

Exhibit C - Critical Areas Report



Sewall Wetland Consulting, Inc.

PO Box 880
Fall City, WA 98024

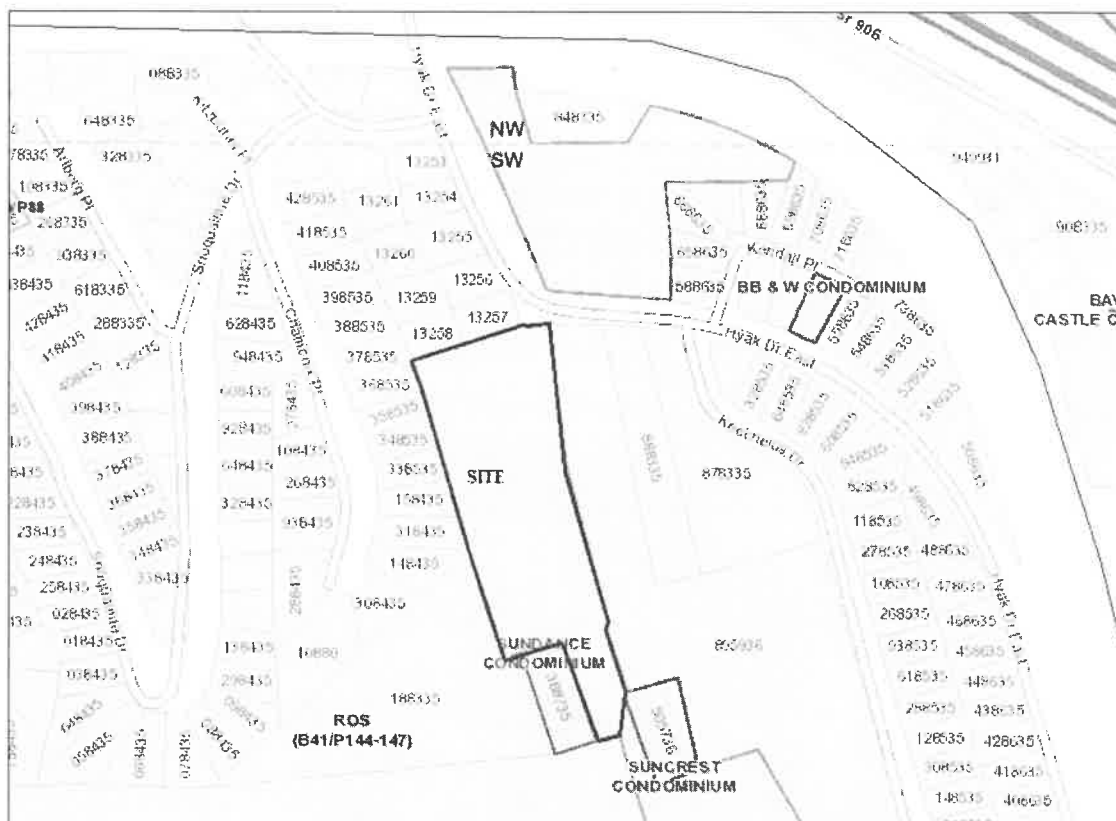
Phone: 253-859-0515

March 15, 2022

East Peak Development LLC
3621 Stone Way N, Suite E
Seattle, WA 98103

RE: Critical Area Report – Tract B of Parcel #961450
Kittitas County, Washington
SWC Job #21-149

This report describes our observations of any jurisdictional wetlands, streams and buffers on the area referred to as Tract B of Parcel #961450, located off Hyak Drive in the Snoqualmie Pass area of unincorporated Kittitas County, Washington.



Above: Vicinity Map of the site.

The site is an irregular shaped parcel 3.9 acres in size and located within SE ¼ of Section 15, Township 22 North, Range 11 East of the W.M.

The site consists of a shrub and forested bench on the west located above an existing gravel parking lot area on the east used by the Summit East Ski Area.



Above: Kittitas Taxsifter aerial photograph of study area.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on June 18, 2021.

The site was reviewed using methodology described in the **Corps of Engineers Wetlands Delineation Manual** (Environmental Laboratory, 1987), and the **Western Mountains, Valleys and Coast region Supplement** (Version 2.0) dated June 24, 2010, as required by the US Army Corps of Engineers and Kittitas County for this portion of the county. Soil colors were identified using the 1990 Edited and Revised Edition of the Munsell Soil Color Charts (Kollmorgen Instruments Corp. 1990).

The wetland was located with a hand held Garmin gps device. The stream was only approximated. These flags will be surveyed in the future and added to the site plan.

OBSERVATIONS

Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the Kittitas County Taxslifter website, National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data.

Kittitas County Taxslifter website

The Kittitas County Taxslifter website with wetland and DNR water types listed depicts no wetlands or streams on the site (see aerial photograph page 2 of this report).

