Avia Environmental Consulting

Serving the Puget Sound Area and North-Central Washington
www.AviaEnvironmental.com

Critical Areas Report
for
Altman Property
Mercer Island, Washington

August 26, 2020
Revised May 16, 2021

Prepared for:

Mr. Curtis Heard
Plan to Permit LLC
7233 Douglas Ave SE
Snoqualmie WA 98065

Prepared by:

Suzanne Tomassi, MSc, PWS, CWB
Avia Environmental Consulting
Suzanne@AviaEnvironmental.com

Project location:

Address: East Mercer Way. Mercer Island, WA
Parcel(s): 3024059213, 3024059001, 3024059151

Table of Contents

Appendices

1 Introduction

Avia Environmental performed a critical areas assessment on the Altman properties (parcels 3024059213, 3024059001, and 3024059151) in the East Mercer Way area of Mercer Island (Figure 1) on May 15, 2020. The study revealed a single wetland on the westernmost property, parcel 3024059213 (Lot 7). This wetland is described in the following text and figures.

An Avia biologist investigated the surrounding area for a documented bald eagle nest along E Mercer Way in Engstrom Open Space during the May 15, 2020 site visit and again on and May 5, and 15, 2021. No eagles were observed in the recorded nest vicinity, and the nest itself was not visually located. Eagles were observed aurally in the nearby area.

Figure 1. Subject properties. Features are approximate and not to scale. Source: King County iMap

2 Project Area

The subject properties are located in the southeast quarter of Mercer Island. The island is within the upper tributary basin of Lake Washington, Water Resource Inventory Area (WRIA) 8. All three parcels are presently undeveloped with the exception of a trail, part of the adjacent Pioneer Park, running east-west through roughly the center of Lot 7. A stream is located south of the trail, paralleling it through the property.

All parcels are heavily wooded except for a cleared area in the northwest corner of the easternmost parcel. Two large, forested public areas, Pioneer Park and Engstrom Open Space, are immediately west

and south of Lot 7. The remainder of the vicinity is primarily developed single-family lots, with a few vacant wooded properties. Lake Washington is approximately 0.13 mile east of the parcels at its nearest point, and approximately 0.3 miles from Lot 7.

3 METHODS

3.1 Documentation

A documentation search was conducted and included local inventories, the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database, state and federal threatened and endangered species lists, the National Wetland Inventory (NWI), King County and City of Mercer Island online databases, WDFW's SalmonScape database, and Natural Resources Conservation Service (NRCS) maps.

3.2 Field Study

Methodology used for wetland determination was that of the Washington State Department of Ecology's (Ecology) *Wetland Identification and Delineation Manual* (Manual) and *Western Mountains, Valleys, and Coast Regional Supplement*. Soil, hydrology, and vegetation were examined throughout the property to determine whether they fit criteria set forth in the Manual. Data were recorded at four of these points, marked with orange flagging. Wetland boundaries were marked with pink flagging. Wetlands were rated using Ecology's 2014 update of the Washington State Wetland Rating System for Western Washington. The stream on Lot 7 was not marked or categorized as part of this project. The potential presence of a stream on adjacent property was investigated to the extent possible without entering the privately owned property.

4 FINDINGS

4.1 Document Review

A WDFW PHS data retrieval for this project depicted a biodiversity corridor encompassing the three parcels and extending west and south to include Pioneer Park and Engstrom Open Space. The nearest wetland on the PHS inventory is adjacent to Lake Washington to the east of the subject parcels. The NWI database depicts the stream spanning Lot 7 as a riparian wetland. SalmonScape depicts the stream crossing the parcel south of the trail but does not classify it or document use by salmonids. Salmonscape does not indicate the presence of a stream in the vicinity of the center and eastern lots, parcels 3024059001 and 3024059151.

NRCS Soil Survey categorizes soils on all three parcels as Kitsap silt loam, 15 to 30 percent slopes.

4.2 Field Investigation

4.2.1 Wetland

The only wetland identified during the site visit is located on Lot 7. Despite its presence in NWI data, the onsite portion of the stream and adjacent reaches has no wetlands associated with it. The wetland (Wetland A) boundary was marked with five pink flags.

