

TECHNICAL MEMORANDUM

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Sitts & Hill Engineers
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November 16, 2023

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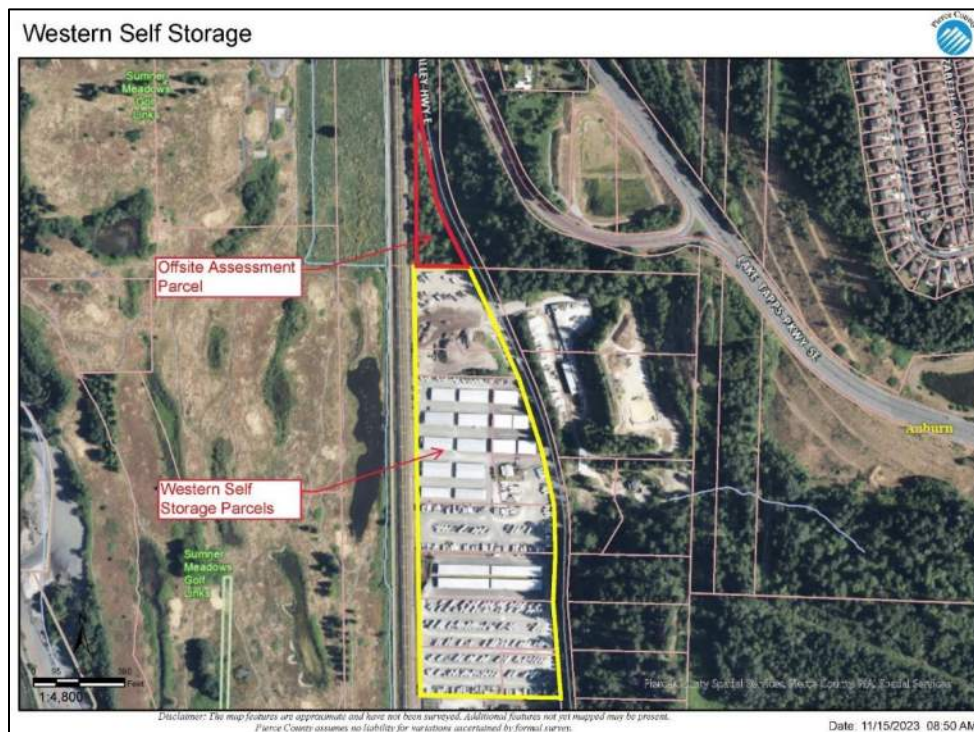
File No.: 402.032

Re: Western Self Storage: E Valley Highway – Offsite Wetland Assessment

1 INTRODUCTION

At the request of Sitts & Hill Engineers, Grette Associates conducted a site visit to a parcel located along E Valley Highway in Sumner, WA to perform a reconnaissance for the presence of wetlands. The subject parcel, which is owned by Lakeland Homeowner’s Association, is immediately north of and adjacent to Western Self Storage’s site along E Valley Highway (Pierce County Parcel No. 0520063017; Figure 1). This technical memorandum summarizes the offsite assessment of the subject parcel.

Figure 1. Pierce County Parcel Map



2 BACKGROUND

2.1 Local Critical Area Inventory

Pierce County's PublicGIS website was queried to identify any known critical areas within the general area of the subject parcel. According to PublicGIS, one wetland feature is mapped within the subject parcel and extending to the north between E Valley Highway and the BNSF railroad tracks. According to PublicGIS, the wetland was identified through the County Wetland Inventory (CWI) and was previously delineated in 1988, though no information from this delineation could be found online.

2.2 National Wetlands Inventory

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) was queried to determine if previously-identified wetlands are present on the subject parcel. According to the NWI Interactive Online Mapper, a Palustrine Scrub-Shrub wetland is located within the parcel. Additionally, a Riverine channel is identified leading to the property from the east and beneath E Valley Highway.

2.3 Web Soil Survey

The Natural Resources Conservation Services' online Web Soil Survey (WSS) mapper was queried to determine the mapped soil series on the subject parcel. According to the WSS, the two soil series mapped on the subject parcel are Semiahmoo muck and Shalcar muck. Both of these soil series are listed as hydric soils

3 METHODS

A Grette Associates Pierce County Qualified Wetland Specialist completed a site visit on November 14, 2023, to identify any wetland features on the subject parcel. As the subject parcel is not owned by Western Self Storage, the assessment was conducted visually from public rights of way along E Valley Highway, and from along the northern parcel boundary of the Western Self Storage property. Wetland vegetation and hydrology indicators within the subject parcel were noted, as well as any stormwater culverts or other surface water sources.