National Wetlands Inventory (NWI)

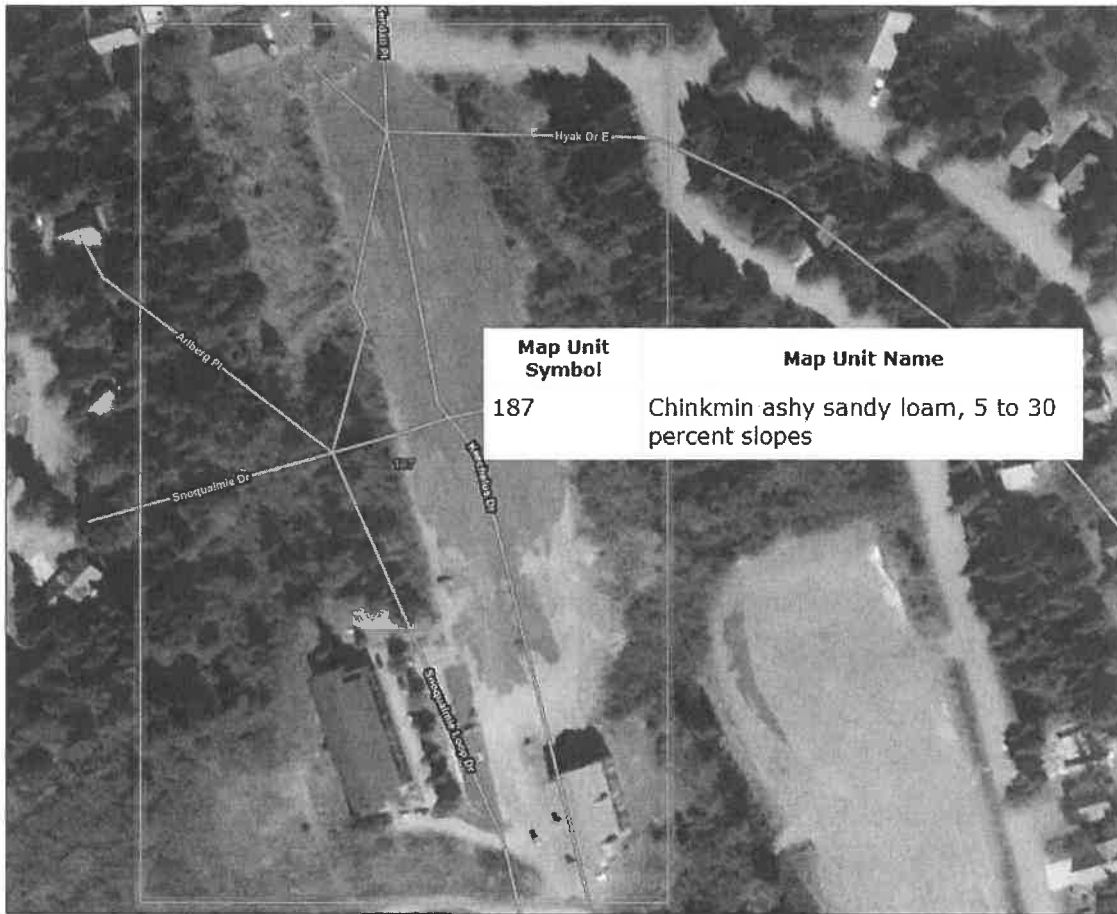
The NWI map depicts no wetlands or streams on or near the site.



Above: NWI map of the area of the site

Soil Survey

According to the NRCS Soil Mapper website, the site is mapped as Chinkmin ashy sandy loams 5%-30% slopes. This soil series is well drained and formed in lateral moraines in volcanic ash and pumice over basal till. Pacific silver fir is the main vegetative cover. This soil series is not considered a "hydric" soils according to the publication *Hydric Soils of the United States* (USDA NTCHS Pub No.1491, 1991).



Above: NRCS soil map of the site.

WADNR Fpars Stream Mapping

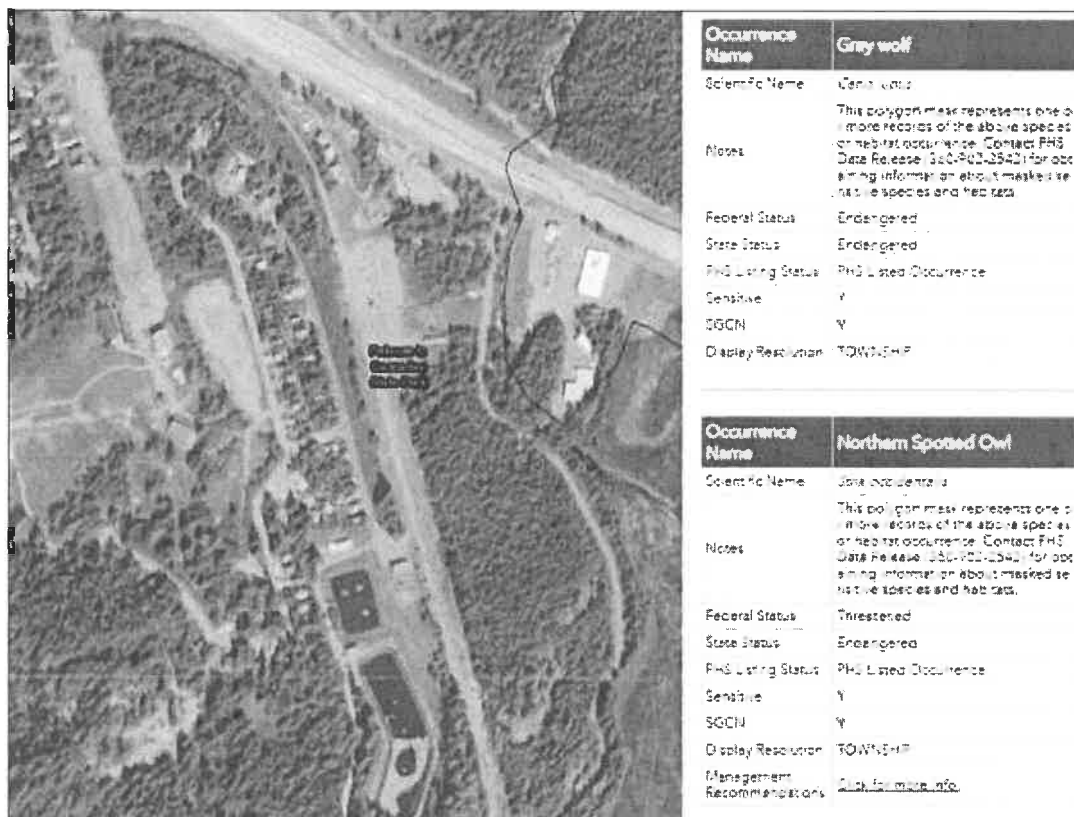
The Washington Department of Natural Resources Fpars stream type mapping website depicts no streams on or near the site.

