VISTA VIEWS AT BLACK LAKE CITY OF TUMWATER, WASHINGTON

PUMP STATION CRITICAL AREAS REPORT

Prepared By:

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20 September 2024

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Critical Areas Report is to identify and map Critical Areas on the subject property, satisfying City of Tumwater regulatory requirements under Critical Areas. Potential wetlands, streams, steep slopes, and their buffers were evaluated on the subject property and within three hundred (\leq 300) feet of the subject property.

A proposed sewage pump station servicing the proposed Vista Views at Black Lake was originally planned for an area west of the subject property across Black Lake Belmore Road SW. However, the proposed pump station location was moved onto the northwestern corner of the subject property to avoid wetland impacts that would have occurred if the pump station were placed in the original location. This report evaluates potential impacts to Critical Areas and their buffers as a result of the proposed pump station placed on the northwestern corner of the subject property.

1.2 Property Location

The subject property is located in the City of Tumwater, Thurston County WA (Figure 1; Table 1).

Table 1. Subject Property

No#	Address	Parcel Number	Map Coordinates	Area			
1	5300 BLACK LAKE BELMORE RD SW, Olympia, WA 98512	12832310400	Section 32 Township 18 Range 2W	5.16			
1 Parcel	Total Size						

The permitting jurisdiction is the City of Tumwater.

1.3 Site Evaluation

A wetland and stream evaluation was performed on the subject property on:

- 11 September 2024
- 16 September 2024

1.4 Property Description

The subject property consists of a relatively flat residential lot containing a home site, grass lawn, and Critical Areas. A residence and access road are located on the southern portion of the subject property (**Figure 2**). Critical Areas occur on the central portion of the subject property. A maintained grass lawn occurs on the northern portion of the subject property (**Appendix A, Photos 1-6**). Yellow flowers form a carpet of upland hairy Cat's ear (*Hypochaeris radicata*, FACU) over the lawn area on the northern portion of the subject property (**Appendix A, Photos 1-6**). Areas containing the yellow flowers are dominated by upland plant species.



2.0 METHODOLOGY

This report is based on a review of existing information and field investigations. The goal of these efforts is to collect and document existing information that reflects current site conditions for assessing potential impacts.

2.1 Review of Existing Literature

Prior to conducting fieldwork, biologists reviewed existing information to identify wetlands, streams, vegetation patterns, topography, soils, wildlife habitats, and other natural resources on the subject property. Existing data sources that were reviewed for this report included but were not limited to the following:

- Washington. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Soil Survey
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), online wetlands mapper
- Washington Department of Fish and Wildlife (WDFW) Salmonscape Database
- Washington Department of Fish and Wildlife (WDFW) Priority and Habitat Species Database
- Washington State Department of Natural Resources (DNR) Natural Heritage Database
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies

2.2 Field Investigation

A wetland evaluation was performed onsite as well as offsite of the subject property to determine if wetlands, streams, or their buffers extend onto the subject property. The routine on-site determination method was used to identify potential wetlands using the procedures outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the 2010 USACE Regional Wetland Supplement.

2.3 Wetland Identification

Prior to 2010, biologists delineated wetlands according to the methods specified in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987). At that time, these methods complied with those in the Washington State Wetland Identification and Delineation Manual (Washington State Department of Ecology [Ecology] 1997).

Following 2010, biologists evaluate wetlands according to the methods specified in the USACE's Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010). These methods comply with those adopted by Washington State pursuant to Washington Administrative Code (WAC) 173-22-035, Revised Code of Washington (RCW) 90.58.380.



2.3.1 Vegetation

The dominant plants and their wetland indicator status were evaluated to determine whether the vegetation is hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants must be facultative, facultative wetland, or obligate, according to the plant indicator status category assigned to each plant species by the USACE National Wetland Plant List. **Table 2** provides the definitions of the indicator status categories. The scientific and common names for plants follow the currently accepted nomenclature. Dominant plant species were observed and recorded on wetland determination data forms for each data plot (**Appendix M**).

Plant Indicator Status Category	Symbol	Description
Obligate Wetland Plants	OBL	Plants that almost always (>99% of the time) occur in wetlands but may rarely (<1% of the time) occur in non-wetlands
Facultative Wetland Plants	FACW	Plants that often (67% to 99% of the time) occur in wetlands but sometimes (1% to 33% of the time) occur in non-wetlands
Facultative Plants	FAC	Plants with a similar likelihood (33% to 66% of the time) of occurring in both wetlands and non-wetlands
Facultative Upland Plants	FACU	Plants that sometimes (1% to 33% of the time) occur in wetlands but occur more often (67% to 99% of the time) in non-wetlands
Upland Plants	UPL	Plants that rarely (<1% of the time) occur in wetlands and almost always (> 99% of the time) occur in non-wetlands

Table 2.	Key to	Plant	Indicator	Status	Categories
----------	--------	-------	-----------	--------	------------

2.3.2 Soils

Soils were excavated to eighteen (18) inches or more below the surface within test pits to evaluate soil characteristics and hydrological conditions throughout the property. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988). Generally, an area must have hydric soils to be considered a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper portion. Biological activities in saturated soil result in reduced concentrations of oxygen that in turn result in a preponderance of organisms that use anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as indicators of hydric soil. Typically, low-chroma colors are formed in the matrix of hydric soil. Bright-colored redoximorphic features form within the matrix under a fluctuating water table. Other important hydric soil indicators include organic matter accumulations in the surface layer, reduced sulfur odors, and organic matter staining in the subsurface.

2.3.3 Hydrology

The subject property was examined for evidence of hydrology. The U.S. Army Corps of Engineers (2005) provides a technical standard for monitoring hydrology on such sites. This standard requires fourteen (14) or more consecutive days of flooding or ponding, or a water table twelve (12) inches (30 cm) or less below the soil surface, during the growing season at a minimum frequency of five (5) years in ten (10) (50 percent or higher probability). The USACE 2010 Regional Supplement provides a list of hydrology indicators to evaluate whether the hydrology standard is satisfied. If wetland hydrology, including pooling, ponding, and soil saturation, is not clearly evident, hydrological conditions may be observed through surface or soil indicators. Indicators of hydrological conditions include oxidized root channels, drainage patterns, drift lines, sediment deposition, watermarks, historic records, visual observation of saturated soils, and visual observation of inundation.

2.4 Wetland Classification and Rating

Delineated wetlands, if identified, would be classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States. Hydrogeomorphic classifications were assigned to wetlands using USACE methods established in 'A Hydrogeomorphic Classification for Wetlands.' Wetlands were rated using the revised Washington State Wetland Rating System for Western Washington.

3.0 STUDY RESULTS

3.1 Background Information

3.1.1 NRCS Soil Survey for Thurston County

Two (2) of the four (4) soils mapped on the subject property are listed as hydric by the NRCS Soil Survey (**Table 3; Appendix B**). The majority of the subject property is mapped as drained hydric soils.

Soil Unit	Hydric	Comments
Mukilteo Muck, Drained	Yes	The majority of the subject property is mapped as this drained hydric soil
Alderwood gravelly sandy loam 0-3% Slopes	No	Mapped on the northwestern corner of the subject property
Cagy Silt Loam	No	Mapped on the southern edge of the subject property
McKenna Gravelly Silt	Yes	Mapped on the northwestern portion of the subject property in the located of the proposed pump station

Table 3. NRCS Soils Survey

3.1.2 National Wetlands Inventory (NWI)

One (1) wetland has been mapped on the subject property by the US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) (**Appendix C**). Wetlands have been mapped offsite east and west of the subject property.



3.1.3 City of Tumwater Critical Areas Database

Potential wetlands are mapped on the northern portion of the subject property and within three hundred (\leq 300) feet of the subject property by the City of Tumwater Critical Areas database (**Appendix D**).

3.1.4 Thurston County Geodata Center Wetlands

One (1) wetland has been mapped on the subject property by the Thurston County Geodata Center database (**Appendix E**). Wetlands have been mapped offsite within three hundred (\leq 300) feet of the subject property.

3.1.5 Thurston County Geodata Center Contours

The southern and portion of the subject property slopes to the northwest by the Thurston County Geodata Center database (**Appendix F**). the rest of the subject property is relatively flat.

3.1.6 Department of Natural Resources (DNR) Water Typing Database

No streams are mapped on the subject property or within three hundred (\leq 300) feet of the subject property by the State Department of Natural Resources (DNR) Water Typing Database (**Appendix G**).

3.1.7 The WDFW PHS Database

No priority species have been mapped on the subject property or within one thousand ($\leq 1,000$) feet of the subject property by the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database (**Appendix H**).

Cutthroat trout (*Oncorhynchus clarki*) and pacific clubtail (*Phanogomphus kurilis*), State Priority Species, are mapped west of the subject property in Black Lake. The Oregon spotted frog, a Federally-listed species, is mapped more than two thousand (>2,000) feet southeast of the subject property.

One (1) wetland is mapped on the northern portion of the subject property. Wetlands are mapped offsite east and west of the subject property. Other wetlands have been mapped in the vicinity.

3.1.8 303(d) Water

One (1) 303(d) listed water has been mapped less than one (<1) mile downgradient of the subject property in Black Lake by the Department of Ecology Water Quality Atlas database (**Appendix I**). Wetlands mapped on the subject property by other databases would be in the larger Black Lake basin.

3.1.9 TMDL

No TMDL is mapped on the subject property by the Department of Ecology Water Quality Atlas Database (**Appendix J**).

3.1.10 Potential Flooding

No FEMA floodplain is mapped on the subject property (**Appendix K**). A FEMA floodplain is mapped in Black Lake west of the subject property.



3.1.11 **Oregon Spotted Frog**

Oregon spotted frog screening area is mapped on the subject property by the Thurston County Geodata Center database (Appendix N).

No Oregon spotted frog Critical Habitat is mapped on the subject property. Oregon spotted frog Critical Habitat is mapped southeast of the subject property.

3.2 **Field results**

Two (2) wetlands, labeled Wetlands A & B, have been identified on the subject property using the Routine Onsite Determination Method in compliance with the USACE (2010) Regional Supplement (Figures 2 & 3; Table 4). The majority of Wetland A is located offsite east of the subject property and extends onto the central and northern portions of the subject property (Figures 2 & 3). Wetland B is located on the western portion of the subject property. Water from Wetland A drains to Wetland B through a metal corrugated pipe (Appendix A, Photos 28 & 36).

Wetlands									
Wetlands	Area of Wetland		Veg Class	Buffer	Habitat	Comments			
··· •···	Onsite	Total	Hydroperiod	Condition	Features	Comments			
Wetland A	17,278 sf (0.40 acre)	498,536 sf (11.44 acres)	PEMC ¹ PFOC ² PSSC ³	Roads, pasture, residential and farm buildings	Logs, snags, Amphibian habitat	Severely degraded habitat dominated by non-native invasive weeds			
Wetland B	42,551 sf (0.98 acre)	42,551 sf (0.98 acre)	PFOC ²	Pasture, roads, fields, residential	Logs, snags, amphibian habitat	Forested wetland			
	-		-		-				
Drainages									
Drainages	On-site Reach	Channel Width	Channel Depth	Bottom	Fish Presence	Comments			
Ditch Sa	330 ft	7 ft	3 ft	Mud	No	Excavated Ditch that drains to roadside ditch			
1 DEMC: D	alustring Emorgan	t Sassanally floods	4						

Table 4. Summary of Critical Areas Results

alustrine Emergent Seasonally-floo

2. PFOC: Palustrine Forested Seasonally-flooded

3 PSSC: Palustrine Scrub-shrub Seasonally-flooded

3.2.1 Wetland A

The Wetland A boundary has been marked using orange ribbon flagging tied to vegetation and labeled A-1 through A-9 and C-1 through C-9 (Figure 4; Appendix A, Photos 23-29). Wetland flags were GNSS located using a Trimble Geo 7x with sub-foot accuracy. Wetland datasheets are provided in Appendix M.



Soils, vegetation, and hydrology data were collected at eleven (11) test plots (**Appendix A, Photos 7-22**). Eight (8) upland test plots, labeled TP-1 through TP-8, were established to analyze potential wetland conditions in an area of drained hydric soils. Only Test Plots TP-1 and TP-2 exhibited non-hydric soils (**Appendix A, Photos 7-11**). Test Plots TP-3 through Tp-8 were collected in an area of drained hydric soils. This area is mapped as 'Mukilteo Muck, Drained' by the NRCS (**Appendix B**). Areas of drained hydric soils contain upland herbaceous vegetation. Yellow flowers of hairy cat's ear (FACU) can be seen in photographs over this entire area (**Appendix A, Photo 2, 3, 5 & 6**). Other upland herbaceous species, such as red clover (*Trifolium pratense*, FACU), chickweed (*Stellaria media*, FACU), orchard grass (*Dactylis glomerata*, FACU), sweet vernal grass (*Anthoxanthum odoratum*, FACU), and common plantain (*Plantago lancelata*, FACU), occur among the yellow flowers of hairy cat's ear (FACU) (**Appendix A, Photos 7-22; Appendix M**).

Un-mowed areas in the buffer contain native and non-native upland plants, such as bracken fern (*Pteridium aquilinum*, FACU), beaked hazelnut (*Corylus cornuta*, FACU), cut-leaf blackberry (*Rubus laciniatus*, FACU), salal (*Gaultheria shallon*, FACU), and Oregon grape (*Mahonia nervosa*, FACU) (**Appendix A, Photo 4**).

A finger of Wetland A extends onto the subject property from the northeastern corner. This lobe is free of hairy cat's ear (FACU), does not contain the yellow flowers, and vegetation primarily consists of reed canarygrass (**Figures 2 & 3**).

3.2.1.1 Conditions

Wetland A is a severely degraded wetland grazed by numerous livestock and dominated by non-native invasive weeds, primarily reed canarygrass (*Phalaris arundinacea*; FACW) and Himalayan blackberry (*Rubus armeniacus*; FAC). The onsite portion primarily consists of reed canarygrass (FACW) and young trees.

The Cowardin (1979) classification of Wetland A is (Figure 11; Table 4):

- Palustrine Emergent Seasonally-flooded (PEMC)
- Palustrine Forested Seasonally-flooded (PFOC)
- Palustrine Scrub-shrub Seasonally-flooded (PFOC)

The onsite wetland boundary on Wetland A is well-defined and consistent throughout (**Appendix A**, **Photos 23-29**). Potential pollutants within one hundred fifty (150) feet of Wetland A are illustrated in **Figure 12**. Land uses located within one (\leq 1) kilometer are illustrated in **Figure 13**. The Wetland A contributing basin is illustrated in **Figure 14**. Impaired Section 303(d) listed waters under the Clean Water Act (CWA) are illustrated in **Appendix I**. TMDL Water Quality Projects are illustrated in **Appendix J**.

3.2.3.2 Hydrology

Hydrology derives from local precipitation, groundwater, and agricultural drainage (**Appendix A**, **Photos 15-20**).



3.2.3.3 Vegetation

Three (3) vegetation classes that include forested, shrub-shrub, and emergent occur in Wetland A (**Figure 11**). Emergent areas are dominated by pasture grasses and reed canarygrass (*Phalaris arundinacea*, FACW). The scrub-shrub portion of Wetland A is dominated by Himalayan blackberry (*Rubus armeniacus*), salmonberry (Rubus spectabilis, FAC), Douglas spirea (*Spiraea douglasii*; FACW), and reed canarygrass (FACW). The forested portion contains a canopy of black cottonwood (*Populus trichocarpa*, FAC), Red alder (*Alnus rubra*, FAC), Oregon ash (*Fraxinus latifolia*, FACW) over plant species found in shrub-shrub areas.

Dominant upland plant species that have been identified adjacent to Wetland A consists of European pasture grasses, a patch of big-leaf maple (*Acer macrophyllum*, FACU), Scotch broom (*Cytisus scoparius*, FACU), and Himalayan blackberry (*Rubus spectabilis*, FAC). Vegetation in majority of the adjacent upland area is dominated by heavily grazed pastureland with very low habitat value.

Dominant plant species identified in Wetland A include:

- Red alder (*Alnus rubra*, FAC)
- Black cottonwood (*Populus trichocarpa*, FAC)
- Oregon ash (*Fraxinus latifolia*, FACW)
- Himalayan blackberry (*Rubus armeniacus*; FAC)
- English laurel (*Prunus laurocerasus*; NL)
- Reed canarygrass (*Phalaris arundinacea*, FACW)
- English Ivy (*Hedera helix*, FACU)
- Salmonberry (*Rubus spectabilis*; FAC)
- Douglas spirea (Spiraea douglasii; FACW)
- Slough sedge (*Carex obnupta*, OBL)

Dominant plant species outside of the Basin include:

- Big-leaf maple (*Acer macrophyllum*, FACU)
- Bitter cherry (*Prunus emarginata*; FACU)
- Himalayan blackberry (*Rubus armeniacus*; FAC)
- English laurel (Prunus laurocerasus; NL)
- English Ivy (*Hedera helix*, FACU)
- Trailing blackberry (*Rubus ursinus*, FACU)
- Sweet vernal grass (*Anthoxanthum odoratum*, FACU)
- Common bentgrass (Agrostis stolonifera, FAC)
- Red fescue (*Festuca rubra*, FAC)
- Hairy cat's ear (Hypochaeris radicata, FACU)
- Common Plantain (*Plantago lancelata*, FACU)
- Scotch broom (*Cytisus scoparius*, FACU)

3.2.3.4 Soils

Soils in Wetland A are highly disturbed and extremely variable. Much of the wetland appears historically drained and used for agriculture. Soils in Wetland A consist of a very dark grayish brown (10YR 3/2) sandy silt from zero (0) to twenty (20) inches in depth with very yellowish brown (10YR 3/6) redox concentrations and coated sand grains.



Soils adjacent to the wetland consist of a very dark grayish brown (10YR 3/2) sandy silt from zero (0) to twenty (20) inches in depth.

3.2.3.5 Habitat Features

Habitat features in Wetland A are minimal but include some minor fallen logs and some snags. Bull frogs were observed in the onsite portion of Wetland A. A dead bull frog was photographed in the wetland buffer area onsite (**Appendix A, Photo 1**).

3.2.2 Wetland B

The Wetland B boundary has been marked using orange ribbon flagging tied to vegetation and labeled B-1 through B-12 (**Figure 4; Appendix A, Photos 30-41**). Wetland flags were GNSS located using a Trimble Geo 7x with sub-foot accuracy. Wetland datasheets are provided in **Appendix M**.

3.2.2.1 Conditions

Wetland B consists of a forested wetland dominated by non-native invasive weeds, primarily reed canarygrass (*Phalaris arundinacea*; FACW) and Himalayan blackberry (*Rubus armeniacus*; FAC). The onsite portion primarily consists of reed canarygrass (FACW) and young trees.

The Cowardin (1979) classification of Wetland B is (Figure 11; Table 4):

- Palustrine Emergent Seasonally-flooded (PEMC)
- Palustrine Forested Seasonally-flooded (PFOC)
- Palustrine Scrub-shrub Seasonally-flooded (PFOC)

The onsite wetland boundary on Wetland B is well-defined and consistent throughout (**Appendix A**, **Photos 30-41**). Potential pollutants within one hundred fifty (150) feet of Wetland B are illustrated in **Figure 12**. Land uses located within one (\leq 1) kilometer are illustrated in **Figure 13**. The Wetland B contributing basin is illustrated in **Figure 14**. Impaired Section 303(d) listed waters under the Clean Water Act (CWA) are illustrated in **Appendix I**. TMDL Water Quality Projects are illustrated in **Appendix J**.

3.2.2.2 Hydrology

Hydrology primarily derives from Ditch Sa (Appendix A, Photo 34).

3.2.2.3 Vegetation

One (1) vegetation class, namely forested, occurs in Wetland B (**Figure 11**). Emergent areas, dominated by reed canarygrass (*Phalaris arundinacea*, FACW), occur on the periphery, but were too small to be included in the rating.



Dominant plant species identified in Wetland B include:

- Red alder (Alnus rubra, FAC)
- Black cottonwood (*Populus trichocarpa*, FAC)
- Oregon ash (*Fraxinus latifolia*, FACW)
- Himalayan blackberry (*Rubus armeniacus*; FAC)
- English laurel (*Prunus laurocerasus*; NL)
- Reed canarygrass (*Phalaris arundinacea*, FACW)
- English Ivy (*Hedera helix*, FACU)
- Salmonberry (Rubus spectabilis; FAC)
- Douglas spirea (*Spiraea douglasii*; FACW)
- Slough sedge (*Carex obnupta*, OBL)

Dominant plant species outside of the Basin include:

- Hairy cat's ear (*Hypochaeris radicata*, FACU)
- Sweet vernal grass (*Anthoxanthum odoratum*, FACU)
- Orchard grass (Dactylis glomerata, FACU)
- Chickweed (*Stellaria media*, FACU)
- Common Plantain (*Plantago lancelata*, FACU)
- red clover (*Trifolium pratense*, FACU)
- Oregon grape (*Mahonia nervosa*, FACU)
- Cut-leaf blackberry (*Rubus laciniatus*, FACU)
- Salal (Gaultheria shallon, FACU)
- Bracken fern (*Pteridium aquilinum*, FACU)
- Beaked hazelnut (Corylus cornuta, FACU)
- Common bentgrass (*Agrostis stolonifera*, FAC)
- Red fescue (*Festuca rubra*, FAC)

3.2.2.4 Soils

Soils in Wetland B consist of a very dark gray (10YR 3/1) sandy silt from zero (0) to ten (10) inches in depth and gray (10YR 6/1) and brownish yellow (10YR 6/8).

Soils adjacent to the wetland consist of a very dark grayish brown (10YR 3/2) sandy silt from zero (0) to six (6) inches in depth and light brownish gray (10YR 6/2) from six (6) to twenty (20) inches in depth.

3.2.2.5 Habitat Features

Habitat features in Wetland B are minimal but include some minor fallen logs and some snags.

3.2.3 Drainages

An excavated ditch, labeled Ditch Sa, extends through the western portion of Wetland A westward to Wetland B through a corrugated metal pipe (**Figures 2 & 3**). Ditch Sa consists of an excavated ditch measuring seven (7) feet wide and approximately three (~3) feet deep. Ditch Sa has been delineated onsite using orange ribbon flags labeled Sa-1 through Sa-8 (**Figure 4; Appendix A; Photos, 28, 42-44**). Ditch Sa discharges to the roadside ditch on Black Lake Bellmore Road SW. The roadside ditch conveys stormwater runoff southward along Black Lake Bellmore Road SW. No fish are likely to occur in this drainage. No fish are indicated by Agency databases.

3.2.4 Oregon Spotted Frog

Potential low-quality Oregon spotted frog habitat occurs in Wetlands A & B. However, no preferred habitat occurs in either Wetlands A or B. The Oregon spotted frog is almost always found in or near a perennial body of water that includes zones of shallow water and abundant emergent or floating aquatic plants, which the frogs use for basking and escape cover (Leonard *et al.* 1993, Corkran and Thoms 1996, McAllister and Leonard 1997, Pearl 1997, Pearl 1999). Wetland A does not contain perennial waters. Wetland A is seasonally flooded. Although, a farm pond, located adjacent to Wetland A, contains perennial waters, no abundant emergent or floating aquatic plants occur in this pond.

Bull frogs were observed in Ditch Sa in both Wetlands A & B. A dead bull frog was observed in the wetland buffer (**Appendix A, Photo 1**). Bull frogs consume and out complete the Oregon spotted frog for habitat.

4.0 **REGULATORY CONSIDERATIONS**

Wetland regulatory considerations have been summarized in Table 5.

Wetlands								
	Area of	Wetland		Habitat	Total	Standard	Reduced	
Wetland	Onsite	Total	Category	Score	Score Rating Buffer Buffer		Buffer	Comments
Wetland A	17,278 sf (0.40 acre)	498,536 sf (11.44 acres)	II	6 (MMM)	22	150 ft	110 ft	Wetland buffers can be reduced from 150' to 110'
Wetland B	42,551 sf (0.98 acre)	42,551 sf (0.98 acre)	Ш	6 (MMM)	18	150 ft	110 ft	Wetland buffers can be reduced from
			-	Drainag	jes			150 10 110 .
Drainages	DNR Mapped	Wetland Re	egulations	tions Stream Regulations		ations		Comments
Ditch Sa	None	Drainage ditches are not wetlands under TMC 16.28.030.		ches are is under 8.030. "Fish and wildlife habitat conservation areas" does not include such artificial features under TMC 16.32.050(C)		Artificial ditches wetlands o are not 1	lly created drainages are not defined as or streams, and thereby regulated as Critical Areas	

 Table 5. Summary of Regulatory Considerations



4.1 Wetlands

4.1.1 Wetland A

Wetland A has been classified as a Category II wetland by the 2014 Department of Ecology Wetland Rating Form for Western Washington as required under Chapter 16.28.090---*Wetlands Rating System*. Wetland A is a depressional wetland under the 2014 Department of Ecology Wetland Rating System.

Under City of Tumwater Municipal Code (TMC) Title 16---*Environment*, Chapter 16.28.090---*Wetlands Rating System*, wetland buffers are calculated based on category of wetland and the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System publication 14-06-029, effective January 2015), as revised. Wetland A scored for habitat a "Medium (M)" potential to provide habitat, a "Medium (M)" landscape potential to support habitat, and a "Medium (M)" potential value to society. Wetlands that rate as an M, M, M receive a score of six (6) points for total habitat functions (**Appendix L**).

The standard buffer for Category II wetlands that score between five (5) and Seven (7) points for Habitat Functions require a buffer width of one hundred fifty (150) feet (TMC Chapter 16.28.170---*Wetland buffers*, Table 16.28.170(2)---*Category II Wetland Buffer Widths*) (Figure 7, Table 5).

The one hundred fifty (150)-foot buffer on Wetland A could be reduced to one hundred ten (110) feet pursuant to compliance with criteria under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction* (See Section 4.3 of this report).

4.1.2 Wetland B

Wetland B has been classified as a Category III wetland by the 2014 Department of Ecology Wetland Rating Form for Western Washington as required under Chapter 16.28.090---*Wetlands Rating System*. Wetland B is a Depressional wetland under the 2014 Department of Ecology Wetland Rating System.

Under City of Tumwater Municipal Code (TMC) Title 16---*Environment*, Chapter 16.28.090---*Wetlands Rating System*, wetland buffers are calculated based on category of wetland and the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System publication 14-06-029, effective January 2015), as revised. Wetland B scored for habitat a "Medium (M)" potential to provide habitat, a "Medium (M)" landscape potential to support habitat, and a "Medium (M)" potential value to society. Wetlands that rate as an M, M, M receive a score of six (6) points for total habitat functions (**Appendix L**).