Wetland A is a very small slope wetland entirely within the parcel boundary. It is vegetated primarily with lady fern (*Athyrium filix-femina*), horsetail (*Equisetum arvense*), and creeping buttercup (*Ranunculus repens*) under a canopy of red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), and western red cedar (*Thuja plicata*) (Appendix A, Photo 1). Dense ivy (*Hedera helix*) covers much of the wetland area. The Cowardin class is forested with an emergent ground stratum. The Western Washington Wetland Rating Form is included as Appendix B.

Soils in the wetland are dark gray (10 YR 4/1) silty loam with approximately 20% yellowish brown (10YR 5/6) redoximorphic features throughout, to at least 14-inch depth. Soils were damp but not saturated at the time of our site visit. Sparse oxidized rhizospheres were present. Wetland determination forms are included in Appendix C.

As noted, Wetland A is completely within parcel boundaries. It is north and uphill of the stream, separated from it by a heavily used recreational trail. Hydrology comes from a small, overgrown culvert in the hillside (Appendix A, Photo 2) and possibly also from runoff. Input is not heavy enough to have formed a defined bed or scour. There is no obvious outlet; rather water appears to infiltrate at the south end of the wetland. There is no evident hydrologic connection between the wetland and the stream, although a subsurface connection is possible. The position of the wetland above the stream would prevent any influence of the stream on the wetland, however.

Functional value of the onsite wetland is low for hydrology, as much of the upslope area is densely vegetated and down-gradient flooding is not a problem. Water quality function is slightly higher to the potential for stormwater to enter the wetland from a parking lot above the vegetative part of the buffer (Appendix A, Photo 3). Habitat provided by the wetland is moderate, largely due to the intact buffer and nearby priority habitats. The wetland itself is too small and not diverse enough in structure or plant community makeup to provide measureable habitat value beyond that of the surrounding area.

4.2.2 Streams

As noted, the stream on Lot 7 was not flagged as part of this investigation; however, the approximate location of the stream is shown in Figure 1. This stream would be considered Type F. The City of Mercer Island online GIS database also depicts a Type-Ns stream running from the east edge of parcel 3024059001, through the adjacent properties to the east, and entering a pipe beneath East Mercer Way just north of parcel 3024059151. We located the pipe leading under the road and observed the area uphill from the pipe to the extent possible. The area immediately adjacent to the pipe is a depression of gravel substrate covered by grasses (*Poa* sp.), creeping buttercup (*Ranunculus repens*), and Robert's geranium (*Geranium robertianum*) (see Wetland Determination Form for DP1 in Appendix C). No water

was present during the May 2020 site visit. We did not enter the private property from which the pipe drained more than a few meters. From the road we did not observe a clearly defined channel, but rather a dry topographic ravine with no water in the short distance before disappearing beneath ornamental vegetation associated with a yard on the property (Appendix A, Photo 4). Although the topography suggests the presence of a stream, we did not observe any channels, seeps, wetland, standing or running water, or evidence of seasonal moving water. Characteristics of the bottom of the ravine are further described by DP1 (see Wetland Determination form for DP1 in Appendix C), which does not have hydric soils, wetland hydrology, or strongly wetland-facultative vegetation. (See also Appendix C, Wetland Determination Form DP2, for data collected at the top of the ravine identified as a water course in the City of Mercer Island online GIS database).

4.2.3 Non-Wetland Area

Non-wetland on the all parcels is mostly mid-age and mature mixed coniferous-deciduous forested dominated by Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and bigleaf maple (*Acer macrophyllum*), with a dense understory of typical Pacific Northwest shrubs and forbs (Table 1). Soils outside of the wetland are brown to very dark brown (10YR 3/2, 10YR 2/2) silty loam with dark yellowish brown (10YR 4/6) redoximorphic features starting at 10 inches depth. Upland forest on Lot 7 is broken only by the previously noted trail and stream.

Table 1. Vegetative species identified on the study site (Lot 7)

Common name	Scientific name
Red alder	*Alnus rubra*
Western red cedar	*Thuja plicata*
Douglas-fir	*Pseudotsuga menziesii*
Western hemlock	*Tsuga heterophylla*
Bigleaf maple	*Acer macrophyllum*
Salal	*Gaulthoria shallon*
Osoberry	*Oemleria cerasiformis*
Salmonberry	*Rubus spectbilis*
Red huckleberry	*Vaccinium parvifolium*
Low Oregon grape	*Mahonia nervosa*
Cascara	*Rhamnus purshiana*
Beaked hazelnut	*Corylus cornuta*
Red elderberry	*Sambucus racemosa*
Thimbleberry	*Rubus parviflorus*
Himalayan blackberry*	*Rubus ameniacus*
Sword fern	*Polystichum munitum*
Robert's geranium	*Geranium robertianum*
Field horsetail	*Equisetum arvense*
Stinging nettle	*Urtica dioica*
Lady fern	*Athyrium filix-femina*
Creeping buttercup	*Ranunculus repens*