WDFW Priority Habitats

According to the WDFW Priority Habitats mapping website, site contains wetlands (pink shading) and the entire site is located within the Township where the Northern Spotted Owl and gray wolf are thought to be present. These species are Federally listed as endangered species.



Above: WDNR Fpars stream mapping for the area of the site.



Above: WDFW Priority Habitats mapping of site.

Field observations

As previously described, the site contains a forested and shrub covered bench on the west sitting 8'-12' higher than the gravel parking lot portion on the east. A large portion of the bench on the west has a layer of gravel and debris that has been sprayed by ski area snow blowers clearing the ski area lots in winter. Most of this area has a sparse coverage of immature cottonwood saplings. The western edge grades up into less disturbed forest area of silver fir, mountain hemlock, douglas fir and black cottonwood. Understory species include vine maple, huckleberry, and slide alder.

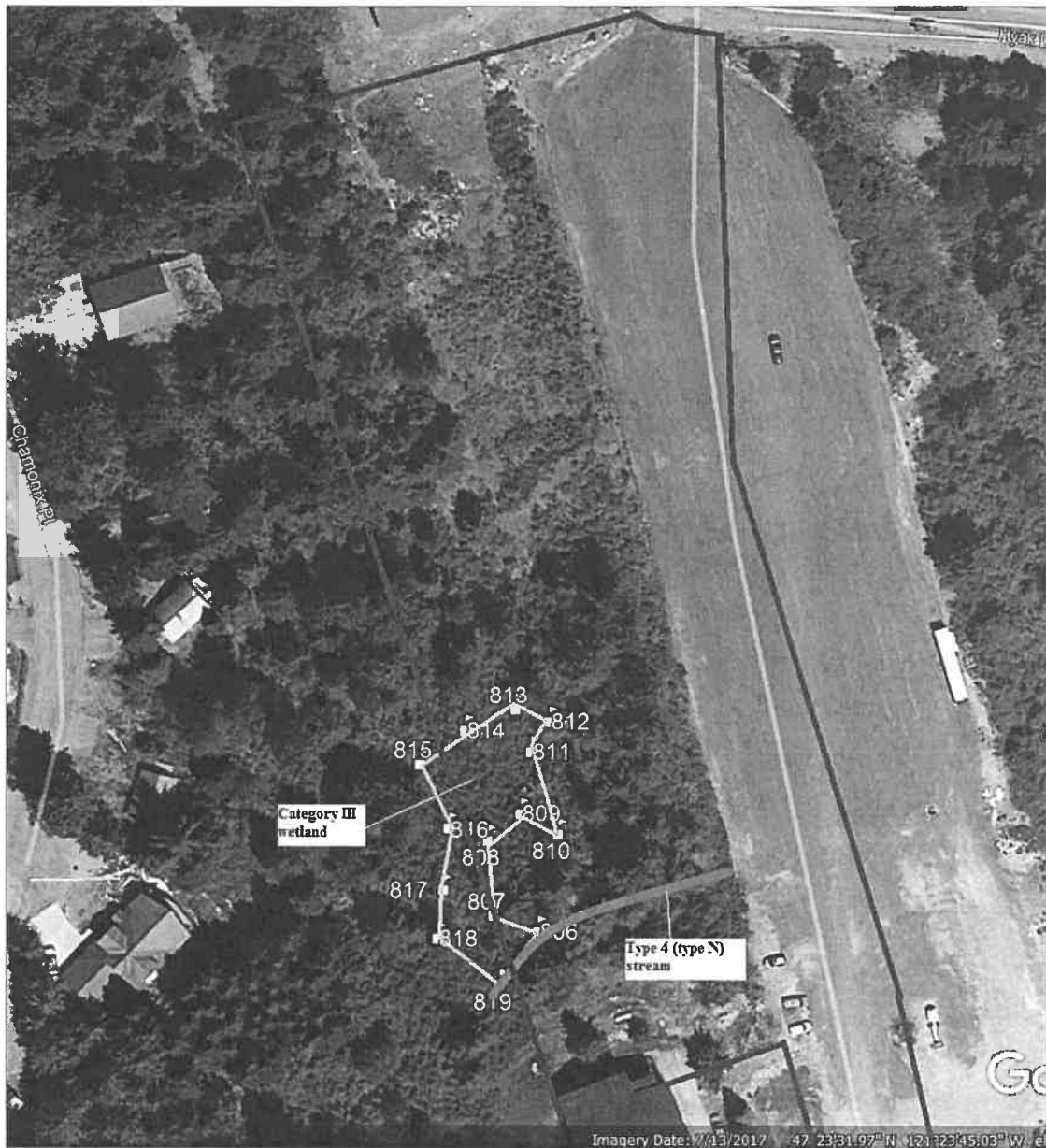
Soil pits excavated within the upland areas throughout the site include dry, gravelly high chroma soils with colors of 10YR 3/3 & 3/4.