The standard buffer for Category III wetlands that score less than sixteen (<16) points for all three (3) functions and with a high intensity impact of proposed land use require a buffer width of one hundred fifty (150) feet under TMC Chapter 16.28.170---*Wetland buffers*, Table 16.28.170(2)---*Category III Wetland Buffer Widths* (Figure 6, Table 5).

The one hundred fifty (150)-foot buffer on Wetland A could be reduced to one hundred ten (110) feet pursuant to compliance with criteria under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction* (See Section 4.3 of this report).



4.2 Avoiding Wetland Impacts

Under TMC 16.28.110---Allowed activities, Subsection H(3)--- Activities within the Improved Right-of-Way, replacement, modification, installation, or construction of utility facilities, lines, pipes, mains, equipment, or appurtenances, not including substations, when such facilities are located within the improved portion of the public right-of-way or a city authorized private roadway except those activities that alter a wetland or watercourse, such as culverts or bridges, or result in the transport of sediment or increase stormwater; subject to the following:

a. Retention and replanting of native vegetation shall occur wherever possible along the right-ofway improvement and resulting disturbance.

Potential impacts to Critical Areas as a result of the installation of pump station are covered under TMC 16.28.110(H)(3).

4.3 Avoiding Wetland Impacts

Under TMC 16.28.180---Avoiding wetland impacts:

- A. Regulated activities shall not be authorized in a regulated wetland or wetland buffer except where it can be demonstrated that the impact is both unavoidable and necessary or that all reasonable economic uses are denied.
- B. With respect to category I wetlands, an applicant must demonstrate that denial of the permit would impose an extraordinary hardship on the part of the applicant brought about by circumstances peculiar to the subject property.
- C. With respect to Category II and III wetlands, the following provisions shall apply:
 - 1. For water-dependent activities, unavoidable and necessary impacts can be demonstrated where there are no practicable alternatives which would not involve a wetland or which would not have less adverse impact on a wetland, and would not have other significant adverse environmental consequences;
 - 2. Where non-water-dependent activities are proposed, it shall be presumed that adverse impacts are avoidable. This presumption may be rebutted upon a demonstration that:
 - a. The basic project purpose cannot reasonably be accomplished utilizing one or more other sites in the general region that would avoid, or result in less, adverse impact on a regulated wetland;
 - b. A reduction in the size, scope, configuration, or density of the project as proposed and all alternative designs of the project as proposed that would avoid, or result in less, adverse impact on a regulated wetland or its buffer will not accomplish the basic purpose of the project; and
 - c. In cases where the applicant has rejected alternatives to the project as proposed due to constraints such as zoning, deficiencies of infrastructure, or parcel size, the applicant has made reasonable attempt to remove or accommodate such constraints.
 - D. With respect to category IV wetlands, unavoidable and necessary impacts can be demonstrated where the proposed activity is the only reasonable alternative which will accomplish the applicant's objectives.



E. If the city determines that alteration of a wetland and/or wetland buffer is necessary and unavoidable, the city shall set forth in writing its findings with respect to each of the items listed in this section.

Impacts to wetlands would be avoided onsite. The proposed project was relocated from the west of Black Lake Belmore Road to the east of Black Lake Belmore Road to avoid off-site wetland impacts. Wetland buffer impacts would be minimized to the greatest extent practicable to achieve project goals. Potential impacts associated with pump station installation would be an alteration of wetland buffers necessary and unavoidable.

The pump station would be located in an area of upland soils where no wetland or historical occur. The location of the pump station is essential for the success of this project. Avoidance and minimization have been applied to the greatest extent practicable to achieve project goals in compliance with TMC 16.28.180---*Avoiding wetland impacts*.

4.4 Exceptions for Infrastructure

The installation of the pump station qualifies for an exemption under TMC 16.28.115(A). This section allows for an exemption of public or private infrastructure. Under TMC 16.28.115(A), if the application of this title would prohibit a development proposal by a public agency, public utility, or a private entity installing public or private infrastructure that is in compliance with the comprehensive transportation, capital facilities or utility plans of Tumwater, the agency or utility may apply for an exception pursuant to this section.

Under TMC 16.28.115(B)---*Exception Request and Review Process*, an application for an infrastructure exception shall be made to the City and shall include a Critical Area Identification Form; Critical Area Report, including Mitigation Plan; and any other related project documents such as permit applications to other agencies, special studies, and environmental documents prepared pursuant to the State Environmental Policy Act (Chapter 43.21C RCW). The community development director shall prepare a recommendation to the hearing examiner based on review of the submitted information, a site inspection, and the proposal's ability to comply with infrastructure exception review criteria in Subsection D of TMC 16.28.115.

Potential impacts to Critical Areas have been completely avoided. Mitigation sequencing has been applied by relocating the proposed pump station to avoid wetland impacts. Potential impacts to drained hydric soils also have been avoided through locating the proposed pump station in an area of upland soils. Wetland buffer impacts have been avoided to the greatest extent practicable to achieve project goals. Unavoidable impacts have been minimized to the greatest extent by reducing the building footprint to its smallest extent. All buffer impacts would be mitigated through buffer rehabilitation at a 3:1 ratio. A mitigation plan has been prepared as part of this report to compensate for potential wetland buffer impacts associated with the installation of the pump station.

Under TMC 16.28.115(C)---*Hearing Examiner Review*, the hearing examiner shall review the application and the community development director's recommendation and conduct a public hearing. The hearing examiner shall approve, approve with conditions, or deny the request based on the proposal's ability to comply with all of the infrastructure exception review criteria in Subsection D of TMC 16.28.115.



Under TMC 16.28.115(D), Infrastructure Exception Review Criteria, the criteria for review and approval of infrastructure exceptions follow:

1. There is no other practical alternative to the proposed development with less impact on critical areas;

Practical alternatives to the proposed improvements required sewage pump station resulting in less impacts on Critical Areas have been analyzed by the project team. Project engineers have analyzed multiple locations required for the feasibility of this pump station. The proposed location would allow for the least impacts to Critical Areas and their buffers. Mitigation sequencing was applied to avoid and minimize potential impacts to the greatest extent practicable to achieve project goals.

2. The application of this title would unreasonably restrict the ability to provide utility services to the public;

The sewage pump station improvements are required and necessary to achieve project and City goals. Eliminating these improvements would unreasonably restrict the ability to provide utility services to the public.

3. The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site;

The proposal does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site. However, without the sewage pump station, sanitary health measures could be unavailable for future residents. Risks may occur if the pump station is eliminated.

4. The proposal attempts to protect and mitigate impacts to the critical area functions and values consistent with other applicable regulations and standards.

The proposal attempts to protect and mitigate impacts to the critical area functions and values consistent with other applicable regulations and standards through preparing a mitigation plan applying mitigation sequencing to avoid and minimize potential impacts and to mitigate unavoidable impacts in compliance with City of Tumwater standards and regulations provided in TMC 16.28.



4.5 Conditions for Wetland Permits

Under TMC 16.28.210---Acting on the application:

- A. Land Division Conditions for Wetland Permits.
 - 1. Sensitive Area Tracts/Easements.

As a condition of any permit issued pursuant to this section, the permit holder shall be required to create a separate sensitive area tract(s)/easement(s) containing the areas determined to be wetland and/or wetland buffer in field investigations performed pursuant to TMC 16.28.080. Sensitive area tracts/easements are legally created tracts/easements containing wetlands and their buffers that shall remain undeveloped as long as wetland functions and values are present. Loss of wetland functions due to human impacts will result in sensitive area tracts/easements being maintained.

a. Protection of Sensitive Area Tracts/Easements.

The city shall require, as a condition of any permit issued pursuant to this section, that the sensitive area tract or tracts created pursuant to this section be protected by one of the following methods:

- i. The permit holder shall convey an irrevocable offer to dedicate to the city of Tumwater or other public or nonprofit entity specified by the city an easement for the protection of native vegetation within a wetland and/or its buffer; or
- ii. The permit holder shall establish and record a permanent and irrevocable deed restriction on the property title of all lots containing a sensitive area tract or tracts created as a condition of this permit. Such deed restriction(s) shall prohibit, as long as wetland function exists, the development, alteration, or disturbance of vegetation within the sensitive area except for purposes of habitat enhancement as part of an enhancement project which has received prior written approval from the city of Tumwater, and any other agency with jurisdiction over such activity.
- 2. The deed restriction shall also contain the following language:
 - a. "Before, beginning, and during the course of any grading, building construction, or other development activity on a lot or development site subject to this deed restriction, the common boundary between the area subject to the deed restriction and the area of development activity must be fenced or otherwise marked to the satisfaction of City of Tumwater."
 - b. Regardless of the legal method of protection chosen by the city, responsibility for maintaining tracts shall be held by a property owner's association, adjacent lot owners, the permit applicant or designee, or other appropriate entity as approved by the city.
 - c. The following note shall appear on the face of all plats, short plats, PUDs, or other approved site plans containing separate sensitive area tracts/easements, and shall be recorded on the title of record for all affected lots:

NOTE: All lots adjoining separate sensitive areas identified as Native Vegetation Protection Easements or protected by deed restriction are responsible for maintenance and protection. Maintenance includes insuring that no alterations occur within the separate tract and that all vegetation remains undisturbed unless the express written authorization of the City of Tumwater has been received. The common boundary between a separate sensitive area tract/easement and the adjacent land must be permanently identified. This identification shall include permanent wood or metal signs on treated or metal posts.

Sign locations and size specifications shall be approved by the city. The city shall require permanent fencing of the sensitive area when there is a substantial likelihood of the presence of domestic grazing animals within the development proposal. The city shall also require as a permit condition that such fencing be provided if, subsequent to approval of the development proposal, domestic grazing animals are in fact introduced.

- 3. Additional Conditions.
 - a. The location of the outer extent of the wetland buffer and the areas to be disturbed pursuant to an approved permit shall be marked in the field, and such field marking shall be approved by the city prior to the commencement of permitted activities. Such field markings shall be maintained throughout the duration of the permit.
 - b. The city may attach such additional conditions to the granting of a wetland permit as deemed necessary to assure the preservation and protection of affected wetlands and to assure compliance with the purposes and requirements of this chapter.

B. Bonding.

1. Performance Bonds.

The city may require the applicant of a development proposal to post a cash performance bond or other security acceptable to the city in an amount and with surety and conditions sufficient to fulfill the requirements of this section. In addition, the city may secure compliance with other conditions and limitations set forth in the permit. The amount and the conditions of the bond shall be consistent with the purposes of this chapter. In the event of a breach of any condition of any such bond, the city may institute an action in a court of competent jurisdiction upon such bond and prosecute the same to judgment and execution. The city shall release the bond upon determining that:

- a. All activities, including any required compensatory mitigation, have been completed in compliance with the terms and conditions of the permit and the requirements of this chapter;
- b. Upon the posting by the applicant of a maintenance bond.

Until such written release of the bond, the principal or surety cannot be terminated or canceled.

The conditions for this wetland permit have been satisfied through the preparation and adherence of this Critical Areas Report and Mitigation Plan. Sensitive areas tracts have been created and a performance bond has been calculated.



2. Maintenance Bonds.

The city may require the holder of a wetland permit issued pursuant to this chapter to post a cash performance bond or other security acceptable to the city in an amount and with surety and conditions sufficient to guarantee that structures, improvements, and mitigation required by the permit or by this chapter perform satisfactorily for a minimum of two years after they have been completed. The city shall release the maintenance bond upon determining that performance standards established for evaluating the effectiveness and success of the structures, improvements, and/or compensatory mitigation have been satisfactorily met for the required period. For compensation projects, the performance standards shall be those contained in the mitigation plan developed and approved during the permit review process to TMC 16.28.220. The maintenance bond applicable to a compensation project shall not be released until the city determines that performance standards established for evaluating the performance standards established for evaluating the performance standards established for evaluating the performance bond applicable to a compensation project shall not be released until the city determines that performance standards established for evaluating the effect and success of the project have been met.

C. Other Laws and Regulations.

No permit granted pursuant to this chapter shall remove an applicant's obligation to comply in all respects with the applicable provisions of any other federal, state, or local law or regulation, including but not limited to the acquisition of any other required permit or approval.

D. Suspension, Revocation.

In addition to other penalties provided for elsewhere, the city may suspend or revoke a permit if it finds that the applicant or permittee has not complied with any or all of the conditions or limitations set forth in the permit, has exceeded the scope of work set forth in the permit, or has failed to undertake the project in the manner set forth in the approved application.

4.6 Compensating for Wetland Impacts

The Mitigation Plan and Monitoring and Maintenance Plan presented in Sections 6-8 satisfy the requirements under TMC 16.28.220---*Compensating for wetlands impacts* as summarized below:

Under TMC 16.28.220---Compensating for wetlands impacts:

A. As a condition of any permit allowing alteration of wetland and/or wetland buffers, or as an enforcement action pursuant to TMC 16.28.280, the city shall require that the applicant demonstrate that wetland impact avoidance is not possible and engage in the restoration, creation or enhancement of wetlands and their buffers in order to offset the impacts resulting from the applicant's or violator's actions. Mitigation for alterations to wetlands shall achieve equivalent or greater biologic functions. Mitigation plans shall be consistent with the Washington State Department of Ecology "Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans," 2006, as revised. The applicant shall develop a plan that provides for land acquisition, construction, maintenance and monitoring of replacement wetlands that recreate as nearly as possible the original wetlands in terms of acreage, function, geographic location and setting, and that are larger than the original wetlands. Compensatory mitigation shall be completed prior to wetland destruction, where possible. Mitigation shall result in no net loss of wetlands function and acreage and seeks a net resource gain in wetlands over present conditions with the exception of enforcement actions.



- B. Mitigation actions shall address functions affected by the alteration in order to achieve functional equivalency or improvement and shall provide similar wetland functions as those lost except when the lost wetland provides minimal functions as determined by a site-specific function assessment and the proposed mitigation action(s) will provide equal or greater functions.
- C. Mitigation actions that require compensation mitigation by replacing, enhancing, or substitution shall occur in the following order of preference:
 - 1. Restoring wetlands on upland sites that were formerly wetlands.
 - 2. Creating wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of nonnative introduced species. This should only be attempted when there is a consistent source of hydrology, and it can be shown that the surface and subsurface hydrologic regime is conducive for the wetland community that is being designed.
 - 3. Enhancing significantly degraded wetlands in combination with restoration or creation. Such enhancement should be part of a mitigation package that includes replacing the impacted area meeting appropriate ratio requirements.
- D. Mitigation actions shall be conducted within the same subdrainage basin and on the same site as the alteration except when all of the following apply:
 - 1. There are no reasonable on-site or in-subdrainage-basin opportunities or on-site and insubdrainage-basin opportunities do not have a high likelihood of success due to development pressures, adjacent land uses, or on-site buffers or connectivity are inadequate;
 - 2. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the impacted wetland; and
 - 3. Off-site locations shall be in the same subdrainage basin and the same water resource inventory area unless:
 - a. The impact is located near the boundary of a water resource inventory area;
 - b. Established regional or watershed goals for water quality, flood or conveyance, habitat or other wetland functions have been established and strongly justify location of mitigation at another site; or
 - c. Credits from a state certified wetland mitigation bank are used as mitigation and the use of credits is consistent with the terms of the bank's certification.
- E. Mitigation projects, where feasible, shall be completed prior to activities that will disturb wetlands. In all other cases, mitigation shall be completed immediately following disturbance and prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora. The community development director may authorize a one-time temporary delay, up to one hundred twenty days, in completing minor construction and landscaping when environmental conditions could produce a high probability of failure or significant construction difficulties. The delay shall not create or perpetuate hazardous conditions or environmental damage or degradation, and the delay shall not be injurious to the health, safety and general welfare of the public. The request for temporary delay must include a written justification that documents the environmental constraints that preclude implementation of the mitigation plan. The justification must be verified and approved by the city and include a financial guarantee.



F. Surface Area Replacement Ratio. The ratios in Table 16.28.220(6) apply to creation or restoration which is in kind, on site, timed prior to or concurrent with alteration, and has a high probability of success. These ratios do not apply to remedial actions resulting from illegal alterations. The first number specifies the area of wetlands requiring replacement and the second specifies the area of wetlands altered.

The ratios in Table 16.28.220(6) are based on the type of compensatory mitigation proposed, such as restoration, creation, and enhancement. In its Regulatory Guidance Letter 02-02, the U.S. Army Corps of Engineers provided definitions for these types of compensatory mitigation, which the Washington State Department of Ecology used in their Guidance on Buffers and Ratios for Western Washington as part of the Wetlands in Washington State Volume 2 – Protecting and Managing Wetlands in October 2014 and are provided below.

1. Restoration.

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into two categories:

a. Reestablishment.

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Reestablishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

b. Rehabilitation.

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.

2. Creation (Establishment).

The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deep-water site where a wetland did not previously exist. Establishment results in a gain in wetland acres. Activities typically involve excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.

3. Enhancement.

The manipulation of the physical, chemical, or biological characteristics of a wetland site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in some wetland functions and can lead to a decline in other wetland functions but does not result in a gain in wetland acres. Activities typically consist of planting vegetation, controlling non-native or invasive species, modifying site elevations or the proportion of open water to influence hydroperiods, or some combination of these activities.

Category and Type of Wetland Impacts (1)	Reestablishment or Creation	Rehabilitation (2)	Enhancement (2)
Category I – bogs or wetlands of high conservation value	Not considered possible (3)	6:1	Case-by-case
Category I – mature forested	6:1	12:1	24:1
Category I based on score for functions	4:1	8:1	16:1
All category II	3:1	6:1	12:1
All category III	2:1	4:1	8:1
All category IV	1.5:1	3:1	6:1

Table 16.28.220(6): Mitigation Ratios for Projects in Western Washington

Table 16.28.220(6) Explanatory Notes:

- (1) Preservation is discussed in subsection J of this section.
- (2) These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead, rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement.
- (3) Wetlands of high conservation value and bogs are considered irreplaceable wetlands because they perform some special functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.
- 4. Increased Replacement Ratio. The city may increase the ratios under any of the following circumstances:
 - a. Uncertainty as to the probable success of the proposed restoration or creation;
 - b. Significant period of time between destruction and replication of wetland functions at the mitigation site;
 - c. Proposed mitigation will result in a lower category wetland or reduced functions relative to the wetland being impacted; or
 - d. The impact was unauthorized.
 - 5. Decreased Replacement Ratio.

The city may decrease these ratios for category II, III, and IV wetlands under the following circumstances:

- a. Documentation by a qualified wetlands specialist demonstrates that the proposed mitigation actions have a very high likelihood of success based on prior experience;
- b. Documentation by a qualified wetlands specialist demonstrates that the proposed mitigation actions will provide functions and values that are significantly greater than the wetland being impacted;
- c. The proposed mitigation actions are conducted in advance of the impact and have been shown to be successful.



- 6. In wetlands where several hydrogeomorphic classes are found within one delineated boundary, the areas of the wetlands within each hydrogeomorphic class can be scored and rated separately and the ratios adjusted accordingly, if all of the following apply:
 - a. The wetland does not meet any of the criteria for wetlands with "special characteristics" as defined in the rating system;
 - b. The rating and score for the entire wetland are provided along with the scores and ratings for each area with a different hydrogeomorphic class;
 - c. Impacts to the wetland are all within an area that has a different hydrogeomorphic class from the one used to establish the initial category; and
 - d. The proponents provide adequate hydrologic and geomorphic data to establish that the boundary between hydrogeomorphic classes lies at least fifty feet outside of the footprint of the impacts.
- 7. In all cases, a minimum acreage replacement ratio of one-to-one shall be required.
- G. Replacement Ratios for Temporal Impacts and Conversions.
 - 1. When impacts to wetlands are not permanent, the city will require compensation for the temporal loss of wetland functions. Temporal impacts refer to impacts to those functions that will eventually be replaced but cannot achieve similar functionality in a short time.
 - 2. In addition to restoring the affected wetland to its previous condition, the city will require compensation to account for the risk and temporal loss of wetland functions. The ratios for temporal impacts to forested and scrub-shrub wetlands are one-quarter of the recommended ratios for permanent impacts found in Table 16.28.220(6); provided, that the following measures are satisfied:
 - a. An explanation of how hydric soil, especially deep organic soil, is stored and handled in the areas where the soil profile will be severely disturbed for a fairly significant depth or time;
 - b. Surface and groundwater flow patterns are maintained or can be restored immediately following construction;
 - c. A ten-year monitoring and maintenance plan is developed and implemented for the restored forest and scrub-shrub wetlands;
 - d. Disturbed buffers are revegetated and monitored; and
 - e. Where appropriate, the hydroseed mix to be applied on reestablishment areas is identified.
 - 3. When impacts are to a native emergent community and there is a potential risk that its reestablishment will be unsuccessful, compensation for temporal loss and the potential risk will be required in addition to restoring the affected wetland and monitoring the site. If the impacts are to wetlands dominated by nonnative vegetation, such as blackberry, reed canarygrass, or pasture grasses, restoration of the affected wetland with native species and monitoring after construction is required.



- 4. Loss of functions due to the permanent conversion of wetlands from one type to another requires compensation. When wetlands are not completely lost but are converted to another type, such as a forested wetland converted to an emergent or shrub wetland, such as for a utility right-of-way, some functions are lost or reduced.
- 5. The ratios for conversion of wetlands from one type to another will vary based on the degree of the alteration, but they are generally one-half (1/2) of the recommended ratios for permanent impacts found in Table 16.28.220(6).
- H. Wetlands Enhancement.
 - 1. Any applicant proposing to alter wetlands may propose to enhance existing significantly degraded wetlands in order to compensate for wetland losses. Applicants proposing to enhance wetlands must produce a critical area report that identifies how enhancement will increase the functions of the degraded wetland and how this increase will adequately mitigate for the loss of wetland area and function at the impact site. An enhancement proposal must also show whether existing wetland functions will be reduced by the enhancement actions.
 - 2. A wetlands enhancement compensation project shall be determined pursuant to this section; provided, that enhancement for one function and value will not degrade another function or value and that acreage replacement ratios shall be in accordance with Table 16.28.220(6).
- I. Wetland Type.

In-kind compensation shall be provided except where the applicant can demonstrate that:

- 1. The wetland system is already significantly degraded and out-of-kind replacement will result in a wetland with greater functional value;
- 2. Scientific problems such as exotic vegetation and changes in watershed hydrology make implementation of in-kind compensation impossible;
- 3. Out-of-kind replacement will best meet identified regional goals, such as replacement of historically diminished wetland types;
- 4. Where out-of-kind replacement is accepted, greater acreage replacement ratios may be required to compensate for lost functional values.
- J. Wetland Preservation as Mitigation.

Impacts to wetlands may be mitigated by preservation of wetland areas, in a separate tract or easement when used in combination with other forms of mitigation such as creation, restoration, or enhancement at the preservation site or at a separate location. Preservation may also be used by itself, but more restrictions as outlined below will apply. Preservation as mitigation is acceptable when done in combination with restoration, creation, or enhancement providing that a minimum of one-to-one acreage replacement is provided by restoration or creation and the criteria below are met:

- 1. The impact area is small, and impacts are to a category III or IV wetland;
- 2. Preservation of a high-quality system occurs in the same water resource inventory area or watershed basin as the wetland impact;
- 3. Acceptable sites for preservation include those that are important due to their landscape position, are rare or limited wetland types, and provide high levels of functions;
- 4. Preservation sites include buffer areas adequate to protect the habitat and its functions from encroachment and degradation; and
- 5. Mitigation ratios for preservation in combination with other forms of mitigation shall range from ten-to-one to twenty-to-one, as determined on a case-by-case basis by the city, depending on the quality of the wetlands being mitigated and the quality of the wetlands being preserved. Specific ratios will depend upon the significance of the preservation project and the quality of the wetland resources lost.
- K. Cooperative Restoration, Creation or Enhancement Projects.
 - 1. The city may encourage, facilitate, and approve cooperative projects wherein a single applicant or other organization with demonstrated capability may undertake a compensation project with funding from other applicants under the following circumstances:
 - a. Restoration, creation, or enhancement at a particular site may be scientifically difficult or impossible; or
 - b. Creation of one or several larger wetlands may be preferable to many small wetlands.
 - 2. Persons proposing cooperative compensation projects shall:
 - a. Submit a joint permit application;
 - b. Demonstrate compliance with all standards;
 - c. Demonstrate the organizational and fiscal capability to act cooperatively; and
 - d. Demonstrate that long-term management can and will be provided.

4.7 On-site Drainage Ditch

The artificially created drainage ditch, ditch Sa, identified and mapped on the subject property is not regulated as wetlands or streams under TMC 16.28.030---*Definitions*. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including drainages ditches or grass-lined swales under TMC 16.28.030---*Definitions*. In additional these human-created agricultural ditches are not defined or rated by the DNR Stream Typing System. However, the ditch is located within a regulated wetland.

Ditch Sa is "un-typed" under the DNR Stream Typing System WAC 222-16-031/030. No buffers required for un-typed watercourses. Thereby, no buffers will be applied to this un-typed watercourse.



5.0 LAND USE ACTION

5.1 **Project Description**

The land use proposal consists of a sewer pump station measuring fifty (50) feet by one hundred (100) feet in size (**Figure 7**). The pump station would service the Vista Views at Black Lake proposed subdivision located to the east of the subject property.

5.2 Impact Justification

5.2.1 Required Pump Station Improvements

The proposed sewer pump station is proposed to service the proposed Vista Views at Black Lake subdivision (**Figures 7**). The required sewer pump station would be located within five thousand (5,000) sf of the wetland buffer (**Figure 7**). No measurable habitat value occurs in the proposed pump station area. The proposed pump station area consists of lawn grass and upland soils.

The installation of infrastructure, including the sewer pump station qualifies for an exemption under TMC 16.28.115(A). This section allows for an exemption for a private entity installing public or private infrastructure. Under TMC 16.28.115(A), if the application of this title would prohibit a development proposal by a public agency, public utility, or a private entity installing public or private infrastructure that is in compliance with the comprehensive transportation, capital facilities or utility plans of Tumwater, the agency or utility may apply for an exception pursuant to this section.

Impacts associated with required sewer pump station are unavoidable and would be mitigated for no net loss of wetland area or functions (See Section 6 of this report).