4 RESULTS

One area that appeared to meet the criteria for a regulated wetland was identified during Grette Associates' site assessment (Wetland A; Figure 2).

It should be noted that Wetland A is located within unincorporated Pierce County, while the Western Self Storage property is located within the City of Sumner. For the purposes of this memorandum and application of buffer provisions, the Sumner Municipal Code was used.

Figure 2. Approximate boundary of Wetland A, north of the Western Self Storage parcel



The subject parcel is comprised of a scrub-shrub vegetated depressional area formed by the raised fill associated with the BNSF railroad tracks to the west, the Western Self Storage site to the south, and E Valley Highway to the east. The area is relatively flat, with a slight slope down to the north. Several stormwater culverts were observed entering the wetland from beneath E Valley Highway, conveying water from small seeps located along the hillside east of E Valley Highway.

While field indicators of hydric soils could not be investigated, other strongly-positive indicators of wetland conditions were observed. Vegetation observed on the site was dominated by hydrophytes. This included an overstory of red alder (*Alnus rubra*, FAC) and mature Pacific willow (*Salix lasiandra*, FACW) over red osier dogwood (*Cornus sericea*, FACW), Douglas's spiraea (*Spiraea douglasii*, FACW), reed canarygrass (*Phalaris arundinacea*, FACW), skunk cabbage (*Lysichiton americanus*, OBL), and water parsley (*Oenanthe sarmentosa*, OBL). Positive hydrologic indicators observed included surface inundation and saturation, surface hydrology inputs from stormwater culverts, and a geomorphic setting conducive to the collection of surface water (i.e., depressional concave surface).

Figure 3. Observed site conditions (typ.)



Based on the conditions observed at the site, Wetland A was rated according to the procedures in the WA State Department of Ecology’s *Washington State Wetland Rating System for Western Washington – 2014 Update Version 2.0* (Hruby and Yahnke, 2023). The completed wetland rating forms are attached to this memorandum.

According to the results of the rating system, Wetland A is rated as a Category III wetland (Table 1). Based on this rating, the required buffer width according to the Sumner Municipal Code (SMC) Chapter 16.46.150 is 60 feet.

Table 1. Wetland Summary

Wetland Name	Approximate Size ¹	Wetland Rating ²	Water Quality Score	Hydrology Score	Habitat Score	Buffer Width ³
Wetland A	80,970 sf	III – 18 pts	7	7	4	60 ft

¹ Wetland A was not delineated and was assessed visually from offsite. Boundary was established in Google Earth.

² Rating from Hruby and Yahnke 2023

³ Buffer width per SMC 16.46.150 Table 1

5 BUFFER REQUIREMENTS

As noted above, Wetland A is located within unincorporated Pierce County, while the Western Self Storage property is located within the City of Sumner. For the purposes of applying buffer provisions, the Sumner Municipal Code applies.

Based on the wetland rating, Wetland A is a Category III wetland requiring a 60 ft buffer width (SMC 16.46.150). According to SMC 16.46.150.M, buffer establishment is subject to the development status of the adjacent parcel. Where new major construction occurs, a buffer is required (SMC 16.46.150.M.1). However, a buffer is not required:

- a) In the area contained within the perimeter of a legally preexisting structure or use that is authorized to continue under this title; or
- b) Within the footprint of an existing residential dwelling allowed to continue or expand under SMC [18.30.090\(B\)](#) subject to SMC [16.40.125\(B\)](#); or
- c) To extend landward beyond a legally preexisting structure, pavement or other facility, including but not limited to a building, parking lot, stormwater detention facility, or public right-of-way that contains an improved street. (SMC 16.46.150.M.2)

The legal and pre-existing industrial use on the northern Western Self Storage parcel meets the above conditions where, under the SMC, no buffer is required on Wetland A that would extend into the Western Self Storage property. Therefore, the buffer for Wetland A stops at the northern extent of the Western Self Storage use.

If you have any questions on this technical memorandum, please contact me at (253) 573-9300, or by email at scottm@gretteassociates.com.

Kind Regards,

GRETTE ASSOCIATES, LLC



Scott Maharry
Associate Scientist
Pierce County Qualified Wetland Specialist

REFERENCES:

Hruby, T. & Yahnke, A. (2023). *Washington State Wetland Rating System for Western Washington: 2014 Update (Version 2)*. Publication #23-06-009. Washington Department of Ecology.