Wetlands and Streams

The south end of the site contains a small stream channel as well as an abutting wetland. Below is a description of these features;

Stream A

A small, steeply sloping stream (>16% slope) drains from west to east along the south side of the site. The OHWM of the channel was flagged with blue flags labeled S1-S7 and N1-N7. This channel is a mix of cobble and gravel bottom, and is somewhat ditched, and carries snow melt in the spring as well as some residual drainage in the summer. The stream passes through the site and then steeply slopes in a series of cascades down to a ditch in the parking lot. At this point it passes approximately 350' under the upper parking lot of the Summit East Ski area to a discharge point within a ditch along the west side of the lower parking lot. The channel width varies but is generally around 4' in width between OHWM.



Above: GPS mapping of wetland flag locations

This stream appears to meet the criteria of a Type Ns due to lack of fish use and seasonal flow. According to Kittitas County Municipal Code 17.A.04.030-4, Type Ns streams in the Cascade Ecoregion have a 50' buffer measured from the OHWM of the stream. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.04.030-4 Standard RMZ Widths
Kittitas County Nonshoreline Rivers, Streams, Lakes and Ponds
(does not include building setback [KCC 17A.01.090.5])

Stream Type	Riparian Management Zone Widths ^{1,2}	
	Cascade Ecoregion (feet)	Columbia Plateau Ecoregion (feet)
Type S (Shoreline)	See the SMP	See the SMP
Type F	150	100
Type Np	100	65
Type Ns	50	40

Wetland A

Wetland A is a scrub-shrub, depressional wetland that was flagged with pink flagging labeled A1-A14 (gps points 806-819). This wetland drains off to the south into the abutting Type 4 stream to the south. The stream does not appear to be flooded by the stream but is a depression that overflows to the stream.

This wetland is vegetated with a mix of sitka willow, slide alder, vine maple, twinberry, skunk cabbage, hedge nettle, and an unidentified sedge.

Soil pits excavated within the wetland revealed a mucky gravelly loam in the wetter areas and a gravelly loam on the drier with redox features and soils saturated to the surface and evidence of shallow standing water in the early spring.

Wetland A was rated using the 2014 *Washington State Department of Ecology Washington State Wetland Rating System for Western Washington*. This wetland was rated as a depressional wetland and scored a total of 18 points with 5 points for habitat indicating a Category III wetland.

According to Kittitas County Municipal Code Chapter 17A.07.030, Category III wetlands have a buffer range of 75'-150' depending upon land use intensity. Assuming a high intensity land use (>1 unit per acre) for the site would result in a 150' buffer from the wetland edge. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.07.030: Standard Buffer Widths

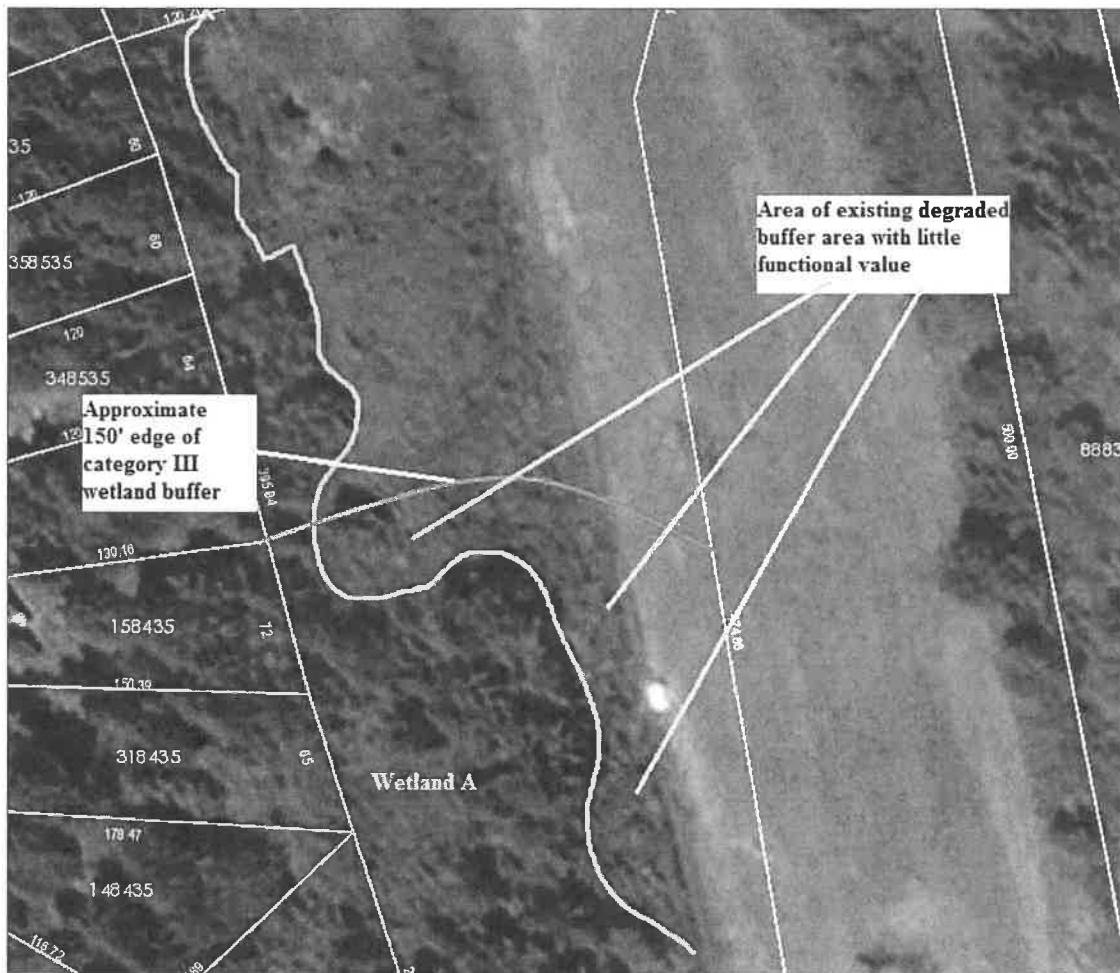
Category of Wetland	Land Use with Low Impact ¹	Land Use with Moderate Impact ²	Land Use with High Impact ³
I	125 ft	190 ft	250 ft
II	100 ft	150 ft	200 ft
III	75 ft	110 ft	150 ft
IV	25 ft	40 ft	50 ft