5.2.2 Potential Oregon Spotted Frog Impacts

5.2.2.1 Potential Direct Impacts

No measurable impacts to the Oregon spotted frog or its habitat would occur from the installation of the sewer pump station. No potential Oregon spotted frog habitat occurs in the location of the pump station. The area of the sewer pump station consists of mowed and maintained grass lawn.

Potential impacts to the Oregon spotted frog, a water-dependent species, would be minimized through construction timing during the dry season when no water is anticipated in the vicinity of the pump station. The finger of wetland A that extends to the west of the proposed pump station would be a dry lawn during the proposed construction. Impacts would be limited to the minimum area required by the project and the City of Tumwater for pump station installation. All potential wetland buffer impacts would be mitigated through wetland buffer rehabilitation for no net loss of wetland buffer area or functions. The size of the buffer on Wetland A, a Category II wetland, would increase through this proposed mitigation plan (See Section 6 of this report).



5.2.2.2 Bull Frogs and Potential Biological Threats

The proposed sewer pump station would not pose a measurable threat to the Oregon spotted frog. The pump station would be located in an upland area containing upland lawn grasses and non-hydric soils. This area would be completely dry during construction with no anticipated runoff or erosion impacts. The construction area contains no measurable habitat value or potential.

5.2.3 Compensatory Mitigation

Wetland impacts require compensatory mitigation as detailed under TMC 16.28.220---*Compensating for wetlands impacts*. As a condition of any permit allowing alteration of wetland and/or wetland buffers, the City requires that the applicant demonstrate that wetland impact avoidance is not possible and engage in the restoration, creation or enhancement of wetlands and their buffers in order to offset the impacts resulting from the proposed action.

Under TMC 16.28.030(F), "Compensatory mitigation" means replacing project-induced wetland losses or impacts, and includes, but is not limited to, the following:

- 1. "Restoration" means actions performed to reestablish wetland functional characteristics and processes which have been lost by alterations, activities, or catastrophic events within an area which no longer meets the definition of a wetland.
- 2. "Creation" means actions performed to intentionally establish a wetland at a site where it did not formerly exist.
- 3. "Enhancement" means actions performed to improve the condition of existing degraded wetlands so that the functions they provide are of a higher quality.
- 4. "Preservation" means actions taken to ensure the permanent protection of existing wetlands.

Mitigation for alterations to the wetland buffer would achieve equivalent or greater biologic functions. The proposed mitigation would be consistent with the Washington State Department of Ecology *"Wetland Mitigation in Washington State –* Part 2: *Developing Mitigation Plans,"* 2006, as revised. A Mitigation Plan has been prepared that provides for planting and monitoring of replacement wetland buffers that recreate, as nearly as possible, the original wetland buffers in terms of acreage, function, geographic location, and setting, and that are larger than the original wetland buffers.

Mitigation would result in no net loss of wetland or buffer functions and acreage and would provide a net resource gain in wetland buffers over present conditions.

The wetland buffer mitigation plan analyses functions affected by the alteration in order to achieve functional equivalency or improvement and would provide similar wetland buffer functions as those lost except when the lost wetland buffer provides minimal functions as determined by a site-specific function assessment. The proposed wetland mitigation was designed to provide greater wetland buffer functions.

The mitigation strategy would include replacing the lost wetland buffer at a 3:1 replacement ratio. The larger replacement buffer would be enhanced by eliminating non-native invasive weeds and installing native plant species.



6.0 MITIGATION PLAN

6.1 General Mitigation Summery

This project would provide the unique opportunity to enlarge and rehabilitate a severely degraded Category II wetland buffer (**Figure 8; Table 6**). Unavoidable and necessary impacts would include:

2) Wetland buffer impacts associated with required installation of sewer pump station.

The installation of infrastructure, including the sewer pump station qualifies for an exemption under TMC 16.28.115(A). This section allows for an exemption for a private entity installing public or private infrastructure. However, mitigation will be proposed to offset wetland buffer impacts for no net loss of wetland buffer area and wetland buffer functions.

Table 6.	Impacts and	Proposed	Mitigation	Strategy

Wetland Impacts				Wetland Mitigation				
Wetland	Category	Potential Impacts	Impact Area	Wetland	Proposed Mitigation	Mitigation Area	Mitigation Ratio	Comments
Wetland A	П	Buffer Impacts	5,000 sf (0.05 acre)	Wetland A	Wetland Buffer Rehabilitation	15,802 sf (0.36 acre)	3:1 ratio	Larger rehabilitated buffer with improved habitat
	Total Area		5,000 sf (0.11acre)			15,802 sf (0.36 acre)	3:1 ratio	value

6.2 Wetland Compensatory Mitigation Plan

This proposed mitigation plan includes:

- 1) Enhance buffer on Category II Wetland
 - a. Wetland Buffer Planting.

Install dense native trees, shrubs, and herbs in an area totaling fifteen thousand eight hundred two (15,802) sf.

- 2) Removal of trash and garbage from the wetlands and buffers to improve wetland and buffer habitat.
- 3) Removal of invasive weeds within the thew buffer rehabilitation area.
- 4) Install split rail fence at the edge of the buffer area to limit entry, if required.
- 5) Install educational signs at the edge of the buffer area according to City specifications.
- 6) Mitigation measures listed in TMC Table 16.28.170(5) would be implemented, as appropriate.

This mitigation plan will provide a visual screen between the wetlands and proposed land use.



6.3 Buffer Rehabilitation

Buffer rehabilitation is proposed totaling fifteen thousand eight hundred two (15,802) sf that will include a planting strategy minimizing mortality and temporal loss and maximizing planting success (**Figures 9-10**).

This strategy includes a planting plan to install a variety of hardy trees, shrubs, and herbaceous plant species at a high density. Habitat features, such as large woody debris, will be installed to jump start wildlife species diversity and to improve wildlife habitat.

Additional measures mitigate wetland impacts includes:

1. Light Reduction

Direct lights away from wetland.

2. <u>Noise Reduction</u>

- Locate activity that generates noise away from wetland.
- Enhance existing buffer with native vegetation plantings adjacent to noise source.

3. Eliminate Toxic Runoff

- Establish covenants limiting use of pesticides within one hundred and fifty (150) feet of wetland.
- Apply integrated pest management standards.

4. <u>Manage Stormwater Runoff</u>

- Prevent channelized flow from lawn that directly enter the buffer.
- Use Low Intensity Development techniques (per PSAT publication on LID techniques) when and if possible.

5. <u>Prevent Change in Water Regime</u>

In order to maintain wetland hydrology, discharge only clean stormwater toward the wetland. Clean stormwater and roof-top runoff may be dispersed outside the wetland buffer for any new runoff from impervious surfaces and new lawns.

6. Pets and Human Disturbance

- Plant thick cover to discourage disturbance.
- Protect wetland and buffer with a conservation easement.

7. Minimize Dust During Construction

• During construction or for commercial or industrial activities, use best management practices to control dust.

8. <u>Habitat Enhancement</u>

• In order to improve habitat quality and connectivity, a vegetation enhancement plan that improves habitat functions and proposes removal of invasive vegetation will provide dense vegetative cover at maturity. Planting noninvasive trees that provide improved filtration of sediment, excess nutrients, and pollutants that may be present.



Other potential Construction impacts

No stockpiling of soils will occur in wetlands or drainages. Erosion and sediment control Best Management Practices (BMPs) would be employed to prevent turbid runoff into the wetland and buffer during and after construction. All exposed soils would be covered. Dust control could be employed, if necessary. No fueling of machinery would occur within wetlands or buffers. Other BMPs would be employed if necessary.

Construction Schedule

The mitigation project will begin upon receipt of permits and should be completed within the duration of the permit.

6.4 Planting Plan

6.4.1 Planting Areas

The planting plan includes the planting of the buffer rehabilitation area with a dense installation of native vegetation in the wetland buffer (**Figures 9 & 10**). Invasive species such as English holly (*Ilex aquifolium*), reed canarygrass (*Phalaris arundinacea*), and Himalayan blackberry (*Rubus armeniacus*) will be removed prior to planting to ensure successful propagation of planted species. Geofabric will be placed around installed cedar trees to discourage the growth of reed canarygrass until the tree is large enough to shade out the invasive species.

6.4.2 Planting Specification

The summary of the planting plan and costs is provided in **Table 7**.

Table 7. Planting Plan Area Calculations

Dianting Dian	Area		Estimated Costs	Diant Dansity	
Planting Plan	SF	Acres	Estimated Costs	Plant Density	
Wetland Buffer Rehabilitation Area	15,802	0.36	\$6,048	See Table 8	

6.4.2.1 Buffer Enhancement Planting Plan

The wetland buffer would be enhanced through two (2) planting strategies:

1. Install a variety of trees, shrubs, and herbs in an area totaling fifteen thousand eight hundred six (15,806 sf) (\$6,048)

The existing vegetation at the buffer rehabilitation area primarily consists of non-native lawn grasses and associated non-native herbs. The wetland buffer will be enhanced to a vibrant coniferous forest community. The installed conifers would eventually provide a screen between the proposed land use and the wetland.

Planting details are summarized in **Table 8** and illustrated in **Figures 9-10**.

Plants are proposed for installation in one-gallon containers. The planting plan for the buffer area consists of planting upland conifers, shrubs, and herbs.

Fertilizer and Irrigation.

A small amount of fertilizer will be added to the planting hole prior to installing the plant. A temporary irrigation system will be installed in the mitigation buffer, if necessary, until the plants are established.

6.5 Oregon Spotted Frog

Measures to avoid, minimize, and mitigate for potential impacts to the Oregon Spotted frog:

- Minimize potential impacts to wetland buffer.
- Rehabilitate Wetland A buffer to enhance wetland functions.

Table 8. Wetland Buffer planting Plan Adjacent to Created Wetland

Buffer	Planting Plan					
Trees	Plant species	Scientific Name	Number	Container	Cost/plant	Cost
FACU	Western Hemlock	Tsuga heterophylla	23	1-gal	\$8.00	\$184.00
FACU	Douglas fir	Pseudotsuga menziesii	23	1-gal	\$8.00	\$184.00
FAC	Western red cedar	Thuja plicata	24	1-gal	\$8.00	\$192.00
	Total		70			\$561.85
Shrubs	Plant species	Scientific Name	Number	Container		
FACU	Thimbleberry	Rubus parvflorus	35	1-gal	\$8.00	\$280.00
FACU	Osoberry	Oemleria cerasiformis	35	1-gal	\$8.00	\$280.00
FACU	Red elderberry	Sambucus racemosa	35	1-gal	\$8.00	\$280.00
FAC-	Vine Maple	Acer circinatum	35	1-gal	\$8.00	\$280.00
FAC	Clustered rose	Rosa pisocarpa	35	1-gal	\$8.00	\$280.00
FAC	Nootka rose	Rosa nutkana	36	1-gal	\$8.00	\$288.00
FACU	Snowberry	Symphoricarpos albus	36	1-gal	\$8.00	\$288.00
	Total		247			\$1,975.25
Herbs	Plant species	Scientific Name	Number	Container		
FACU	Trailing blackberry	Rubus Ursinus	73	1-gal	\$8.00	\$585.26
FACU	Cascade Oregongrape	Mahonia repens	73	1-gal	\$8.00	\$585.26
FACU	salal	Gaultheria shallon	73	1-gal	\$8.00	\$585.26
FACU	Sword Fern	Polystichum munitum	73	1-gal	\$8.00	\$585.26
FAC	False lilly of the valley	Maianthemum dilatatum	73	1-gal	\$8.00	\$585.26
FAC	Deer Fern	Blechnum spicant	73	1-gal	\$8.00	\$585.26
	Total		439			\$3,511.56
	Plant Types	Feet on center	Area (sf)	Plants/Acre	Plants/sf	# Plants
	Trees	15	15,802	193.6	0.0044	70
	Shrubs	8	15,802	680.625	0.0156	247
	Herbs	6	15,802	1210	0.0278	439
		Est. cost per plant		# Plants	Total Cost	
	Trees	\$8.00		70	\$561.85	
	Shrubs	\$8.00		247	\$1,975.25	
	Herbs	\$8.00		439	\$3,511.56	
			Total	756	\$6,048.65	
	Total Cost of Plants	<u>т</u> т	\$6.048.65			
L			, -,			



7.0 MONITORING AND CONTINGENCY PLAN

7.1 Monitoring Methodology

The monitoring program will be conducted for a period of five (5) years. A baseline assessment will be conducted at the end of the construction phase. This information will be used as a baseline to compare subsequent monitoring events.

Field visits will be completed as follows:

- i. At completion of construction of mitigation project (as-built report);
- ii. Thirty (30) days after completion;
- iii. Early in the first (1st) growing season after construction;
- iv. End of the first (1^{st}) growing season after construction;
- v. Twice the second (2^{nd}) year; and
- vi. Once in years 3, 4, & 5 years

Monitoring will evaluate plant growth and establishment, condition of habitat quality, and wildlife usage in the enhancement area. If objectives are met at an earlier date, the applicant may request to end the monitoring phase earlier.

7.2 Vegetation

Permanent vegetation sampling points or transects will be established in the planting areas to incorporate the installed plants. The same monitoring point will be re-visited throughout the monitoring period. Vegetation will be recorded on the basis of relative percent cover. General plant health, percent survival, and plant species occurrence (including volunteer species) will also be recorded. Qualified personnel or the property owners will conduct all monitoring.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the buffer enhancement area. Review of the photos over time will provide a semiquantitative representation of success of the buffer enhancement plan.

Monitoring and photo-point locations will be recorded to keep a record of enhancement success.

7.3 Wildlife

Birds, mammals, reptiles, amphibians, and invertebrates, which are readily observable (either by direct or indirect means), will be identified and recorded in the buffer enhancement area. Direct observations would include actual sightings, while indirect observations include tracks, scat, nests, song, or other indicative signs.


7.4 Success Criteria

Success of plant establishment within the enhancement area will be evaluated on the basis of both percent survival and percent cover of installed species. Planting success will be based on at least an eighty percent (80%) survival rate following each monitoring event. Successful plant establishment will also be met if there is at least a sixty percent (60%) areal cover of a combination of planted species and equivalent recruitment of native conifer species by the end of the third to fifth (5th)-year monitoring period.

7.5 **Performance Standards**

Vegetation in Planting Areas

- Eighty percent (80%) survival rate following each monitoring event.
- Sixty percent (60%) areal cover of a combination of planted species and equivalent recruitment of native conifers by the end of the fifth (5th)-year monitoring period.

7.6 Maintenance (M) and Contingency (C)

Established performance standards for the project will be compared to the monitoring results in order to judge the success of the buffer enhancement plan. Contingency measures will include the items listed below and will be implemented if these performance standards are not met. Maintenance and remedial action on the site will be implemented immediately upon completion of the monitoring event (unless otherwise specifically indicated below).

Wetland Buffer Restoration

- Replace dead plants with the same species or a substitute species that meets the goals and objectives of the plan. (C)
- Re-plant areas after reason for failure has been identified (*e.g.*, moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, *etc.*). (C)
- Remove/control weedy or exotic invasive plants (*e.g.*, Scotch broom [*Cytisus scoparius*], reed canarygrass [*Phalaris arundinacea*], Himalayan blackberry [*Rubus armeniacus*], purple loosestrife [*Lythrum salicaria*], *etc.*) by manual or chemical means approved by City of Shelton. Use of herbicides or pesticides within the buffer enhancement area would only be implemented if other measures failed or were considered unlikely to be successful. (C & M)



8.0 COST ESTIMATE AND PERFORMANCE BOND

Cost Estimate

Item	Estimate cost
Plant Stock	\$6,048
Planting crew	\$2,000
Monitoring	\$3,500
Contingency	\$1,000
Total	\$12,548
Total (125%)	\$15,685

9.0 SUMMARY & CONCLUSION

The purpose of this Critical Areas Report is to identify and map Critical Areas on the subject property, satisfying City of Tumwater regulatory requirements under Critical Areas. Potential wetlands, streams, steep slopes, and their buffers were evaluated on the subject property and within three hundred (\leq 300) feet of the subject property.

A proposed sewage pump station servicing the proposed Vista Views at Black Lake was originally planned for an area west of the subject property across Black Lake Belmore Road SW. However, the pump station was relocated onto the northwestern corner of the subject property to avoid wetland impacts that would have occurred if the pump station were placed in the original location. This report evaluates potential impacts to Critical Areas and their buffers as a result of the proposed pump station placed on the northwestern corner of the subject property.

The subject property consists of a relatively flat residential lot containing a home site, grass lawn, and Critical Areas. A residence and access road are located on the southern portion of the subject property (**Figure 2**). Critical Areas occur on the central portion of the subject property. A maintained grass lawn occurs on the northern portion of the subject property (**Appendix A, Photos 1-6**). Yellow flowers form a carpet of upland hairy Cat's ear (*Hypochaeris radicata*, FACU) over the lawn area on the northern portion of the subject property (**Appendix A, Photos 1-6**). Areas containing the yellow flowers are dominated by upland plant species.

Two (2) wetlands, labeled Wetlands A & B, have been identified on the subject property using the Routine Onsite Determination Method in compliance with the USACE (2010) Regional Supplement (**Figures 2 & 3; Table 4**). The majority of Wetland A is located offsite east of the subject property and extends onto the central and northern portions of the subject property (**Figures 2 & 3**). Wetland B is located on the western portion of the subject property. Water from Wetland A drains to Wetland B through a metal corrugated pipe (**Appendix A, Photos 28 & 36**).

Wetland A has been classified as a Category II wetland by the 2014 Department of Ecology Wetland Rating Form for Western Washington as required under Chapter 16.28.090---*Wetlands Rating System*. Wetland A is a depressional wetland under the 2014 Department of Ecology Wetland Rating System.



Under City of Tumwater Municipal Code (TMC) Title 16---*Environment*, Chapter 16.28.090---*Wetlands Rating System*, wetland buffers are calculated based on category of wetland and the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System publication 14-06-029, effective January 2015), as revised. Wetland A scored for habitat a "Medium (M)" potential to provide habitat, a "Medium (M)" landscape potential to support habitat, and a "Medium (M)" potential value to society. Wetlands that rate as an M, M, M receive a score of six (6) points for total habitat functions (**Appendix L**).

The standard buffer for Category II wetlands that score between five (5) and Seven (7) points for Habitat Functions require a buffer width of one hundred fifty (150) feet (TMC Chapter 16.28.170---*Wetland buffers*, Table 16.28.170(2)---*Category II Wetland Buffer Widths*) (Figure 7, Table 5).

The one hundred fifty (150)-foot buffer on Wetland A could be reduced to one hundred ten (110) feet pursuant to compliance with criteria under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction* (See Section 4.3 of this report).

Wetland B has been classified as a Category III wetland by the 2014 Department of Ecology Wetland Rating Form for Western Washington as required under Chapter 16.28.090---*Wetlands Rating System*. Wetland B is a Depressional wetland under the 2014 Department of Ecology Wetland Rating System.

Under City of Tumwater Municipal Code (TMC) Title 16---*Environment*, Chapter 16.28.090---*Wetlands Rating System*, wetland buffers are calculated based on category of wetland and the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System publication 14-06-029, effective January 2015), as revised. Wetland B scored for habitat a "Medium (M)" potential to provide habitat, a "Medium (M)" landscape potential to support habitat, and a "Medium (M)" potential value to society. Wetlands that rate as an M, M, M receive a score of six (6) points for total habitat functions (**Appendix L**).

The standard buffer for Category III wetlands that score less than sixteen (<16) points for all three (3) functions and with a high intensity impact of proposed land use require a buffer width of one hundred fifty (150) feet under TMC Chapter 16.28.170---*Wetland buffers*, Table 16.28.170(2)---*Category III Wetland Buffer Widths* (Figure 6, Table 5).

The one hundred fifty (150)-foot buffer on Wetland A could be reduced to one hundred ten (110) feet pursuant to compliance with criteria under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction* (See Section 4.3 of this report).

The land use proposal consists of a sewer pump station measuring fifty (50) feet by one hundred (100) feet in size (**Figure 7**). The pump station would service the Vista Views at Black Lake proposed subdivision located to the east of the subject property.

The proposed sewer pump station is proposed to service the proposed Vista Views at Black Lake subdivision (**Figures 7**). The required sewer pump station would be located within five thousand (5,000) sf of the wetland buffer (**Figure 7**). No measurable habitat value occurs in the proposed pump station area. The proposed pump station area consists of lawn grass and upland soils.

The installation of infrastructure, including the sewer pump station qualifies for an exemption under TMC 16.28.115(A). This section allows for an exemption for a private entity installing public or private



infrastructure. Under TMC 16.28.115(A), if the application of this title would prohibit a development proposal by a public agency, public utility, or a private entity installing public or private infrastructure that is in compliance with the comprehensive transportation, capital facilities or utility plans of Tumwater, the agency or utility may apply for an exception pursuant to this section.

Impacts associated with required sewer pump station are unavoidable and would be mitigated to provide no net loss of wetland area or functions (See Section 6 of this report).

Wetland impacts require compensatory mitigation as detailed under TMC 16.28.220---*Compensating for wetlands impacts*. As a condition of any permit allowing alteration of wetland and/or wetland buffers, the City requires that the applicant demonstrate that wetland impact avoidance is not possible and engage in the restoration, creation or enhancement of wetlands and their buffers in order to offset the impacts resulting from the proposed action.

Under TMC 16.28.030(F), "Compensatory mitigation" means replacing project-induced wetland losses or impacts, and includes, but is not limited to, the following:

- 1. "Restoration" means actions performed to reestablish wetland functional characteristics and processes which have been lost by alterations, activities, or catastrophic events within an area which no longer meets the definition of a wetland.
- 2. "Creation" means actions performed to intentionally establish a wetland at a site where it did not formerly exist.
- 3. "Enhancement" means actions performed to improve the condition of existing degraded wetlands so that the functions they provide are of a higher quality.
- 4. "Preservation" means actions taken to ensure the permanent protection of existing wetlands.

Mitigation for alterations to the wetland buffer would achieve equivalent or greater biologic functions. The proposed mitigation would be consistent with the Washington State Department of Ecology *"Wetland Mitigation in Washington State –* Part 2: *Developing Mitigation Plans,"* 2006, as revised. A Mitigation Plan has been prepared that provides for planting and monitoring of replacement wetland buffers that recreate, as nearly as possible, the original wetland buffers in terms of acreage, function, geographic location, and setting, and that are larger than the original wetland buffers.

Mitigation would result in no net loss of wetland or buffer functions and acreage and would provide a net resource gain in wetland buffers over present conditions.

The wetland buffer mitigation plan analyses functions affected by the alteration in order to achieve functional equivalency or improvement and would provide similar wetland buffer functions as those lost except when the lost wetland buffer provides minimal functions as determined by a site-specific function assessment. The proposed wetland mitigation was designed to provide greater wetland buffer functions.

The mitigation strategy would include replacing the lost wetland buffer at a 3:1 replacement ratio. The larger replacement buffer would be enhanced by eliminating non-native invasive weeds and installing native plant species.



The installation of infrastructure, including the sewer pump station qualifies for an exemption under TMC 16.28.115(A). This section allows for an exemption for a private entity installing public or private infrastructure. Under TMC 16.28.115(A), if the application of this title would prohibit a development proposal by a public agency, public utility, or a private entity installing public or private infrastructure that is in compliance with the comprehensive transportation, capital facilities or utility plans of Tumwater, the agency or utility may apply for an exception pursuant to this section.

10.0 REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Department of the Interior. FWSOBS-70/31.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.
- Hitchcock, C.L., and A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press. 730 pp.
- Iowa State University. 1995. Hydric Soils of Washington State. U.S. Department of Agriculture, Natural Resources Conservation Service. December 5.
- Munsell Color. 1988. *Munsell Soil Color Charts*. Kollmorgen Instruments Corp., Baltimore, Maryland.
- Reed, P.B. Jr. 1988. *National List of Plant Species that Occur in Wetlands: Northwest (Region 9)*. USF&WS Biol. Report 88.
- Reed, P.B. Jr. 1993. Supplement to: *National List of Plant Species that Occur in Wetlands: Northwest (Region 9).* USF&WS Biol. Report 88.
- Reed, P.B. Jr. 1998. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). USF&WS Update.
- U.S. Department of Agriculture, Soil Conservation Service. June, 1991. *Hydric Soils of the United States*.
- U.S. Department of Agriculture, Soil Conservation Service. Thurston County Area Soil Survey.
- Washington State Department of Ecology. 1997. Washington State Wetland Identification and Delineation Manual. March.
- Washington State Department of Ecology. 2004. Washington State Wetland Rating System for Western Washington. Ecology Publication # 04-06-025. August.