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/14/23
 Rated by S Maharry Trained by Ecology: Yes No Date of training 4/2010
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the required figures (figures can be combined).
 Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY III based on functions or special characteristics

1. Category of wetland based on FUNCTIONS

- Category I – Total score = 23 - 27
- Category II – Total score = 20 - 22
- Category III – Total score = 16 - 19
- Category IV – Total score = 9 - 15

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	
Landscape Potential	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	
Value	H <input checked="" type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/>	H <input checked="" type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	TOTAL
Score Based on Ratings	7	7	4	18

- 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 <input type="checkbox"/>	II <input type="checkbox"/>		
Wetland of High Conservation Value	I <input type="checkbox"/>			
Bog	I <input type="checkbox"/>			
Mature Forest	I <input type="checkbox"/>			
Old Growth Forest	I <input type="checkbox"/>			
Coastal Lagoon	I <input type="checkbox"/>	II <input type="checkbox"/>		
Interdunal	I <input type="checkbox"/>	II <input type="checkbox"/>	III <input type="checkbox"/>	IV <input type="checkbox"/>
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	2
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	3
Map of the contributing basin	D 4.3, D 5.3	4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	7

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 total 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 total 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 total 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

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.

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). <input type="checkbox"/> points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. <input checked="" type="checkbox"/> points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing <input type="checkbox"/> points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. <input type="checkbox"/> points = 1	2	
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 No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area <input checked="" type="checkbox"/> points = 5 Wetland has persistent, ungrazed plants > ½ of area <input type="checkbox"/> points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area <input type="checkbox"/> points = 1 Wetland has persistent, ungrazed plants < 1/10 of area <input type="checkbox"/> points = 0	5	
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> Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2	
Total for D 1	9	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? Yes = 1 No = 0	1	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1	
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0	
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____ Yes = 1 No = 0	0	
Total for D 2	2	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 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? 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 in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	2	
Total for D 3	4	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 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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression with no surface water leaving it (no outlet) <input type="checkbox"/> points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet <input checked="" type="checkbox"/> points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch <input type="checkbox"/> points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing <input type="checkbox"/> points = 0	2	
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. Marks of ponding are 3 ft or more above the surface or bottom of outlet <input type="checkbox"/> points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet <input type="checkbox"/> points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet <input checked="" type="checkbox"/> points = 3 The wetland is a "headwater" wetland <input type="checkbox"/> points = 3 Wetland is flat but has small depressions on the surface that trap water <input type="checkbox"/> points = 1 Marks of ponding less than 0.5 ft (6 in) <input type="checkbox"/> points = 0	3	
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 area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit <input type="checkbox"/> points = 5 The area of the basin is 10 to 100 times the area of the unit <input checked="" type="checkbox"/> points = 3 The area of the basin is more than 100 times the area of the unit <input type="checkbox"/> points = 0 Entire wetland is in the Flats class <input type="checkbox"/> points = 5	3	
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? Yes = 1 No = 0	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	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.)? Yes = 1 No = 0	0	
Total for D 5	Add the points in the boxes above	2

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. Is <u>the unit in a landscape that has flooding problems</u> ? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met.</u> The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): <ul style="list-style-type: none"> • Flooding occurs in a sub-basin that is immediately downgradient of unit. <input checked="" type="checkbox"/> points = 2 • Surface flooding problems are in a sub-basin farther downgradient. <input type="checkbox"/> points = 1 • Flooding from groundwater is an issue in the sub-basin. <input type="checkbox"/> points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ <input type="checkbox"/> points = 0 • There are no problems with flooding downstream of the wetland. <input type="checkbox"/> points = 0 	2	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0	
Total for D 6	Add the points in the boxes above	2

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

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 if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

- 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/groundcover) that each cover 20% within the Forested polygon

0

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 if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 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
- Intermittently or 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, Canada thistle**

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

1

H 1.4. Interspersion of habitats

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



None = 0 points



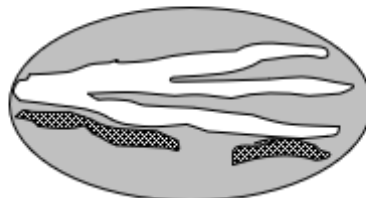
Low = 1 point



Moderate = 2 points



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



0

Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh > 4 in.) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extend at least 3.3 ft (1 m) over open water or 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 (cut shrubs or trees that have not yet weathered where wood is exposed)</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 (structures for egg-laying by amphibians)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)</p>		2
Total for H 1	Add the points in the boxes above	4