Proposed Project

The proposed project is the construction of a single condominium structure on the north, and 7 "rowhomes" on the south, as well as associated paved driveway, parking areas and infrastructure.

The stream, wetland and the associated 150' buffer of the Category III wetland encompass more than 50% of the parcel.

Per KCC 17A.07.030.11, buffer averaging is allowed but this would allow a maximum reduction to the buffer of 25%, or to a width of 112.5'. This still leaves a large amount of area which although buffer, is non-functional. The buffer of Wetland A is a highly degraded area of non-functional buffer as it has been historically filled, graded, and is yearly covered with gravel from the parking lot snow clearing operations for Summit East. The buffer area contains scattered cottonwood saplings growing in a gravel/dirt substrate with little functional value to the wetland itself. In addition, the small area of trees within the buffer is also degraded from past grading and gravel deposition as well.



Above: Aerial photograph showing the large area of existing non-functional buffer and upland. This area has a thick layer of gravel that is deposited yearly on the site from the ski area parking lot snow clearing operations. The only vegetation is weedy species and scattered cottonwood saplings.

Proposed Reduced and enhanced buffer

As depicted on the Sewall Wetland Consulting, Inc. “*Wetland Buffer Enhancement Plan – Hyak PUD Parcel B*” dated 3-8-22”, a total of 17,176sf of the existing degraded buffer will be enhanced through removal of trash and gravel, and replanting with a mix of native vegetation. Although this is a reduced buffer, the improvements in the function of the buffer through the removal of the gravel debris and restoration of a native forested buffer plant community will provide greater protection to the wetland, and the associated Type N stream to

the east, than is currently provided by the 150' buffer that is undeveloped.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets
Rating Form & exhibits

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Kittitas County Municipal Code Chapter 17A

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

middle of site

12-81-3

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.

Top Stratum (Plot size: _____)		Dominant Indicator % Cover Species?		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:	
1. _____	_____	_____	_____	(A) _____	_____
2. _____	_____	_____	_____	(B) _____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
_____		= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (AB)
Savanna Stratum (Plot size: _____)		Dominant Indicator % Cover Species?		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:	
1. <i>Leptochloa battimbana</i>	30	FA	_____	(A) _____	_____
2. _____	_____	_____	_____	(B) _____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____
_____		= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	_____
Herb Stratum (Plot size: _____)		Dominant Indicator % Cover Species?		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:	
1. <i>Cynodon dactylon</i>	10	NR	_____	(A) _____	_____
2. _____	_____	_____	_____	(B) _____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____
_____		= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	_____
Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: Dominance Test is >50% _____ Prevalence Index is <3.0' _____ Morphological Adaptations: (Provide supporting data in Remarks or on a separate sheet) Wetland Non-Vascular Plants _____ Problematic Hydrophytic Vegetation? (Explain) _____ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Hydrophytic Vegetation Present? Yes ☒ No _____					
Woody Vine Stratum (Plot size: _____)		Dominant Indicator % Cover Species?		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:	
1. _____	_____	_____	_____	(A) _____	_____
2. _____	_____	_____	_____	(B) _____	_____
_____		= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	_____
% Bare Ground in Herb Stratum		Remarks:			

U.S. Army Corps of Engineers

Western Mountains Valleys and Coast -- Interim Version

1407

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

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)	
Primary Indicators (Infillment of one required, check all that apply)		Water-Stained Leaves (B9) (all RA 1, 2, 4A, and 4B)	
Surface Water (A1)	Yes	Water-Stained Leaves (B9) (all RA 1, 2, 4A, and 4B)	Yes
High Water Table (A2)	Yes		
Saturation (A3)	Yes		
Water Marks (B1)	Yes		
Sediment Deposits (B2)	Yes		
Drift Deposits (B3)	Yes		
Agal Mat or Crust (B4)	Yes		
Iron Deposits (B5)	Yes		
Surface Soil Cracks (B6)	Yes		
Unsaturation Visible on Aerial Imagery (B7)	Yes		
Sparsely Vegetated Concave Surface (B8)	Yes		
Field Observations:		Wetland Hydrology Present? Yes No	
Surface Water Present?	Yes No	Depth (inches):	
Water Table Present?	Yes No	Depth (inches):	
Saturation Present?	Yes No	Depth (inches):	
Includes capillary fringe?			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