*Non-native invasive species

4.2.4 Bald Eagle Habitat

Mercer Island supports a number of bald eagle breeding pairs, as well as perching and foraging habitat. City intake comments dated April 28, 2020, include an estimated location of an eagle nest on the edge of Engstrom Open Space, along East Mercer Way. During the roughly 4-hour May 2020 site visit, no eagles were observed visually or aurally from Lot 7, the parcel nearest the documented nest location (parcel 3024059213). A subsequent walk through the purported nest vicinity also resulted in no observations.

The subject property and surrounding area was again visited on May 6 and May 15, 2021. The nest tree was located from the ground and appeared to have a collection of sticks about midway up the trunk. This could be a historic eagle nest, but it does not presently appear large or structurally secure enough to be an active nest. No eagles were observed in the tree vicinity. The most recent confirmation of this nest was in 2006 and it is a likely conclusion that the nest is no longer active.

Eagles were heard calling repeatedly near the easternmost parcel (3024059151) during the morning hours of both site visit dates. Calls were from the east, near Lake Washington, across East Mercer Way from the parcel. The lots between the road and the lake support a number of potential nest and perch trees. No eagles or nests were observed on these lots from public roads and private driveways in the area of the calls. The three subject parcels support suitable eagle perch trees, as well as some trees that could potentially provide suit able nest sites in the future. There is no documentation of eagles using the subject property, however.

5 REGULATORY IMPLICATIONS

5.1 Local Regulations

The City of Mercer Island regulates wetlands through Mercer Island City Code (MICC) Chapter 19.07.190. The onsite wetland scores 15 points, including 6 habitat points, using the Western Washington Wetland Rating Form, making it a Category IV wetland. Category IV wetlands in the City of Mercer Island require standard regulatory buffers of 40 feet (MICC 19.07.190.C.1), within which most development activities are restricted. Critical areas require an additional building setback of 10 feet; this setback may be reduced to 5 feet for Category IV wetlands, provided criteria are met and protective measures taken (MICC19.07.190.C.7.a). It is not clear whether Wetland A fits these criteria, as MICC requires that any wetland with a building setback not contain habitat for WDFW Priority Species. While the wetland is within a PHS polygon, the polygon represents a “Biodiversity Area” and is not associated with a particular PHS species.

The stream on parcel -9213 would be considered Type F, with standard buffers of 120 feet (MICC 19.07.180.C.1).

The City of Mercer Island designated areas used by bald eagles for foraging, nesting, and roosting, or areas within 660 feet of a bald eagle nest, as Fish and Wildlife Habitat Conservation Areas.

Investigation, including three site visits during the 2020 and 2021 breeding seasons, revealed no evidence to support the notion that the bald eagle nest depicted in City records is active or even present. It is the conclusion of this report that the historic nest does not constitute a Fish and Wildlife Habitat Conservation Area per MICC 19.07.170.

5.2 State and Federal Regulations

Wetlands are also regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would likely require notification and permits from the Corps. The onsite wetland would likely be considered non-isolated by the Corps. Federally permitted actions that could affect endangered species may also require consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service.

Please note that the findings of this report are subject to the verification and agreement of local, State and/or federal regulatory authorities. Determinations made by these entities may disagree with and will likely supersede the conclusions in this report.

Appendix A

Photos

Photo 1: Wetland A.

Photo 2: Wetland A input drain.

Photo 3. Potential nest and perch trees between E Mercer Way and Lake Washington.

Photo 4. Input area of pipe running beneath East Mercer Way.