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?														
<p>H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.)</p> <p><i>Calculate:</i> % relatively undisturbed habitat <u> 0 </u> + [(% moderate and low intensity land uses)/2] <u> 0 </u> = <u> 0 </u> %</p> <p>Total accessible habitat is:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">> 1/3 (33.3%) of 1 km Polygon</td> <td style="width: 30%; text-align: right;">points = 3</td> <td style="width: 10%; text-align: center;">0</td> </tr> <tr> <td>20-33% of 1 km Polygon</td> <td style="text-align: right;">points = 2</td> <td></td> </tr> <tr> <td>10-19% of 1 km Polygon</td> <td style="text-align: right;">points = 1</td> <td></td> </tr> <tr> <td>< 10% of 1 km Polygon</td> <td style="text-align: right;">points = 0</td> <td></td> </tr> </table> <p style="text-align: center; margin-left: 100px;">wetland surrounding by development</p>			> 1/3 (33.3%) of 1 km Polygon	points = 3	0	20-33% of 1 km Polygon	points = 2		10-19% of 1 km Polygon	points = 1		< 10% of 1 km Polygon	points = 0	
> 1/3 (33.3%) of 1 km Polygon	points = 3	0												
20-33% of 1 km Polygon	points = 2													
10-19% of 1 km Polygon	points = 1													
< 10% of 1 km Polygon	points = 0													
<p>H 2.2. Total habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % relatively undisturbed habitat <u> 19 </u> + [(% moderate and low intensity land uses)/2] <u> 18 </u> = <u> 37 </u> %</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Total habitat > 50% of Polygon</td> <td style="width: 30%; text-align: right;">points = 3</td> <td style="width: 10%; text-align: center;">1</td> </tr> <tr> <td>Total habitat 10-50% and in 1-3 patches</td> <td style="text-align: right;">points = 2</td> <td></td> </tr> <tr> <td>Total habitat 10-50% and > 3 patches</td> <td style="text-align: right;">points = 1</td> <td></td> </tr> <tr> <td>Total habitat < 10% of 1 km Polygon</td> <td style="text-align: right;">points = 0</td> <td></td> </tr> </table>			Total habitat > 50% of Polygon	points = 3	1	Total habitat 10-50% and in 1-3 patches	points = 2		Total habitat 10-50% and > 3 patches	points = 1		Total habitat < 10% of 1 km Polygon	points = 0	
Total habitat > 50% of Polygon	points = 3	1												
Total habitat 10-50% and in 1-3 patches	points = 2													
Total habitat 10-50% and > 3 patches	points = 1													
Total habitat < 10% of 1 km Polygon	points = 0													
<p>H 2.3. Land use intensity in 1 km Polygon:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">> 50% of 1 km Polygon is high intensity land use</td> <td style="width: 30%; text-align: right;">points = (- 2)</td> <td style="width: 10%; text-align: center;">0</td> </tr> <tr> <td>≤ 50% of 1 km Polygon is high intensity</td> <td style="text-align: right;">points = 0</td> <td></td> </tr> </table>			> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0	≤ 50% of 1 km Polygon is high intensity	points = 0							
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0												
≤ 50% of 1 km Polygon is high intensity	points = 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 data</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>Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>		

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

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- 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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- 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.
- Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- 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. Do not select if Fresh Deepwater habitat is also present.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- 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) diameter at breast height (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.

Wetland name or number A

- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- 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.
- 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.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
<p>SC 1.0. Estuarine wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><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</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland</p>	
<p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No – Go to SC 1.2</p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two 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 10% cover of non-native plant species. If non-native species are <i>Spartina</i>, see chapter 4.8 in the manual.</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 has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	Cat. I Cat. II
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?¹³⁵</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No – Go to SC 2.2</p> <p>SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements.</p> <p>Yes – Submit data to WA Natural Heritage Program for determination,¹³⁶ Go to SC 2.3 <input type="checkbox"/> No = Not a WHCV <input checked="" type="checkbox"/></p> <p>SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a WHCV</p>	Cat. I
<p>SC 3.0. Bogs</p> <p>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></p> <p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2</p> <p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Not a bog</p> <p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No – Go to SC 3.4</p> <p>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.</p> <p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I bog <input checked="" type="checkbox"/> No = Not a bog</p>	Cat. I