U.S. Army Corps of Engineers

Western Mountains, Valleys, and Coast – Interim Version

Wetland name or number _____

RATING SUMMARY - Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 6-18-21
Rated by: Ed Sand Trained by Ecology? Yes No Date of training _____
HGM Class used for rating: Dependent Wetland has multiple HGM classes? Y N

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

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics ✓)

1. Category of wetland based on FUNCTIONS
Category I - Total score = 23 - 27
Category II - Total score = 20 - 22
Category III - Total score = 16 - 19
Category IV - Total score = 9 - 15

FUNCTION	Limnology	Water Quality	Hydrologic	Habitat
Site Potential	H	M	L	H
Landscape Potential	H	M	L	H
Value	H	M	L	H
Score Based on Ratings	7	6	5	18

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
6 = H,M,M
5 = H,M,L
4 = M,M,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Intertidal	I II III IV
None of the above	

Wetland Rating System for Western WA: 2014 Update
Rating Form - Effective January 1, 2015

1

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map #	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 #	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 #	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 #	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 trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland Rating System for Western WA: 2014 Update
Rating Form - Effective January 1, 2015

2

Wetland name or number _____

HGM Classification of Wetlands in Western Washington

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

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO - go to 2

YES - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

If your wetland can be classified as a **Freshwater Tidal Fringe** use the forms for **Riverine wetlands**. If it is **Saltwater Tidal Fringe** it is an **Estuarine wetland** and is not scored. This method cannot be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

YES - The wetland class is **Flats**. If your wetland can be classified as a **Flats wetland**, use the form for **Depressional wetlands**.

3. Does the entire wetland unit meet all of the following criteria?

— The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit meet all of the following criteria?

— The wetland is on a slope (slope can be very gradual).
— The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
The water leaves the wetland without being impounded.

NO - go to 5

YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit meet all of the following criteria?

— The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
— The overbank flooding occurs at least once every 2 years.

Wetland name or number _____

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: 3 indicators that the site functions to improve water quality			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3		
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2		
Wetland has an unobstructed, or slightly constricted, surface outlet that is permanently flowing	points = 1		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 0		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions) Yes = 4 No = 0			
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):			
Wetland has persistent, ungrazed, plants > 95% of area	points = 3		
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 2		
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1		
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0		
D 1.4. Characteristics of seasonal ponding or inundation:			
This is the area that is ponded for at least 2 months. See description in manual.			
Area seasonally ponded is > 1/2 total area of wetland	points = 4		
Area seasonally ponded is > 1/4 total area of wetland	points = 2		
Area seasonally ponded is < 1/4 total area of wetland	points = 0		
Total for D1			7
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page			
D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland unit receive stormwater discharges?	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?	Yes = 1 No = 0		0
Source			
Total for D2			2
Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page			
D 3.0. Is the water quality improvement provided by the site valuable to society?			
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0		0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0		1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 1 No = 0		2
Total for D3			3
Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page			

Hydrologic Functions: The ability of a landscape to store, filter, and move water			
DEPRESSIONAL AND FLAT WETLANDS			
D 4.0. Does the site have the potential to reduce flooding and erosion?			
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outcrop (circle) Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 4 points = 1 points = 1 points = 0	2	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	points = 7 points = 5 points = 3 points = 3 points = 1 points = 0	0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit Entire wetland is in the Flats class	points = 5 points = 3 points = 0 points = 5	3	
Total for D 4	Add the points in the boxes above	5	
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	1	
Total for D 5	Add the points in the boxes above	3	
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L			Record the rating on the first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?			
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooded occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ There are no problems with flooding downstream of the wetland.	points = 2 points = 1 points = 1 points = 0 points = 0	1	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0	
Total for D 6	Add the points in the boxes above	1	

Wetland name or number A

HABITAT FUNCTIONS Indicators that site functions to provide important habitat	
H 2.0. Does the site have the potential to provide habitat? H 2.1. 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 10% or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 _____ Aquatic bed _____ Emergent _____ Scrub-shrub (areas where shrubs have > 30% cover) _____ Forested (areas where trees have > 30% cover) _____ 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	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 or 1/4 ac to count (see text for descriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 _____ Permanently flooded or inundated _____ Seasonally flooded or inundated _____ Occasionally flooded or inundated _____ Saturated only _____ Permanently flowing stream or river in, or adjacent to, the wetland _____ Seasonally flowing stream in, or adjacent to, the wetland _____ Lake Fringe wetland _____ Freshwater tidal wetland	1 2 points 2 points
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 15 species: points = 2 5 - 15 species: points = 1 < 5 species: points = 0	1 points = 2 points = 1 points = 0
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersions among Cowardin plant 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.	0 None = 0 points Low = 1 point Moderate = 2 points High = 3 points All three diagrams in this row are HIGH = 3 points