Appendix B

Wetland Rating Form

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Altman parcel 3024059213 Date of site visit: 5/15/2020

Rated by S Tomassi, B MacWhinney Trained by Ecology? ☒ Yes ☐ No Date of training 2007

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☒ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY _____ (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
__x__ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		List appropriate rating (H, M, L)		
Site Potential	L	M	L	
Landscape Potential	M	L	M	
Value	M	L	H	**Total**
Score Based on Ratings	5	4	6	**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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	S 2.1, S 5.1	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	4

HGM Classification of Wetland in Western Washington

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

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☑ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☑ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

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

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

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

Rating of Landscape Potential If score is: ☑ **1 - 2 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows.*	1
Dense, uncut, **rigid** plants cover > 90% of the area of the wetland — points = 1	
All other conditions — points = 0	

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

S 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	0

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems:	0
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) — points = 2	
Surface flooding problems are in a sub-basin farther down-gradient — points = 1	
No flooding problems anywhere downstream — points = 0	
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 — Add the points in the boxes above	**0**

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

NOTES and FIELD OBSERVATIONS:

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	1
☑ 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		

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	1
☑ Seasonally flooded or inundated	3 types present: points = 2	
☐ Occasionally flooded or inundated	2 types present: points = 1	
☑ Saturated only	1 types 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**	

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

1

If you counted:	> 19 species	points = 2
	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

1

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

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

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

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 6 % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) = If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 23 % undisturbed habitat + (26 % moderate & low intensity land uses / 2) = 36% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	2
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	0
Total for H 2 — Add the points in the boxes above	**2**

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

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

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

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.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***

- ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

☐ Yes = **Category I** ☒ No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

- ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

☐ Yes - Go to **SC 5.1** ☒ No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

- ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- ☐ The wetland is larger than $^1/_{10}$ ac (4350 ft^2)

☐ Yes = **Category I** ☒ No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

- ☐ Long Beach Peninsula: Lands west of SR 103
- ☐ Grayland-Westport: Lands west of SR 105
- ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

☐ Yes - Go to **SC 6.1** ☒ No = **Not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?

☐ Yes = **Category I** ☒ No - Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?

☐ Yes = **Category II** ☒ No - Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?

☐ Yes = **Category III** ☒ No = **Category IV**

Category of wetland based on Special Characteristics

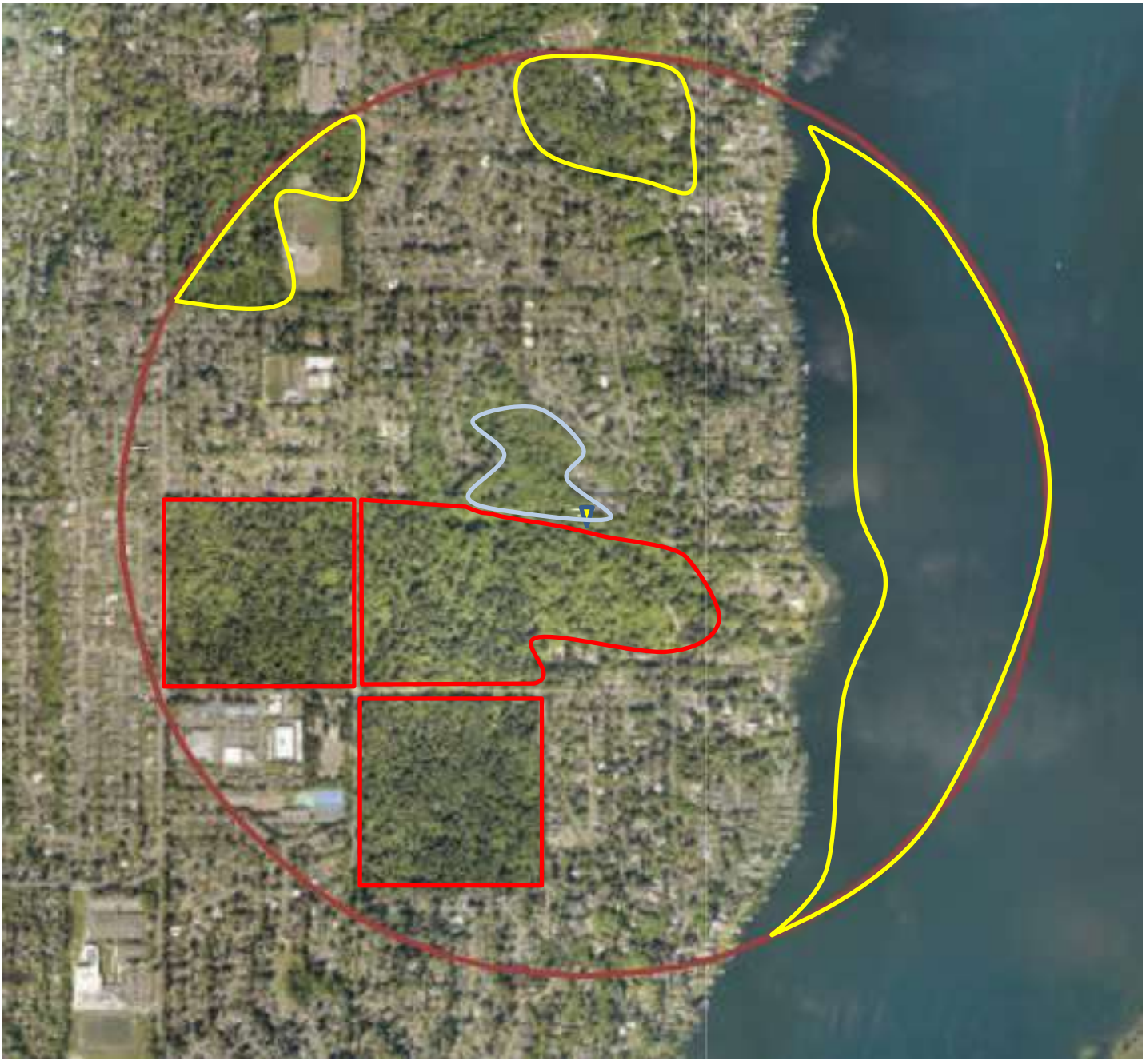
If you answered No for all types, enter "Not Applicable" on Summary Form