FIGURES















	Ĩ				
5	o' Propos Pump 100	sed Station			
Curtis@envirovector.co 360-790-1559	Com	Wetland (Delineated) Wetland (Not Delineated Stream Sa Wetland Buffers Onsite Construction Footprint (s	d) 5,000 st)	Figure 7 Vista Views at Black Lake Site Plan	Scale: 1" = 40' 0 40' 18 September 2024





We	Wetland Planting Schedule						
R	Western Red Cedar	\square	Clustered Rose				
F	Oregon Ash	\$	Nootka Rose				
N O N	Sitka Spruce	\odot	Soft Rush				
\bigcirc	Black Twinberry	\bigcirc	Slough Sedge				
0	Salmonberry		Lady Fern				
\oplus	Pacific Ninebark	\bigotimes	Red-osier Dogwood				
+	Douglas spirea	\checkmark	Dagger-leaf rush				
\mathbb{V}	Small-fruited bulrush	\forall	Hard-stem bulrush				
		ſ	Willow				

Buffer Planting Schedule

	Western Hemlock	\bigcirc	Clustered Rose	;	
\times	Douglas Fir	*	Nootka Rose		
X	Western Red Cedar	\otimes	Snowberry		
\odot	Red Elderberry		Trailing Blackberry		
	False lily of the valley	\bigcirc	Cascade Oregongrape		
A	Vine Maple	SKALL	Salal		
Ŵ	Osoberry		Deer Fern		
×	Thimbleberry		Sword Fern		
Envirovecto			Figure 10 Vista Views at Black lake Pump station	NTS	
www.envirovector. 360-790-1559	com		Plant Legend	18 September 2024	









APPENDIX A

PHOTOGRAPHS



Subject Property



Photo 1. Evidence of large bull frogs in ditch



Photo 2. Cat's ear (yellow Flowers) FACU, upland plants



Photo 3. Cat's ear (yellow Flowers) FACU, upland plants



Photo 5. Cat's ear (yellow Flowers) FACU, upland plants



Photo 4. Upland plants in areas not mowed



Photo 6. Cat's ear (yellow Flowers) FACU, upland plants



Test Plots



Photo 7. Test Plot TP-1, upland plants and upland soils



Photo 9. Test Plot TP-1, upland plants and upland soils



Photo 11. Test Plot TP-2, upland plants and hydric soils



Photo 8. Test Plot TP-1, upland plants and upland soils



Photo 10. Test Plot TP-2, upland plants and upland soils



Photo 12. Test Plot TP-3, upland plants and hydric soils



Vista Views at Black Lake

Critical Areas Report



Photo 13. Test Plot TP-3, upland plants and hydric soils



Photo 15. Test Plot TP-4, upland plants and hydric soils



Photo 17. Charcoal found at TP-4



Photo 14. Test Plot TP-3 measuring depth of soil horizons



Photo 16. Test Plot TP-4, upland plants and hydric soils



Photo 18. Branches turned to charcoal found at TP-4







Photo 23. Wetland Flag A-1 on Wetland A

Wetland Delineation



Photo 24. Wetland Flag A-2 on Wetland A





Photo 25. Wetland Flag A-6 on Wetland A



Photo 27. Wetland Flag A-6 on Wetland A, & Sa-4 on Steam Sa



Photo 29. Wetland Flag A-8 on Wetland A



Photo 26. Wetland Flag A-6 on Wetland A, & Sa-4 on Steam Sa



Photo 28. Corrugated Metal Pipe on Ditch Sa onsite



Photo 30. Wetland Flag B-1 on Wetland B





Photo 31. Wetland Flag B-2 on Wetland B



Photo 33. Wetland Flag B-5 on Wetland B



Photo 35. Wetland Flag B-8 on Wetland B



Photo 32. Wetland Flag B-4 on Wetland B



Photo 34. Wetland Flag B-8 on Wetland B



Photo 36. Wetland Flag B-8 & Flag Sa-5 on Wetland B





Photo 37. Wetland Flag B-9 on Wetland B



Photo 39. Wetland Flag B-11 on Wetland B



Photo 41. Wetland Flag B-12 on Wetland B



Photo 38. Wetland Flag B-10 on Wetland B



Photo 40. Wetland Flag B-11 on Wetland B



Photo 42. Flag Sa-3 on Ditch Sa







Photo 44. Flag Sa-8 on Ditch Sa





Appendix B

Thurston County

Geodata Center

Soils Survey







20 September 2024

Appendix C

National Wetlands Inventory (NWI)







Appendix D

City of Tumwater

Wetlands and Streams






Appendix E

Thurston County

Geodata Center Database



Critical Areas Report





Appendix F

Thurston County

Contours







Appendix G

State Department of Natural Resources (DNR)

Water Typing Database







20 September 2024

Appendix H

Washington Department of Fish and Wildlife (WDFW)

Priority Habitats and Species (PHS)

Database







Appendix I

303(d)







Appendix J

Department of Ecology Water Quality Atlas Database

TMDL

Critical Areas Report





Appendix K

Thurston County

Geodata Center

&

FEMA Flooding

Vista Views at Black Lake

Critical Areas Report





Appendix L

Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or	ID #):	Wetland A					Date of site visit:	3-Oct-22
Rated by Curtis Wa	mbach		Tr	ained by E	cology? 🗹]Yes □No	Date of training	Continual
HGM Class used for	r rating	Depressior	nal & Flats		Wetland	d has multip	le HGM classes? 🗌 \	∕es ⊡No
NOTE: Fo	orm is no Source	ot complete of base aeri	e with out the ial photo/map	f igures re Google Ea	equested (arth	figures can	be combined).	
OVERALL WETLA	ND CA	TEGORY	II	(based on	functions	⊡or specia	al characteristics \Box)	
1. Category of v	vetland	based on	FUNCTION	S				
		Category I	- Total score	= 23 - 27			Score for each	
	Х	Category I	II - Total score	e = 20 - 22			function based	
		Category I	III - Total scor	e = 16 - 19)		on three	
		Category I	IV - Total scor	e = 9 - 15			ratings	
							(order of ratings	
FUNCTION	Imp	roving	Hydrologic	Habitat			is not	
FUNCTION	Wate	r Quality					important)	
		List app	ropriate rating	(H, M, L)			. ,	
Site Potential		М	М	М			9 = H, H, H	
Landscape Potential		Н	Н	М			8 = H, H, M	
Value		М	М	М	Total		7 = H, H, L	
Score Based on		7	7	6	20		7 = H, M, M	

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	

Ratings

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

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	Figure 11
Hydroperiods	D 1.4, H 1.2	Figure 11
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	Figure 11
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	Figure 12
Map of the contributing basin	D 4.3, D 5.3	Figure 14
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	Figure 13
polygons for accessible habitat and undisturbed habitat		rigule 15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	Appendix I
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	Appendix J

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to another figure)		
Boundary of area within 150 ft of the wetland (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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	

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;
 - \Box At least 30% of the open water area is deeper than 6.6 ft (2 m).
 - \square 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.
- \Box The water leaves the wetland without being impounded.
- ☑ NO go to 5

 \Box 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,
- \Box 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.*

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

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS				
Water Quality Functions - Indicators that the site functions to improve water quality				
D 1.0. Does the site have the potential to improve water quality?				
D 1.1. Characteristics of surface water outflows from the wetland:				
Wetland is a depression or flat depression (QUESTION 7 on key)				
with no surface water leaving it (no outlet). points = 3				
Wetland has an intermittently flowing stream or ditch, OR highly				
constricted permanently flowing outlet. points = 2	1			
Wetland has an unconstricted, or slightly constricted, surface outlet				
that is permanently flowing points = 1				
Wetland is a flat depression (QUESTION 7 on key), whose outlet is				
a permanently flowing ditch. points = 1				
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic	0			
(<i>use NRCS definitions</i>). Yes = 4 No = 0	0			
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or				
Forested Cowardin classes):				
Wetland has persistent, ungrazed, plants > 95% of area points = 5	2			
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area points = 3	3			
Wetland has persistent, ungrazed plants $> 1/10$ of area points = 1				
Wetland has persistent, ungrazed plants $< \frac{1}{10}$ 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 > $\frac{1}{2}$ total area of wetland points = 4	4			
Area seasonally ponded is $> \frac{1}{4}$ total area of wetland points = 2				
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 0				
Total for D 1 Add the points in the boxes above	8			
Rating of Site Potential If score is: \Box 12 - 16 = H \Box 6 - 11 = M \Box 0 - 5 = L Record the rating or	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 us	ses that		1
generate pollutants?	Yes = 1	No = 0	I
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1	No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetl	and that are		
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	3
Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2	$= M \square 0 = L$ Record the	rating on	the first page

D 3.0. Is the water quality improvement provided by the site val	luable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to lake, or marine water that is on the 303(d) list?	a stream, river, Yes = 1 No =	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic	resource is on the 303(d) list?	1
	Yes = 1 NO =	J
D 3.3. Has the site been identified in a watershed or local plan for maintaining water quality (<i>answer YES if there is a TMDL fo</i>	as important or the basin in	0
which the unit is found)?	Yes = 2 No =	D
Total for D 3	Add the points in the boxes abov	e 1
Rating of Value If score is: $\Box 2 - 4 = H \lor 1 = M \Box 0 = L$	Record the rating of	on the first page

DEPRESSIONAL AND FLATS WETLANDS				
Hydrologic Functions - Indicators that the site functions to reduce flooding ar	nd stream degra	adation		
D 4.0. Does the site have the potential to reduce flooding and erosion?				
D 4.1. Characteristics of surface water outflows from the wetland:				
Wetland is a depression or flat depression with no surface water				
leaving it (no outlet)	points = 4			
Wetland has an intermittently flowing stream or ditch, OR highly		_		
constricted permanently flowing outlet	points = 2	0		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is				
a permanently flowing ditch	points = 1			
thet is normanically flowing	nointo - O			
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 wate	r or if dry the			
deenest nart				
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7			
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	3		
✓ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	-		
The wetland is a "headwater" wetland	points = 3			
Wetland is flat but has small depressions on the surface that trap water	points = 1			
Marks of ponding less than 0.5 ft (6 in)	points = 0			
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of t	he area of			
upstream basin contributing surface water to the wetland to the area of the wetland u	unit itself.			
\Box The area of the basin is less than 10 times the area of the unit	points = 5	3		
The area of the basin is 10 to 100 times the area of the unit	points = 3	0		
The area of the basin is more than 100 times the area of the unit	points = 0			
☐ Entire wetland is in the Flats class	points = 5	_		
Total for D 4 Add the points in the	e boxes above	6		
Rating of Site Potential If score is: $\Box 12 - 16 = H$ $\Box 6 - 11 = M$ $\Box 0 - 5 = L$ Reco	ord the rating on	the first page		
D 5.0. Does the landscape have the potential to support hydrologic function of the si	te?			
D 5.1. Does the wetland unit receive stormwater discharges? Yes	s = 1 No = 0	1		
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate ex	cess runoff?	1		
Yes	s = 1 No = 0	·		
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensi	ive human			
land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		1		
	s = 1 No = 0	•		
I otal for D 5 Add the points in the	e boxes above	3		
Rating of Landscape Potential If score is: $\boxed{3} = H$ $\boxed{1}$ or $2 = M$ $\boxed{0} = L$ Reco	ord 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. <u>Choose</u>	the highest			
score if more than one condition is met.				
The wetland captures surface water that would otherwise flow down-gradie	ent into areas			
where flooding has damaged human or natural resources (e.g., houses or s	almon redds):			
 Flooding occurs in a sub-basin that is immediately down- 				
gradient of unit.	points = 2	1		
□ • Surface hooding problems are in a sub-basin farmer down-	nointo - 1			
Grading from groundwater is an issue in the sub-basin	points = 1			
\square The existing or potential outflow from the wetland is so constrained				
by human or natural conditions that the water stored by the wetland				
cannot reach areas that flood. Explain why	points = 0			
\square There are no problems with flooding downstream of the wetland	points = 0			
D 6.2. Has the site been identified as important for flood storage or flood		^		
conveyance in a regional flood control plan?	s = 2 No = 0	U		
Total for D 6 Add the points in the	e boxes above	1		
Rating of Value If score is: $\Box 2 - 4 = H$ $\Box 1 = M$ $\Box 0 = L$ Reco	ord 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: <i>Indicators are Cowardin classes and strata within the</i> <i>Forested class.</i> 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 Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Scrub-shrub (areas where trees have > 30% cover) Forested (areas where trees have > 30% cover) Istructure: points = 0 If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon 	4			
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions of</i> <i>hydroperiods</i>).				
 Seasonally flooded or inundated Occasionally 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 Ereshwater tidal wetland Saturated and 	0			
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 Ioosestrife, Canadian thistle If you counted: > 19 species 5 - 19 species points = 1 < 5 species	2			
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open</i> <i>water, the rating is always high.</i> None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3 points HIGH = 3 points	2			

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.	
\Box 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)	3
Stable steep banks of fine material that might be used by beaver or muskrat for denning	
(> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees</i>	
that have not vet 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 (<i>structures for eqg-laving by amphibians</i>)	
\Box Invasive plants cover less than 25% of the wetland area in every stratum of plants (see	
H 1.1 for list of strata)	
Total for H 1 Add the points in the boxes above	11
Poting of Site Detential if Source in: $\Box 45 = 49 = 41 = 7$, $44 = M$, $\Box 0 = 6 = 1$. Depend the rating on	
Kaling of Sile Polential II Scole is. $ 15 - 10 - 11 - 14 - - 10 - 11 - 10 - 11$	the first page
	the first page
H 2.0. Does the landscape have the potential to support the habitat function of the site?	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).	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 <i>only habitat that directly abuts wetland unit</i>).	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 <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat $\pm ($ 1.3 % moderate & low intensity land uses (2) = 0.65%	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: 0 % undisturbed habitat	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: 0 % undisturbed habitat + (1.3)% moderate & low intensity land uses / 2) = 0.65%	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). <i>Calculate:</i> 0 % undisturbed habitat + (<u>1.3</u> % moderate & low intensity land uses / 2) = 0.65% If total accessible habitat is: $> \frac{1}{2}$ (22.2%) of 4 km Delvgen	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: 0 % undisturbed habitat If total accessible habitat is: > $1/3$ (33.3%) of 1 km Polygon	the first page
Rating of Site Potential In Score is: $[13 - 16 - H] \odot 7 - 14 - M] \odot 7 - 14 - 14 - M] \odot 7 - 14 - 14 - M] \odot 7 - 14 - 14 - 14 - 14 - 14 - 14 - 14 - $	the first page
Rating of Site Potential in Score is. \Box 15 - 16 - H \bigtriangledown 7 - 14 - M \Box 0 - 6 - LRecord the rating ofH 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:0 % undisturbed habitat + (1.3 % moderate & low intensity land uses / 2) = 0.65%If total accessible habitat is:> $1/_3$ (33.3%) of 1 km Polygon20 - 33% of 1 km Polygon10 - 19% of 1 km Polygon10 - 19% of 1 km Polygon	the first page
Record the Potential In Score is. If S - N - N	the first page
Rating of Site Potential in Score is. \Box 13 - 18 - 18 - 19 - 14 - M \Box 0 - 6 - LRecord the rating ofH 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:00% undisturbed habitat + (1.3% moderate & low intensity land uses / 2) = 0.65%If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20 - 33% of 1 km Polygon10 - 19% of 1 km Polygon< 10 % of 1 km Polygon	the first page
Rating of Site Potential in Score is. \Box 15 - 16 - HTo - 14 - MG 7 - 14 - MRecord the fating of TH 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:00% undisturbed habitat + (1.3% moderate & low intensity land uses / 2) = 0.65%If total accessible habitat is:> 1/3 (33.3%) of 1 km Polygon20 - 33% of 1 km Polygonpoints = 320 - 19% of 1 km Polygonpoints = 1< 10 % of 1 km Polygon	the first page
Rating of site Potential in Score is. If 15 - 16 - NIF - 14 - MIF - 16 - 60MIf total accessible habitat is:> 1/3 (33.3%) of 1 km Polygonpoints = 2points = 0points = 0IF total accessible habitat in 1 km Polygonpoints = 0<	the first page
Record the Potential in Score is. [15 - 16 - H] 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: 0 % undisturbed habitat + (1.3 % moderate & low intensity land uses / 2) = 0.65% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20 - 33% of 1 km Polygon points = 3 20 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon	the first page 0

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	
H 2.3 Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (-2)	0
≤ 50% of 1km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	1
Pating of Landscape Botential If Score is: 🗖 4 - 6 = H 🛛 🖓 1 - 3	$=$ M $\square < 1 = I$ Record the rating on	the first name

Rating of Landscape Potential If Score is: \Box 4 - 6 = H \Box 1 - 3 = M \Box < 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 polici	es? 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 provides and provi	olant	
or animal on the state or federal lists)		
It is mapped as a location for an individual WDFW priority speci	ies	
It is a Wetland of High Conservation Value as determined by the	e l	
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	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	
Rating of ValueIf Score is: $\Box 2 = H$ $\Box 1 = M$ $\Box 0 = L$ Rec	cord the rating on the first	page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

9

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland	Туре	Category
Chook off	any aritaria that apply to the watland. List the actorian when the appropriate aritaria are mat	
	any chiena that apply to the wetland. List the category when the appropriate chiena are met.	
30 1.0.1	Suallie weilands	
	The deminant water regime is tide	
	Vegeteted, and	
	Vegetated, and With a colimity greater than 0.5 ppt	
	with a salinity greater than 0.5 ppt $\Box = 0.0044$	
0044	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?	
0010	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No - Go to SC 1.2}$	
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 ³ / ₄ 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 I	
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?	
	\Box Yes - Go to SC 2.2 \Box No - Go to SC 2.3	
SC 2.2.	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
	$\Box \text{ Yes} = \textbf{Category I} \qquad \Box \text{ No} = \textbf{Not WHCV}$	
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. I	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?	
	\Box Yes - Go to SC 3.3 \Box 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 W/A Department of Eich and Wildlife's forests as priority babitats? If you	
chiena for the WA Department of Fish and Windhe's forests as priority habitats? If you	
answer YES you will still need to rate the wetland based on its functions.	
Old-growth lotests (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/na) 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 (dbn)	
exceeding 21 in (53 cm).	
Yes = Category I I No = Not a forested wetland for this section	
SU S.U. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
i ne 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,	
I ne 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</i>	
be measured near the bottom)	
\Box Yes - Go to SC 5.1 \Box 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.	
\Box The wetland is larger than $\frac{1}{10}$ 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)?	
$\Box \text{ Yes} = \textbf{Category I} \qquad \Box \text{ No - Go to SC 6.2}$	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
$\Box \text{ Yes} = \textbf{Category II} \qquad \Box \text{ No - Go to SC 6.3}$	
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	

RATING SUMMARY – Western Washington

Name of wetland (or ID #):	Wetland B		Date of site visit: <u>16-Sep-24</u>
Rated by Curtis Wambach	Trained	l by Ecology? ⊡ Yes □No	Date of training <u>Continual</u>
HGM Class used for rating	Depressional & Flats	Wetland has multip	le HGM classes?
NOTE: Form is r Source	ot complete with out the figu of base aerial photo/map <u>Goo</u> g	res requested (<i>figures can</i> gle Earth	be combined).
OVERALL WETLAND CA	TEGORY III (base	ed on functions	Il characteristics \Box)
1. Category of wetland	based on FUNCTIONS		
	Category I - Total score = 23	- 27	Score for each
	Category II - Total score = 20) - 22	function based
X	Category III - Total score = 1	6 - 19	on three
	Category IV - Total score = 9	- 15	ratings (order of ratings
Im	proving Hydrologic Hat	pitat	is not

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	М	L	М	
Landscape Potential	М	L	М	
Value	М	М	Н	Total
Score Based on Ratings	6	4	7	17

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	Figure 11
Hydroperiods	D 1.4, H 1.2	Figure 11
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	Figure 11
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	Figure 12
Map of the contributing basin	D 4.3, D 5.3	Figure 14
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	Figure 13
polygons for accessible habitat and undisturbed habitat		rigule 15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	Appendix I
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	Appendix J

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to another figure)		
Boundary of area within 150 ft of the wetland (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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	

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;
 - \Box 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.
- \Box The water leaves the wetland without being impounded.
- ☑ NO go to 5

 \Box **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,
- \Box 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.*

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

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key)		
with no surface water leaving it (no outlet). points = 3		
Wetland has an intermittently flowing stream or ditch, OR highly		
constricted permanently flowing outlet. points = 2	1	
Wetland has an unconstricted, or slightly constricted, surface outlet		
that is permanently flowing points = 1		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is		
a permanently flowing ditch. points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic	0	
(<i>use NRCS definitions</i>). Yes = 4 No = 0	0	
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or		
Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area points = 5	2	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area points = 3	3	
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 > $\frac{1}{2}$ total area of wetland points = 4	2	
Area seasonally ponded is $> \frac{1}{4}$ total area of wetland points = 2		
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 0		
Total for D 1 Add the points in the boxes above	6	
Rating of Site Potential If score is: \Box 12 - 16 = H \Box 6 - 11 = M \Box 0 - 5 = L Record the rating of	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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that			0
generate pollutants?	Yes = 1	No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1	No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are			
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2 Add the point	s in the boxe	es above	1
Rating of Landscape Potential If score is: \Box 3 or 4 = H \Box 1 or 2 = M \Box 0 =	L Record the	rating on	the first page

D 3.0. Is the water quality improvement provided by the site va	luable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to	a stream, river,	0
lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	
D 3.2. Is the wetland in a basin or sub-basin where an aquatic	resource is on the 303(d) list?	1
	Yes = 1 No = 0	
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	or the basin in	0
which the unit is found)?	Yes = 2 No = 0	
Total for D 3	Add the points in the boxes above	1
Rating of Value If score is: $\Box 2 - 4 = H \lor 1 = M \Box 0 = L$	Record the rating or	n the first page

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and	stream degra	adation
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water		
leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly		0
Constricted permanently llowing outlet Wotland is a flat depression (OUESTION 7 on key), where outlet is	points = 2	0
a permanently flowing ditch	nointe - 1	
Wetland has an unconstricted or slightly constricted surface outlet	points – i	
that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the k	pottom of	
the outlet. For wetlands with no outlet, measure from the surface of permanent water of	or if dry, the	
deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	3
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the	e area of	
upstream basin contributing surface water to the wetland to the area of the wetland un	it itself.	
☐ The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit \Box Entire wetland is in the Elete class	points = 0	
$\Box = \Box u = veualio is in ule Flais class$	points = 5	2
$\begin{array}{c} \text{Fotarior D 4} \\ \text{Add the points in the b} \\ Add the points in $		J
Rating of Site Potential II scole is: $\Box 12 - 16 = H \Box 6 - 11 = M \supseteq 0 - 5 = L$ Record		the linst page
D 5.0. Does the landscape have the potential to support hydrologic function of the site	? = 1 No = 0	0
D 5.2 Is > 10% of the area within 150 ft of the wetland in land uses that generate exce	ess runoff?	0
Yes =	= 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive	e human	
land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		0
Yes =	= 1 No = 0	
Total for D 5 Add the points in the b	oxes above	0
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L Record	the rating on	the first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description the	nat best	
matches conditions around the wetland unit being rated. Do not add points. <u>Choose th</u>	<u>e highest</u>	
score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradien	t into areas	
where flooding has damaged human or natural resources (e.g., houses or salr	non redds):	
 Flooding occurs in a sub-basin that is immediately down- 		
gradient of unit.	points = 2	1
□ • Surface flooding problems are in a sub-basin farmer down-	nainta - 1	
Grading from groundwater is an issue in the sub-basin	points = 1	
\square The existing or potential outflow from the wetland is so constrained	points – T	
by human or natural conditions that the water stored by the wetland		
cannot reach areas that flood Explain why	points = 0	
□ There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood		0
conveyance in a regional flood control plan?	o 11 o	U
ree in a regional need control plan.	= 2 No = 0	
Total for D 6 Add the points in the b	= 2 No = 0 oxes above	1

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: <i>Indicators are Cowardin classes and strata within the</i> <i>Forested class.</i> 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 Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Istructure: points = 0 If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon 	1	
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions of</i> <i>hydroperiods</i>).		
 Permanently flooded or inundated Seasonally flooded or inundated Seasonally flooded or inundated Occasionally 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 	1	
□ Lake Fringe wetland 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 ft ² . Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0	2	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3 points	0	

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)	4
Stable steep banks of fine material that might be used by beaver or muskrat for denning	
(> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees</i>	
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 (<i>structures for egg-laying by amphibians</i>)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see	
H 1.1 for list of strata)	
Total for H 1 Add the points in the boxes above	8
Rating of Site Potential If Score is: \Box 15 - 18 = H \Box 7 - 14 = M \Box 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:	
0 % undisturbed habitat + (1.3 % moderate & low intensity land uses / 2) = 0.65%	
If total accessible habitat is:	0
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	
20 - 33% of 1 km Polygon points = 2	
$10 - 19\% \text{ of } 1 \text{ km Polygon} \qquad \qquad \text{points} = 1$	
< 10 % of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate:	
5.4 % undisturbed habitat + (60 % moderate & low intensity land uses / 2) = 35.4%	
	4
Undisturbed habitat > 50% of Polygon points = 3	I

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	
H 2.3 Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (-2)	0
≤ 50% of 1km Polygon is high intensity	points = 0	
Fotal for H 2 A	Add the points in the boxes above	1
Pating of Landscape Potential If Score is: 🗖 4 - 6 = H 🛛 7 - 3 = N	$\square \square \le 1 = I$ Record the rating on	the first name

Rating of Landscape Potential If Score is: \Box 4 - 6 = H \Box 1 - 3 = M \Box < 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 polic	cies? Choose
only the highest score that applies to the wetland being rated.	
Site meets ANY of the following criteria:	points = 2
\Box 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 spece	cies
It is a Wetland of High Conservation Value as determined by the second secon	ne U
Department of Natural Resources	
It has been categorized as an important habitat site in a local o	or
regional comprehensive plan, in a Shoreline Master Plan, or in	а
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
Rating of ValueIf Score is: \Box 2 = H \Box 1 = M \Box 0 = LRe	ecord the rating on the first pag

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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	Туре	Category
Chook off	i any aritaria that apply to the watland. List the astarany when the appropriate criteria are mot	
	any chiena that apply to the wetland. List the category when the appropriate chiena are met.	
50 1.0.1	-Stuarine wetland most the following criteria for Estuaring wetlands?	
	The deminant water regime is tide.	
	Vegeteted, and	
	Vegetated, and	
	with a salinity greater than 0.5 ppt	
0044		
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?	
0010	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No} - \text{Go to SC 1.2}$	
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 ³ / ₄ 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 I	
SC 2.0. \	Netlands 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?	
	\Box Yes - Go to SC 2.2 \Box 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	
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. I	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?	
	\Box Yes - Go to SC 3.3 \Box 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	
0040	a waata di Matlawida	
-----------	--	--
50 4.0. 1	-orested 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</i>	
	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 capony have an average diameter (dbh)	
	exceeding 21 in (53 cm)	
	\Box Vec - Category I \Box No - Not a forested wetland for this section	
SC 5 0 1	\square res - Category I \square No - Not a forested wetland for this section	
50 5.0.	Weilands 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</i>	
	be measured near the bottom)	
	\Box Yes - Go to SC 5.1 \Box 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 n. 100)	
	At least 3/ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
	arazed or up mowed arassland	
	grazed of difference grassiand.	
	The wetland is larger than 7_{10} ac (4350 ft ⁻)	
	□ Yes = Category I □ No = Category II	
SC 6.0. I	nterdunal 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	
	\Box Yes - Go to SC 6.1 \Box 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)?	
	$\Box Yes = Category I \qquad \Box No - Go to SC 6 2$	
SC 6 2	Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
0.2.	$\Box V_{ee} = Catagory II \qquad \Box N_{ee} = Catagory II$	
SC 6 2	\Box 165 - Calegory II \Box 100 - G0 10 SC 0.3	
30 0.3.		
Categor	y of wetland based on Special Characteristics	
If you an	swered No for all types, enter "Not Applicable" on Summary Form	

Appendix M

Datasheets

Project/Site: Vista Views at Black Lake	City/County: Thurston County	Sampling Date: 11, 16 Sept 24
Applicant/Owner: Vista Views at Black Lake	State: WA	Sampling Point: <u>TP-1</u>
Investigator(s): <u>Curtis Wambach</u>	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classi	ification:
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes 🛛 No 🗌 (If no, explain in Remark	<s.)< td=""></s.)<>
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly distur	rbed? Are "Normal Circumstances" present	? Yes 🛛 No 🗌
Are Vegetation no, Soil no, or Hydrology no naturally problematic?	(If needed, explain any answers in Remar	ks.)
SUMMARY OF FINDINGS – Attach site map show	ring sampling point locations, transec	ts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes □ No ⊠ Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks:			

	Absolute	Dominant	t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>) 1	<u>% Cover</u>	<u>Species'</u>	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Deminant Species
Sapling/Shrub Stratum (Plot size: <u>12'</u>)		= Total C	Cover	That Are OBL, FACW, or FAC: 50% (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species <u>1</u> x 1 = <u>1</u>
4				FACW species x 2 =
5				FAC species <u>41</u> x 3 = <u>123</u>
	_	= Total C	Cover	FACU species <u>101</u> x 4 = <u>404</u>
Herb Stratum (Plot size: <u>6'</u>)				UPL species x 5 =
1. <u>Hairy cat's ear (Hypochaeris radicata)</u>	80	Y	FACU	Column Totals: <u>143</u> (A) <u>528</u> (B)
2. Kentucky bluegrass (Poa pretenses)	30	Y	FAC	
3. Red fescue (Festuca rubra)	10	N	FAC	Prevalence Index = $B/A = 3.69$
4. Common plantain (Plantago lancelata)	5	N	FACU	Hydrophytic Vegetation Indicators:
5. Red clover (Trifolium pratense)	5	N	FACU	Rapid Test for Hydrophytic Vegetation
6. Orchard grass (Dactylis glomerata)	5	N	FACU	□ Dominance Test is >50%
7. Sweet vernal grass (Anthoxanthum odoratum)	5	N	FACU	Prevalence Index is ≤3.0 ¹
8. <u>Chickweed (Stellaria media)</u>	1	N	FACU	Morphological Adaptations ¹ (Provide supporting
9. <u>Common bentgrass (Agrostis stolonifera)</u>	1	N	FAC	data in Remarks or on a separate sheet)
10. <u>Slough Sedge (Carex obnupta)</u>	1	N	OBL	Wetland Non-Vascular Plants
11				
Woody Vine Stratum (Plot size:)	<u>143</u>	= Total C	Cover	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
		= Total C	Cover	Present? Yes 🗌 No 🖂
% Bare Ground in Herb Stratum				
Remarks:				

(inches) Color (moist)		Rec	lox Feature	S			
	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
<u>0-20" 10YR 3/2-3/3</u>	3	none					Sandy Gravelly Loam
			·				
					<u> </u>		
_							
Type: C=Concentration, [D=Depletion, RN	/I=Reduced Matrix, 0	CS=Covere	d or Coate	ed Sand G	rains. ²	_ocation: PL=Pore Lining, M=Matrix.
lydric Soil Indicators: (A	Applicable to a	II LRRs, unless oth	erwise not	ed.)		Indic	ators for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox	(S5)			□ 2	cm Muck (A10)
Histic Epipedon (A2)		Stripped Matri	x (S6)			🗆 R	ed Parent Material (TF2)
Black Histic (A3)		Loamy Mucky	Mineral (F	1) (except	MLRA 1)		ery Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed	l Matrix (F2)		0 🗌	ther (Explain in Remarks)
Depleted Below Dark S	Surface (A11)	Depleted Matr	ix (F3)				
Thick Dark Surface (A1	12)	Redox Dark S	urface (F6)			³ Indic	ators of hydrophytic vegetation and
Sandy Mucky Mineral ((S1)	Depleted Dark	Surface (F	7)		We	tland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depres	sions (F8)			un	less disturbed or problematic.
Restrictive Layer (if pres	ent):						
Туре:							
Depth (inches): Remarks:						Hydric S	oil Present? Yes 🗌 No 🛛
Depth (inches):						Hydric S	oil Present? Yes 🗌 No 🛛
Depth (inches): Remarks: /DROLOGY						Hydric S	oil Present? Yes 🗌 No 🛛
Depth (inches): Remarks: DROLOGY Wetland Hydrology Indic	ators:					Hydric S	oil Present? Yes 🗌 No 🖂
Depth (inches): Remarks: DROLOGY Wetland Hydrology Indic Primary Indicators (minimu	ators: Im of one require	ed; check all that ap	ply)			Hydric S	oil Present? Yes 🗌 No 🛛
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1)	ators: Im of one require	ed; check all that ap	ply) ained Leav	es (B9) (e	xcept MLF	Hydric S	oil Present? Yes No 🛛 condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu G Surface Water (A1) High Water Table (A2)	ators: Im of one require	ed; check all that ap	<u>ply)</u> ained Leav	es (B9) (e	xcept MLF	Hydric S	oil Present? Yes No 🛛 condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) Surface Water Table (A2) High Water Table (A2) Saturation (A3)	ators: Im of one require	ed: check all that ap ☐ Water-St: 1, 2, 4 ☐ Salt Crus	<u>ply)</u> ained Leav 4A, and 4B t (B11)	es (B9) (e)	xcept MLF	Hydric S	oil Present? Yes No 🛛 condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10)
Depth (inches): Remarks: DROLOGY Netland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ators: Im of one require	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus	<u>ply)</u> ained Leav 4A, and 4B t (B11) nvertebrate	es (B9) (e) s (B13)	xcept MLF	Hydric S	oil Present? Yes No 🖂
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2	ators: Im of one require	ed; check all that ap Water-St: 1, 2, 4 Salt Crus Aquatic II	<u>ply)</u> ained Leav 4A, and 4B t (B11) nvertebrate n Sulfide Od	es (B9) (e) s (B13) dor (C1)	xcept MLF	Hydric S	oil Present? Yes No 🛛 condary 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 (C
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ators: Im of one require	ed; check all that ap Water-St 1, 2, 4 Salt Crus Aquatic Iu Hydroger	<u>ply)</u> ained Leav 4A, and 4B it (B11) nvertebrate n Sulfide Oo Rhizosphe	es (B9) (e) s (B13) dor (C1) res along	xcept MLF	Hydric S	oil Present? Yes ☐ No ⊠ condary 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 (C Geomorphic Position (D2)
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ators: Im of one require ?)	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus Aquatic In Hydroger Oxidized Presence	<u>ply)</u> ained Leave 4A, and 4B it (B11) nvertebrate on Sulfide Oo Rhizosphe e of Reduce	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4	xcept MLF	Hydric S	oil Present? Yes ☐ No ⊠ <u>condary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3)
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu 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)	ators: Im of one require	ed: check all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence	ply) ained Leave 4 A, and 4B t (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce on Reduction	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tilleo	xcept MLF	Hydric S 	oil Present? Yes No X condary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu 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 (B	ators: Im of one require ?) 6)	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir Stunted c	ply) ained Leave 4 A, and 4B t (B11) nvertebrate a Sulfide Oo Rhizosphe e of Reduce on Reduction or Stressed	es (B9) (e) dor (C1) res along do Iron (C4 on in Tilleo Plants (D	Living Roc) d Soils (C6 1) (LRR A	Hydric S Se RA Image: Se (C3) Image: Se (C3	oil Present? Yes No ⊠ condary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indic Primary Indicators (minimu 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 (B Inundation Visible on A	ators: Im of one require 2) 6) &erial Imagery (E	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus Aquatic Iu Hydroger Oxidized Presence Recent Ir Stunted c 37) Other (E)	ply) ained Leav 4A, and 4B t (B11) nvertebrate n Sulfide Oo Rhizosphe of Reduce on Reduction or Stressed colain in Re	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tillee Plants (D marks)	Living Roo) d Soils (C6 1) (LRR A	Hydric S 	oil Present? Yes No ⊠ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Depth (inches): Remarks: DROLOGY Netland Hydrology Indic Primary Indicators (minimu 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 (B Inundation Visible on A Sparsely Vegetated Co	ators: Im of one require () () () () () () () () () () () () ()	ed; check all that ap Water-St: 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted c 37) Other (Ex	ply) ained Leav 4 A, and 4B t (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce on Reduction or Stressed colain in Re	es (B9) (e) dor (C1) res along ed Iron (C4 on in Tilled Plants (D marks)	Living Roo) d Soils (C6 1) (LRR A	Hydric S 	oil Present? Yes No ⊠ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Depth (inches): Remarks: DROLOGY Wetland Hydrology Indic Primary Indicators (minimu 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 (B Inundation Visible on A Sparsely Vegetated Co Field Observations:	ators: Im of one require 2) 6) kerial Imagery (E oncave Surface	ed; check all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted c 37) Other (Ex (B8)	ply) ained Leav 4A, and 4B t (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce on Reduction or Stressed colain in Re	es (B9) (e) dor (C1) res along ed Iron (C4 on in Tilled Plants (D marks)	Living Roc I) d Soils (C6 1) (LRR A	Hydric S 	oil Present? Yes No ⊠ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Depth (inches): Remarks: DROLOGY Wetland Hydrology Indic Primary Indicators (minimu 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 (B Inundation Visible on A Sparsely Vegetated Co Field Observations: Surface Water Present?	ators: Im of one require 2) 6) kerial Imagery (E pncave Surface Yes \Box N	ed; check all that ap Water-Sti Salt Crus Salt Crus Aquatic In Hydroger Oxidized Presence Recent Ir Stunted c 37) Other (E) (B8)	ply) ained Leave 4 A, and 4B it (B11) nvertebrate on Sulfide Oo Rhizosphe of Reduce on Reduction or Stressed on Reduction or Stressed on Reduction or Stressed on Reduction or Stressed on Reduction or Stressed	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tillee Plants (D marks)	xcept MLF	Hydric S 	condary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Project/Site: Vista Views at Black Lake	City/County: Thurston County	Sampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA	Sampling Point: <u>TP-2</u>
Investigator(s): <u>Curtis Wambach</u>	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classi	fication:
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes 🛛 🛛 No 🗌 (If no, explain in Remark	:s.)
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly distur	rbed? Are "Normal Circumstances" present?	?Yes 🛛 No 🗌
Are Vegetation no, Soil no, or Hydrology no naturally problematic?	(If needed, explain any answers in Remark	ks.)
SUMMARY OF FINDINGS – Attach site map show	ving sampling point locations, transec	ts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes □ No ⊠ Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>2</u> (B)
4				Demonst of Deminant Creation
		= Total C	Cover	That Are OBL, FACW, or FAC: 0% (A/B)
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				
1		. <u> </u>		Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3		. <u></u>		OBL species x 1 =
4				FACW species x 2 =
5.				FAC species <u>15</u> x 3 = <u>75</u>
		= Total C	Cover	FACU species <u>106</u> x 4 = <u>424</u>
Herb Stratum (Plot size: 6')				UPL species x 5 =
1. <u>Hairy cat's ear (Hypochaeris radicata)</u>	80	Y	FACU	Column Totals: 121 (A) 499 (B)
2. <u>Chickweed (Stellaria media)</u>	20	Y	FACU	
3. Kentucky bluegrass (Poa pretenses)	<u>10</u>	N	FAC	Prevalence Index = $B/A = 4.12$
4. Common plantain (Plantago lancelata)	5	N	FACU	Hydrophytic Vegetation Indicators:
5. <u>Red fescue (Festuca rubra)</u>	5	N	FAC	Rapid Test for Hydrophytic Vegetation
6. <u>Tansy regwort (Senecio jacobaea)</u>	1	N	FACU	Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting
9.				data in Remarks or on a separate sheet)
10.		·		Wetland Non-Vascular Plants ¹
11				Problematic Hydrophytic Vegetation ¹ (Explain)
	121	= Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	<u>121</u>	Total C		be present, unless disturbed or problematic.
1.				
2.				Hydrophytic Vegetation
		= Total C	over	Present? Yes No 🖂
% Bare Ground in Herb Stratum		, etal e		
Remarks:				

Depth	Matrix		Rec	ox Feature	<u>s</u>		_			
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	<u> </u>	R	<u>emarks</u>
-20"	<u>10YR 3/3</u>		none		<u> </u>			<u> </u>	Sandy Gravel	lly Loam
					<u> </u>			<u> </u>		
					<u> </u>			<u> </u>		
Type: C=Co	oncentration, D=D	epletion, RM	l=Reduced Matrix, 0	S=Covered	d or Coate	ed Sand G	rains.	² Loc	ation: PL=Por	re Lining, M=Matrix.
ydric Soil I	ndicators: (App	licable to al	I LRRs, unless oth	erwise not	ed.)		Inc	dicato	rs for Problen	natic Hydric Soils ³
Histosol ((A1)		Sandy Redox	(S5)				2 cm	Muck (A10)	
Histic Epi	ipedon (A2)		Stripped Matri	(S6)				Red	Parent Materia	al (TF2)
Black His	stic (A3)		Loamy Mucky	Mineral (F1) (except	: MLRA 1)	Ц	Very	Shallow Dark	Surface (TF12)
] Hydrogen] Doplatad	1 Sulfide (A4)	200 (111))			Othe	r (Explain in R	emarks)
] Depieleu] Thick Dar	rk Surface (A12)	ace (ATT)		x (F3) Irface (F6)			³ In	dicato	re of hydrophy	tic vegetation and
Sandy Mi	ucky Mineral (S1)			Surface (F	7)			wetlar	nd hydrology m	nust be present
] Sandy Gl	eved Matrix (S4)		Redox Depres	sions (F8)	')			unles	s disturbed or I	problematic.
estrictive L	ayer (if present)	:		(-)						•
Type:	,									
Depth (inc	ches):						Hydrid	c Soil	Present? Y	'es 🔲 🛛 No 🖂
Depth (inc Remarks:	ches):						Hydrid	c Soil	Present? Y	es 🗌 No 🛛
Depth (inc Remarks:	:hes):						Hydrid	c Soil	Present? Y	es 🗌 No 🛛
Depth (inc Remarks:	:hes):						Hydrid	c Soil	Present? Y	'es 🗌 No 🛛
Depth (inc Remarks:	:hes):						Hydrid	c Soil	Present? Y	'es 🗌 No 🛛
Depth (inc Remarks: DROLOG	rhes):						Hydrid	c Soil	Present? Y	ies 🗌 No 🛛
Depth (inc Remarks: DROLOG Vetland Hyd	ches): Y Irology Indicator	 'S:					Hydrid	c Soil	Present? Y	ies 🗌 No 🛛
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic:	hes): Y Irology Indicator ators (minimum o	's: f one require	ed; check all that ap	oly)			Hydrid	c Soil	Present? Y	res 🗌 No 🛛
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic Surface V	Y trology Indicator ators (minimum o Vater (A1)	's: f one require	ed; check all that ap	oly)	es (B9) (e	xcept MLF	Hydrid RA	Secon	Present? Y	res No S
Depth (inc emarks: DROLOG Vetland Hyd rimary Indic Surface V High Wat	Y frology Indicator ators (minimum o Water (A1) er Table (A2)	's: f one require	ed; check all that ap □ Water-Sta □ 1, 2, 4	bly) ained Leave	əs (B9) (e	xcept MLF	Hydrid	<mark>Secon</mark> □ Wa	Present? Y	Yes No X s (2 or more require eaves (B9) (MLRA 1
Depth (inc emarks: DROLOG Vetland Hyd rimary Indica Surface V High Wata Saturation	Y trology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3)	's: f one require	ed; check all that ap □ Water-St 1, 2, 4 □ Salt Crus	oly) ained Leave IA, and 4B t (B11)	es (B9) (e)	xcept MLF	Hydrid RA	Secon	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern	Yes □ No ⊠ <u>s (2 or more require</u> eaves (B9) (MLRA + ns (B10)
Depth (inc Remarks: DROLOG Vetland Hyd I Surface V High Wate Saturation Water Ma	Y trology Indicator ators (minimum o Vater (A1) er Table (A2) n (A3) arks (B1)	's: f one require	ed; check all that ap Water-St: 1, 2, 4 Salt Crus Aquatic II	oly) ained Leave I A, and 4B t (B11) avertebrate:	es (B9) (e) s (B13)	xcept MLF	Hydrid RA	Secon	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wat	Yes □ No ⊠ <u>s (2 or more require</u> eaves (B9) (MLRA ns (B10) er Table (C2)
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic: Surface V High Wate Saturation Water Ma Sediment	Y frology Indicator sators (minimum o Water (A1) ser Table (A2) n (A3) arks (B1) t Deposits (B2)	's: If one require	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus Aquatic In Hydroger	oly) ained Leave I A, and 4B t (B11) nvertebrates a Sulfide Oc	es (B9) (e) s (B13) dor (C1)	xcept MLF	Hydrid RA	<u>Secon</u>	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wate aturation Visible	res I No X s (2 or more require eaves (B9) (MLRA ns (B10) er Table (C2) e on Aerial Imagery
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo	Y frology Indicator ators (minimum of Vater (A1) arr Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	's: If one require	ed; check all that ap Water-Sta 1, 2, 4 Salt Crus Aquatic II Hydroger	bly) ained Leave I A, and 4B t (B11) ivertebrates a Sulfide Oc Rhizospher	es (B9) (e) s (B13) dor (C1) res along	xcept MLF	Hydrid RA	<u>Secon</u>	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wate turation Visible comorphic Pos	Yes □ No ⊠ s (2 or more require eaves (B9) (MLRA ns (B10) er Table (C2) e on Aerial Imagery sition (D2)
Depth (inc Remarks: DROLOG Vetland Hyd Yrimary Indic: Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat	Y trology Indicator ators (minimum o Vater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	's: f one require	ed; check all that ap Water-Sta Salt Crus Salt Crus Aquatic Iu Hydroger Oxidized	bly) ained Leave I A, and 4B t (B11) nvertebrate of Sulfide Oc Rhizospher of Reduce	es (B9) (e) s (B13) dor (C1) res along d Iron (C4	xcept MLF	Hydrid RA	Secon Secon Dr Dr Dr Sa Sa Sa Sa Sa Sa Sa Sa Sa	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wat uturation Visible comorphic Pos allow Aquitard	Yes □ No ⊠ s (2 or more require eaves (B9) (MLRA ns (B10) er Table (C2) e on Aerial Imagery sition (D2) d (D3)
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indica Surface V High Wate Saturation Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo	Y drology Indicator ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	's: f one require	ed; check all that ap Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence	bly) ained Leave IA, and 4B t (B11) tvertebrates a Sulfide Oc Rhizospher of Reduce on Reduction	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tille	xcept MLF	RA ets (C3)	<u>Secon</u> Secon □ Dr □ Dr □ Sa □ Ge □ Sh □ FA	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wat aturation Visible comorphic Pos nallow Aquitard AC-Neutral Tes	Yes No ⊠ s (2 or more require) eaves (B9) (MLRA) ns (B10) er Table (C2) e on Aerial Imagery (D2) d (D3) st (D5)
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic Surface V High Water Saturation Water Ma Sediment Sediment Drift Depo Algal Mat Iron Depo Surface S	Y trology Indicator ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	's: f one require	ed; check all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Aquatic lu Hydroger Oxidized Presence Recent Ir Stunted c	bly) ained Leave LA, and 4B t (B11) nvertebrates of Sulfide Oc Rhizospher of Reduce on Reductio r Stressed	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	xcept MLF	RA Hydrid	<u>Secon</u> Secon □ Dr □ Dr □ Sa □ Ge □ Sh □ FA □ Ra	Present? Y dary Indicators ater-Stained La 4A, and 4B) ainage Pattern y-Season Wate turation Visible comorphic Pos nallow Aquitard AC-Neutral Tes aised Ant Mour	Yes No ⊠ s (2 or more require eaves (B9) (MLRA fractional) ns (B10) (C2) e on Aerial Imagery (D2) (D3) st (D5) (D6) nds (D6) (LRR A)
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Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic Surface V High Water Saturation Water Ma Sediment Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Surface Water	Y trology Indicator ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aeria Vegetated Conca vations: er Present? Bracont?	r s: <u>f one require</u> Il Imagery (B ave Surface (Yes □ N	ed; check all that ap Water-St 1, 2, 4 Salt Crus Aquatic II Aquatic II Oxidized Presence Recent Ir Stunted c 7) Other (E) B8)	bly) ained Leave LA, and 4B t (B11) nvertebrate: of Reduce on Reduction r Stressed plain in Re es): none	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLF	Hydrid RA ats (C3)	Secon Secon Dr Dr Dr Sa Ge Sh FA Free	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wat turation Visible comorphic Pos hallow Aquitard AC-Neutral Tes haised Ant Mour ost-Heave Hur	res No X s (2 or more require eaves (B9) (MLRA the s (B10) er Table (C2) e on Aerial Imagery sition (D2) d (D3) st (D5) hds (D6) (LRR A) mmocks (D7)
Depth (inc Remarks: DROLOG Vetland Hyd Primary Indic: Surface V High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Field Observ Surface Water Vater Table F	Y frology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aeria Vegetated Conca vations: er Present? Present?	r s: <u>f one require</u> <u>il Imagery (B</u> <u>ive Surface (</u> <u>Yes □ N</u> <u>Yes □ N</u>	ed; check all that ap Water-St: 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir Stunted co 7) Other (Ex B8) O Depth (incher O Depth (incher	bly) ained Leave LA, and 4B t (B11) nvertebrate: a Sulfide Oc Rhizospher of Reduce on Reduction r Stressed plain in Re es): none	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLF	RA ets (C3)	Secon Secon Dr Dr Dr Sa Ge Sh FA Rational Free	Present? Y dary Indicators ater-Stained Le 4A, and 4B) ainage Pattern y-Season Wat aturation Visible comorphic Pos hallow Aquitard AC-Neutral Tes hased Ant Mour ost-Heave Hur	Yes No ⊠ s (2 or more require eaves (B9) (MLRA eaves (B9) (MLRA hs (B10) er Table (C2) e on Aerial Imagery sition (D2) d (D3) st (D5) nds (D6) (LRR A) nmocks (D7)

Remarks:

Project/Site: Vista Views at Black Lake	City/County: Thurston County Sa	ampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA Sa	ampling Point: <u>TP-3</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classification	:
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbe	ed? Are "Normal Circumstances" present? Yes	🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, im	portant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes ⊠ No □ Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				Demonstrat Demoissant Operation
		= Total C	over	That Are OBL_EACW_or EAC: 0% (A/B)
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species <u>2</u> x 1 = <u>2</u>
4.				FACW species x 2 =
5				FAC species 20 x 3 = 60
		= Total C	over	FACU species 102 x 4 = 408
<u>Herb Stratum</u> (Plot size: <u>6'</u>)		Total C	0000	UPL species $x = 5 =$
1. <u>Hairy cat's ear (Hypochaeris radicata)</u>	70	Y	FACU	Column Totals: 124 (A) 470 (B)
2. Chickweed (Stellaria media)	20	N	FACU	
3. Red fescue (Festuca rubra)	20	N	FAC	Prevalence Index = $B/A = 3.79$
4. Dandilion (Taraxacum officinale)	10	N	FACU	Hydrophytic Vegetation Indicators:
5. <u>Slough sedge (Carex obnupta)</u>	10	N	OBL	Rapid Test for Hydrophytic Vegetation
6. <u>Velvet grass (Holcus lanatus)</u>	2	N	FACU	Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8.				Morphological Adaptations ¹ (Provide supporting
9.				data in Remarks or on a separate sheet)
10.				☐ Wetland Non-Vascular Plants ¹
11				Problematic Hydrophytic Vegetation ¹ (Explain)
····	132	= Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	102	Total C	0000	be present, unless disturbed or problematic.
1.				
2.				Hydrophytic Vegetation
		= Total C	over	Present? Yes No 🛛
% Bare Ground in Herb Stratum				
Remarks:				

Sampling Point: TP-3

Depth <u>Matr</u> (inches) Color (moist)	ix %	<u>Rec</u>	dox Features	<u>s</u> Type ¹	$l oc^2$	Textur	re i	Remarks	
				туре		TEXLU	<u> </u>	It le ere	<u>.</u>
<u>J-6 10YR 4/1</u>		None		·			<u> </u>		
<u>5-12" 10YR 4/2</u>		None		·			<u> </u>	andy Silty Clay Loa	m
<u>12-20" 10YR 4/2</u>		<u>10YR 6/8</u>		·			<u> Sa</u>	andy Silty Clay Loa	m
				·					
				·					
Type: C=Concentration. D=	Depletion. R	M=Reduced Matrix.	 CS=Covered	d or Coate	ed Sand G	rains.	² Locati	on: PL=Pore Lining	g. M=Matrix.
Hydric Soil Indicators: (Ap	plicable to a	all LRRs, unless oth	erwise not	ed.)		In	dicators	for Problematic H	ydric Soils ³ :
Histosol (A1)		Sandy Redox	(S5)] 2 cm M	uck (A10)	
Histic Epipedon (A2)		Stripped Matri	x (S6)] Red Pa	rent Material (TF2)	
Black Histic (A3)		Loamy Mucky	Mineral (F1) (except	t MLRA 1)] Very Sh	allow Dark Surface	e (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed	Matrix (F2))] Other (E	Explain in Remarks)
Depleted Below Dark Sur	face (A11)	Depleted Matr	ix (F3)			2.			
Inick Dark Surface (A12) Sendy Muelsy Minerel (S))	Redox Dark S	urface (F6)	7)		°Ir	ndicators (of hydrophytic vege	etation and
Sandy Mucky Mineral (S))		sions (F8)	/)				isturbed or problem	present, patic
	/ +)·						unicee u		
Restrictive Laver (if presen	U.								
Restrictive Layer (if presen	<i>.</i>).								
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric.	May be tech	nically not hydric bec	ause redox	does not	appear wi	Hydri thin twelv	ic Soil Pr evention	esent? Yes 🛛 of the surface at thi	No 🗌 is test plot.
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric.	May be tech	nically not hydric bec	ause redox	does not	appear wi	Hydri thin twelv	ic Soil Province	esent? Yes 🛛 of the surface at thi	No 🗌 is test plot.
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric.	May be tech	nically not hydric bec	ause redox	does not	appear wi	Hydri	ic Soil Prove inches	esent? Yes 🛛 of the surface at thi	No
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric. ZDROLOGY Wetland Hydrology Indicators (minimum	May be tech	inically not hydric bec	ause redox	does not	appear wi	Hydri	ic Soil Prove inches	esent? Yes of the surface at thi	No is test plot.
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric. TOROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1)	May be tech	inically not hydric bec	ause redox	does not	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r	No is test plot.
	May be tech	inically not hydric bec	ply)	does not	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I	No is test plot. more required) B9) (MLRA 1, 2
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric.	May be tech	inically not hydric bed	ply) ained Leave 4A, and 4B	does not	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B)	No is test plot. more required) B9) (MLRA 1, 2
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	May be tech	inically not hydric bec ired; check all that ap Water-St 1, 2, Salt Crus	ply) ained Leave 4A, and 4B it (B11)	does not	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) age Patterns (B10)	No
Restrictive Layer (if presen Type: Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	May be tech	inically not hydric bec ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I	ply) ained Leave 4A, and 4B it (B11) nvertebrates	does not es (B9) (e) s (B13) lor (C1)	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) lage Patterns (B10) Season Water Table	No is test plot. more required) B9) (MLRA 1, 2) e (C2) erial Imagery (C5
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	May be tech	inically not hydric bec ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Qxidized	ained Leave 4A, and 4B it (B11) nvertebrates n Sulfide Od Rhizospher	does not es (B9) (e) s (B13) lor (C1) es along	appear wi	Hydri thin twelv	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (f A, and 4B) age Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D)	No is test plot. more required) B9) (MLRA 1, 2) e (C2) trial Imagery (C2 2)
Restrictive Layer (if presen Type:	May be tech	inically not hydric bed ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized	ply) ained Leave 4A, and 4B; tr (B11) nvertebrates n Sulfide Od Rhizospher	does not es (B9) (e) s (B13) lor (C1) es along d Iron (C4	appear wi	Hydri thin twelv RA	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) Hage Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D: ow Aquitard (D3)	No is test plot. more required) B9) (MLRA 1, 2) e (C2) trial Imagery (C3 2)
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicate Primary Indicators (minimum 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)	May be tech	inically not hydric bed inically not hydric bed ired; check all that ap Water-St 1, 2, Salt Crus Salt Crus Aquatic I Hydrogel Oxidized Presence	ply) ained Leave 4A, and 4B it (B11) nvertebrates in Sulfide Od Rhizospher e of Reduces	does not es (B9) (e s (B13) lor (C1) res along d Iron (C4 on in Tilleo	appear wi	Hydri thin twelv RA	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) lage Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5)	No is test plot. more required) B9) (MLRA 1, 2) e (C2) erial Imagery (C3 2)
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicate Primary Indicators (minimum 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)	May be tech	inically not hydric bed ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Hydrogel Oxidized Presence Recent Iu	ply) ained Leave 4A, and 4B to (B11) nvertebrates n Sulfide Od Rhizosphere of Reducer fon Reduction or Stressed	does not es (B9) (e s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D	appear wi xcept MLI Living Roc 4) d Soils (C6 1) (LRR A	RA bits (C3)	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) lage Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D: ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6)	No is test plot. more required) B9) (MLRA 1, 2) e (C2) trial Imagery (C2 2)
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. Primary Indicators (minimum 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)	May be tech	inically not hydric become ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted of (B7) Other (E)	ply) ained Leave 4A, and 4B t (B11) nvertebrates n Sulfide Od Rhizospher e of Reducer on Reductio or Stressed xolain in Rej	does not es (B9) (e s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	appear wi xcept MLI Living Roc 4) d Soils (C6 1) (LRR A	Hydri thin twelv RA ots (C3)	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) Bage Patterns (B10) Beason Water Table ration Visible on Ae norphic Position (D) ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) -Heave Hummocks	No is test plot. is test plot. more required) B9) (MLRA 1, 2) e (C2) rial Imagery (C 2)) (LRR A) s (D7)
Restrictive Layer (if presen Type:	May be tech	inically not hydric bed ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroget Oxidized Presence Recent Ir Stunted of (B7) Other (E:	<u>ply)</u> ained Leave 4A, and 4B ; t (B11) nvertebrates n Sulfide Od Rhizospher e of Reduce on Reductio or Stressed kplain in Rei	does not es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	appear wi xcept MLI Living Roc 1) d Soils (C6 1) (LRR A	Hydri thin twelv RA ots (C3)	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (f A, and 4B) age Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D) Season Water Table ration Visible on Ae norphic Position (D) ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6 -Heave Hummocks	No is test plot. is test plot. more required) B9) (MLRA 1, 2) e (C2) erial Imagery (C2 2)) (LRR A) s (D7)
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Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicate Primary Indicators (minimum 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 Aer Sparsely Vegetated Cond Field Observations: Surface Water Present?	May be tech	inically not hydric become ired; check all that ap Water-St 1, 2, Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted of (B7) Other (E: e (B8)	ained Leave 4A, and 4B; ained Leave 4A, and 4B; the (B11) nvertebrates on Sulfide Od Rhizospher e of Reducer on Reduction or Stressed kplain in Ref es): none	does not es (B9) (e s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	appear wi xcept MLF Living Roc 4) d Soils (C6 1) (LRR A	RA bits (C3)	ic Soil Prove inches	esent? Yes of the surface at thi ry Indicators (2 or r r-Stained Leaves (I A, and 4B) Bage Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D) ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) -Heave Hummocks	No is test plot. more required) B9) (MLRA 1, 2) e (C2) rrial Imagery (C2 2)) (LRR A) s (D7)
Restrictive Layer (if presen Type: Depth (inches): Depth (inches): Remarks: Borderline hydric. 'DROLOGY Wetland Hydrology Indicate Primary Indicators (minimum 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 Aer Sparsely Vegetated Cond Field Observations: Surface Water Present? Water Table Present? Saturation Present?	May be tech	inically not hydric bed inically not hydric bed water-St l, 2, Salt Crus Salt Crus Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted of (B7) Other (E: (B7) Depth (inch No Depth (inch	ained Leave 4A, and 4B ained Leave 4A, and 4B ained Leave 4A, and 4B ained Leave 4A, and 4B ained Leave 4 4 4 5 1 1 1 1 1 1 1 1	does not es (B9) (e s (B13) lor (C1) res along d Iron (C4 Plants (D marks)	appear wi xcept MLI Living Roc 4) d Soils (C6 1) (LRR A	Hydri thin twelv RA ots (C3) 3))	ic Soil Prove inches	esent? Yes of the surface at thi of the surface at thi ry Indicators (2 or r r-Stained Leaves (f A, and 4B) Hage Patterns (B10) Season Water Table ration Visible on Ae norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) -Heave Hummocks	No is test plot. more required) B9) (MLRA 1, 2) e (C2) orial Imagery (C 2)) (LRR A) s (D7) No 🖂

Project/Site: Vista Views at Black Lake	City/County: Thurston County	Sampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA	_ Sampling Point: <u>TP-4</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classifie	cation:
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes 🛛 No 🗌 (If no, explain in Remarks	.)
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbed	? Are "Normal Circumstances" present?	Yes 🛛 No 🗌
Are Vegetation no, Soil no, or Hydrology no naturally problematic?	(If needed, explain any answers in Remarks	s.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects	s, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: Marginal hydric soils			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1			·	That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3		. <u> </u>		Species Across All Strata: <u>3</u> (B)
4				Demonst of Deminent Creation
		= Total C	over	That Are OBL, FACW, or FAC: 33% (A/B)
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				
1		. <u> </u>		Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3		. <u></u>		OBL species x 1 =
4				FACW species x 2 =
5.				FAC species <u>42</u> x 3 = <u>126</u>
		= Total C	over	FACU species 100 x 4 = 400
Herb Stratum (Plot size: <u>6'</u>)				UPL species x 5 =
1. <u>Hairy cat's ear (Hypochaeris radicata)</u>	60	Y	FACU	Column Totals: 142 (A) 526 (B)
2. <u>Red fescue (Festuca rubra)</u>	40	Y	FAC	
3. Sweet vernal grass (Anthoxanthum odoratum)	30	Y	FACU	Prevalence Index = $B/A = 3.7$
4. Kentucky bluegrass (Poa pretenses)	10	N	FACU	Hydrophytic Vegetation Indicators:
5. <u>Velvet grass (Holcus lanatus)</u>	2	N	FAC	Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7.				□ Prevalence Index is ≤3.0 ¹
8.				☐ Morphological Adaptations ¹ (Provide supporting
9.				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹
11		·		Problematic Hydrophytic Vegetation ¹ (Explain)
· · · · <u> </u>	1/2	– Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	142	- 10tai C		be present, unless disturbed or problematic.
1.				
2				Hydrophytic Versetation
		= Total C	over	Present? Yes No 🕅
% Bare Ground in Herb Stratum		, otar C		
Remarks:				•

(inches) (Color (moist)	%	$\frac{\text{Redox Features}}{\text{Color (moist)}} \qquad \% \qquad \text{Type}^1 \qquad \text{Loc}^2$	Texture	Remarks
				Texture	
<u>J-12</u>	<u>10 Y R 4/2</u>				Sandy gravelly slit loam
12-20" 1	10YR 6/2		None		Silty clay
¹ Type: C=Con	ncentration, D=De	epletion, RM=	Reduced Matrix, CS=Covered or Coated Sand Gra	ains. ² L	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil In	idicators: (Appl	icable to all	LRRs, unless otherwise noted.)	Indica	itors for Problematic Hydric Soils ³ :
Histosol (A	\1)		Sandy Redox (S5)		cm Muck (A10)
HISTIC EPIP Block Histi	bedon (A2) $(A2)$		Stripped Matrix (S6)		ed Parent Material (TF2)
	Sulfide (A1)				ber (Explain in Remarks)
	Below Dark Surfa	ce (A11)	Depleted Matrix (F3)		
Thick Dark	k Surface (A12)	00 (7117)	Redox Dark Surface (F6)	³ Indica	ators of hydrophytic vegetation and
Sandy Mu	cky Mineral (S1)		Depleted Dark Surface (F7)	wei	tland hydrology must be present.
 □ Sandy Gle	eved Matrix (S4)		Redox Depressions (F8)	unl	ess disturbed or problematic.
Restrictive La	ayer (if present):		()		·
Restrictive La Type:	ayer (if present):				·
Restrictive La Type: Depth (inch	ayer (if present):			Hydric So	oil Present? Yes ⊠ No □
Restrictive La Type: Depth (inch Remarks: Boro	ayer (if present): nes): derline hydric. M	ay be technic	ally not hydric because redox does not appear with	Hydric So	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
Restrictive La Type: Depth (inch Remarks: Boro	ayer (if present): nes): derline hydric. Ma	ay be technic	ally not hydric because redox does not appear with	Hydric So	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
Restrictive La Type: Depth (inch Remarks: Boro	ayer (if present):	ay be technic		Hydric So nin twelve in	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
Restrictive La Type: Depth (inch Remarks: Boro	derline hydric. M	ay be technic	ally not hydric because redox does not appear with	Hydric So	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
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Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr	Ayer (if present): hes): derline hydric. M f rology Indicators	ay be technic	cally not hydric because redox does not appear with	Hydric So	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica	Ayer (if present): hes): derline hydric. M f rology Indicators ttors (minimum of	ay be technic	zally not hydric because redox does not appear with	Hydric So iin twelve in	bil Present? Yes ⊠ No □ ches of the surface at this test plot.
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Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate	Aver (if present): nes): derline hydric. M f rology Indicators ators (minimum of /ater (A1) r Table (A2)	ay be technic		Hydric So in twelve in <u>Sec</u> A	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B)
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation	Aver (if present): hes): derline hydric. M f rology Indicators Ators (minimum of /ater (A1) rr Table (A2) (A3)	ay be technic		Hydric So in twelve in <u>Sec</u> A	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10)
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar	Ager (if present): hes): derline hydric. M f rology Indicators ators (minimum of /ater (A1) r Table (A2) (A3) rks (B1)	ay be technic		Hydric So in twelve in <u>Sec</u> A	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
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Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos	ayer (if present): ayer (if present): hes): derline hydric. M derline hydric. M f rology Indicators ators (minimum of /ater (A1) rr Table (A2) (A3) rks (B1) Deposits (B2) sits (B3)	ay be technic		Hydric So in twelve in Sec S (C3)	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (Geomorphic Position (D2)
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of	ayer (if present): ayer (if present): ayer (if present): hes): derline hydric. M derline hydric. M y rology Indicators ators (minimum of /ater (A1) rr Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)	ay be technic		Hydric So in twelve in Sec A s (C3)	Dil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (G Geomorphic Position (D2) Shallow Aquitard (D3)
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos	Ager (if present): ayer (if present): hes): derline hydric. M f rology Indicators ators (minimum of /ater (A1) r Table (A2) i (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	ay be technic		Hydric So in twelve in Sec A s (C3)	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (G Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So	Ager (if present): ayer (if present): hes): derline hydric. M f rology Indicator: ators (minimum of /ater (A1) r Table (A2) i (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	ay be technic		Hydric So in twelve in <u>Sec</u> A S (C3)	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (0 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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Restrictive La Type: Depth (inch Remarks: Bord /DROLOGY Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water	Ager (if present): ayer (if present): hes): derline hydric. M f rology Indicator: ators (minimum of /ater (A1) r Table (A2) i (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) i Visible on Aerial /egetated Concav ations: r Present?	ay be technic ay be technic s: one required Imagery (B7 /e Surface (E Yes \[No		Hydric So in twelve in Sec A Image: Second Se	bil Present? Yes ⊠ No □ ches of the surface at this test plot. condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (G Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

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

Yes 🗌 No 🖾 Depth (inches): <u>none</u>

Remarks:

Saturation Present?

Wetland Hydrology Present? Yes 🗌 No 🖂

Project/Site: Vista Views at Black Lake	City/County: Thurston County	Sampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA	Sampling Point: <u>TP-5</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classifi	cation:
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🛛 🛛 No 🗌 (If no, explain in Remarks	S.)
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbed	? Are "Normal Circumstances" present?	Yes 🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transect	s, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: Drained hydric soils			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Demonstrat Demonstration
Sapling/Shrub Stratum (Plot size: 12')		= Total C	Cover	That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1.				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species 5 $x 2 = 10$
5				FAC species 10 $x 3 = 30$
··		= Total (over	FACU species 110 x 4 = 440
Herb Stratum (Plot size: <u>6'</u>)		rotar c	0000	UPL species $x = 5$
1. Hairy cat's ear (Hypochaeris radicata)	60	Y	FACU	Column Totals: 125 (A) 480 (B)
2. Chickweed (Stellaria media)	30	Y	FACU	
3. Sweet vernal grass (Anthoxanthum odoratum)	20	N	FACU	Prevalence Index = B/A = <u>3.84</u>
4. <u>Red fescue (Festuca rubra)</u>	10	N	FAC	Hydrophytic Vegetation Indicators:
5. Reed canarygrass (Phalaris arundinacea)	5	N	FACW	Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9		. <u> </u>		☐ Wetland Non-Vascular Plants ¹
10				□ □ Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
Woody Vino Stratum (Plot size:	125	= Total C	Cover	be present, unless disturbed or problematic.
1				Hydrophytic
2		- Total C		Vegetation Present? Ves 🗆 No 🕅
% Bare Ground in Herb Stratum		- Total C	over	
Remarks:				

Sampling Point: TP-5

Profile Description: (Descri	be to the depth							
Depth Matrix	<u> </u>	Redo	<u>x Features</u>					
(inches) Color (moist)	<u>%</u> <u>C</u>	olor (moist)	<u>% Type¹</u>	Loc ²	Texture	<u>e</u>	Remark	<u>s</u>
0-9" <u>10YR 4/2</u>	<u> </u>	lone				<u>Sa</u>	andy gravelly silt lo	bam
9-10" <u>10YR 6/2</u>	<u> </u>	lone				Ha	ard pan	
10-20" 10YR 6/2		0YR 6/8				Si	It very gravelly cla	V
1011(0/2	<u>+</u>	0111 0/0				0	it very graveny ela	y
¹ Type: C=Concentration D=F	enletion RM=F	Reduced Matrix CS	S=Covered or Coat	ed Sand Gr	ains		on: PI =Pore Linin	ng M=Matrix
Hydric Soil Indicators: (App	blicable to all L	RRs, unless othe	rwise noted.)		Inc	dicators	for Problematic F	lydric Soils ³ :
Histosol (A1)	Γ] Sandy Redox (S	\$5)			2 cm M	uck (A10)	-
Histic Epipedon (A2)	Ē	Stripped Matrix	(S6)			Red Pa	rent Material (TF2))
Black Histic (A3)	Γ	Loamy Mucky M	lineral (F1) (excep	t MLRA 1)		Very Sh	allow Dark Surfac	e (TF12)
Hydrogen Sulfide (A4)	Ľ	Loamy Gleyed	Matrix (F2)			Other (E	Explain in Remarks	s)
Depleted Below Dark Surf	ace (A11)	Depleted Matrix	(F3)		0.			
☐ Thick Dark Surface (A12)	, L	☐ Redox Dark Sur	face (F6)		³ln	dicators of	of hydrophytic veg	etation and
Sandy Mucky Mineral (S1) L	J Depleted Dark S				wetland	hydrology must be	e present,
Restrictive Laver (if present						uniess u	isturbed of probler	
Type:	,-							
Type.							aaant2 Vaa M	
Depth (inches):					Hvdrie	c Soil Pr	esent? tes ixi	NOII
Type Depth (inches): Remarks:					Hydrid	c Soil Pr	esent? Tes 🖂	
Remarks:					Hydrid	c Soil Pr	esent? Yes 🖂	
Depth (inches): Remarks:					Hydrid	c Soil Pr	esent? Yes 🖂	
Depth (inches): Remarks: DROLOGY Wetland Hydrology Indicato					Hydrid	c Soil Pr		
Depth (inches): Depth (inches): Remarks: DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Deptily (141)	rs: of one required;	check all that appl	y)		Hydri	<u>Seconda</u>	ry Indicators (2 or	more required)
Type Depth (inches): Remarks: TDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1)	rs: of one required;	<u>check all that appl</u> □ Water-Stai	y) ned Leaves (B9) (e	xcept MLR	Hydrid A	<u>Seconda</u>	ry Indicators (2 or	more required) (B9) (MLRA 1, 2 ,
Type Depth (inches): Remarks: 'DROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the second	rs: of one required;		y) ned Leaves (B9) (e A, and 4B)	xcept MLR	Hydrid A	<u>Seconda</u> □ Wate 4.	ry Indicators (2 or r-Stained Leaves (A, and 4B)	more required) (B9) (MLRA 1, 2 ,
Type Depth (inches): Remarks: 'DROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of primary Indicators (minimum of surface Water (A1)) □ Surface Water Table (A2) □ Saturation (A3) □ Weter Mache (B4)	rs: ⊵f one required;	<u>check all that appl</u> ☐ Water-Stai 1, 2, 4 A ☐ Salt Crust	y) ned Leaves (B9) (e A, and 4B) (B11)	xcept MLR	Hydrid A	<u>Seconda</u> Wate Drain	ry Indicators (2 or r-Stained Leaves A, and 4B) lage Patterns (B10	<u>more required)</u> (B9) (MLRA 1, 2,
Type Depth (inches): Remarks: /DROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	rs: <u>of one required;</u>	<u>check all that appl</u> ☐ Water-Stai 1, 2, 4 A ☐ Salt Crust ☐ Aquatic Inv	<u>y)</u> ned Leaves (B9) (e A, and 4B) (B11) /ertebrates (B13)	xcept MLR	Hydrid	Seconda Seconda Wate 4. Drain Dry-S	ry Indicators (2 or r-Stained Leaves A, and 4B) age Patterns (B10 Season Water Tab	more required) (B9) (MLRA 1, 2,)) le (C2)
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Type Depth (inches): Remarks: 'DROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the second secon	rs: of one required;	<u>check all that appl</u> ☐ Water-Stai 1, 2, 4 A ☐ Salt Crust ☐ Aquatic Inv ☐ Hydrogen 3 ☐ Oxidized R ☐ Presence co	y) ned Leaves (B9) (e A, and 4B) (B11) /ertebrates (B13) Sulfide Odor (C1) thizospheres along of Reduced Iron (C-	xcept MLR	Hydrid A s (C3)	Seconda Seconda Wate 4. Drain Dry-S Satur Geor Shall	ry Indicators (2 or r-Stained Leaves A, and 4B) age Patterns (B10 Season Water Tab ration Visible on Ad norphic Position (E ow Aquitard (D3)	<u>more required)</u> (B9) (MLRA 1, 2,)) le (C2) erial Imagery (C9))2)
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Type Depth (inches): Remarks: 'DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of 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 Aeria	rs: of one required; al Imagery (B7)	check all that appl Water-Stai 1, 2, 44 Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence o Recent Iron Stunted or Other (Exp	y) ned Leaves (B9) (e A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) thizospheres along of Reduced Iron (C4 n Reduction in Tille Stressed Plants (D lain in Remarks)	xcept MLR Living Root 4) d Soils (C6) 1) (LRR A)	Hydrid A s (C3)	Seconda Seconda Wate 4, Drain Dry-S Satur Geor Shall FAC- Raise Frost	ry Indicators (2 or r-Stained Leaves A, and 4B) lage Patterns (B10 Season Water Tab ration Visible on Ad norphic Position (D ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6 -Heave Hummock	more required) (B9) (MLRA 1, 2,)) le (C2) erial Imagery (C9) D2) 6) (LRR A) s (D7)
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Type Depth (inches): Remarks: 'DROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of 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 Aeria Sparsely Vegetated Concomparise Surface Water Present? Water Table Present? Water Table Present? Saturation Present? Saturation Present?	rs: of one required; of one required; al Imagery (B7) ave Surface (B8 Yes □ No [Yes □ No [Yes □ No [check all that appl □ Water-Stai 1, 2, 44 □ Salt Crust □ Aquatic Inv □ Hydrogen S □ Oxidized R □ Presence c □ Recent Iron □ Stunted or □ Other (Exp ○ Depth (inchest □ Depth (inchest □ Depth (inchest	y) ned Leaves (B9) (e A, and 4B) (B11) vertebrates (B13) Sulfide Odor (C1) thizospheres along of Reduced Iron (C4 n Reduction in Tille Stressed Plants (D lain in Remarks) s): none s): none	Living Root 4) d Soils (C6) 1) (LRR A) Wetla	A A s (C3)	Seconda Seconda Wate 4 Drain Dry-S Satur Geor Shall FAC- Raise Frost	ry Indicators (2 or r-Stained Leaves A, and 4B) lage Patterns (B10 Season Water Tab ration Visible on Ad norphic Position (E ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6 -Heave Hummock	more required) (B9) (MLRA 1, 2, (B9) (MLRA 1, 2, (D) le (C2) erial Imagery (C9) (D2) 6) (LRR A) (s (D7))
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Type	rs: of one required; of one required; al Imagery (B7) ave Surface (B8 Yes □ No [Yes □ No [Yes □ No [am gauge, mon	check all that appl □ Water-Stai 1, 2, 44 □ Salt Crust □ Aquatic Inv □ Hydrogen 3 □ ○ □ Aquatic Inv □ Hydrogen 3 □ ○ ○ ○ Necent Iron □ ○ <	y) ned Leaves (B9) (e A , and 4B) (B11) (ertebrates (B13) Sulfide Odor (C1) thizospheres along of Reduced Iron (C4 n Reduction in Tille Stressed Plants (D lain in Remarks) s): <u>none</u> s): <u>none</u> s): <u>none</u> s): <u>none</u>	xcept MLR Living Root 4) d Soils (C6) 1) (LRR A) Wetta spections), i	A A s (C3)	Seconda Seconda Wate 4. Dry-S Satur Geor Shall FAC- Raise Frost rology P	ry Indicators (2 or r-Stained Leaves (A, and 4B) hage Patterns (B10 Season Water Tab ration Visible on Ad norphic Position (E ow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6 -Heave Hummock	more required) (B9) (MLRA 1, 2, (B9) (MLRA 1, 2, (D) le (C2) erial Imagery (C9) (D2) 6) (LRR A) (s (D7)

Project/Site: Vista Views at Black Lake	_City/County: Thurston County Sa	mpling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: <u>WA</u> Sa	mpling Point: <u>TP-6</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classification	
Are climatic / hydrologic conditions on the site typical for this time of y	vear? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbe	d? Are "Normal Circumstances" present? Yes	🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, im	portant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: Drained hydric soils			

	Absolute	Dominant	t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4.				
		= Total (Cover	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				$\frac{11}{11} \frac{11}{11} 11$
1.				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3				OBL species x 1 =
۵				FACW species x 2 =
4				$\frac{1}{2} = \frac{1}{2}$
5				FAC species 10 $x_3 = 30$
Herb Stratum (Plot size: 6')		= Total C	Cover	FACU species $\frac{100}{100}$ $x = \frac{400}{100}$
$\frac{1}{1} \frac{1}{1} \frac{1}$	70	V		UPL species x 5 =
	<u>70</u>	<u>r</u>	FACU	Column Totals: <u>110</u> (A) <u>430</u> (B)
2. Sweet vernal grass (Anthoxanthum odoratum)	20	<u>Y</u>	FACU	Dravalance index $= B/A = -2.0$
3. <u>Chickweed (Stellaria media)</u>	10	<u>N</u>	FACU	$\frac{1}{2} = \frac{1}{2} = \frac{1}$
4. <u>Red fescue (Festuca rubra)</u>	10	N	FAC	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				□ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8.				Morphological Adaptations ¹ (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹
				Problematic Hydrophytic Vegetation ¹ (Explain)
11	440			¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:	110		Jover	be present, unless disturbed or problematic.
1:				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum		= Total C	Cover	
Remarks:				1
nomano.				

Depth <u>Matri</u>	X		Redo	x Feature	<u>s</u>	-					
(inches) Color (moist)	%	Color (mo	ist)	%	Type ¹	Loc ²	Textu	e		<u>Remarks</u>	
0-10 <u>10YR 3/2</u>		None							Sandy grav	elly silt loam	
0-20 <u>10YR 6/2</u>		<u>10YR 6/8</u>							Silty clay		
					. <u> </u>			2.			
lype: C=Concentration, D=	Depletion, RN	II LRRs. uni	Matrix, CS	S=Covere rwise not	d or Coate ed.)	ed Sand G	rains. Ir	Loc dicato	rs for PL=P	ore Lining, M=I ematic Hvdric	Matrix. Soils ³ :
T Histosol (A1)	1	□ Sandv	/ Redox (S	35)	,		Г	1 2 cm	Muck (A10)		
Histic Epipedon (A2)			ed Matrix	(S6)				Red	Parent Mate	rial (TF2)	
Black Histic (A3)		Loamy	y Mucky N	, 1ineral (F1) (except	MLRA 1)		_] Very	Shallow Dar	rk Surface (TF1	2)
Hydrogen Sulfide (A4)		Loamy	y Gleyed N	Matrix (F2))	,] Othe	r (Explain in	Remarks)	,
Depleted Below Dark Sur	face (A11)	Deplet	ted Matrix	(F3)							
Thick Dark Surface (A12)		Redox	Cark Sur	face (F6)			³ I	ndicato	rs of hydropl	hytic vegetation	and
Sandy Mucky Mineral (S1)	Deplet	ted Dark S	Surface (F	7)			wetla	nd hydrology	/ must be prese	nt,
Sandy Gleyed Matrix (S4)	Redox	Our Depression of the second secon	ions (F8)				unles	s disturbed o	or problematic.	
estrictive Layer (if presen	t):										
Туре:											
Type: Depth (inches): Remarks:							Hydr	ic Soil	Present?	Yes 🛛 No []
Type: Depth (inches): Remarks:							Hydr	ic Soil	Present?	Yes 🛛 No []
Type: Depth (inches): temarks: DROLOGY							Hydr	ic Soil	Present?	Yes 🛛 No []
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator)rs:						Hydr	ic Soil	Present?	Yes 🛛 No []
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indicator rimary Indicators (minimum	prs: of one requir	ed; check al	I that appl	y)			Hydr	ic Soil	Present?	Yes ⊠ No [] equired)
Type: Depth (inches): temarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1))rs: of one requir	<u>ed; check al</u>	<u>I that appl</u>	y) ned Leave	es (B9) (e	xcept MLF	Hydr	ic Soil Secor □ W	Present?	Yes ⊠ No [ors (2 or more r Leaves (B9) (N	 equired) ILRA 1,
Type: Depth (inches): temarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1) High Water Table (A2)	rs: of one requir	ed; check al	<u>I that appl</u> Vater-Stain 1, 2, 44	y) ned Leave A, and 4B	əs (B9) (e)	xcept MLI	Hydr	ic Soil	Present? ndary Indicate ater-Stained 4A, and 4E	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3)	equired)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator Irimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	of one requir	<u>ed; check al</u>	<u>I that appl</u> Vater-Stair 1, 2, 4 Salt Crust (y) ned Leave A, and 4B (B11)	es (B9) (e)	xcept MLI	Hydr	Secon	Present? Indary Indicate ater-Stained 4A, and 4E rainage Patter	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10)	equired)
Type: Depth (inches): Temarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	rs: of one require	<u>ed; check al</u> V	<u>I that appl</u> Vater-Stain 1, 2, 4 Falt Crust (squatic Inv	y) ned Leave A, and 4B (B11) vertebrates	es (B9) (e) s (B13)	xcept MLF	Hydr	Secor	Present? Indary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) Vater Table (C2)	equired)
Type: Depth (inches): temarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Prs: of one require	<u>'ed; check al</u> V S P F	<u>I that appl</u> Vater-Stain 1, 2, 4 Salt Crust (squatic Inv Iydrogen S	y) ned Leave A, and 4B (B11) /ertebrates Sulfide Oc	es (B9) (e) s (B13) dor (C1)	xcept MLI	Hydr	Secor	Present? Indary Indicate ater-Stained 4A, and 4E ainage Patter y-Season W aturation Visi	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) /ater Table (C2) ible on Aerial Im	equired) ILRA 1,
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	איז: of one requir	<u>ed; check al</u> V S S S S S S S S S S S S S S S S S S	<u>I that appl</u> Vater-Stair 1, 2, 4 Salt Crust (iquatic Inv Iydrogen S)xidized R	y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher	es (B9) (e) s (B13) dor (C1) res along	xcept MLF	Hydr Hydr	Second Second W Di Signal Gin	Present? adary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W aturation Visi eomorphic P	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) /ater Table (C2) /ble on Aerial Im osition (D2)	equired) ILRA 1,
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indicator rimary Indicators (minimum] Surface Water (A1)] High Water Table (A2)] Saturation (A3)] Water Marks (B1)] Sediment Deposits (B2)] Drift Deposits (B3)] Algal Mat or Crust (B4)	of one requir	ed; check al	<u>I that appl</u> Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S)xidized R 'resence c	y) ned Leave A, and 4B (B11) /ertebrate: Sulfide Oc Rhizosphei of Reduce	es (B9) (e) s (B13) dor (C1) res along d Iron (C4	xcept MLF	RA ets (C3)	Second Second W D D Second Second	Present? adary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W aturation Visi eomorphic P- nallow Aquita	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) Vater Table (C2) ble on Aerial Im osition (D2) ard (D3)	equired) ILRA 1,
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator trimary Indicators (minimum 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)	ors: of one requir	<u>ed; check al</u> V S E E E E E E E E E E E E E E E E E E	<u>I that appl</u> Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S)xidized R 'resence c Recent Iror	y) ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Sulfide Oc Shizosphei of Reduce n Reductio	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilled	xcept MLI	RA (C3)	Secon Secon W Di Si Si Si Si Si Si	Present? Indary Indicate ater-Stained 4A, and 4E ainage Patter y-Season W aturation Visi comorphic P aallow Aquita AC-Neutral T	Yes ⊠ No [ors (2 or more r Leaves (B9) (N B) Perns (B10) Vater Table (C2) ble on Aerial Im osition (D2) ard (D3) fest (D5)	equired) ILRA 1,
Type: Depth (inches): Temarks: DROLOGY Vetland Hydrology Indicator rimary Indicators (minimum 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)	ors: of one requir	<u>ed; check al</u> V S P P P P P P P P S S S S S S S S S S	<u>I that appl</u> Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S)xidized R 'resence c &ccent Iror ;tunted or	y) ned Leave A, and 4B (B11) /ertebrates Sulfide Oc Shizospher of Reduce n Reduction Stressed	es (B9) (e) dor (C1) res along d Iron (C4 on in Tiller Plants (D	Living Roc) d Soils (C6 1) (LRR A	Hydr Hydr RA	Secon Secon W Di Si Gi Si F/ Rai	Present? Indary Indicate ater-Stained 4A, and 4E ainage Patter y-Season W aturation Visi comorphic P hallow Aquita AC-Neutral T aised Ant Mo	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) /ater Table (C2) ible on Aerial In osition (D2) ard (D3) fest (D5) punds (D6) (LRI	equired) ILRA 1, Dagery (C
Type: Depth (inches): Temarks: DROLOGY /etland Hydrology Indicator rimary Indicators (minimum 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 Aer	ors: of one requir al Imagery (E	<u>ed; check al</u> V S S P S F S S 37)	I that appl Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S)xidized R Presence c Recent Iror Stunted or)ther (Exp	y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed Jain in Re	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc) d Soils (C6 1) (LRR A	RA (C3)	Secon Secon W Di Si Gi Si Fr Fr	Present? Indary Indicate ater-Stained 4A, and 4E rainage Pattery-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	Yes ⊠ No [ors (2 or more r Leaves (B9) (M 3) erns (B10) /ater Table (C2) ible on Aerial Im osition (D2) ard (D3) est (D5) punds (D6) (LRF lummocks (D7)	equired) ILRA 1, hagery ((
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicato <u>trimary Indicators (minimum</u> 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 Aeri Sparsely Vegetated Conc	ors: of one requir al Imagery (E ave Surface	ed; check al V S H S H S H S <tr< td=""><td>I that apply Vater-Stain 1, 2, 4 Salt Crust (iquatic Inv lydrogen S Dxidized R Presence of Recent Iror Stunted or Dther (Exp</td><td>y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Shizospher of Reduce n Reduction Stressed Jain in Re</td><td>es (B9) (e) s (B13) dor (C1) res along d Iron (C4 pn in Tiller Plants (D marks)</td><td>Living Roc Living Roc</td><td>RA (C3)</td><td>Second Second W Di Si Gi Si Fr Fr</td><td>Present? Indary Indicate ater-Stained 4A, and 4E y-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo ost-Heave H</td><td>Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) Vater Table (C2) ble on Aerial Im osition (D2) ard (D3) est (D5) bunds (D6) (LRF lummocks (D7)</td><td>equired) ILRA 1, hagery ((</td></tr<>	I that apply Vater-Stain 1, 2, 4 Salt Crust (iquatic Inv lydrogen S Dxidized R Presence of Recent Iror Stunted or Dther (Exp	y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Shizospher of Reduce n Reduction Stressed Jain in Re	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 pn in Tiller Plants (D marks)	Living Roc Living Roc	RA (C3)	Second Second W Di Si Gi Si Fr Fr	Present? Indary Indicate ater-Stained 4A, and 4E y-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	Yes ⊠ No [ors (2 or more r Leaves (B9) (N 3) erns (B10) Vater Table (C2) ble on Aerial Im osition (D2) ard (D3) est (D5) bunds (D6) (LRF lummocks (D7)	equired) ILRA 1, hagery ((
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Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicato Primary Indicators (minimum 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 Aeri Sparsely Vegetated Cond Sediment Present ?	ors: of one requir al Imagery (E ave Surface	ed; check al V S A C F C F S 37) C (B8) V Dep	I that appl Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S Vidized R Presence of Stunted or Other (Exp	y) ned Leave A, and 4B (B11) vertebrate: Sulfide Oc thizospher of Reduce n Reductio Stressed lain in Re	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLF Living Roc () d Soils (C6 1) (LRR A	RA ets (C3)	Secon W Di Si Gi Si Fr	Present? adary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W aturation Visi eomorphic P hallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	Yes ⊠ No [ors (2 or more r Leaves (B9) (N B) erns (B10) vater Table (C2) ble on Aerial Im osition (D2) ard (D3) iest (D5) punds (D6) (LRF lummocks (D7)	equired) ILRA 1, hagery (C
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicato Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Vater Table Present?	of one requir	ed; check al	I that apply Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp oth (inches oth (inches	y) ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Shizospher of Reduce n Reductio Stressed lain in Re s): <u>none</u>	es (B9) (e) dor (C1) res along d Iron (C4 on in Tillea Plants (D marks)	xcept MLF Living Roc I) d Soils (C6 1) (LRR A	RA ets (C3)	Secon W Di Si Si Fi Ri Fr	Present? Indary Indicate ater-Stained 4A, and 4E ainage Patter y-Season W aturation Visi comorphic P hallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	Yes No Construction (C2) Yes (2 or more reading to the construction (C2) Year (C2) Ye	equired) ILRA 1, hagery (C
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicato Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Vater Table Present? Saturation Present?	al Imagery (E ave Surface Yes IN Yes N	red; check al □ V □ <td>I that appl Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S Dxidized R Presence of Cecent Iror Stunted or Dther (Exp th (inches th (inches th (inches</td> <td>y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Shizospher of Reduce n Reduction Stressed alain in Re s): <u>none</u> s): <u>none</u></td> <td>es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks)</td> <td>Living Roc) d Soils (C6 1) (LRR A</td> <td>RA ets (C3) (C3)</td> <td>Secon W Di Si Fr Rain Fr</td> <td>Present? ndary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W aturation Visi comorphic P hallow Aquita AC-Neutral T aised Ant Mo ost-Heave H</td> <td>Yes ⊠ No [ors (2 or more r Leaves (B9) (M 3) erns (B10) /ater Table (C2) ible on Aerial Im osition (D2) ard (D3) iest (D5) bunds (D6) (LRF lummocks (D7) Yes □ No [</td> <td>☐ equired) ILRA 1, hagery (C R A)</td>	I that appl Vater-Stain 1, 2, 4 Salt Crust (vquatic Inv lydrogen S Dxidized R Presence of Cecent Iror Stunted or Dther (Exp th (inches th (inches th (inches	y) ned Leave A, and 4B (B11) vertebrates Sulfide Oc Shizospher of Reduce n Reduction Stressed alain in Re s): <u>none</u> s): <u>none</u>	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roc) d Soils (C6 1) (LRR A	RA ets (C3) (C3)	Secon W Di Si Fr Rain Fr	Present? ndary Indicate ater-Stained 4A, and 4E rainage Patter y-Season W aturation Visi comorphic P hallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	Yes ⊠ No [ors (2 or more r Leaves (B9) (M 3) erns (B10) /ater Table (C2) ible on Aerial Im osition (D2) ard (D3) iest (D5) bunds (D6) (LRF lummocks (D7) Yes □ No [☐ equired) ILRA 1, hagery (C R A)

Remarks:

Project/Site: Vista Views at Black Lake	City/County: Thurston County S	ampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: <u>WA</u> State: <u>State</u>	ampling Point: <u>TP-7</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classification	ו:
Are climatic / hydrologic conditions on the site typical for this time of y	vear? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbe	d? Are "Normal Circumstances" present? Yes	3 🖾 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, transects, in	nportant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: Drained hydric soils			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Deminant Species
		= Total C	over	That Are OBL, FACW, or FAC: 0% (A/B)
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species <u>5</u> x 1 = <u>5</u>
4				FACW species x 2 =
5.				FAC species <u>5</u> x 3 = <u>15</u>
		= Total C	over	FACU species 100 x 4 = 400
Herb Stratum (Plot size: <u>6'</u>)				UPL species x 5 =
1. <u>Hairy cat's ear (Hypochaeris radicata)</u>	60	Y	FACU	Column Totals: 110 (A) 420 (B)
2. Sweet vernal grass (Anthoxanthum odoratum)	20	Y	FACU	(*)
3. <u>Chickweed (Stellaria media)</u>	20	Y	FACU	Prevalence Index = $B/A = 3.8$
4. Red fescue (Festuca rubra)	5	Ν	FAC	Hydrophytic Vegetation Indicators:
5. <u>Slough sedge (Carex obnupta)</u>	5	N	OBL	Rapid Test for Hydrophytic Vegetation
6.				Dominance Test is >50%
7.				□ Prevalence Index is ≤3.0 ¹
8.				Morphological Adaptations ¹ (Provide supporting
9.				data in Remarks or on a separate sheet)
10				☐ Wetland Non-Vascular Plants ¹
11				Problematic Hydrophytic Vegetation ¹ (Explain)
····	110	– Total (over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	110	- 10tai C		be present, unless disturbed or problematic.
1.				
2				Hydrophytic Versteiler
		- Total C	over	Present? Yes No 🕅
% Bare Ground in Herb Stratum		- 101010		
Remarks:				

Depth <u>Ma</u>	trix %		Redo	x Feature	<u>s</u> Typo1	loc^2	Toytu	` 0	Dom	arke
			<u>or (moist)</u>	70	Type	LOC	Textu	<u>e</u>	Rell	
<u>-10 10YR 3/2</u>		<u>None</u>	e						Sandy gravelly s	silt loam
0-20 <u>10YR 6/2</u>		<u>10YI</u>	R 6/8						Silty clay	
				<u>.</u>						
					·					
					·					
Type: C=Concentration, D	=Depletion, F	RM=Red	luced Matrix, CS	S=Covered	d or Coate	ed Sand G	rains.	² Loc	ation: PL=Pore I	Lining, M=Matrix.
	pplicable to			wise not	ea.)					lic Hydric Solis".
」 Histosol (A1) ∃ Histic Eninodon (A2)			Sandy Redox (S	(S6)] 2 cm] Pod	Muck (A10) Parant Material (
☐ Thistic Epipedon (A2) ☐ Black Histic (A3)			Loamy Mucky M	(30) lineral (F1) (excent	MI RA 1)] Neu] Verv	Shallow Dark Su	ITZ) Inface (TE12)
Hvdrogen Sulfide (A4)			Loamy Gleved N	Matrix (F2)) (елсері] Othe	r (Explain in Rem	narks)
Depleted Below Dark S	urface (A11)		Depleted Matrix	(F3)	/				. (_,,p.a	
 Thick Dark Surface (A1:	2)		, Redox Dark Sur	face (F6)			3	ndicato	rs of hydrophytic	vegetation and
Sandy Mucky Mineral (, S1)		Depleted Dark S	Surface (F	7)			wetla	nd hydrology mus	st be present,
Sandy Gleyed Matrix (S	4)	□ I	Redox Depressi	ons (F8)				unles	s disturbed or pro	oblematic.
estrictive Laver (if prese	nt):									
	,									
Туре:	, 		_							
Type: Depth (inches): Remarks:	, 		-				Hydr	ic Soil	Present? Yes	No 🗌
Type: Depth (inches): Remarks:			-				Hydr	ic Soil	Present? Yes	⊠ No 🗌
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica	fors:		-				Hydr	ic Soil	Present? Yes	⊠ No 🗆
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur	tors:		- - eck all that appl	v)			Hydr	ic Soil	Present? Yes	
Type: Depth (inches): temarks: DROLOGY Vetland Hydrology Indica rimary Indicators (minimur Surface Water (A1)	tors:	iired; che	eck all that appl	y)	os (B9) (e	vcent MI I	Hydr	ic Soil	Present? Yes	2 or more required)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Irimary Indicators (minimur Surface Water (A1) High Water Table (A2)	tors: n of one requ	lired; che	eck all that appl	y) ned Leave	es (B9) (e	xcept MLI	Hydr	ic Soil Secor	Present? Yes	2 or more required) ves (B9) (MLRA 1 ,
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica trimary Indicators (minimur Surface Water (A1) High Water Table (A2) Saturation (A3)	tors: n of one requ	<u>iired; che</u>	eck all that appl Water-Stain 1, 2, 44	y) ned Leave A, and 4B	es (B9) (e	xcept MLF	Hydr Hydr	ic Soil	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B)	2 or more required) ves (B9) (MLRA 1 ,
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indica rimary Indicators (minimur] Surface Water (A1)] High Water Table (A2)] Saturation (A3)] Water Marks (B1)	tors: n of one requ	iired; che	eck all that appl Water-Stain 1, 2, 44	y) ned Leave A, and 4B (B11)	es (B9) (e)	xcept MLI	Hydr	Secor	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (v-Season Water	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2)
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indica rimary Indicators (minimur] Surface Water (A1)] High Water Table (A2)] Saturation (A3)] Water Marks (B1)] Sadiment Deposits (B2)	tors: n of one requ	ired; che	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv	y) ned Leave A, and 4B (B11) rertebrates	es (B9) (e) s (B13)	xcept MLI	Hydr	Secor	Present? Yes dary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water)	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	tors: n of one requ	lired; che	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od	es (B9) (e) s (B13) lor (C1)	xcept MLI	Hydr Hydr	Secor	Present? Yes dary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery (C
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	tors: n of one requ	lired; che	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher	es (B9) (e) s (B13) lor (C1) res along d Iron (C4	xcept MLF	Hydr Hydr	Secor	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o comorphic Positic pallow Aquitard (2	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery ((on (D2)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indication irimary Indicators (minimur 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)	tors: n of one requ	<u>iired; che</u>	eck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c	y) ned Leave A, and 4B (B11) vertebrates Sulfide Od hizospher of Reduce	es (B9) (e) s (B13) lor (C1) res along d Iron (C4	xcept MLF	Hydr RA	Secon Secon W Di Si Gi Si Gi Si	Present? Yes dary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible of comorphic Position hallow Aquitard (E C-Neutral Test (1)	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery ((on (D2) 03)
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indica rimary Indicators (minimur] 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)	itors: n of one requ	<u>iired; che</u>	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D	xcept MLF	Hydr Hydr RA ts (C3)	Secon Secon W Di Si Gi Si F/	Present? Yes dary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o comorphic Positic hallow Aquitard (E AC-Neutral Test () bised Ant Mounds	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery (C on (D2) D3) D5) a (D6) (LRE A)
Type: Depth (inches): temarks: DROLOGY /etland Hydrology Indica rimary Indicators (minimur] 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)] Surface Soil Cracks (B6)	itors: n of one requ	<u>iired; che</u>	eck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reducer n Reductio Stressed Jain in Red	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLI	Hydr Hydr RA ts (C3)	Second Second W Di Si Gi Si Fr River	Present? Yes Adary Indicators (2 ater-Stained Leave 4A, and 4B) rainage Patterns (y-Season Water aturation Visible o comorphic Position hallow Aquitard (E AC-Neutral Test (1 aised Ant Mounds ost-Heave Humm	2 or more required) 2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery (0 on (D2) D3) D5) a (D6) (LRR A) pocks (D7)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica trimary Indicators (minimur 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) Surface Soil Cracks (B6) Inundation Visible on Ae	n of one requ	(B7)	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reduction Stressed lain in Ref	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLI Living Roc I) d Soils (C6 1) (LRR A	Hydr Hydr RA ets (C3)	Secon W Di Si Si F/ Ra Fr	Present? Yes datary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible of comorphic Position allow Aquitard (E AC-Neutral Test (1 aised Ant Mounds ost-Heave Humm	No 2 or more required) ves (B9) (MLRA 1, (B10) Table (C2) on Aerial Imagery (Con (D2) O3) D5) s (D6) (LRR A) hocks (D7)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur 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) Surface Soil Cracks (B6) Inundation Visible on A6 Sparsely Vegetated Continent	n of one requ n of one requ n all Imagery ncave Surfac	(B7) e (B8)	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	xcept MLF	Hydr Hydr RA	Secon W Di Si Gi Si Fr Ra Fr	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o comorphic Positic hallow Aquitard (E AC-Neutral Test (1) aised Ant Mounds ost-Heave Humm	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery (C on (D2) D3) D5) s (D6) (LRR A) nocks (D7)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur 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) Surface Soil Cracks (B6) Inundation Visible on A6 Sparsely Vegetated Con Field Observations: Surface Water Present?	i) in of one requ i) irial Imagery icave Surface	(B7) e (B8)	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) vertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref	es (B9) (e s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roc I) d Soils (C6 1) (LRR A	Hydr Hydr RA ets (C3)	Secon W Di Si Gi Si F/ Ra Fr	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible of comorphic Positic hallow Aquitard (E AC-Neutral Test (1) aised Ant Mounds ost-Heave Humm	2 or more required) ves (B9) (MLRA 1 , (B10) Table (C2) on Aerial Imagery (C on (D2) 03) D5) s (D6) (LRR A) nocks (D7)
Type: Depth (inches): Remarks: DROLOGY Vetland Hydrology Indica Primary Indicators (minimur 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 Ae Sparsely Vegetated Con Field Observations: Surface Water Present?	i) i) i) inial Imagery icave Surface Yes	(B7) e (B8)	eck all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLF Living Roc) d Soils (C6 1) (LRR A	Hydr Hydr RA ts (C3)	Secon W Di Si Gi Si Fr	Present? Yes adary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o comorphic Positic hallow Aquitard (E AC-Neutral Test (1) aised Ant Mounds ost-Heave Humm	No 2 or more required) ves (B9) (MLRA 1, (B10) Table (C2) on Aerial Imagery (Con (D2) D3) D5) s (D6) (LRR A) nocks (D7)
Type: Depth (inches): Remarks:	i) i) i) incave Surfact Yes Yes Yes Yes Yes Yes Yes Yes	(B7) e (B8) No ⊠ No ⊠	eck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp Depth (inchess Depth (inchess	y) ned Leave A, and 4B) (B11) rertebrates Sulfide Od hizospher of Reducer n Reductio Stressed lain in Rei s): none	es (B9) (e) s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	xcept MLI Living Roc I) d Soils (C6 1) (LRR A	Hydr Hydr RA ts (C3)	Second Second W Di Si Gi Si Fr Rate Fr	Present? Yes dary Indicators (2 ater-Stained Leav 4A, and 4B) ainage Patterns (y-Season Water aturation Visible o comorphic Position hallow Aquitard (E AC-Neutral Test (1 aised Ant Mounds ost-Heave Humm	No 2 or more required) ves (B9) (MLRA 1, (B10) Table (C2) on Aerial Imagery (Con (D2) D3) D5) s (D6) (LRR A) nocks (D7)

Remarks:

Project/Site: Vista Views at Black Lake	_City/County: Thurston County Sa	ampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA Sa	ampling Point: <u>TP-8</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classification	:
Are climatic / hydrologic conditions on the site typical for this time of y	vear? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbe	d? Are "Normal Circumstances" present? Yes	🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, in	portant features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛
Remarks: Drained hydric soils			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	Status	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4.				
		= Total C	over	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 12')				$\frac{11}{11} \text{ (A/B)} $
1.				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3				OBL species 5 x 1 = 5
4		·		FACW species x 2 =
+				FAC species 5 $x_3 = 15$
J		- Total C		EACLL species 105 $x 4 = 420$
Herb Stratum (Plot size: 6')		- Total C	over	
1 Hairy cat's ear (Hypochaeris radicata)	70	Y	FACU	OFL species x 3 Column Tatalay (10) (A) (A)
2 Sweet vernal grass (Anthoxanthum odoratum)	20	<u> </u>	FACU	Column Totals: 10 (A) 440 (B)
2. Common plantain (Plantage langelate)	15	V		Prevalence Index = $B/A = 4$
	<u>15</u>	<u>r</u>	FACU	Hydrophytic Vegetation Indicators:
	5	<u>N</u>	FAC	
5. <u>Slough sedge (Carex obnupta)</u>	5	<u>N</u>	OBL	
6			·	
7		·		□ Prevalence Index is ≤3.0 ⁺
8		·		Morphological Adaptations ¹ (Provide supporting
9				data III Remarks of on a separate sheet)
10				
11.				Problematic Hydrophytic Vegetation' (Explain)
	115	= Total C	Cover	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed of problematic.
1				
2				Hydrophytic Vegetation
		= Total C	over	Present? Yes 🗌 No 🖂
% Bare Ground in Herb Stratum				
Remarks:				

Depth <u>Matr</u>	<u>ix</u>		Redo	x Feature	<u>s</u> Tunol	1.002	Toytu	~	Bom	orko
	70		<u>(moist)</u>	70	Type	LOC	Textu	<u>e</u>	Reil	
<u>-10 10YR 3/2</u>		Non	e						Sandy gravelly s	lit loam
0-20 <u>10YR 6/2</u>		<u>10Y</u>	R 6/8						Silty clay	
					- <u> </u>					
					- <u> </u>					
Type: C=Concentration, D=	Depletion, F	RM=Red	uced Matrix, CS	=Covered	d or Coate	ed Sand G	rains.	² Loo	cation: PL=Pore L	_ining, M=Matrix.
lydric Soil Indicators: (Ap	plicable to		s, unless other	wise not	ed.)		Ir	dicato	ors for Problemat	ic Hydric Soils':
☐ Histosol (A1)			Sandy Redox (S	(5) (00)			L] 2 cm	n Muck (A10)	
_ HISTIC Epipedon (A2)			Stripped Matrix	(50) linoral (E1) (avaant] Kea] Von	Parent Material (IFZ) rfaaa (TE12)
				Ineral (F I Astrix (E2)) (except	WILKA 1)		J Very	r Shallow Dark Su	nace (TFTZ)
Depleted Below Dark Sui	face (A11)		Depleted Matrix	(F3))		L			iai ksj
Thick Dark Surface (A12)			Redox Dark Sur	(F6)			3	ndicato	ors of hydrophytic	vegetation and
Sandy Mucky Mineral (S	1)		Depleted Dark S	Surface (F	7)			wetla	nd hydrology mus	t be present.
☐ Sandy Gleved Matrix (S4	.)		Redox Depressi	ons (F8)	.,			unles	s disturbed or pro	blematic.
estrictive Layer (if presen	, t):			()					·	
T	•									
Type:			_							
Type: Depth (inches): Remarks:			-				Hydr	ic Soil	Present? Yes	No 🗌
Type: Depth (inches): Remarks:			-				Hydr	ic Soil	Present? Yes	⊠ No 🗌
Depth (inches): Remarks:			-				Hydr	ic Soil	Present? Yes	⊠ No 🗌
Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator	ors:						Hydr	ic Soil	Present? Yes	
Depth (inches): Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Distribution (14)	ors:	ired; ch	eck all that apply	y)			Hydr	Secol	Present? Yes	No No 2 or more required)
Depth (inches): Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1)	ors: of one requ	ired; che	eck all that apply	y) ned Leave	es (B9) (e	xcept MLI	Hydr	ic Soil	Present? Yes	No □ 2 or more required) ves (B9) (MLRA 1,
Depth (inches): Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2)	ors: of one requ	ired; ch	eck all that apply Water-Stain 1, 2, 44	y) ned Leave	es (B9) (e)	xcept MLI	Hydr	Secon	Present? Yes ndary Indicators (2 (ater-Stained Leav 4A, and 4B)	No □ 2 or more required) ves (B9) (MLRA 1,
Depth (inches): Depth (inches): Remarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	ors: of one requ	ired; ch	eck all that apply Water-Stain 1, 2, 4A	y) ned Leave s, and 4B (B11)	es (B9) (e)	xcept MLI	Hydr	Secon	Present? Yes hdary Indicators (2 /ater-Stained Leav 4A, and 4B) rainage Patterns (No □ 2 or more required) /es (B9) (MLRA 1, B10) Table (C2)
Depth (inches): Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate trimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ors: of one requ	ired; ch	eck all that appl Water-Stain 1, 2, 4A	y) ned Leave A, and 4B (B11) ertebrates	es (B9) (e) s (B13)	xcept MLI	Hydr RA	<u>Seco</u> W	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water	No □ 2 or more required) ves (B9) (MLRA 1, B10) Table (C2)
Depth (inches): Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ors: of one requ	ired; ch	eck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od	es (B9) (e) s (B13) dor (C1)	xcept MLI	Hydr RA	Secon	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water - aturation Visible o	No No Revealed to the second s
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Depth (inches): Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum 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)	ors: of one requ	ired; ch	eck all that apply Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od hizospher of Reduce on Reduction	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilled	xcept MLI	Hydr Hydr	Second W D Second W Second W Second	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Position hallow Aquitard (E AC-Neutral Test (I	No No 2 or more required) ves (B9) (MLRA 1, B10) Table (C2) n Aerial Imagery (C on (D2) 03) D5)
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Depth (inches): Depth (inches): demarks: DROLOGY Vetland Hydrology Indicate rimary Indicators (minimum 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 Aer	ors: of one requ	<u>iired; ch</u>	eck all that apply Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od hizospher of Reduce n Reduction Stressed lain in Ref	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	Living Roc) d Soils (C6 1) (LRR A	RA (C3)	Second Second W D Second W Second Second <	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Positio hallow Aquitard (D AC-Neutral Test (I aised Ant Mounds rost-Heave Humm	No □ 2 or more required)
Depth (inches): Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate trimary Indicators (minimum 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 Aer Sparsely Vegetated Core	ors: of one requ ial Imagery :ave Surface	<u>iired; ch</u> (B7) ∋ (B8)	eck all that apply Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od hizospher of Reduced n Reductio Stressed lain in Ref	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLI	Hydr RA ots (C3)	Second Second W D Si G Si	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Position hallow Aquitard (E AC-Neutral Test (I aised Ant Mounds rost-Heave Humm	No □ 2 or more required)
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Depth (inches): Depth (inches): Cemarks: Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum 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 Aer Sparsely Vegetated Cond Surface Water Present?	ors: of one requ ial Imagery ave Surface	(B7) ∋ (B8)	eck all that apply Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or Other (Exp Depth (inches	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roc) d Soils (C6 1) (LRR A	Hydr Hydr RA ots (C3) 3)	Second W D Second W Second W Second W Second Second <	Present? Yes hdary Indicators (2 dater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Positio hallow Aquitard (E AC-Neutral Test (I aised Ant Mounds rost-Heave Humm	No □ 2 or more required) ves (B9) (MLRA 1, B10) Table (C2) n Aerial Imagery (Con (D2) 03) D5) ic (D6) (LRR A) icocks (D7)
Depth (inches): Depth (inches): Cemarks: Depth (inches): Cemarks: DROLOGY Vetland Hydrology Indicate Primary Indicators (minimum 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 Aer Sparsely Vegetated Cond Field Observations: Surface Water Present? Water Table Present?	ial Imagery ave Surface Yes Yes Yes	(B7) ⇒ (B8) No ⊠ No ⊠	eck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Oxidized R Presence c Recent Iror Stunted or Other (Exp Depth (inches Depth (inches	y) ned Leave A, and 4B (B11) ertebrates Sulfide Od hizospher of Reduce of Reduce of Reduce Stressed lain in Rei): <u>none</u>): <u>none</u>	es (B9) (e) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roc J d Soils (C6 1) (LRR A	RA (C3)	Second W D G S G S G S G S G S G S G S G S G S S G S G S G S <td>Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Position hallow Aquitard (D AC-Neutral Test (I aised Ant Mounds rost-Heave Humm</td> <td>No □ 2 or more required) (a) yes (B9) (MLRA 1, (b) B10) (C2) Table (C2) (c) n Aerial Imagery (Con (D2) (c) 03) (C5) (D6) (LRR A) (c) iocks (D7) (c)</td>	Present? Yes hdary Indicators (2 vater-Stained Leav 4A, and 4B) rainage Patterns (ry-Season Water aturation Visible o eomorphic Position hallow Aquitard (D AC-Neutral Test (I aised Ant Mounds rost-Heave Humm	No □ 2 or more required) (a) yes (B9) (MLRA 1, (b) B10) (C2) Table (C2) (c) n Aerial Imagery (Con (D2) (c) 03) (C5) (D6) (LRR A) (c) iocks (D7) (c)

Remarks:

Project/Site: Vista Views at Black Lake	City/County: Thurston County Sa	mpling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA Sa	mpling Point: <u>TP-Aa1</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classification	:
Are climatic / hydrologic conditions on the site typical for this time of y	year? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbe	ed? Are "Normal Circumstances" present? Yes	🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, transects, im	portant features, etc.

Hydrophytic Vegetation Present? Yes ⊠ No □ Is the Sampled Area Hydric Soil Present? Yes ⊠ No □ within a Wetland? Yes ⊠ No □ Wetland Hydrology Present? Yes ⊠ No □ No □ No □ Remarks: No □ No □ No □

	Absolute	Dominant	t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				Demonstrat Demonstration
		= Total C	Cover	That Are OBL, FACW, or FAC: 100% (A/B)
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5.				FAC species x 3 =
		= Total (Cover	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>6'</u>)		i otar e		UPL species x 5 =
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW	Column Totals: (A) (B)
2.				
3.				Prevalence Index = B/A =
4.				Hydrophytic Vegetation Indicators:
5.				Rapid Test for Hydrophytic Vegetation
6				□ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting
0				data in Remarks or on a separate sheet)
3		·		Wetland Non-Vascular Plants ¹
				Problematic Hydrophytic Vegetation ¹ (Explain)
11	100			¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:	100	= Iotal C	Jover	be present, unless disturbed or problematic.
1				
1		·		Hydrophytic
2				Vegetation Brosont2 Vos ⊠ No □
% Bare Ground in Herb Stratum			Jover	
Remarks:				1

Sampling Point: TP-Aa1

						,
Depth <u>Matrix</u>	<u> </u>	Redo: or (moist)	<u>x Features</u> % Type ¹	loc^2	Texture	Remarks
	<u></u> <u></u>				TOXICIO	
<u>10YR 3/2</u>	<u> </u>	ne				Sandy gravelly loam
<u>6-20 10YR 6/2</u>	<u> 10</u>	(R 6/8	·			<u>Silty clay</u>
				·		
			·	·		
Type: C=Concentration, D=De Hydric Soil Indicators: (Appl	epletion, RM=Re icable to all LRF	duced Matrix, CS Rs, unless other	S=Covered or Coate wise noted.)	ed Sand Gra	ains. ² Lo Indicat	cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils ³ :
Histosol (A1)	П	Sandv Redox (S	(5)		∏ 2 cr	n Muck (A10)
Histic Epipedon (A2)		Stripped Matrix	(S6)			Parent Material (TF2)
Black Histic (A3)		Loamy Mucky M	lineral (F1) (except	MLRA 1)	🗌 Ver	y Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed N	/latrix (F2)		🗌 Oth	er (Explain in Remarks)
Depleted Below Dark Surfa	ice (A11)	Depleted Matrix	(F3)			
Thick Dark Surface (A12)		Redox Dark Sur	face (F6)		³ Indicat	ors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark S	Surface (F7)		wetl	and hydrology must be present,
Sandy Gleyed Matrix (S4)		Redox Depressi	ons (F8)		unle	ss disturbed or problematic.
Restrictive Layer (if present):						
Type:		_				
Depth (inches):		_			Hydric Soi	l Present? 🛛 Yes 🖾 🛛 No 🗌
/DROLOGY Wetland Hydrology Indicator	s:					
/DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of	s: f one required; cf	neck all that apply	x)		Seco	ndary Indicators (2 or more required)
/DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of □ Surface Water (A1)	s: f one required; cf	neck all that apply	y) ned Leaves (B9) (e	xcept MLR	<u>Secc</u>	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2,
	s: f one required; cf	neck all that apply Water-Stain 1. 2. 44	<u>y)</u> ned Leaves (B9) (e 1. and 4B)	xcept MLR	<u>Secc</u> A □ V	ondary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
/DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of □ Surface Water (A1) □ High Water Table (A2) □ Saturation (A3)	s: f one required; cf	neck all that appl ☐ Water-Stain 1, 2, 4A	γ) ned Leaves (B9) (e λ, and 4B) (B11)	xcept MLR	<u>Secc</u> ▲ □ V	ondary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	s: f one required; ch	heck all that appl Water-Stain 1, 2, 4A Salt Crust (Aguatic Inv	γ) ned Leaves (B9) (e λ, and 4B) (B11) ertebrates (B13)	xcept MLR	<u>Secc</u> ▲ □ V □ □ □	ondary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
/DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	s: f one required; cf	heck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hvdrogen S	γ) ned Leaves (B9) (e λ, and 4B) (B11) ertebrates (B13) Sulfide Odor (C1)	xcept MLR	<u>Secc</u> A □ V □ □ □ □ □	ondary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Gaturation Visible on Aerial Imagery (C9)
	s: f one required; cł	heck all that apply Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S	y) ned Leaves (B9) (e A, and 4B) (B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along	xcept MLR	<u>Secc</u> A □ V □ □ □ □ □ □ s (C3) ⊠ (Andary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	s: f one required; ch	heck all that apply Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R	y) ned Leaves (B9) (e A, and 4B) (B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along of Reduced Iron (C4	xcept MLR	<u>Secc</u> A □ V □ □ □ 5 s (C3) ⊠ 0	Andary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Schallow Aquitard (D3)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of 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)	s: f one required; ch	heck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	y) ned Leaves (B9) (e A, and 4B) (B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along of Reduced Iron (C4 n Reduction in Tiller	xcept MLR	<u>Secc</u> A □ V □ □ □ □ s (C3) ⊠ C □ S □ S □ S □ S □ S	Andary Indicators (2 or more required) Vater-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) GC-Neutral Test (D5)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of 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)	s: f one required; ch	heck all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or	γ) ned Leaves (B9) (e λ, and 4B) (B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along of Reduced Iron (C4 n Reduction in Tilled Stressed Plants (D	xcept MLR	<u>Secc</u> A □ V □ □ □ □ □ □ s (C3) ⊠ C □ 5 □ 5 □ 5	Andary Indicators (2 or more required) Vater-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) GAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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Project/Site: Vista Views at Black Lake	City/County: Thurston County	Sampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: WA	Sampling Point: <u>TP-Ab1</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classif	ication:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes 🛛 No 🗌 (If no, explain in Remarks	s.)
Are Vegetation <u>Yes</u> , Soil <u>Yes</u> , or Hydrology <u>Yes</u> significantly disturb	Ded? Are "Normal Circumstances" present?	Yes 🛛 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remark	(s.)
SUMMARY OF FINDINGS – Attach site map showing	ng sampling point locations, transect	ts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No □	Is the Sampled Area within a Wetland?	Yes 🛛 No 🗌
Remarks:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	Status	Number of Dominant Species
1. <u>Red alder (Alnus rubra)</u>	10	Yes	FAC	That Are OBL, FACW, or FAC: 4 (A)
2				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4.				
	10	= Total C	over	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>12')</u>	10	rotar e		That Are OBL, FACW, of FAC: 100% (A/B)
1. <u>Himalayan blackberry (Rubus Armediacus)</u>	20	Yes	FAC	Prevalence Index worksheet:
2. Douglas spirea	10	Yes	FACW	Total % Cover of:Multiply by:
3.				OBL species x 1 =
4.				FACW species x 2 =
5.				FAC species x 3 =
	30	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>6'</u>)				UPL species x 5 =
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW	Column Totals: (A) (B)
2				
3				Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5.				Rapid Test for Hydrophytic Vegetation
6.				Dominance Test is >50%
7.				□ Prevalence Index is ≤3.0 ¹
8.				Morphological Adaptations ¹ (Provide supporting
9.				data in Remarks or on a separate sheet)
10.				Wetland Non-Vascular Plants ¹
11.				Problematic Hydrophytic Vegetation ¹ (Explain)
	100	= Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
		= Total C	over	Present? Yes 🛛 No 🗌
% Bare Ground in Herb Stratum				
Remarks:				

Sampling Point: TP-Ab1

•				
x	Redox Features			
<u>%</u> C	Color (moist) % Ty	pe ¹ Loc ²	Texture	Remarks
Ν	lone			Sandy gravelly loam
	0VR 6/8			Silty clay
<u> </u>	011(0/8			
			. <u> </u>	
Depletion, RM=F	Reduced Matrix, CS=Covered or	Coated Sand G	Grains. ²	Location: PL=Pore Lining, M=Matrix.
plicable to all L	RRs, unless otherwise noted.)		Indic	ators for Problematic Hydric Soils ³ :
Γ] Sandy Redox (S5)		□ 2	cm Muck (A10)
C	Stripped Matrix (S6)		🗌 R	ed Parent Material (TF2)
	Loamy Mucky Mineral (F1) (ex	(cept MLRA 1)		ery Shallow Dark Surface (TF12)
	Loamy Gleyed Matrix (F2)		ЦC	other (Explain in Remarks)
ace (A11)	Depleted Matrix (F3)		31	stand flander better og talten av d
\ \	Redox Dark Surface (F6) Depleted Dark Surface (F7)		°inaic	ators of hydrophytic vegetation and
	\square Reday Depressions (F8)			pless disturbed or problematic
<u> </u>				
			Hydric S	coil Present? Ves 🕅 No 🗔
irs:	check all that apply)		5.	eender (Indiactors (2 as more required)
o rs: of one required;	check all that apply)	0) (<u>Se</u>	condary Indicators (2 or more required)
r s: of one required;	check all that apply)	39) (except ML	<u>Se</u> RA 🗌	water-Stained Leaves (B9) (MLRA 1, 2 ,
n rs: of one required;	<u>check all that apply)</u> ☐ Water-Stained Leaves (B 1, 2, 4A, and 4B)	39) (except ML	<u>Se</u> RA □	Condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
o rs: of one required;	<u>check all that apply)</u> ☐ Water-Stained Leaves (B 1, 2, 4A, and 4B) ☐ Salt Crust (B11)	39) (except ML	<u>Se</u> RA □	 <u>condary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dra one with the Table (20)
o rs: of one required;	<pre>check all that apply)</pre>	39) (except ML 13)	<u>Se</u> RA □ □	 <u>econdary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
ors: of one required;	<pre>check all that apply)</pre>	39) (except ML 13) C1)		Condary 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)
ors: of one required;	<pre>check all that apply)</pre>	19) (except ML 13) C1) Ilong Living Roo	Se RA □ □ □ □ □	 Condary 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)
ors: of one required;	<pre>check all that apply)</pre>	89) (except ML 13) C1) Ilong Living Roo n (C4)	Se RA □ □ □ □ □ □ □ □	Accondary 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)
ors: of one required;	check all that apply) Water-Stained Leaves (B 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in	i9) (except ML 13) C1) Ilong Living Rod n (C4) Tilled Soils (C6	Se RA □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	 <u>condary Indicators (2 or more required)</u> 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) Deviced Act Maxwells (D2) (LDD 4)
ors: of one required;	check all that apply) Water-Stained Leaves (B 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stressed Plan	39) (except ML 13) C1) Ilong Living Roo n (C4) Tilled Soils (C6 tts (D1) (LRR A	Se RA □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	 <u>condary Indicators (2 or more required)</u> 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)
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	1 1	None 10YR 6/8 10YR 6/8 Depletion, RM=Reduced Matrix, CS=Covered or Dilicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) (ex) Loamy Gleyed Matrix (F2) face (A11) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8)	None 10YR 6/8 10YR 6/8 Image: Second Strict Stripped Matrix, CS=Covered or Coated Sand Geolicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) (except MLRA 1) Loamy Gleyed Matrix (F2) face (A11) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8)	None 10YR 6/8 10YR 6/8 Image: Solution of the stress of the stres

Project/Site: Vista Views at Black Lake	City/County: Thurston County S	ampling Date: <u>11, 16 Sept 24</u>
Applicant/Owner: Vista Views at Black Lake	State: <u>WA</u> S	ampling Point: <u>TP-Bb1</u>
Investigator(s): Curtis Wambach	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR): Lat:	Long:	Datum:
Soil Map Unit Name:	NWI classificatio	n:
Are climatic / hydrologic conditions on the site typical for this time of y	year? Yes 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation <u>Yes</u> , Soil <u>Yes</u> , or Hydrology <u>Yes</u> significantly disturbe	ed? Are "Normal Circumstances" present? Yes	s 🖾 No 🗌
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locations, transects, ir	nportant features, etc.

Hydrophytic Vegetation Present? Yes ⊠ No □ Is the Sampled Area Hydric Soil Present? Yes ⊠ No □ within a Wetland? Yes ⊠ No □ Wetland Hydrology Present? Yes ⊠ No □ No □ Yes ⊠ No □

Remarks:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	Status	Number of Dominant Species
1. <u>Red alder (Alnus rubra)</u>	<u>30</u>	Yes	FAC	That Are OBL, FACW, or FAC: 4 (A)
2. Oregon ash (Fraxinus latifolia)	<u>15</u>	Yes	FACW	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4.				
	45	= Total C	over	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>12'</u>)				$\frac{100\%}{100\%}$ (A/D)
1. Himalayan blackberry (Rubus Armediacus)	30	Yes	FAC	Prevalence Index worksheet:
2. Douglas spirea (Spiraea douglasii)	10	Yes	FACW	Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5.				FAC species x 3 =
	40	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>6'</u>)		-		UPL species x 5 =
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW	Column Totals: (A) (B)
2				() ()
3				Prevalence Index = B/A =
4.				Hydrophytic Vegetation Indicators:
5.				Rapid Test for Hydrophytic Vegetation
6.				□ Dominance Test is >50%
7.		·		□ Prevalence Index is ≤3.0 ¹
8		·		Morphological Adaptations ¹ (Provide supporting
9		·		data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
···	100	- Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	10tai C	00001	be present, unless disturbed or problematic.
1.				
2.				Hydrophytic
		= Total C	over	Present? Yes 🛛 No 🗌
% Bare Ground in Herb Stratum		- 101010		
Remarks:				

Sampling Point: TP-Bb1

Depth <u>Matri</u>	X	Redo	x Feature	<u>s</u> 1	. 2	- ·	
(inches) Color (moist)	<u>%</u>	<u>Color (moist)</u>	%	Type ¹	Loc ²	Texture	Remarks
)-6 <u>10YR 3/2</u>		None		· <u> </u>			Sandy gravelly loam
6-20 <u>10YR 6/2</u>		<u>10YR 6/8</u>		·			Silty clay
				· <u> </u>			
				·			
				· <u> </u>			
Type: C=Concentration D=I	Depletion RM:	=Reduced Matrix CS	S=Covered	l or Coate	ed Sand G	rains ² I	ocation: PI =Pore Lining M=Matrix
Hydric Soil Indicators: (App	plicable to all	LRRs, unless other	wise not	ed.)		Indica	tors for Problematic Hydric Soils ³ :
☐ Histosol (A1)		□ Sandy Redox (S	5)				cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix	(S6)				ed Parent Material (TF2)
Black Histic (A3)		Loamy Mucky M	lineral (F1) (except	MLRA 1)	🗌 Ve	ery Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed N	/latrix (F2))		🗌 Ot	her (Explain in Remarks)
Depleted Below Dark Sur	face (A11)	Depleted Matrix	(F3)				
_ Thick Dark Surface (A12)		Redox Dark Sur	face (F6)			³ Indica	ators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Surface (F	()		we	tland hydrology must be present,
_ Sandy Gleyed Matrix (S4))		ons (F8)			uni	ess disturbed or problematic.
testrictive Layer (ii present	.y.						
Type:							
Type: Depth (inches):						Hudric S	all Brossent? Yes M No 🗆
Type: Depth (inches): Remarks: Near ditch filled wit	h water					Hydric So	bil Present? Yes 🛛 No 🗌
Type: Depth (inches): Remarks: Near ditch filled wit	h water					Hydric So	oil Present? Yes 🛛 No 🗌
Type: Depth (inches): Remarks: Near ditch filled wit	h water					Hydric So	bil Present? Yes 🛛 No 🗌
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY	h water					Hydric So	oil Present? Yes ⊠ No 🗌
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicato Primary Indicators (minimum	h water	d; check all that appl	y)			Hydric So	bil Present? Yes 🛛 No 🗌
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicato Primary Indicators (minimum Surface Water (A1)	h water ors: of one required	d; check all that appl □ Water-Stair	y) ned Leave	es (B9) (e	xcept MLF	Hydric So Sec	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2)	h water	d; check all that appl ☐ Water-Stair 1, 2, 44	y) ned Leave A, and 4B	es (B9) (e	xcept MLF	Hydric So <u>Sec</u>	bil Present? Yes No condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	h water	d; check all that appl □ Water-Stair 1, 2, 44 □ Salt Crust (y) ned Leave A, and 4B (B11)	es (B9) (e	xcept MLF	Hydric So Sec RA 🗌	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	h water	d; check all that appl ☐ Water-Stair 1, 2, 4 A ☐ Salt Crust (☐ Aquatic Inv	y) ned Leave A, and 4B (B11) rertebrates	es (B9) (e) s (B13)	xcept MLF	Hydric So Sec RA	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicato Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	h water	d; check all that appl ☐ Water-Stair 1, 2, 4 A ☐ Salt Crust (☐ Aquatic Inv ☐ Hydrogen S	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od	es (B9) (e) s (B13) or (C1)	xcept MLF	Hydric So Sec RA	bil Present? Yes ⊠ No □ condary 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 (C
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	h water	d: check all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R	y) ned Leave A, and 4B (B11) 'ertebrates Sulfide Od hizospher	es (B9) (e) (B13) lor (C1) es along	xcept MLF	Hydric So Sec RA ts (C3)	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	h water	d; check all that appl Water-Stain 1, 2, 4A Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce	es (B9) (e) s (B13) lor (C1) es along d Iron (C4	xcept MLF	Hydric So 	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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)	h water	d; check all that appl Water-Stair 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduces n Reductio	es (B9) (e s (B13) or (C1) es along d Iron (C4 on in Tilleo	xcept MLF	Hydric So 	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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)	h water	d; check all that appl Water-Stain 1, 2, 44 Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed	es (B9) (e s (B13) for (C1) es along d Iron (C4 on in Tilleo Plants (D	xcept MLF Living Roo I) d Soils (C6 1) (LRR A)	Hydric So 	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Netland Hydrology Indicato Primary Indicators (minimum 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 Aeri	h water	d; check all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or 7) Other (Exp	y) ned Leave (A, and 4B) (B11) rertebrates Sulfide Od hizospher of Reduce of Reduce of Reduced Stressed lain in Ref	es (B9) (e s (B13) for (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Roo) d Soils (C6 1) (LRR A)	Hydric So Hydric So Sec RA ts (C3)	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conc	h water ors: of one required al Imagery (B7 ave Surface (B	d: check all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or 7) Other (Exp 38)	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLF Living Roo I) d Soils (C6 1) (LRR A)	Hydric So Sec RA ts (C3) ts (C3) U U U U U U U U U U U U U	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present?	h water	d; check all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or 7) Other (Exp 38) Depth (inchess Depth (inchess Depth (inchess	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref lain in Ref	es (B9) (e s (B13) for (C1) es along d Iron (C4 on in Tilleo Plants (D marks)	xcept MLF Living Roo I) d Soils (C6 1) (LRR A)	Hydric So 	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Type: Depth (inches): Remarks: Near ditch filled wit DROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conce Field Observations: Surface Water Present? Nater Table Present? Nater Table Present? Saturation Present? Saturation Present? Saturation Present? Includes capillary fringe) Describe Recorded Data (street	h water	d: check all that appl Water-Stain 1, 2, 44 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Stunted or T) Other (Exp S8) Depth (inchess Dipth (inchess Depth (inchess Dipth (inchess	y) ned Leave A, and 4B (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed lain in Ref (): <u>none</u> (): <u>none</u> (): <u>none</u> (): <u>none</u>	evious ins	xcept MLF	Hydric So Sec RA ts (C3) ts (C3) and Hydrolo if available:	bil Present? Yes ⊠ No □ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Appendix N

Oregon Spotted Frog Screening