Wetland name or number A

H 1.5. Special habitat features: Check 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 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) _____ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	1
Total for H 1	3
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?	0
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: $\frac{\% \text{ undisturbed habitat}}{\% \text{ undisturbed habitat} + (\% \text{ moderate and low intensity land uses})} \times 100 = \%$ If total accessible habitat is: > 1/4 (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: $\frac{\% \text{ undisturbed habitat}}{\% \text{ undisturbed habitat} + (\% \text{ moderate and low intensity land uses})} \times 100 = \%$ Undisturbed habitat > 50% of Polygon: points = 3 Undisturbed habitat 10-50% and in 1-3 patches: points = 2 Undisturbed habitat 10-50% and > 3 patches: points = 1 Undisturbed habitat < 10% of 1 km Polygon: points = 0	1
H 2.3. Land use intensity in 1 km Polygon: if > 50% of 1 km Polygon is high intensity land use: points = (-2) ≤ 50% of 1 km Polygon is high intensity	0
Total for H 2	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?	0
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: _____ It has 3 or more priority habitats within 100 m (see next page) _____ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) _____ It is mapped as a location for an individual WDFW priority species _____ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources _____ It has been categorized as an Important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan _____ Site has 1 or 2 priority habitats (listed on next page) within 100 m Site does not meet any of the criteria above	points = 0
Rating of Value If score is: 2 = H 1 = M 0 = L	Record the rating on the first page

4

4

4

4

- 4

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Wetland name or number A

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> --- Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. --- Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).	Yes = Category I No = Not a forested wetland for this section Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? --- The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks --- The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i> Cat. I Cat. II 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 ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. --- The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II Cat. III Cat. IV <i>NA</i>
SC 6.0. Interdunal Wetlands Is the wetland west of the 1689 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> 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	Cat. I Cat. II Cat. III Cat. IV
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H₁,H₂ or H₁,H₃ for the three aspects of function)? Yes = Category I No - Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No - Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat. I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	<i>NA</i>

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

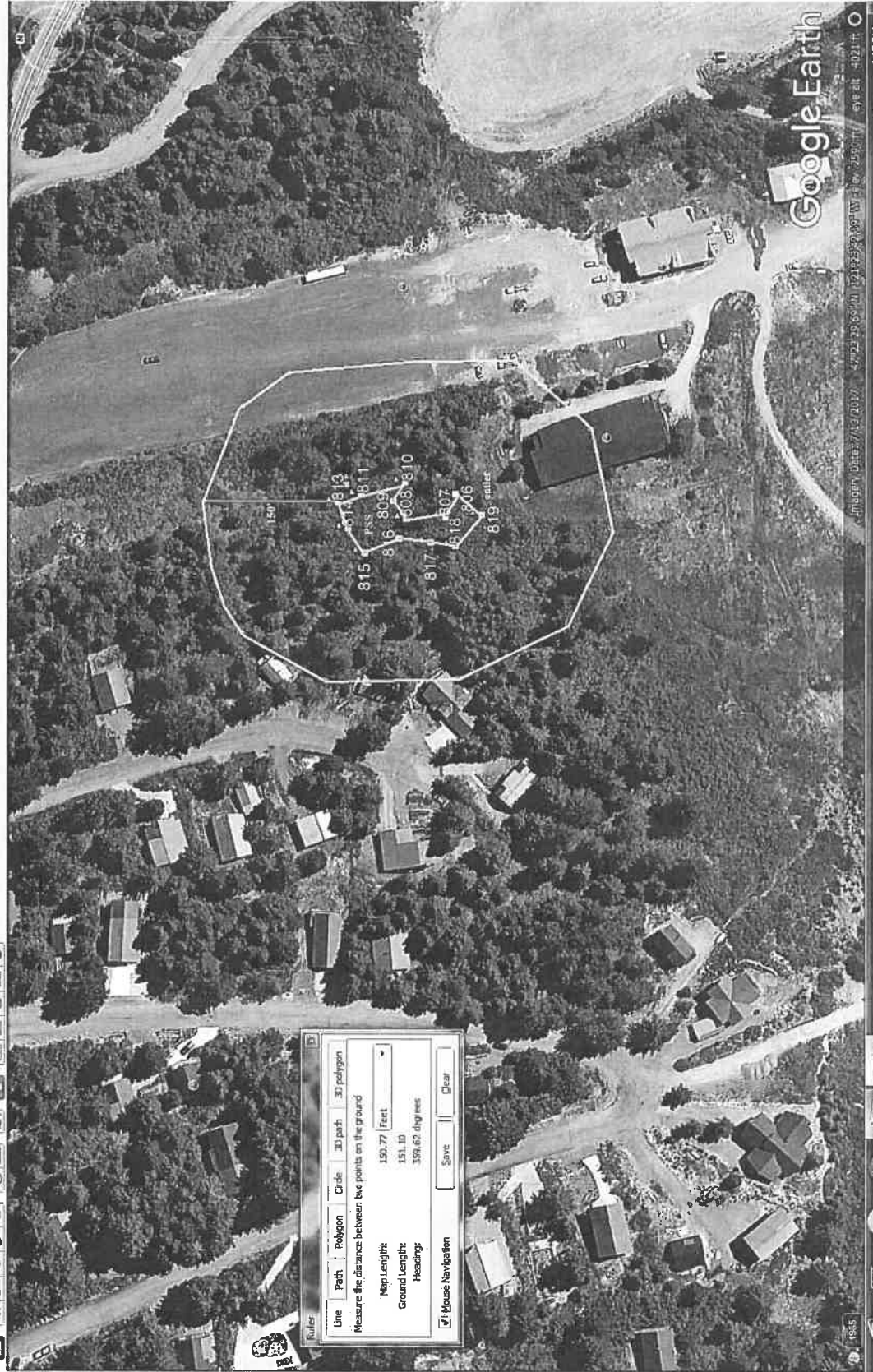
Map Length: 150.77 Feet

Ground Length: 151.10

Heading: 359.62 degrees

Save Clear

☒ Mouse Navigation





Water Quality Atlas Map

- Legend
- Filter
- Zoom
- Tools
- Home
- Add/Remove Map Data
- My Maps
- Print
- Share
- About



- Legend
- Filter
- Zoom
- Tools
- Home
- Add/Remove Map Data
- My Maps
- Print
- Share
- About

Usage:
Click on map to add measure points. Double-click to finish.

Unit
Feet

Distance
8,235.03 ft

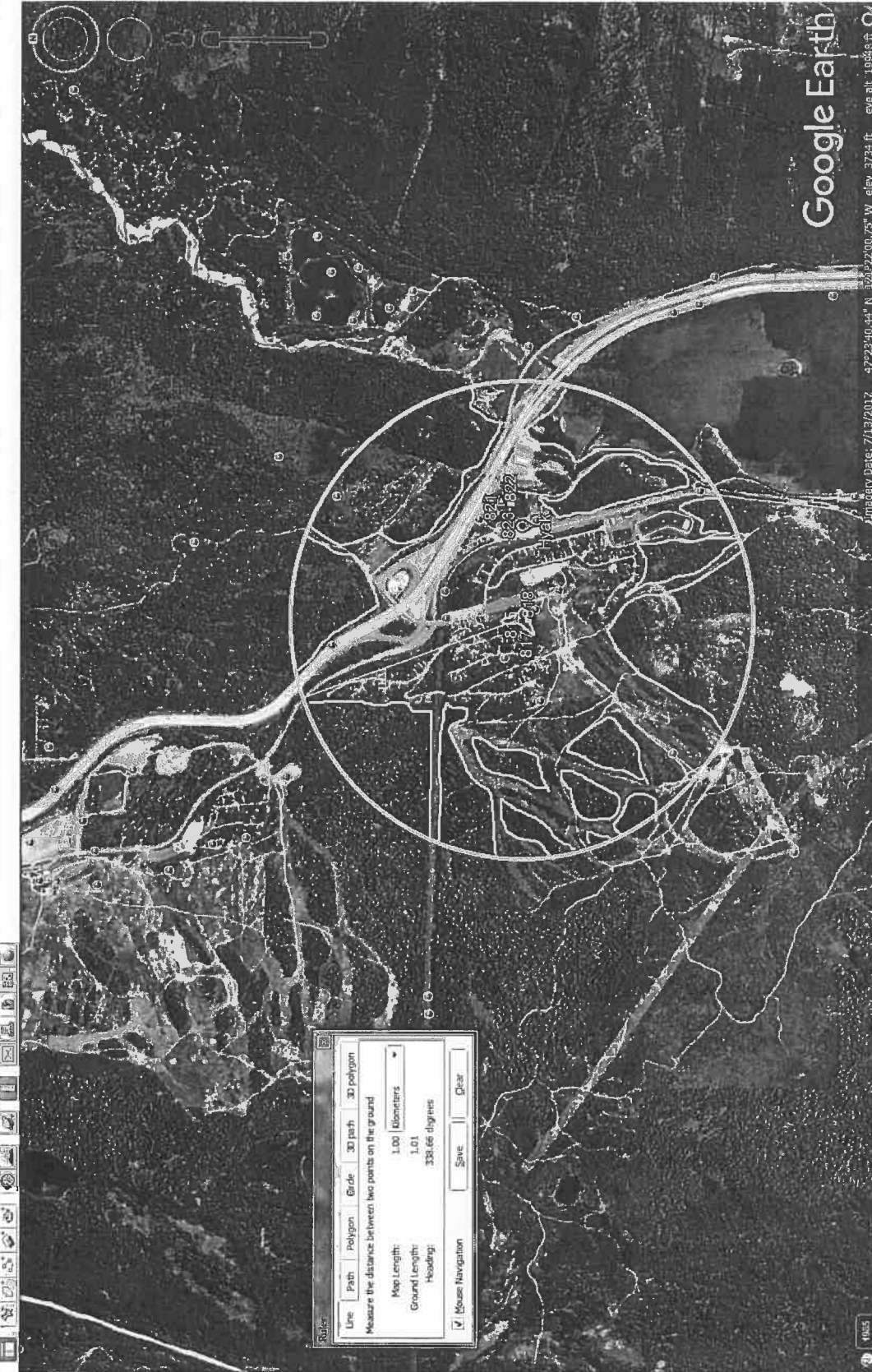
New measurement

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Assessed Water/Sediment Filter Applied Clear filters

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	66746	170200011202_01_01	5	Water	Dissolved Oxygen	View
	11253	170200030203_01_01	5	Water	Temperature	View
	42784	170200030203_01_01	5	Water	Dissolved Oxygen	View

Show 5 entries Showing 1 to 5 of 4,548 entries



Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 1.00 Kilometers

Ground Length: 1.61 Kilometers

Heading: 338.66 degrees

☒ Mouse Navigation Save Clear