Map 1: 150-ft-radius circle; Cowardin classes, hydroperiods, and outlet.

Cowardin vegetation classes: Emergent (remainder of wetland area is forested)

Hydroperiods: Seasonally inundated (remainder is saturated only)

Map 2: 1-km radius from wetland; accessible and undisturbed habitat polygons

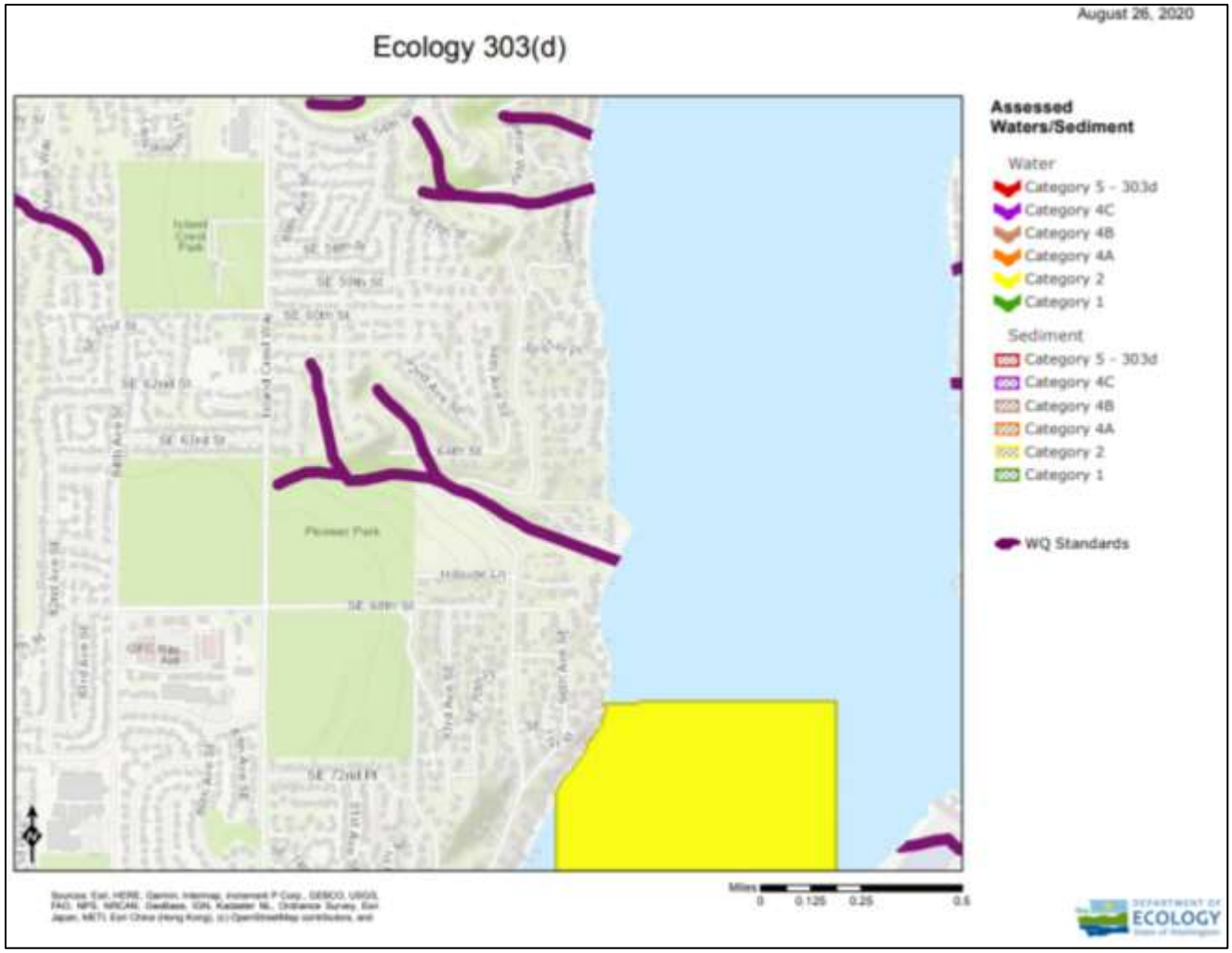


Accessible undisturbed habitat

Undisturbed habitat

Moderate and low-intensity land uses

Map 3: Ecology 303(d) Waters



TMDLs in King County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Bear-Evans Creek Basin	Fecal Coliform	EPA approved	Ralph Svrjcek 425-649-7165
Bear-Evans Creek Basin	Dissolved Oxygen Temperature	EPA approved	Ralph Svrjcek 425-649-7165
Cottage Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Duwamish and Lower Green River	Ammonia-N	EPA approved	Ralph Svrjcek 425-649-7165
Duwamish and Green River	Pollutant loading	Working with technical advisory group	Rachel McCrea 425-649-7033
Fauntleroy Creek	Fecal Coliform	EPA approved	Ralph Svrjcek 425-649-7165
Fenwick Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Green River and Newaukum Creek	Dissolved Oxygen Temperature	EPA approved	Ralph Svrjcek 425-649-7165
Issaquah Creek Basin	Fecal Coliform	EPA approved	Ralph Svrjcek 425-649-7165
Lake Sawyer	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Little Bear Creek	Fecal Coliform	EPA approved	Ralph Svrjcek 425-649-7165
Newaukum Creek	Bacteria	Under development	Ralph Svrjcek 425-649-7165
North Creek	Fecal Coliform	EPA approved and Has an implementation plan	Ralph Svrjcek 425-649-7165
Pipers Creek	Fecal Coliform	EPA approved	Ralph Svrjcek 425-649-7165
Sammamish River	Dissolved Oxygen Temperature	Under development	Ralph Svrjeck 425-649-7165
Snoqualmie River	Ammonia-N BOD (5-day) Fecal Coliform	EPA approved	Ralph Svrjeck 425-649-7165
