="" type="checkbox"/> L	H <input checked="" type="checkbox"/> L	TOTAL
Score Based on Ratings	6	4	5	15

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	<input checked="" type="checkbox"/>

Wetland name or number C

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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

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 C

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 C

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	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	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 C

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:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 <input type="checkbox"/> No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		3
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3		
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. Characteristics of seasonal ponding or inundation: <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		0
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input checked="" type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
Total for D 1	Add the points in the boxes above	6

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 <input type="checkbox"/> No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 <input type="checkbox"/> No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <input type="checkbox"/> 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 <input type="checkbox"/> No = 0	0
Total for D 2	Add the points in the boxes above	0

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 <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

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

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Wetland name or number C**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:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
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.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input checked="" type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 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.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	0
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	4

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 <input type="checkbox"/> No = <input type="text" value="0"/>	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 <input type="checkbox"/> No = <input type="text" value="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 <input type="checkbox"/> No = <input type="text" value="0"/>	0
Total for D 5	Add the points in the boxes above	0

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):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	1
<input checked="" type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="checkbox"/> No = <input type="text" value="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 C**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.*

- | | | |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> 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 | | |

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*).

- | | | |
|--|-------------------------------------|-----------------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

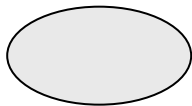
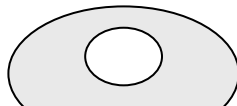
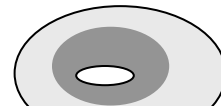
Count the number of plant species in the wetland that cover at least 10 ft².

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

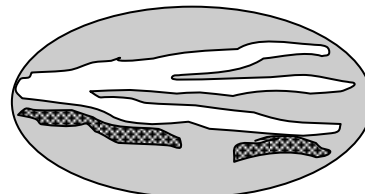
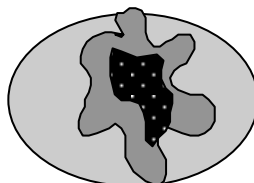
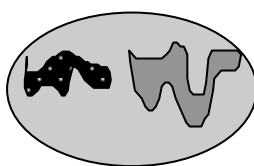
- | | | |
|------------------------------|-------------------|----------|
| If you counted: > 19 species | points = 2 | 0 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

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****0**

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



Wetland name or number C

<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 checked="" 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 checked="" 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>		2
Total for H 1	Add the points in the boxes above	2

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 <u>2</u> + [(% moderate and low intensity land uses)/2] <u>1</u> = <u>3</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 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 <u>17</u> + [(% moderate and low intensity land uses)/2] <u>22</u> = <u>39</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> 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><input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>			0
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> <p><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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> <p><input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>			1

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

Record the rating on the first page

Wetland name or number C

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 C**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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> 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? <input type="checkbox"/> 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) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> 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 C


<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> 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 (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>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</p> <p>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</p> <p>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</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 1- WETLAND C




LEGEND

-  FORESTED VEGETATION
-  SATURATED ONLY
-  150' FROM WL BOUNDARY



Scale 1" = 100'



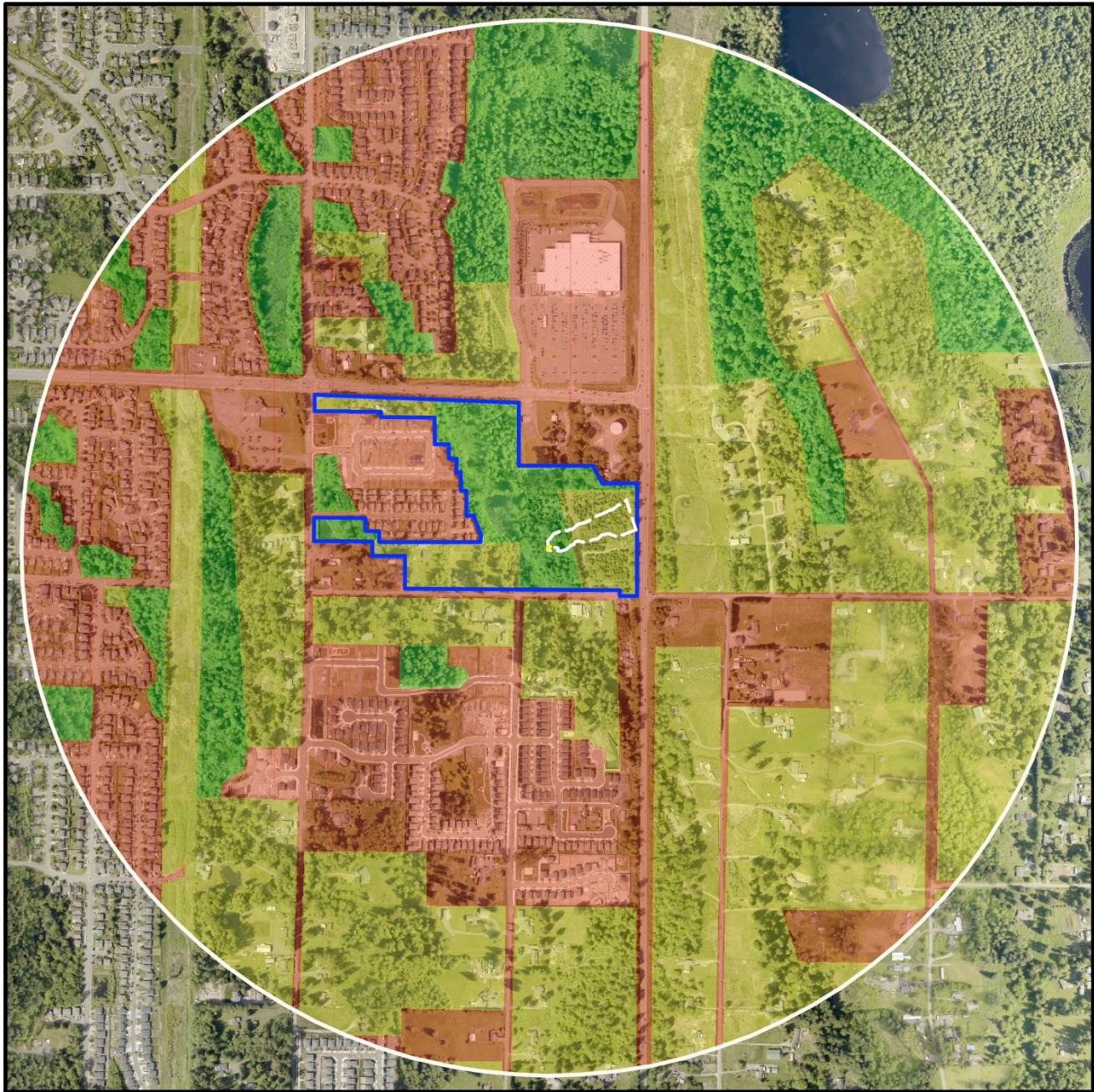
Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland C

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure C-1
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 2- WETLAND C



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 37.2:1**



Scale 1" = 1,000'



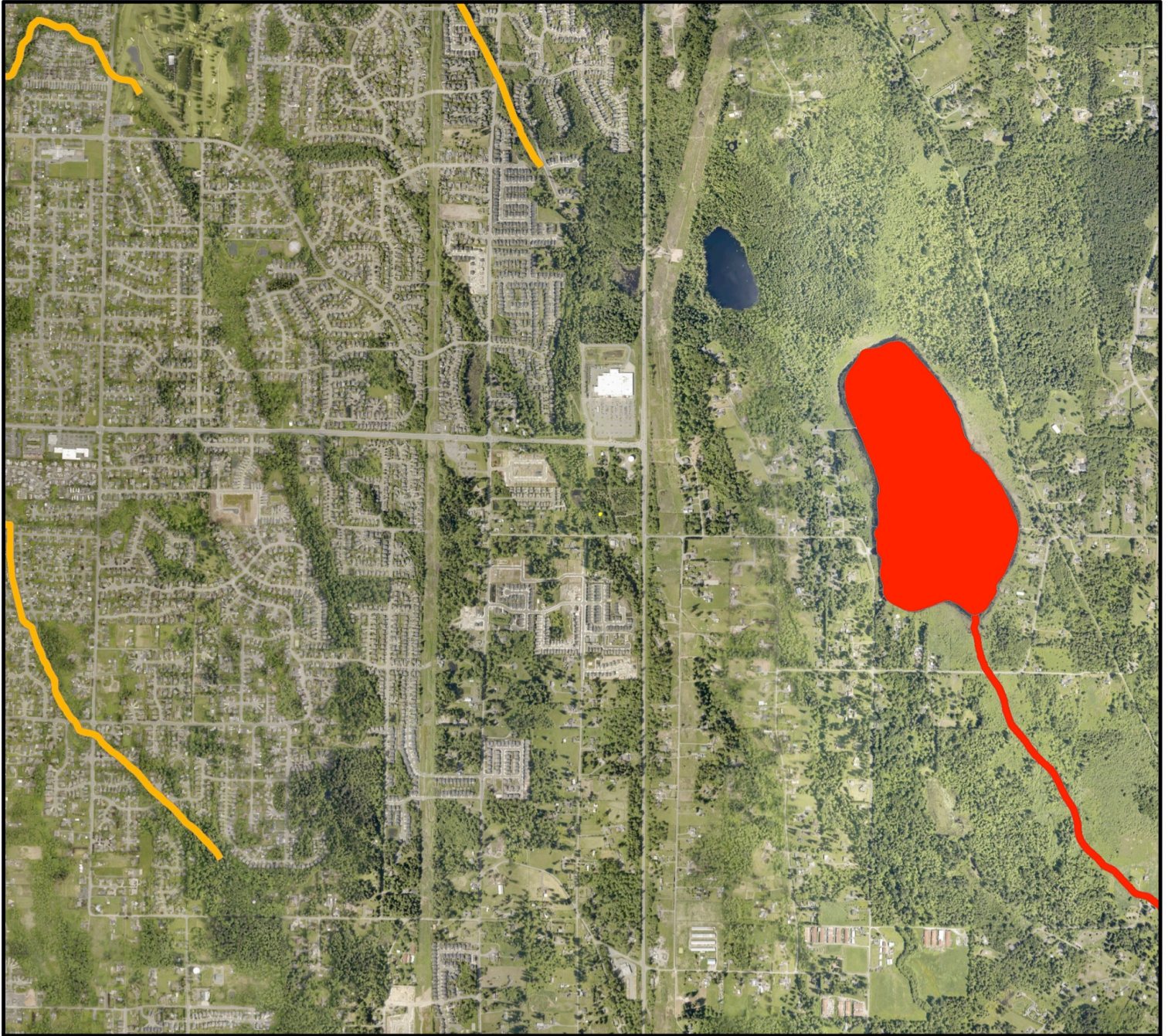
Wetland Resources, Inc.
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 9505 19th Avenue S.E., Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland C**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure C-2
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 3- WETLAND C



LEGEND



WETLAND



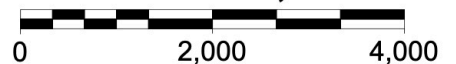
AQUATIC RESOURCES
 ON THE 303(d) LIST



AQUATIC RESOURCES
 WITH TMDL LISTING



Scale 1" = 2,000'



Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
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 Phone: (425) 337-3174
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 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland C

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure C-3
 WRI Job # 22061
 Rated by: EC

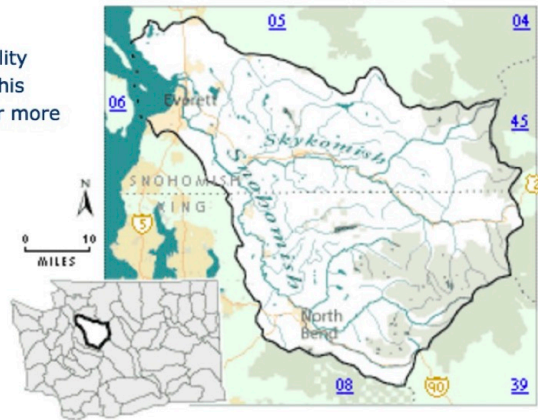
**JM1 HOLDINGS - BRODIE PROPERTY
WETLAND RATING FIGURE 4- WETLAND C**

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	Under development	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svrcek 425-649-7165
	Estuary	EPA approved	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Fecal Coliform Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 			
Snoqualmie River	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved Has an implementation plan		

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

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
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 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland C**

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure C-4
 WRI Job # 22061
 Rated by: EC

Wetland name or number D - Off site

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 22061 - Wetland D - (Off site) Date of site visit: 3/14/22

Rated by EC Trained by Ecology? Yes No Date of training 10/18

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 Snohmish County

OVERALL WETLAND CATEGORY II (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 <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Landscape Potential	<input checked="" type="checkbox"/> M L	<input checked="" type="checkbox"/> M L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	TOTAL
Score Based on Ratings	8	7	6	21

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	<input checked="" type="checkbox"/>

Wetland name or number D - Off site

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	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

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 **D - Off site**

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 D - Off site

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	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input checked="" type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	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 D - Off site

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:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 <input type="checkbox"/> No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		3
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3		
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1		
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0		
D 1.4. Characteristics of seasonal ponding or inundation: <i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
<input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		4
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2		
<input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0		
Total for D 1		10

Add the points in the boxes above

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?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
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 <input type="checkbox"/> No = 0	0
Total for D 2		3

Add the points in the boxes above

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 <input type="checkbox"/> 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?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
Total for D 3		3

Add the points in the boxes above

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

Wetland name or number D - Off site**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:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. <u>Depth of storage during wet periods</u> : 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.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	3
<input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	10

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?	<input type="text" value="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?	<input type="text" value="Yes = 1"/> No = 0	1
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.)?	<input type="text" value="Yes = 1"/> No = 0	1
Total for D 5	Add the points in the boxes above	3

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):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	1
<input checked="" type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> 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	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="text" value="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 D - Off site**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

2

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.

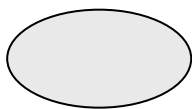
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

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

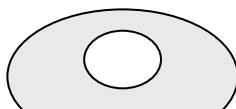
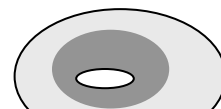
1

H 1.4. Interspersion of habitats

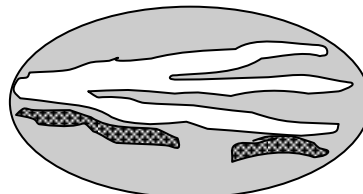
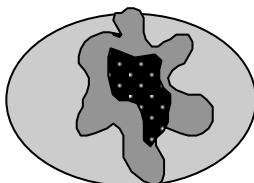
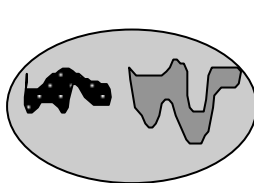
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

**Low = 1 point****Moderate = 2 points****1**

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



Wetland name or number **D - Off site**

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		3
Total for H 1	Add the points in the boxes above	8

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 <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>1</u> = <u>1</u> % If total accessible habitat is: <input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3 <input type="checkbox"/> 20-33% of 1 km Polygon points = 2 <input type="checkbox"/> 10-19% of 1 km Polygon points = 1 <input checked="" type="checkbox"/> < 10% of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat <u>13</u> + [(% moderate and low intensity land uses)/2] <u>26</u> = <u>39</u> % <input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3 <input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2 <input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1 <input type="checkbox"/> Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3. Land use intensity in 1 km Polygon: If <input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2) <input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0		0
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? <i>Choose only the highest score that applies to the wetland being rated.</i> Site meets ANY of the following criteria: points = 2 <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 <input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 <input type="checkbox"/> 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 **D - Off site**

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.

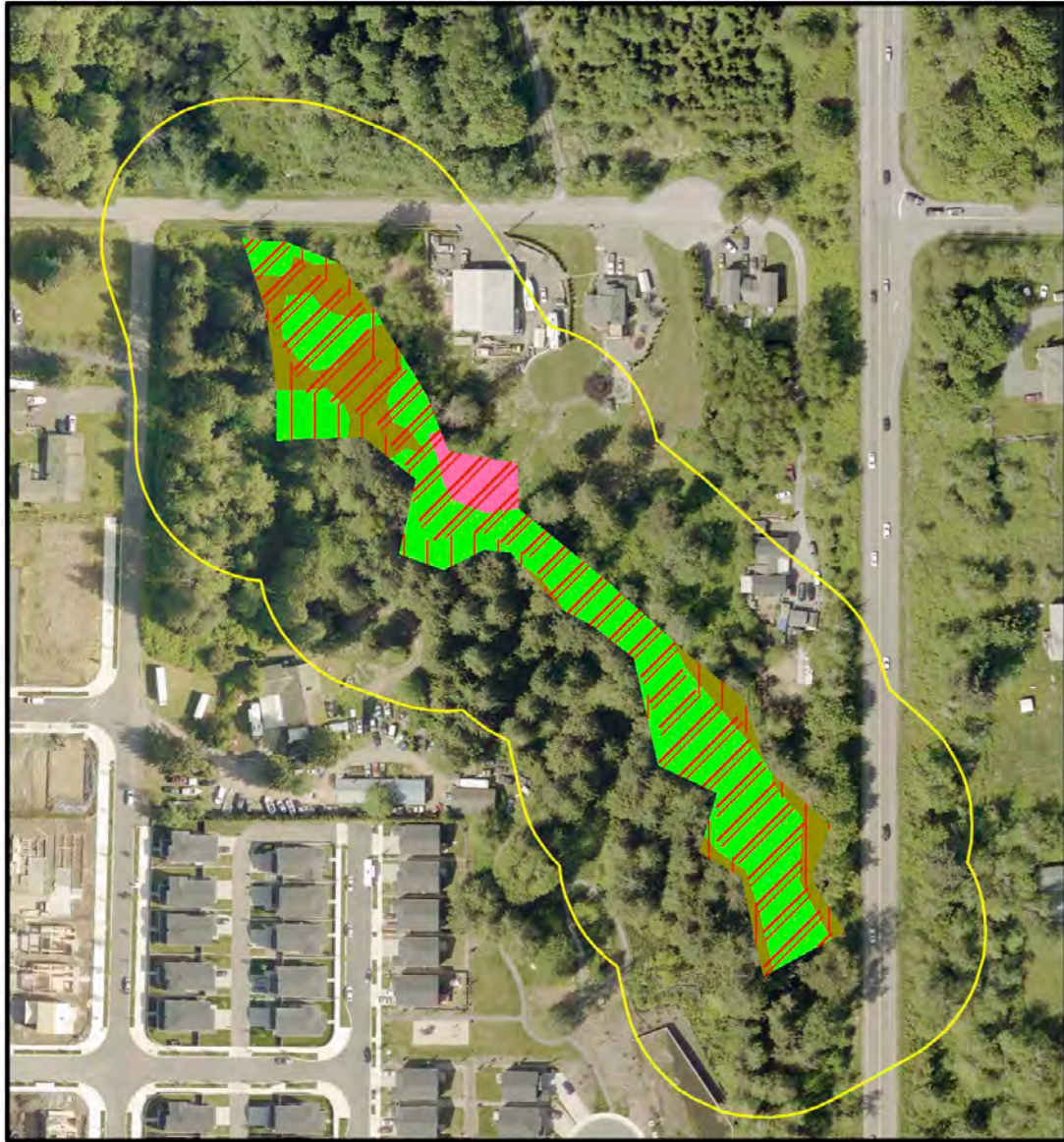
Wetland name or number D - Off site**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> 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? <input type="checkbox"/> 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) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> 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 D - Off site


<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> 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 (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>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</p> <p>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</p> <p>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</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 1- WETLAND D




LEGEND

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



Scale 1" = 200'



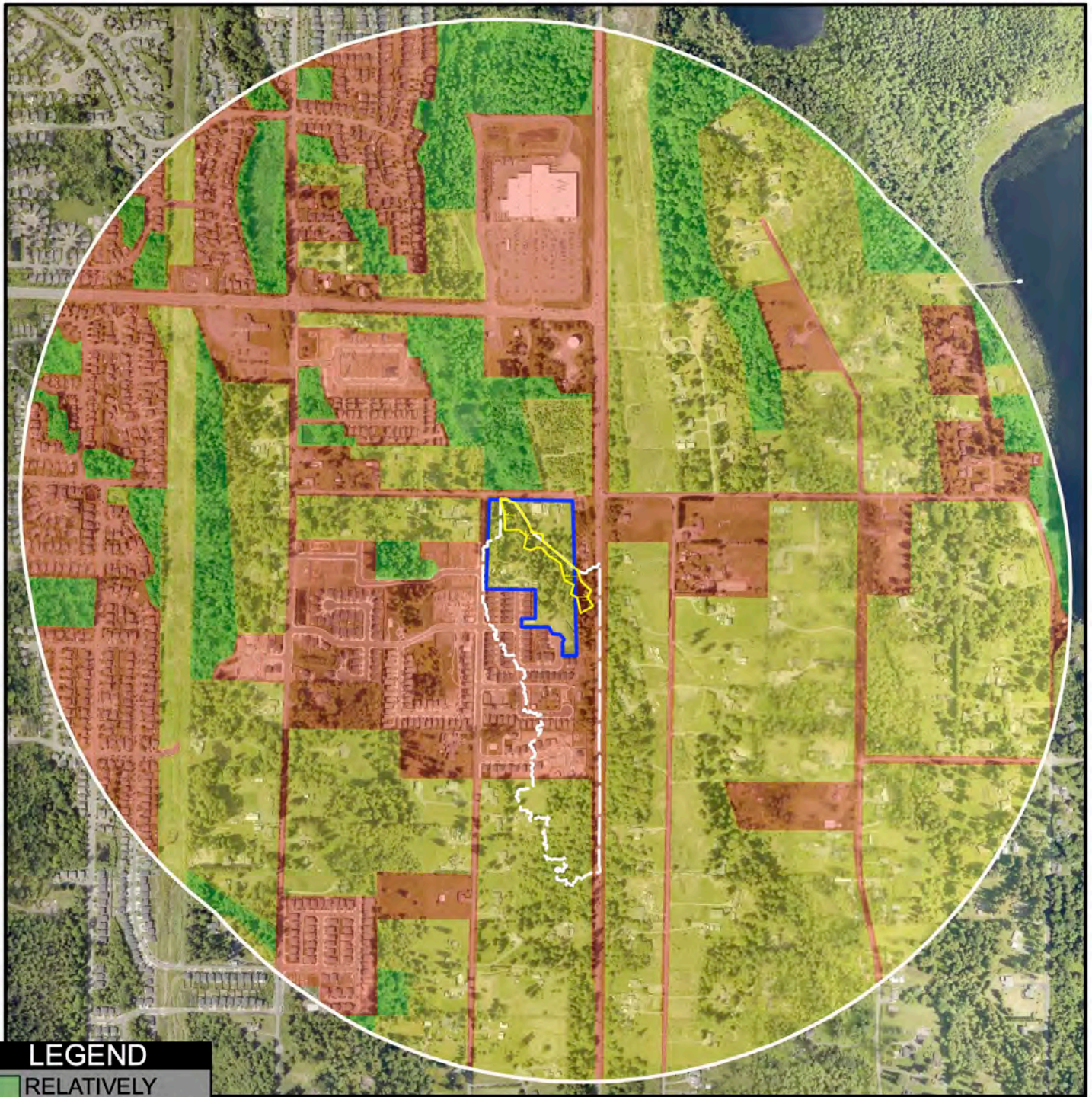
Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland D

JM1 Holdings, LLC
 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

Figure D-1
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
 WETLAND RATING FIGURE 2- WETLAND D



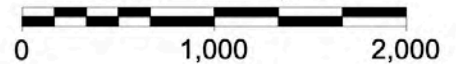
LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 15.7:1**



Scale 1" = 1,000'



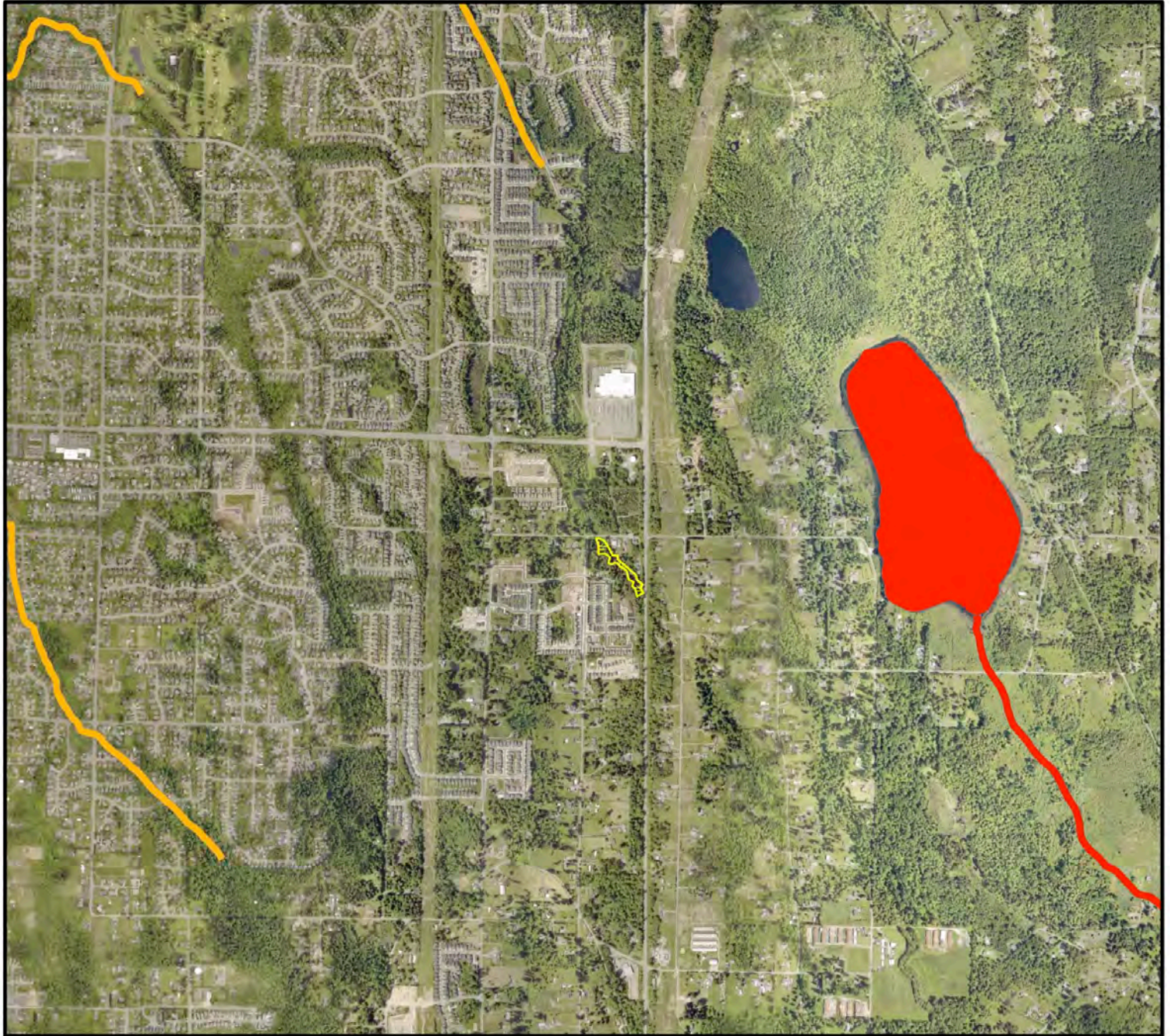
Wetland Resources, Inc.
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**WETLAND RATING
 Wetland D**

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 c/o Land Pro Group, Inc.
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Figure D-2
 WRI Job # 22061
 Rated by: EC

JM1 HOLDINGS - BRODIE PROPERTY
WETLAND RATING FIGURE 3- WETLAND D



LEGEND



WETLAND



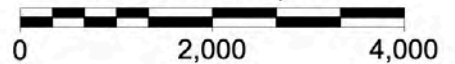
AQUATIC RESOURCES
ON THE 303(d) LIST



AQUATIC RESOURCES
WITH TMDL LISTING



Scale 1" = 2,000'



Wetland Resources, Inc.

Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

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Fax: (425) 337-3045

Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland D**

JM1 Holdings, LLC
c/o Land Pro Group, Inc.
10515 20th Street SE, #202
Lake Stevens, WA 98258

Figure D-3
WRI Job # 22061
Rated by: EC

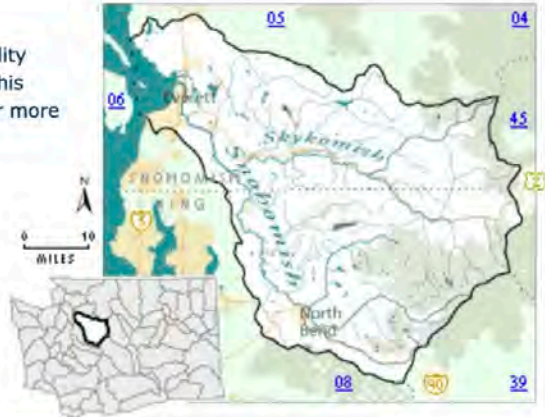
**JM1 HOLDINGS - BRODIE PROPERTY
WETLAND RATING FIGURE 4- WETLAND D**

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	Under development	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svrcek 425-649-7165
	Estuary	EPA approved	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	<ul style="list-style-type: none"> • Fecal Coliform 	EPA approved	Ralph Svrcek 425-649-7165
	Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 		
Snoqualmie River	<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform 	EPA approved	Ralph Svrcek 425-649-7165
	Temperature	EPA approved Has an implementation plan	

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

Wetland Resources, Inc.
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Wetland D**

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 c/o Land Pro Group, Inc.
 10515 20th Street SE, #202 Lake Stevens, WA 98258

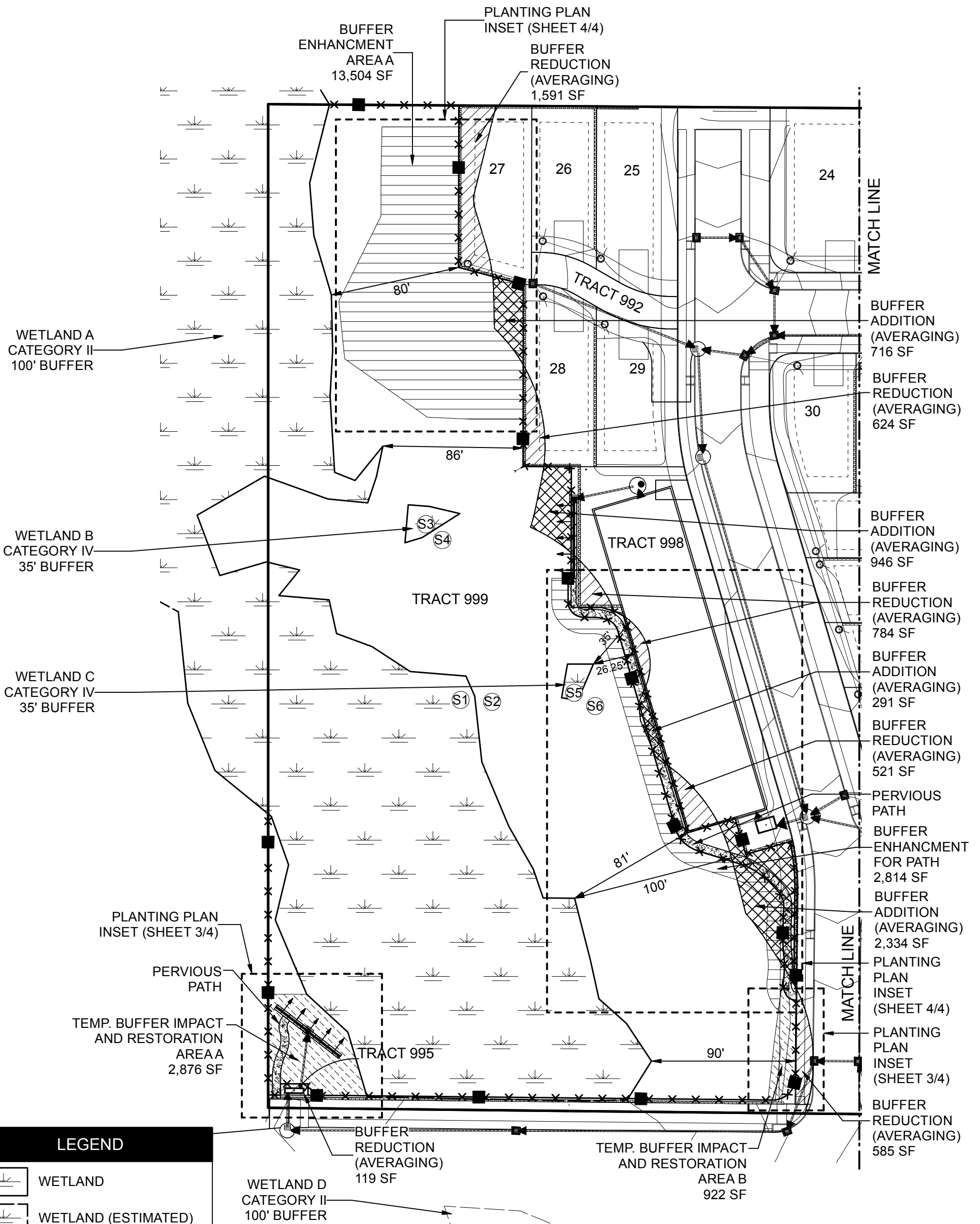
Figure D-4
 WRI Job # 22061
 Rated by: EC

APPENDIX C:
CRITICAL AREA STUDY AND MITIGATION PLAN MAPS

CRITICAL AREA STUDY AND MITIGATION PLAN MAP

BRODIE PROPERTY

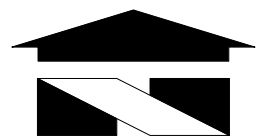
PORTION OF SECTION 25, TOWNSHIP 30N, RANGE 5E, W.M.



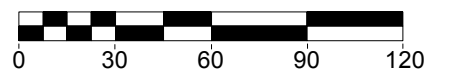
LEGEND

- WETLAND
- WETLAND (ESTIMATED)
- STANDARD BUFFER
- BUFFER REDUCTION
- BUFFER ADDITION
- BUFFER ENHANCEMENT
- TEMPORARY BUFFER IMPACTS & RESTORATION
- FINAL BUFFER & SPLIT RAIL FENCE
- NGPA SIGN
- DATA SITE

	Buffer Reduction Areas (SQ. FT.)	Buffer Addition Areas (SQ. FT.)
	1,591	716
	624	946
	784	291
	521	2,334
	585	
	119	
Total	4,224	4,287



Scale 1" = 60'



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 Area Study & Mitigation Plan Map
BRODIE PROPERTY
 MARYSVILLE, WA

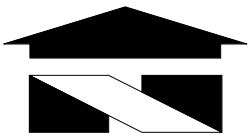
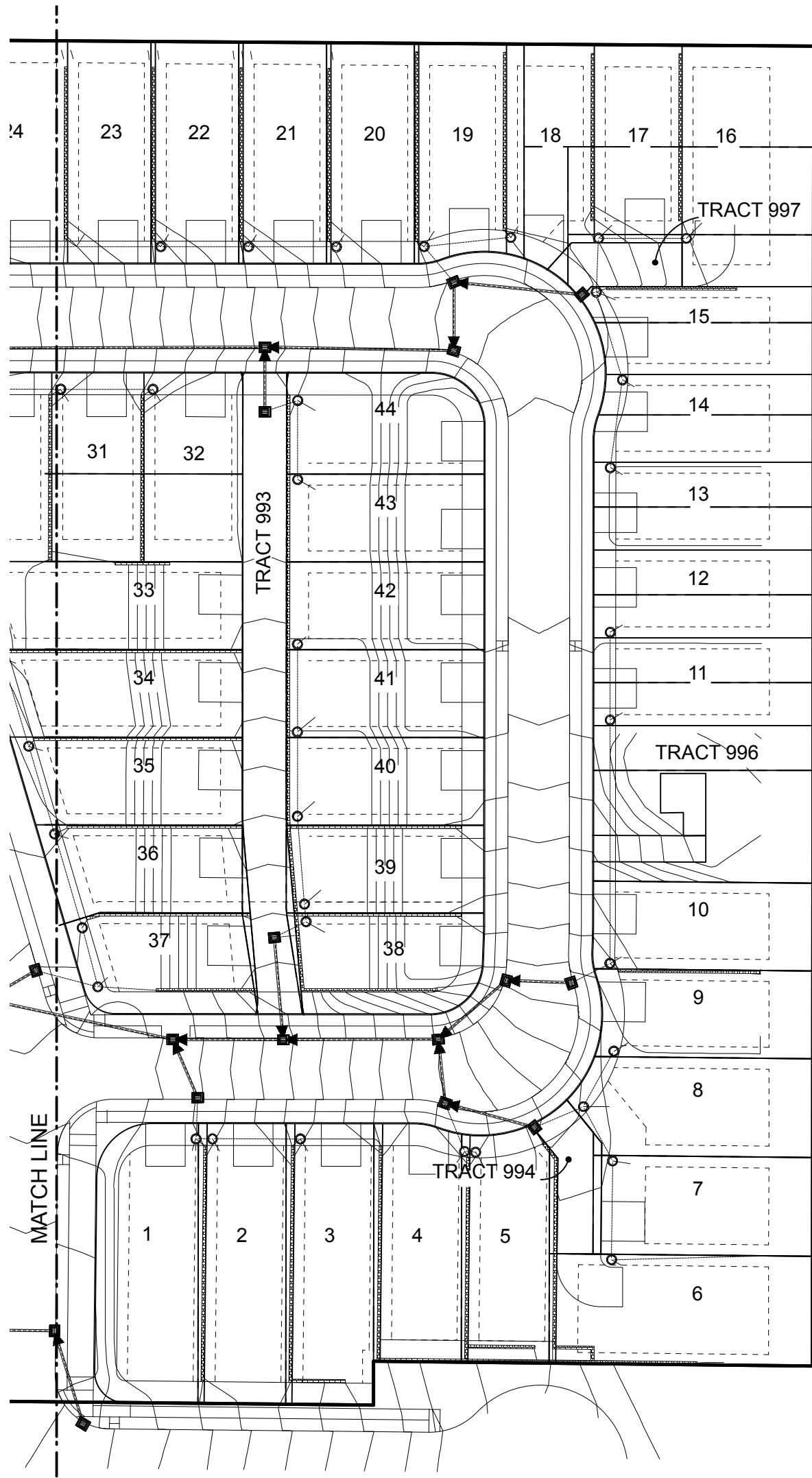
JM1 Holdings LLC
 c/o Land Pro Group, Inc.
 10515 20th St SE, #202
 Lake Stevens, WA 98258

Sheet 1/4
 WRI #: 22061
 Drawn by: EC
 Rev. 3: 04.26.2023

CRITICAL AREA STUDY AND MITIGATION PLAN MAP

BRODIE PROPERTY

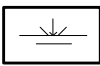
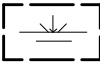
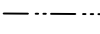


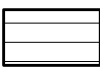
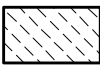
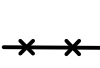


PORTION OF SECTION 25, TOWNSHIP 30N, RANGE 5E, W.M.



Scale 1" = 60'



LEGEND

-  WETLAND
-  WETLAND (ESTIMATED)
-  STANDARD BUFFER
-  BUFFER REDUCTION
-  BUFFER ADDITION
-  BUFFER ENHANCEMENT
-  TEMPORARY BUFFER IMPACTS & RESTORATION
-  FINAL BUFFER & SPLIT RAIL FENCE
-  NGPA SIGN
-  DATA SITE

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Critical Area Study & Mitigation Plan Map
BRODIE PROPERTY
 MARYSVILLE, WA

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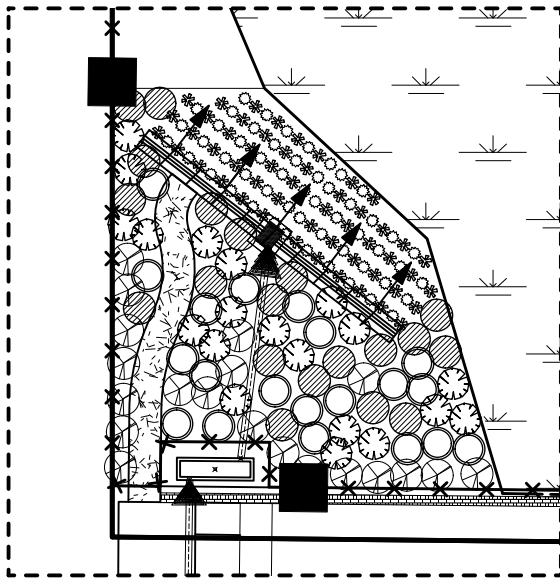
Sheet 2/4
 WRI #: 22061
 Drawn by: EC
 Rev. 3: 04.26.2023

CRITICAL AREA STUDY AND MITIGATION PLAN MAP

BRODIE PROPERTY

PORTION OF SECTION 25, TOWNSHIP 30N, RANGE 5E, W.M.

BUFFER RESTORATION AREA A

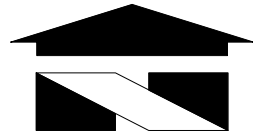


Buffer Restoration Area A (2,876 SF)

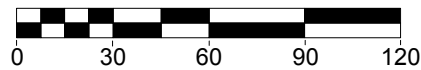
<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	5'	20
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5'	20
Nootka rose	<i>Rosa nutkana</i>	1 gallon	5'	20
Vine maple	<i>Acer circinatum</i>	1 gallon	5'	20
Pacific willow	<i>Salix lasiandra</i>	3' stake	2'	48
Sitka willow	<i>Salix sitchensis</i>	3' stake	2'	48

LEGEND

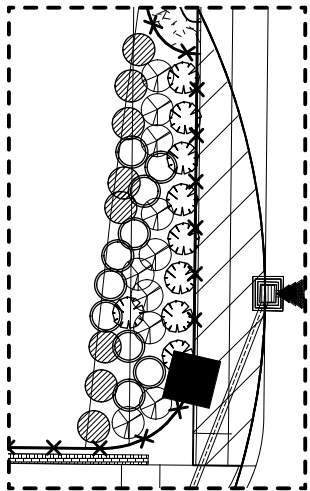
	PACIFIC WILLOW
	SITKA WILLOW
	SALMONBERRY
	SNOWBERRY
	NOOTKA ROSE
	VINE MAPLE



Scale 1" = 30'



BUFFER RESTORATION AREA B



Buffer Restoration Area B (922 SF)

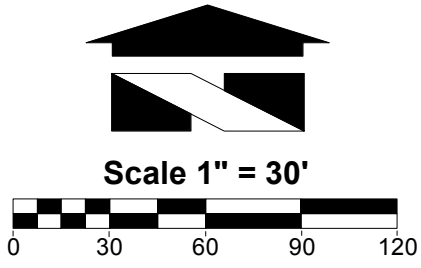
<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	5'	10
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5'	10
Nootka rose	<i>Rosa nutkana</i>	1 gallon	5'	10
Vine maple	<i>Acer circinatum</i>	1 gallon	5'	10

CRITICAL AREA STUDY AND MITIGATION PLAN MAP

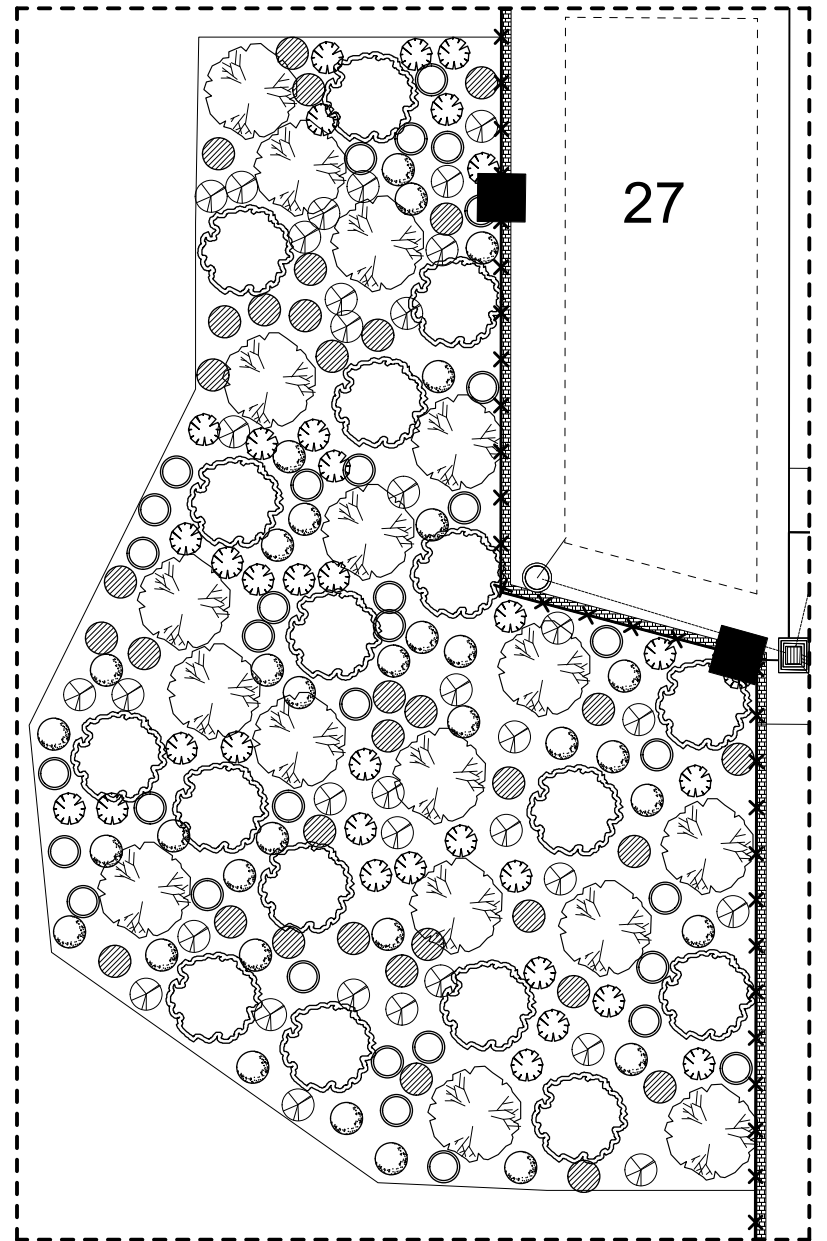
BRODIE PROPERTY

PORTION OF SECTION 25, TOWNSHIP 30N, RANGE 5E, W.M.

BUFFER ENHANCEMENT AREA A



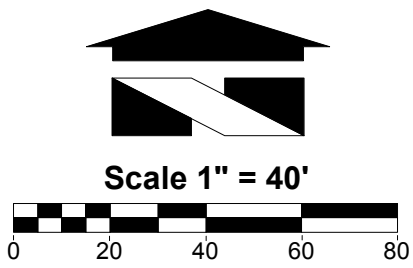
LEGEND	
	BIG LEAF MAPLE
	WESTERN RED CEDAR
	SALMONBERRY
	SNOWBERRY
	NOOTKA ROSE
	VINE MAPLE
	THIMBLEBERRY



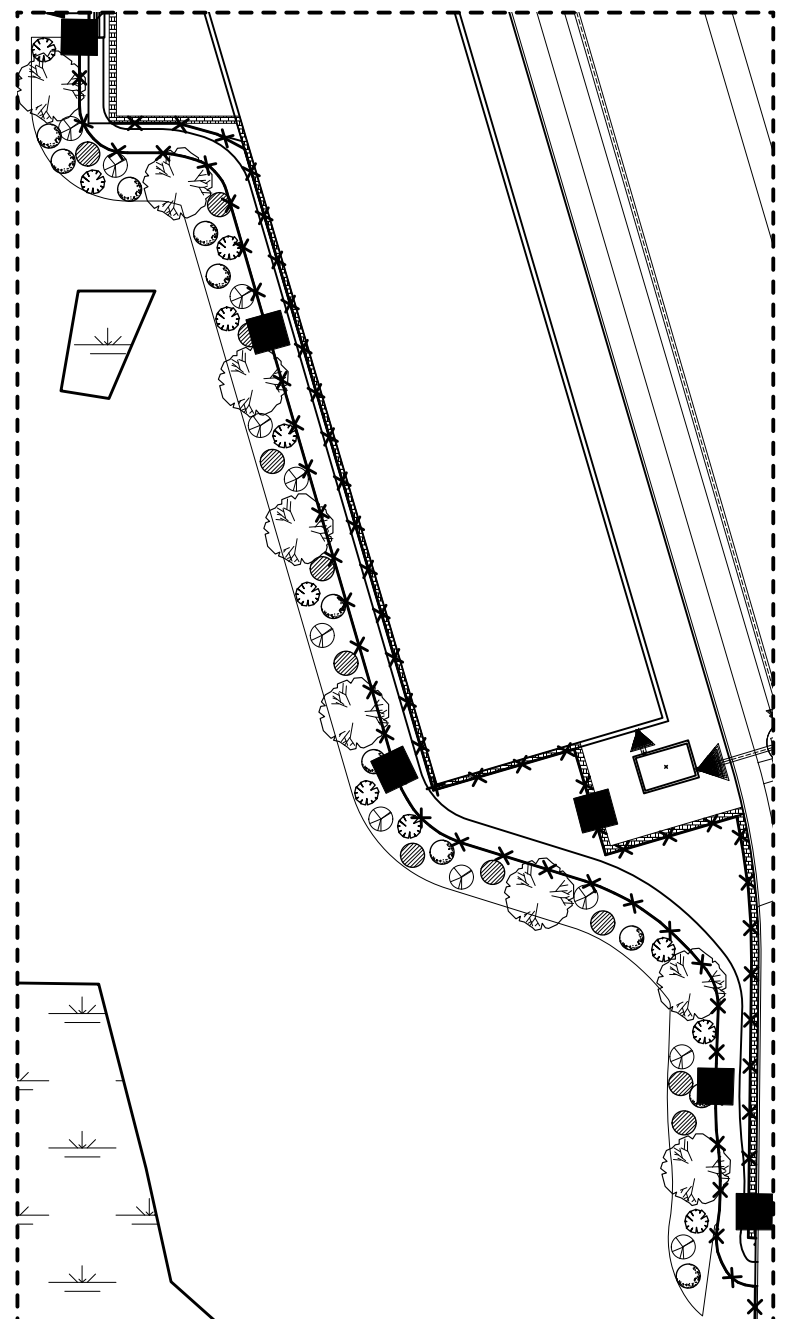
Buffer Enhancement Area A (13,504 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Big leaf maple	<i>Acer macrophyllum</i>	1 gallon	20'	17
Western red cedar	<i>Thuja plicata</i>	1 gallon	20'	17
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	8'	36
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	8'	36
Nootka rose	<i>Rosa nutkana</i>	1 gallon	8'	36
Vine maple	<i>Acer circinatum</i>	1 gallon	8'	36
Thimbleberry	<i>Rubus parvifolium</i>	1 gallon	8'	36

BUFFER ENHANCEMENT AREA B



LEGEND	
	BIG LEAF MAPLE
	SALMONBERRY
	SNOWBERRY
	NOOTKA ROSE
	THIMBLEBERRY



Buffer Enhancement Area B (3,258 SF)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Big leaf maple	<i>Acer macrophyllum</i>	1 gallon	20'	8
Salmonberry	<i>Rubus spectabilis</i>	1 gallon	8'	11
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	8'	11
Nootka rose	<i>Rosa nutkana</i>	1 gallon	8'	11
Thimbleberry	<i>Rubus parvifolium</i>	1 gallon	8'	11