¹³⁵ <https://www.dnr.wa.gov/NHPdata>

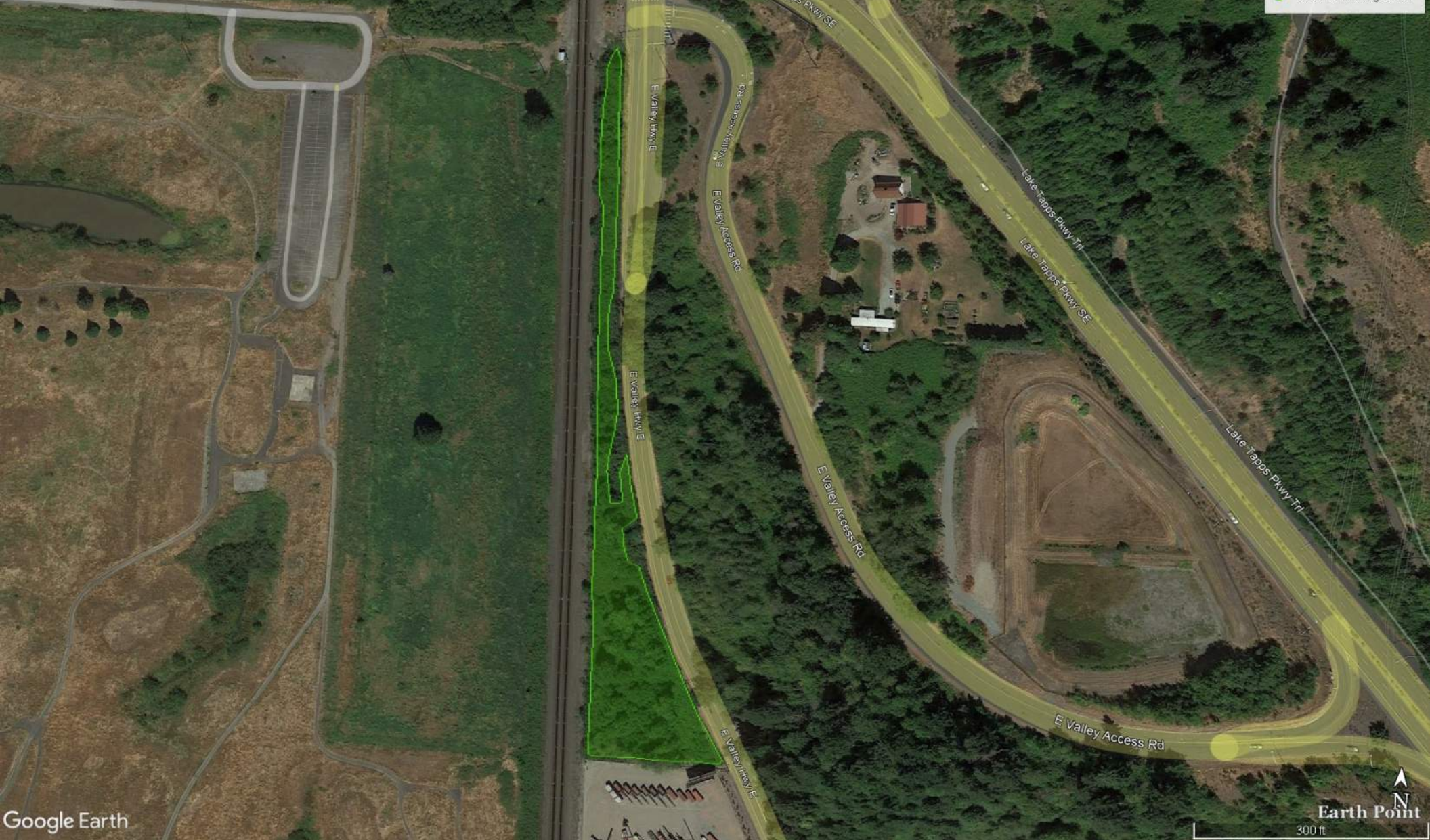
¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

<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;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> 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><input type="checkbox"/> The lagoon retains some of its surface water at low tide during spring tides</p> <p><input type="checkbox"/> Yes – Go to SC 5.1 <input checked="" type="checkbox"/> 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 in H 1.5 in the manual).</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 un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	Cat. I
<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 in H 1.5 in the manual).</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 un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	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 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 6.1 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> 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? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> 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? <input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	Cat I
<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

Cowardin Plant Classes

Legend

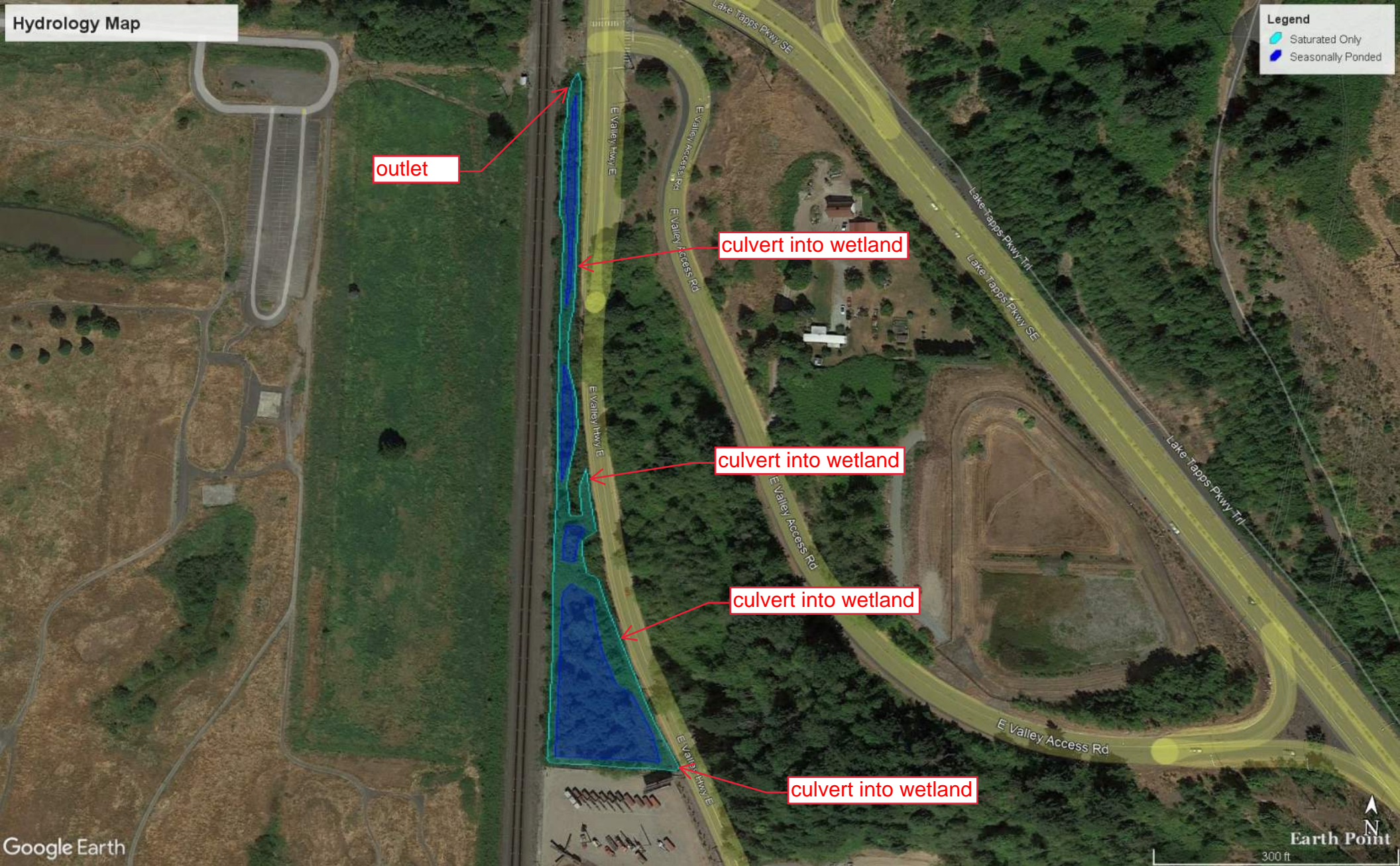
- Scrub-Shrub Vegetation



Hydrology Map

Legend

- Saturated Only
- Seasonally Pondered



outlet

culvert into wetland

culvert into wetland

culvert into wetland

culvert into wetland

Boundary of 150-ft from Wetland

Legend
● 150-ft from Wetland A
● Wetland A

Google Earth

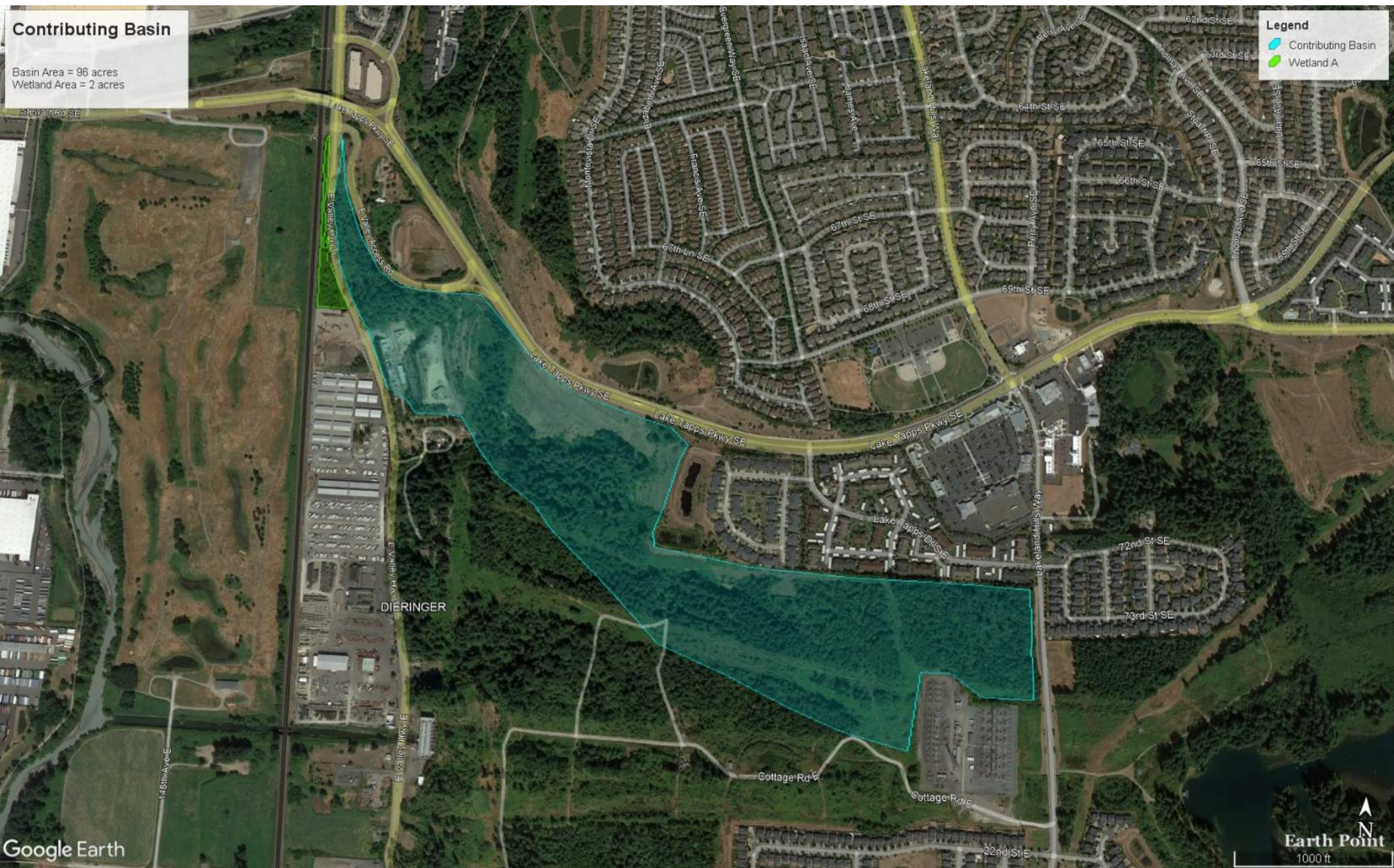
Earth Point
N

300 ft



Contributing Basin
Basin Area = 96 acres
Wetland Area = 2 acres

Legend
Contributing Basin
Wetland A



Google Earth

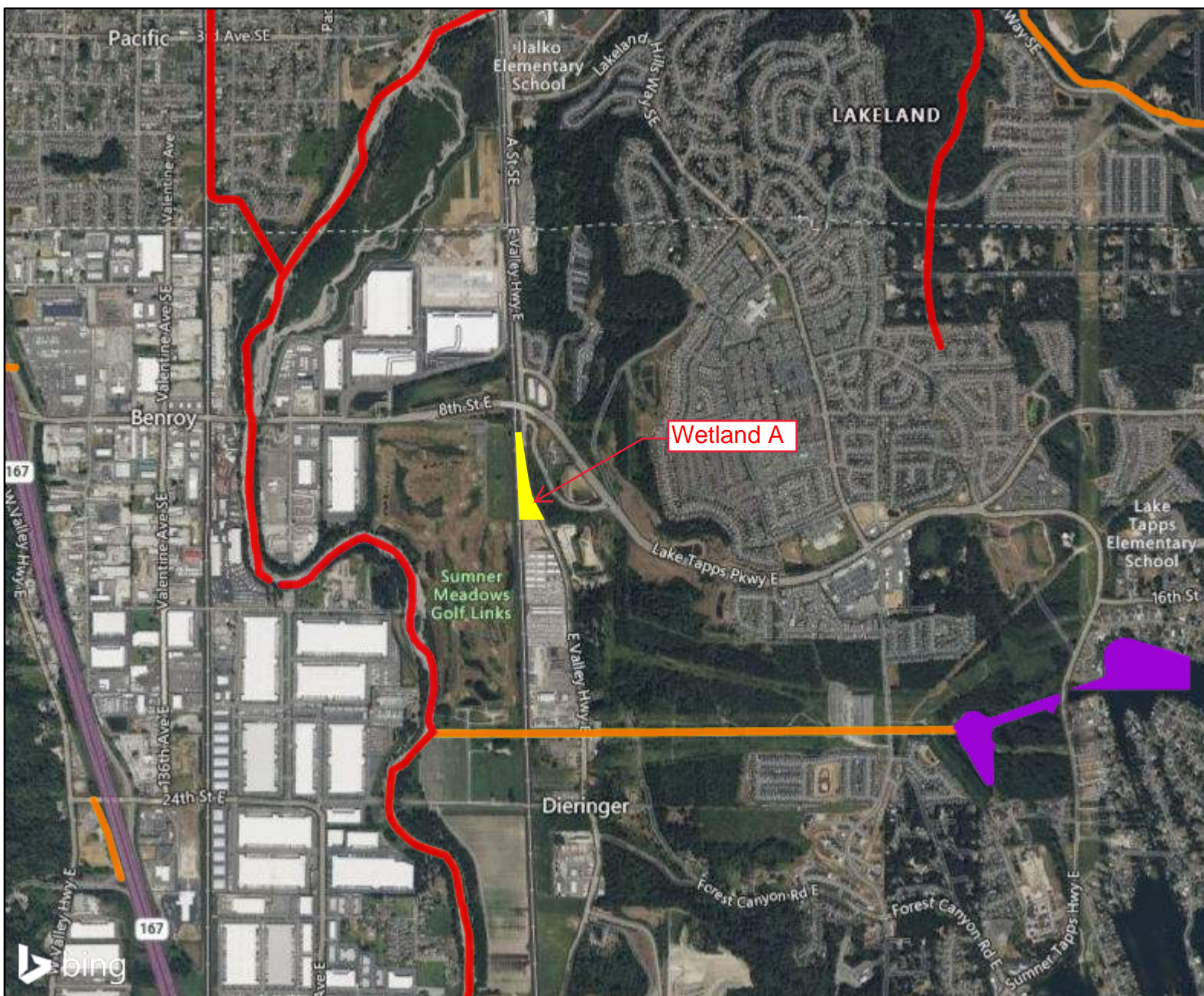
Earth Point
1000 ft

Land Use Intensity - 1 km

- Legend**
- High Intensity
 - Low Intensity
 - Mod Intensity
 - Undisturbed
 - Wetland A
 - Wetland A 1km Circle



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DEPARTMENT OF
ECOLOGY
State of Washington

Pierce County

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Pierce 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)
Clarks and Meeker Creeks	Dissolved Oxygen Sediment Fecal Coliform	EPA approved and Has an implementation plan	Donovan Gray 360-407-6407
Clover Creek	Dissolved Oxygen Fecal Coliform Temperature	Under development	Donovan Gray 360-407-6407
Commencement Bay	Dioxin	EPA approved	Donovan Gray 360-407-6407
Puyallup River Watershed	Fecal Coliform	EPA approved and Has implementation plan	Donovan Gray 360-407-6407
Puyallup River Watershed	Multi-parameter Ammonia-N BOD (5-day)	EPA approved	Donovan Gray 360-407-6407
Puyallup River: Upper White River	Sediment Temperature	EPA approved	Donovan Gray 360-407-6407
Puyallup River: Puyallup River Watershed > Lower White River	pH	Under development	Donovan Gray 360-407-6407
South Prairie Creek	Fecal Coliform Temperature	EPA approved and Has an implementation plan	Donovan Gray 360-407-6407
Wapato Lake	Total Phosphorus	EPA approved	Donovan Gray 360-407-6407