Snoqualmie River	Temperature	EPA approved and Has an implementation plan	Ralph Svrjeck 425-649-7165
Soos Creek	Fecal Coliform	Under Development	Ralph Svrjcek 425-649-7165

Appendix C

Wetland Determination Forms

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

Project/Site: Altman Mercer Islan | City/County: King | Sampling Date: 5/15/2020

Applicant/Owner: Plan to Permit LLC/Altman | State: wa | Sampling Point: DP1

Investigator(s): S Tomassi, B MacWhinney | Section, Township, Range: Sec 30 T24N R05W

Landform (hillslope, terrace, etc.): toe of slope | Local relief (concave, convex, none): concave | Slope (%): 1

Subregion (LRR): A | Lat: 45.54438 | Long: -122.21622 | Datum: NAD83HARN

Soil Map Unit Name: Kitsap silt loam, 15 to 30% slope | NWI Classification:

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1.				
2.				
3.				
4.				
	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1.				
2.				
3.				
4.				
5.				
	= Total Cover			
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Poa*	65	Y	65.0	FAC
2. *Ranunculus repens*	20	Y	20.0	FAC
3. *Geranium robertianum*	15	N	15.0	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	100 = Total Cover			
Woody Vine Stratum (Plot size:)				
1.				
2.				
	= Total Cover			

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	100 (A)		315 (B)

Prevalence Index = B/A = 3.150

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants¹
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ◉ Yes ○ No

Remarks:

SOIL

Sampling Point: DP1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

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

Project/Site: Altman Mercer Islan | City/County: King | Sampling Date: 5/15/2020

Applicant/Owner: Plan to Permit LLC/Altman | State: wa | Sampling Point: DP2

Investigator(s): S Tomassi, B MacWhinney | Section, Township, Range: Sec 30 T24N R05W

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

Subregion (LRR): A | Lat: 45.54438 | Long: -122.21622 | Datum: NAD83HARN

Soil Map Unit Name: Kitsap silt loam, 15 to 30% slope | NWI Classification:

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. *Tsuga heterophylla*	20	Y	20.0	FACU
2. *Pseudotsuga menziesii*	30	Y	30.0	FACU
3. *Acer macrophyllum*	50	Y	50.0	FACU
4.				
	100	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Frangula purshiana*	5	Y	50.0	FAC
2. *Rhododendron macrophyllum*	5	Y	50.0	FACU
3.				
4.				
5.				
	10	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Achlys triphylla*	1	N	1.6	FAC
2. *Polystichum munitum*	60	Y	98.4	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	61	= Total Cover		
Woody Vine Stratum (Plot size: 5ft x 5ft)				
1. *Hedera helix*	60	Y	100.0	FACU
2.				
	60	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	225	x 4 =	900
UPL species	0	x 5 =	0
Column Totals:	231 (A)		918 (B)

Prevalence Index = B/A = 3.974

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants¹
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ○ Yes ◉ No

Remarks:

SOIL

Sampling Point: DP2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR	2/2	75	10YR	5/3	20	C	M	Loam	
				10YR	4/6	5	C	M		

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

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

Project/Site: Altman Mercer Islan | City/County: King | Sampling Date: 5/15/2020

Applicant/Owner: Plan to Permit LLC/Altman | State: wa | Sampling Point: DP3

Investigator(s): S Tomassi, B MacWhinney | Section, Township, Range: Sec 30 T24N R05W

Landform (hillslope, terrace, etc.): slope | Local relief (concave, convex, none): none | Slope (%): 10

Subregion (LRR): A | Lat: 45.54438 | Long: -122.21622 | Datum: NAD83HARN

Soil Map Unit Name: Kitsap silt loam, 15 to 30% slope | NWI Classification:

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

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. *Alnus rubra*	40	Y	36.4	FAC
2. *Thuja plicata*	20	N	18.2	FAC
3. *Acer macrophyllum*	50	Y	45.5	FACU
4.				
	110	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Rubus spectabilis*	5	Y	100.0	FAC
2.				
3.				
4.				
5.				
	5	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Athyrium americanum*	20	Y	100.0	FAC
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	20	= Total Cover		
Woody Vine Stratum (Plot size: 5ft x 5ft)				
1. *Hedera helix*	90	Y	100.0	FACU
2.				
	90	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals:	225 (A)		815 (B)

Prevalence Index = B/A = 3.622

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants¹
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ◉ Yes ○ No

Remarks:

SOIL

Sampling Point: DP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	80	10YR 5/6	20	C	M	Silty Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:

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

Project/Site: Altman Mercer Islan | City/County: King | Sampling Date: 5/15/2020

Applicant/Owner: Plan to Permit LLC/Altman | State: wa | Sampling Point: DP4

Investigator(s): S Tomassi, B MacWhinney | Section, Township, Range: Sec 30 T24N R05W

Landform (hillslope, terrace, etc.): slope | Local relief (concave, convex, none): none | Slope (%): 10

Subregion (LRR): A | Lat: 45.54438 | Long: -122.21622 | Datum: NAD83HARN

Soil Map Unit Name: Kitsap silt loam, 15 to 30% slope | NWI Classification:

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

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1.				
2. *Thuja plicata*	20	Y	28.6	FAC
3. *Acer macrophyllum*	50	Y	71.4	FACU
4.				
	70	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Rubus spectabilis*	5	Y	50.0	FAC
2. *Rubus parviflorus*	5	Y	50.0	FACU
3.				
4.				
5.				
	10	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1.				FAC
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		= Total Cover		
Woody Vine Stratum (Plot size: 5ft x 5ft)				
1. *Hedera helix*	100	Y	100.0	FACU
2.				
	100	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	155	x 4 =	620
UPL species	0	x 5 =	0
Column Totals:	180 (A)		695 (B)

Prevalence Index = B/A = 3.861

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants¹
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ○ Yes ◉ No

Remarks:

SOIL

Sampling Point: DP4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Silt Loam	
10-14	10YR 3/2	97	10YR 4/6	3	C	M	Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks: