VISTA VIEWS AT BLACK LAKE

CITY OF TUMWATER, WASHINGTON

PUMP STATION CRITICAL AREAS REPORT

Prepared By:

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Senior Biologist and Principal

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OPTIMIZE USABLE LAND

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 (≤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			5.16 acres

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**).

Table 2. Key to Plant Indicator Status Categories

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

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.

Table 3. NRCS Soils Survey

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

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 (≤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 (≤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 (≤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 (≤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 off-site 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**).

Table 4. Summary of Critical Areas Results

Wetlands						
Wetlands	Area of Wetland		Veg Class Hydroperiod	Buffer Condition	Habitat Features	Comments
	Onsite	Total				
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. PEMC: Palustrine Emergent Seasonally-flooded
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 (≤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 (≤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**.

Table 5. Summary of Regulatory Considerations

Wetlands								
Wetland	Area of Wetland		Category	Habitat Score	Total Rating Score	Standard Buffer	Reduced Buffer	Comments
	Onsite	Total						
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)	III	6 (MMM)	18	150 ft	110 ft	Wetland buffers can be reduced from 150’ to 110’.
Drainages								
Drainages	DNR Mapped	Wetland Regulations		Stream Regulations			Comments	
Ditch Sa	None	Drainage ditches are not wetlands under TMC 16.28.030.		“Fish and wildlife habitat conservation areas” does not include such artificial features under TMC 16.32.050(C)			Artificially created drainages ditches are not defined as wetlands or streams, and thereby are not regulated as Critical Areas	

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-of-way 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 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 in-subdrainage-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.

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

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) 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	II	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 value
Total Area			5,000 sf (0.11acre)			15,802 sf (0.36 acre)	3:1 ratio	

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. **Noise Reduction**

   - 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. **Manage Stormwater Runoff**

   - 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. **Prevent Change in Water Regime**

   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. **Habitat Enhancement**

   - 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

Planting Plan	Area		Estimated Costs	Plant Density
	SF	Acres		
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		$6,048.65

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 (1st) growing season after construction;

v. Twice the second (2nd) 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 semi-quantitative 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 (5^{th})-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 (5^{th})-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 (≤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.

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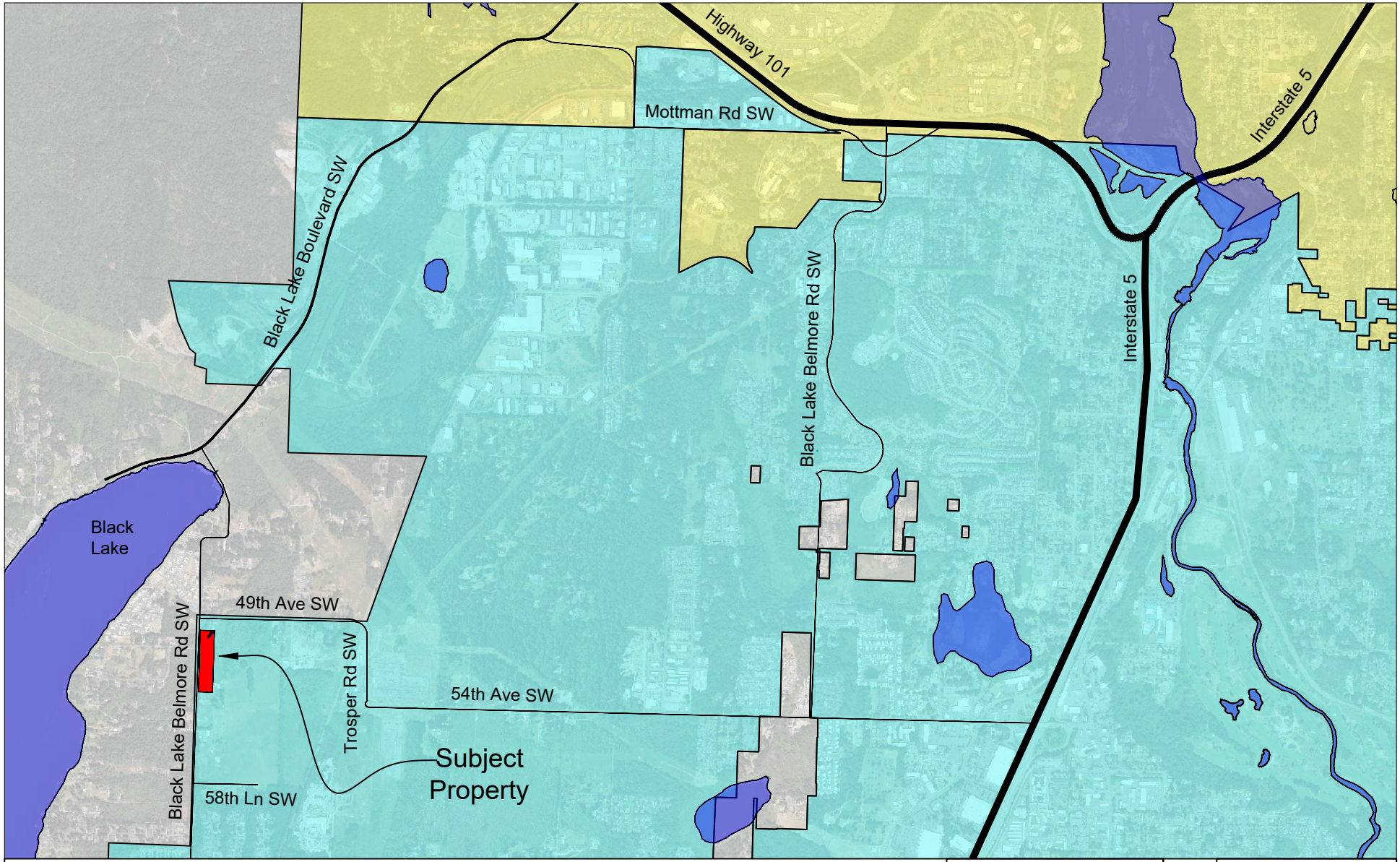
FIGURES



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City of Tumwater
City of Olympia
Water Bodies

Figure 1

Vista Views
at Black Lake
Pump Station

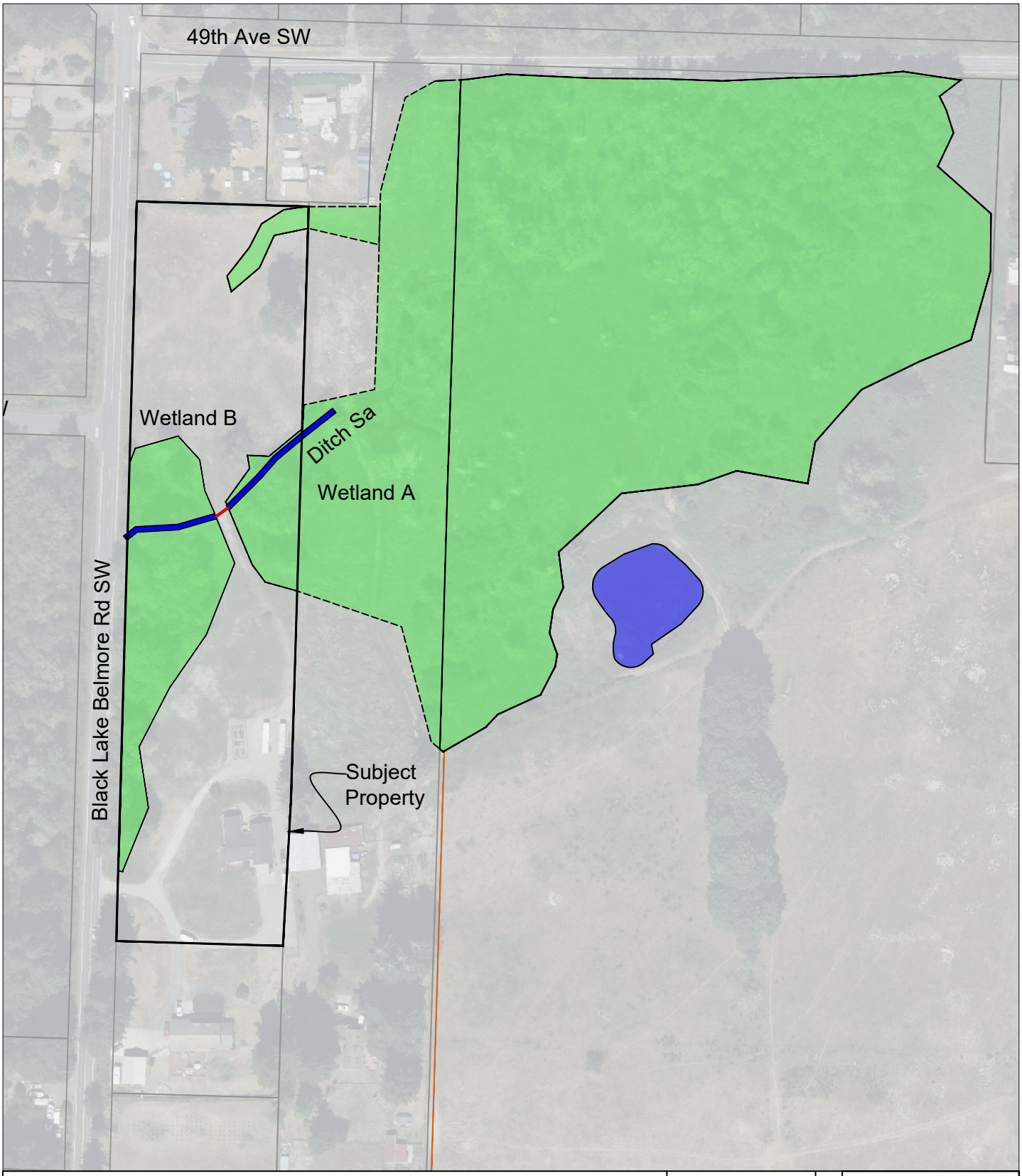
Vicinity Map

N

Scale: 1" = 2200'

0 2200'

18 September 2024



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Wetland (Delineated)
Wetland (Not Delineated)
Farm Pond
Stream Sa
Conveyance Pipes

Figure 2

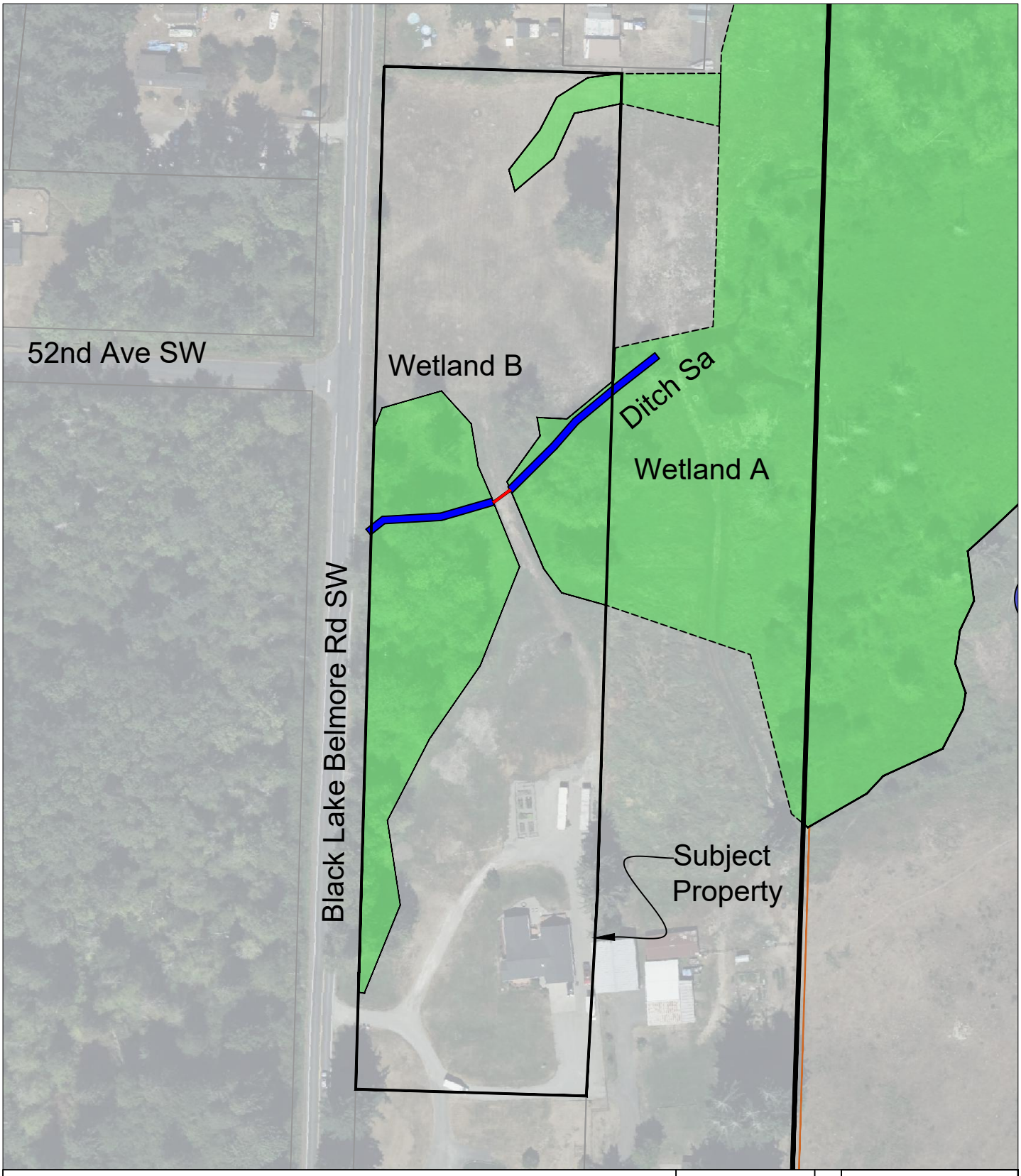
Vista Views at Black Lake Pump Station

Existing Conditions

Scale: 1" = 180'

0 180'

18 September 2024



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Wetland (Delineated)
Wetland (Not Delineated)
Stream A (Ditch)
Conveyance Pipes

Figure 3

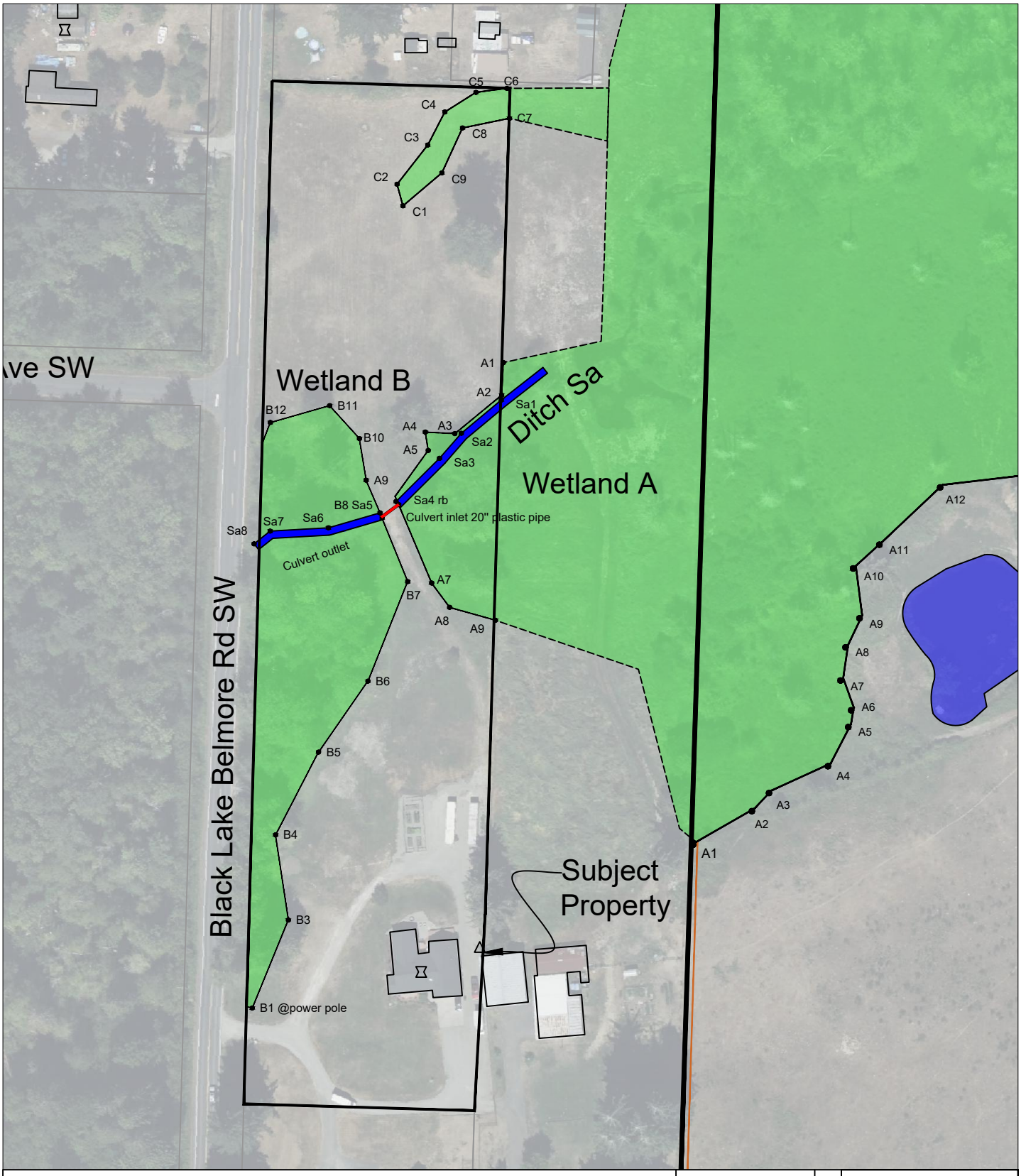
Vista Views at Black Lake Pump Station

Wetlands

Scale: 1" = 130'

0 130'

18 September 2024



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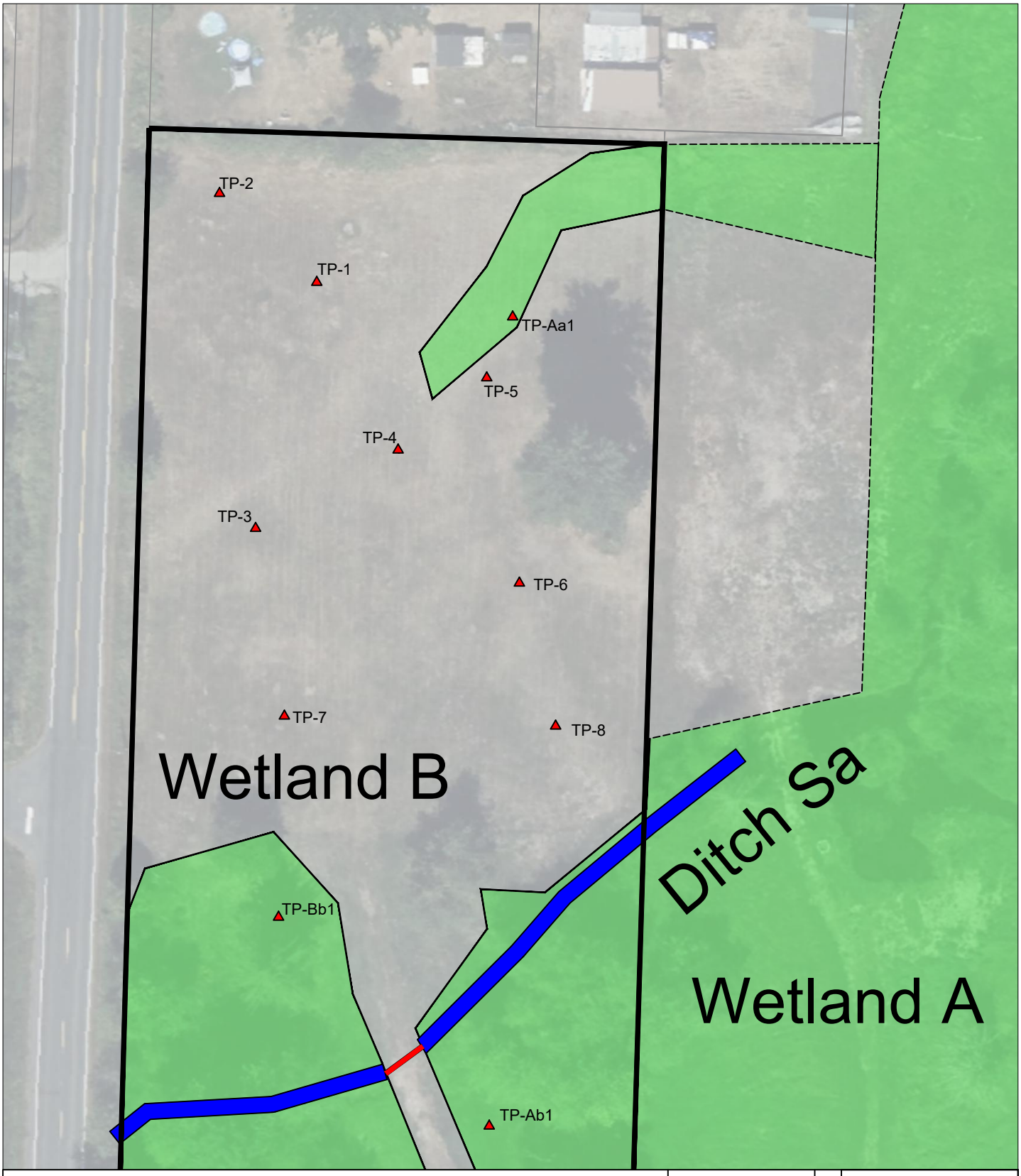
Wetland (Delineated)
Wetland (Not Delineated)
Active Farm Pond
C1 — C2 Wetland Delineation
Stream A (Ditch)
Conveyance Pipes

Figure 4
Vista Views at Black Lake Pump Station
Wetland & Stream Delineation

Scale: 1" = 130'
0 130'

18 September 2024



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Wetland (Delineated)
Wetland (Not Delineated)
Farm Pond
TP 1
Conveyance Pipes

Figure 5

Vista Views at Black Lake Pump Station

Test Plots

Scale: 1" = 60'

0 60'

18 September 2024

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Wetland (Delineated)
Wetland (Not Delineated)
Stream
Wetland Buffers Onsite
Conveyance Pipes

Figure 6

Vista Views at Black Lake

Wetland Buffers

Scale: 1" = 130'

0 130'

18 September 2024

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Wetland (Delineated)
Wetland (Not Delineated)
Stream Sa
Wetland Buffers Onsite
Construction Footprint (5,000 st)

Figure 7

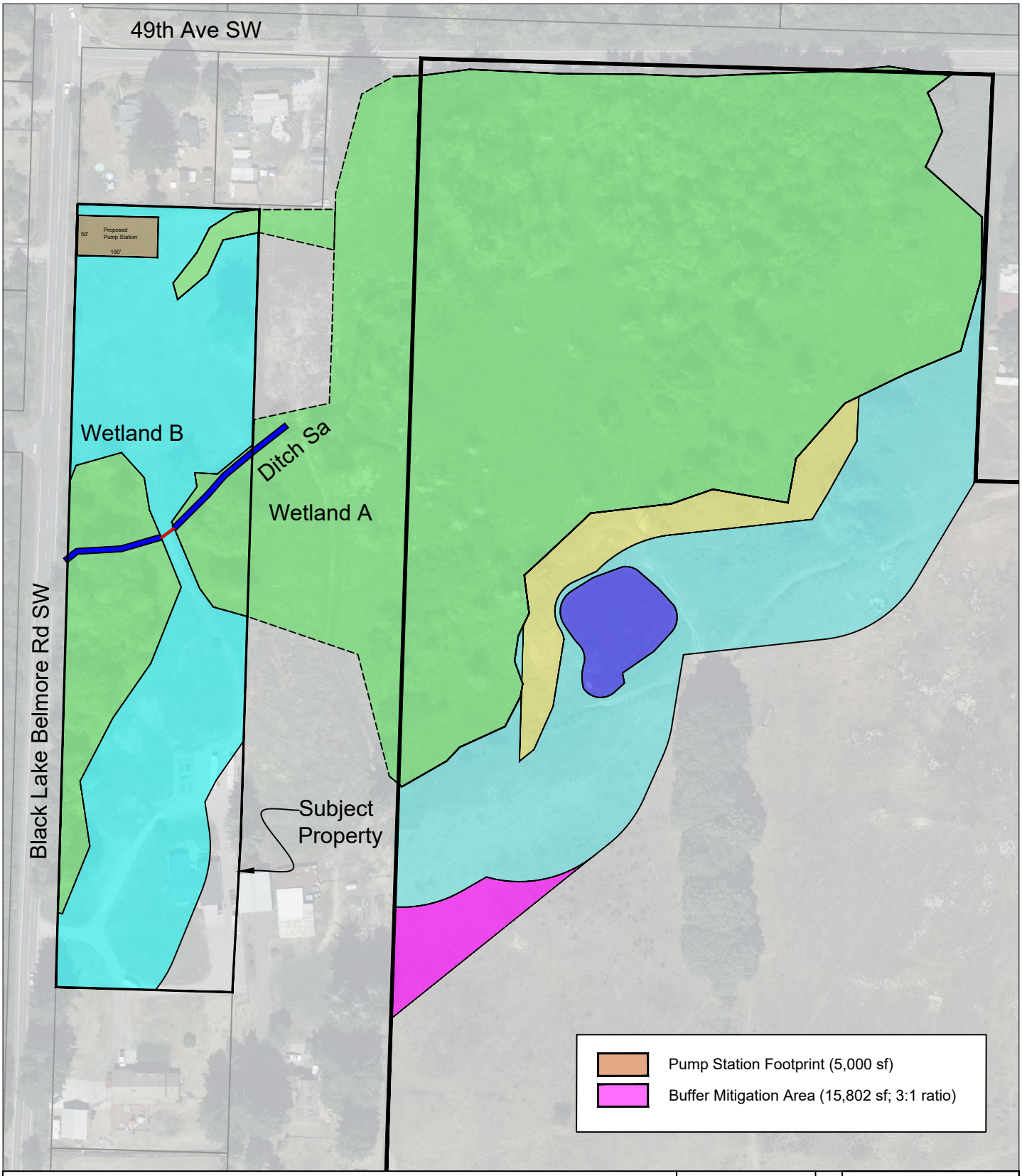
Vista Views
at Black Lake

Site Plan

Scale: 1" = 40'

0 40'

18 September 2024



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Wetland (Delineated)
Wetland (Not Delineated)
Farm Pond
Wetland Buffers Onsite
Stream Sa
Wetland Creation (29,948 sf)

Figure 8

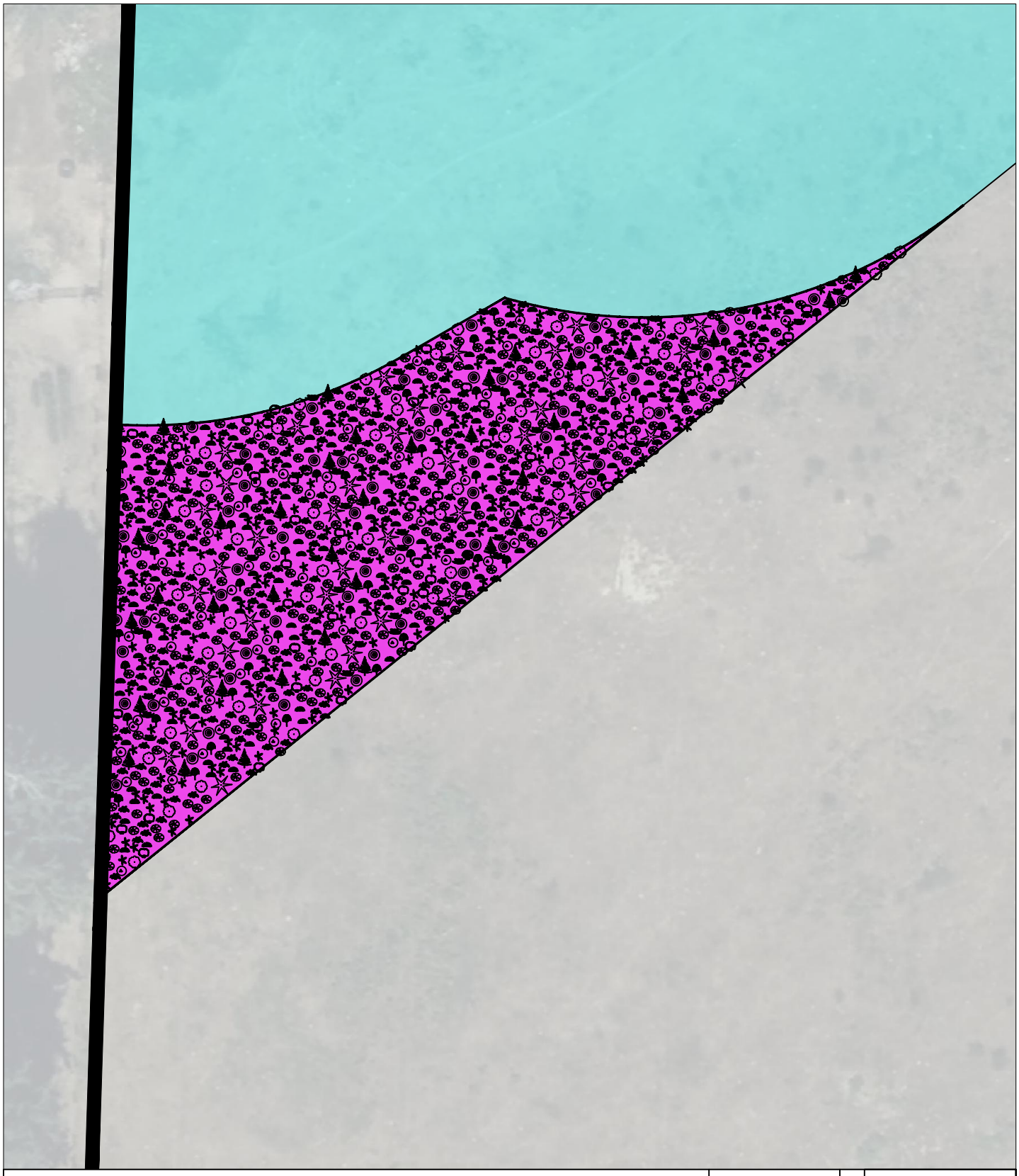
Vista Views at Black Lake

Mitigation Plan

Scale: 1" = 170'

0 170'

18 September 2024



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Wetland A Buffer

Wetland Buffer Planting Plan (15,802 sf; 3:1 ratio)

Figure 9

Vista Views at Black Lake Pump Station

Planting Plan

Scale: 1" = 40'

0 40'

18 Sept 2024

Wetland Planting Schedule


Western Red Cedar


Oregon Ash


Sitka Spruce


Black Twinberry


Salmonberry


Pacific Ninebark


Douglas spirea


Small-fruited bulrush


Clustered Rose


Nootka Rose


Soft Rush


Slough Sedge


Lady Fern


Red-osier Dogwood


Dagger-leaf rush


Hard-stem bulrush


Willow

Buffer Planting Schedule


Western Hemlock


Douglas Fir


Western Red Cedar


Red Elderberry


False lily of the valley


Vine Maple


Osoberry


Thimbleberry


Clustered Rose


Nootka Rose


Snowberry


Trailing Blackberry


Cascade Oregongrape


Salal


Deer Fern


Sword Fern

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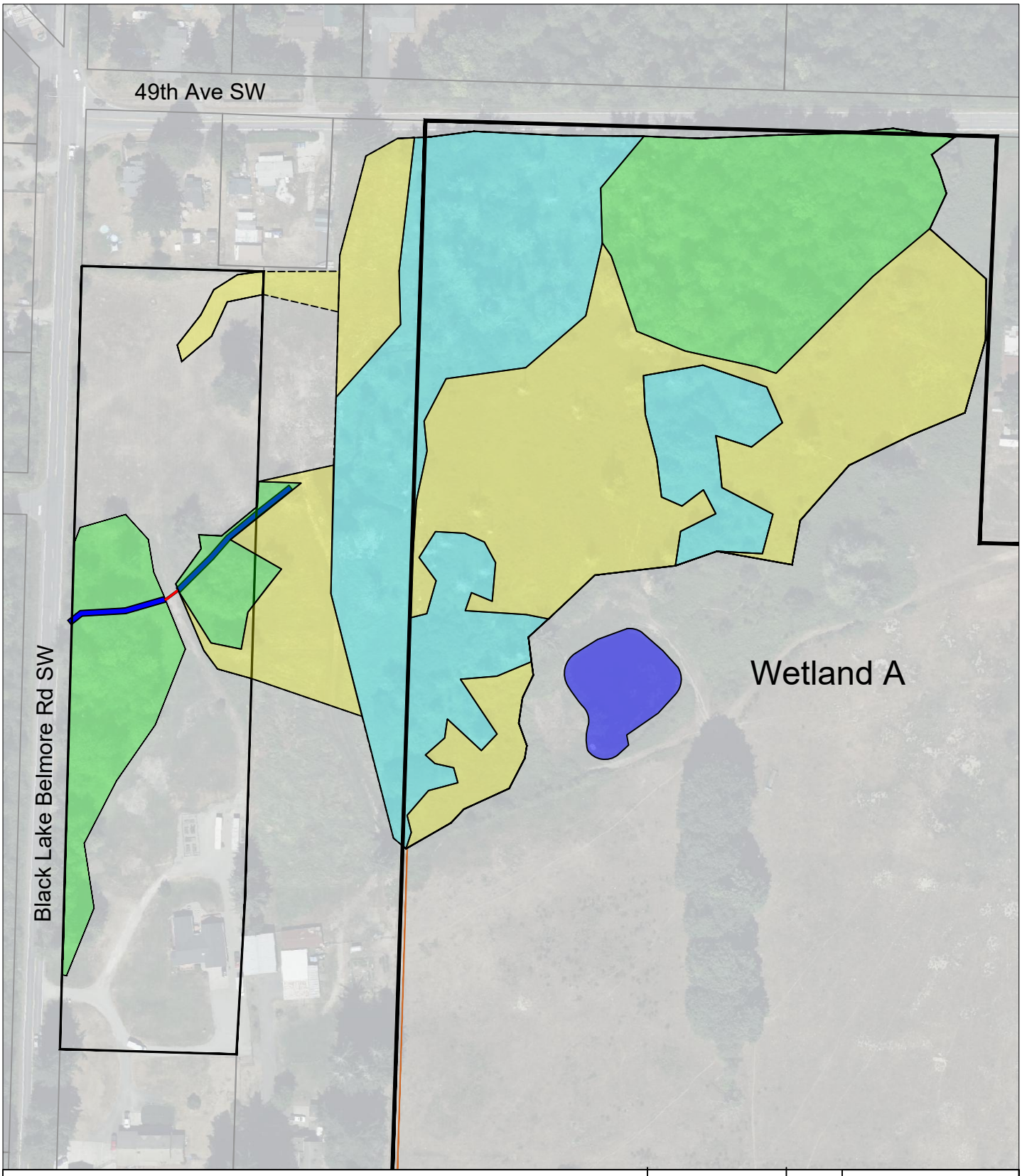
Figure 10
Vista Views at Black lake Pump station

Plant Legend

NTS

18 September 2024



EnviroVector
OPTIMIZE USABLE LAND
curtis@envirovector.com
www.envirovector.com
360-790-1559

Emergent Seasonally-flooded
Forested Seasonally-flooded
Scrub Shrub Seasonally-flooded

Figure 11

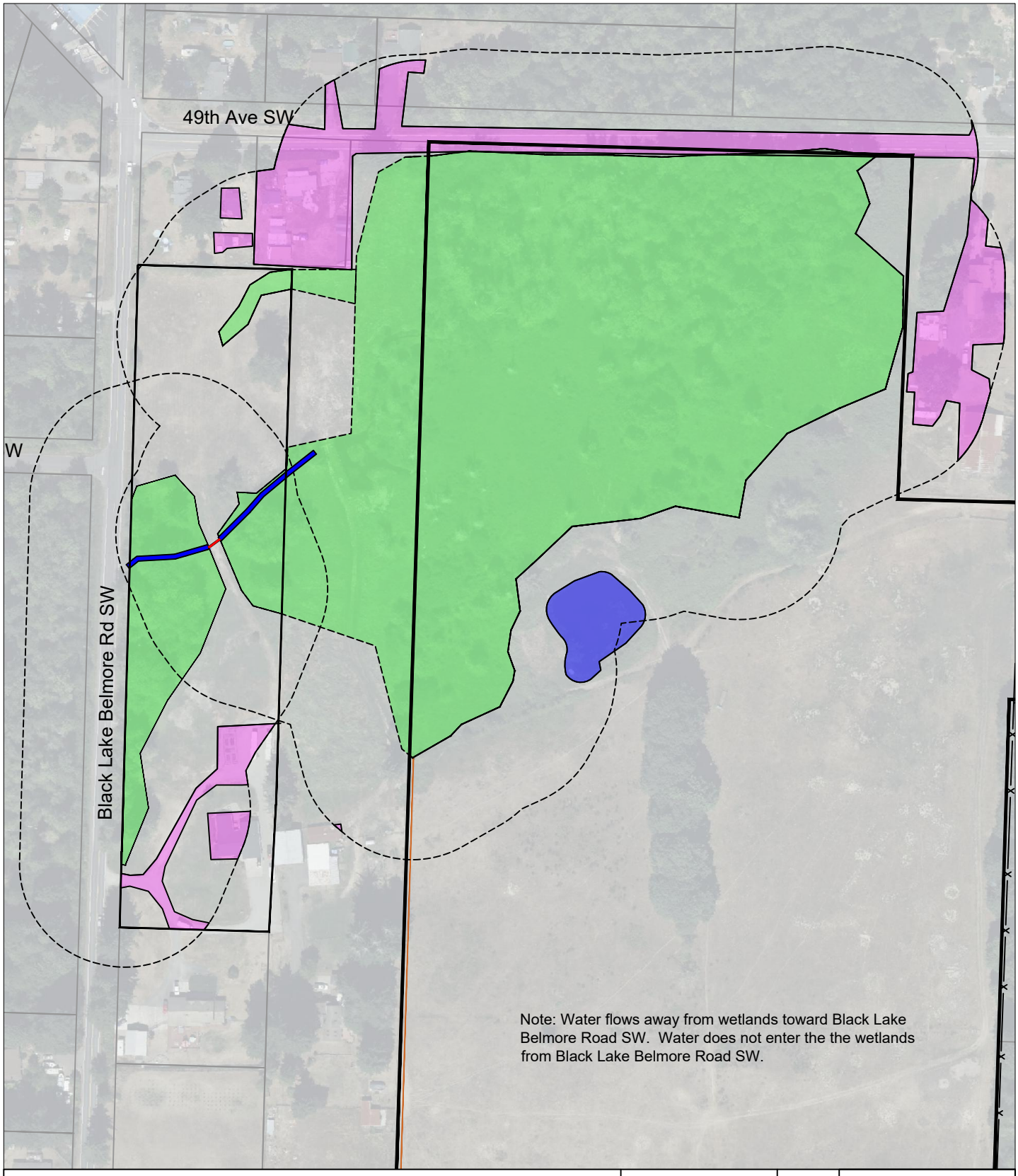
Vista Views at Black Lake Pump Station

Veg Classes & Hydroperiods

Scale: 1" = 170'

0 170'

18 September 2024



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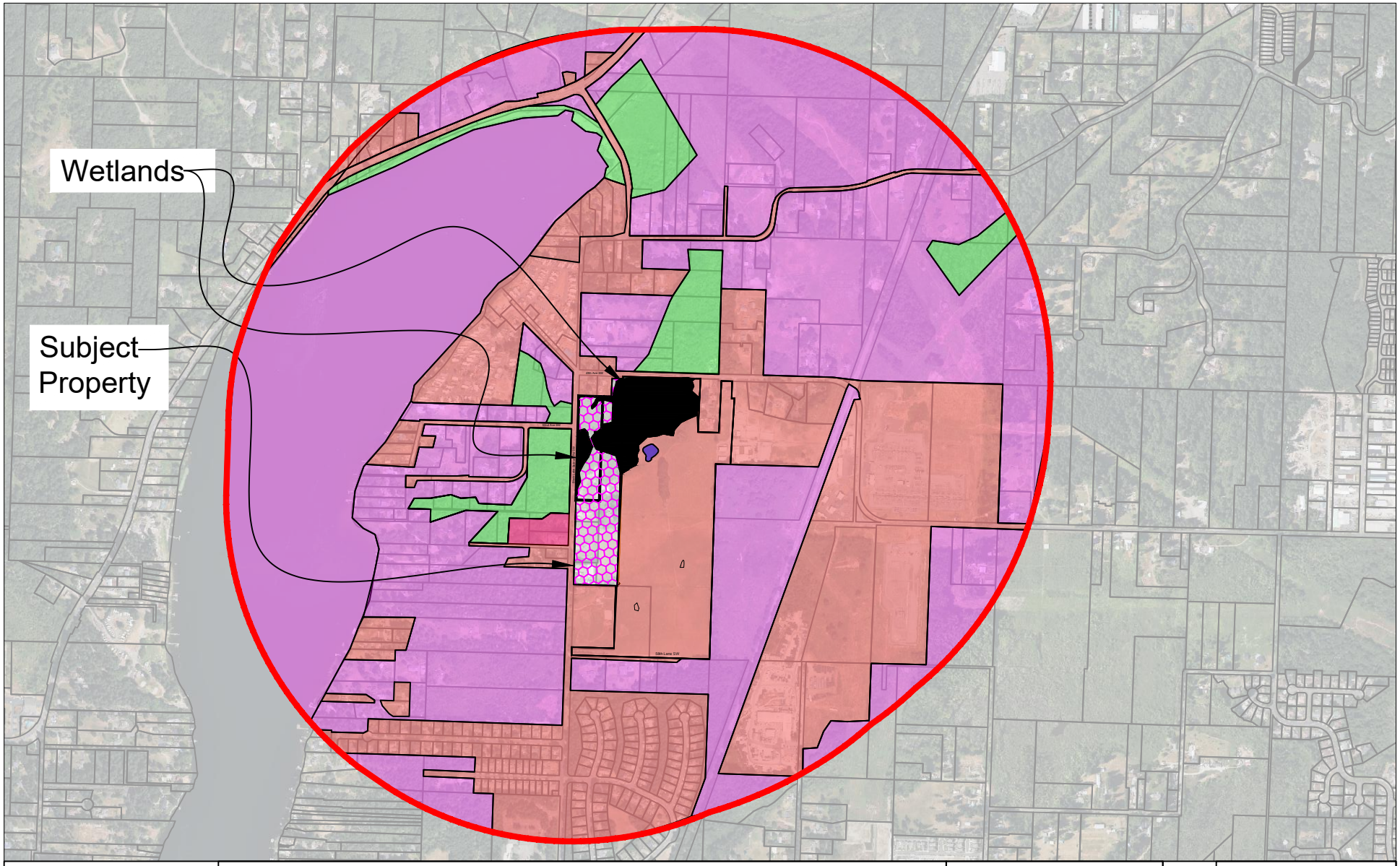
360-790-1559

Wetland (Delineated)
Wetland (Not Delineated)
Potential Pollutants
Wetland A (>10%)
Wetlands B (<10%)
150-foot Polygon Around Wetland

Figure 12
Vista Views at Black Lake Pump Station
Potential Pollutants within 150 ft of Wetland

Scale: 1" = 200'
0 200'

18 September 2024



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360-790-1559

Accessible Habitat (0 sf, 0 acres, 0%)

Accessible Moderate to Low Intensity Land Use (584796 sf, 14 acres, 1.3%)

Relatively Undisturbed Habitat + Accessible Habitat (2,521,693 sf, 58 cres, 5.4%)

Low to Moderate Intensity Land Use + accessible Low to Moderate (27,966,291 sf, 71 acres, 60%)

High Intensity Land Use (15,369,617 sf, 352 acres, 33.1%)

1km Polygon (46,502,411 sf, 1,067 acres)

H2.1: 0% + 1.3% /2 = 0.65% (0 points)

H2.2: 5.4% + 60%/2 = 35.4% (1 point)

H2.3: High Intensity = 33.1% (0 points)

Figure 13

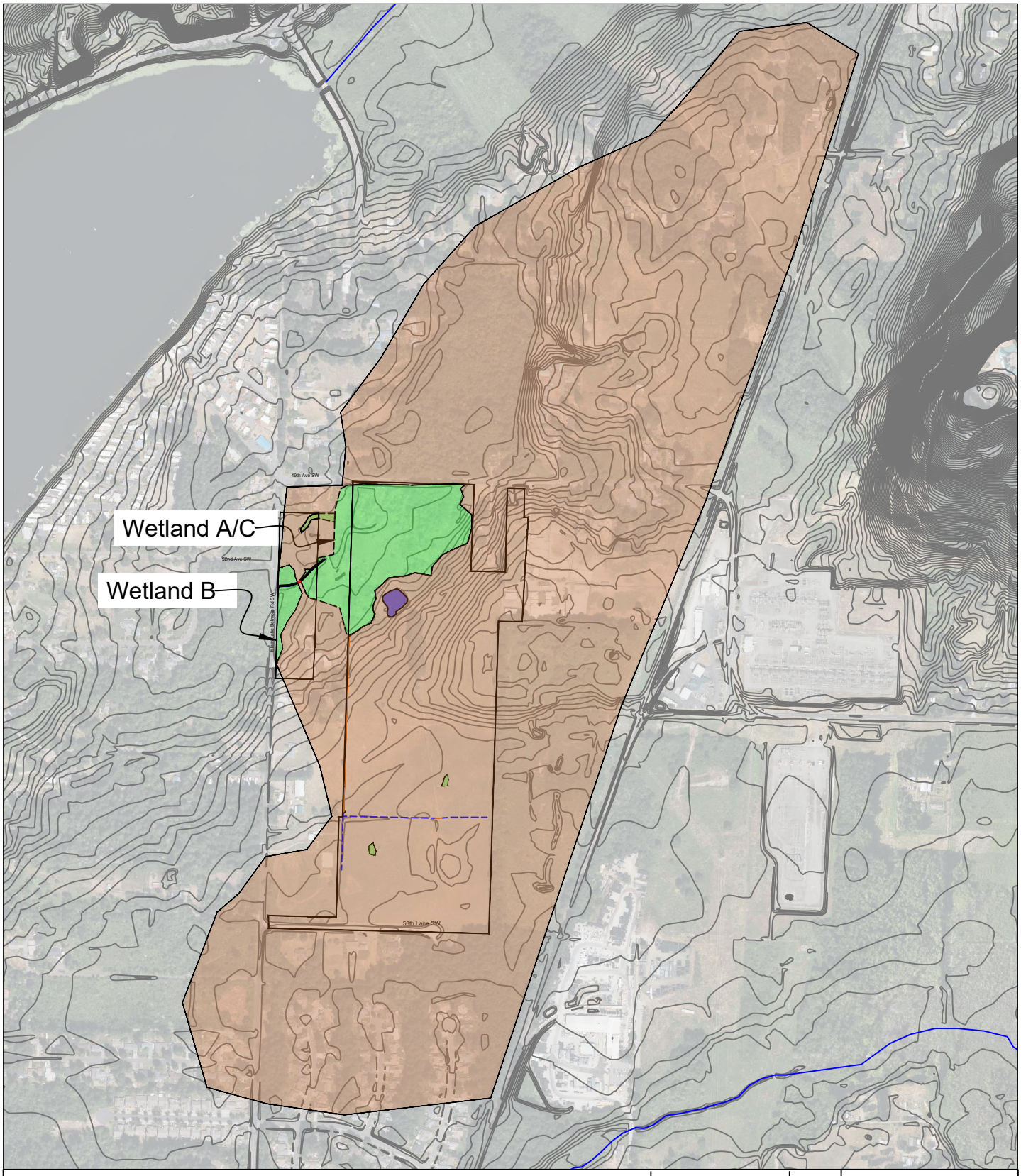
Vista Views at Black Lake

1 KM Polygon Wetland A

Scale: 1"= 1300'

0 1300'

18 September 2024



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www.envirovector.com
360-790-1559

Wetland (Delineated)

Wetland (Not Delineated)

Contributing Basin
Wetland A (100x; 10-100x)
Wetland B (264x; >100x)

Figure 14

Vista Views at Black Lake

Contributing Basin

N

Scale: 1" = 800'

0 800'

6 August 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 4. Upland plants in areas not mowed

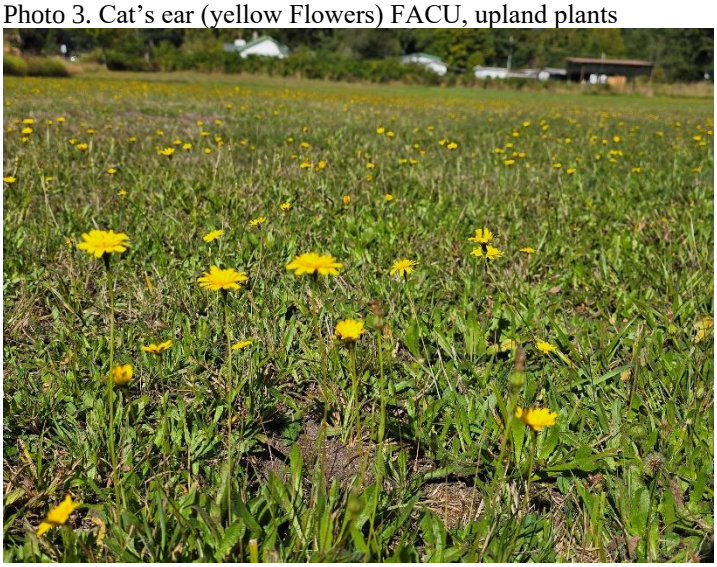


Photo 5. Cat's ear (yellow Flowers) FACU, upland plants


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

Test Plots

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

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

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

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

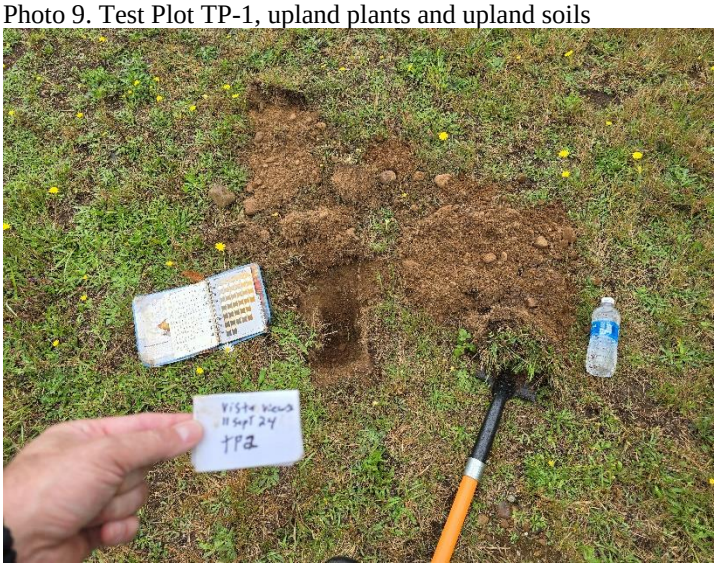


Photo 11. Test Plot TP-2, upland plants and hydric soils

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

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

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

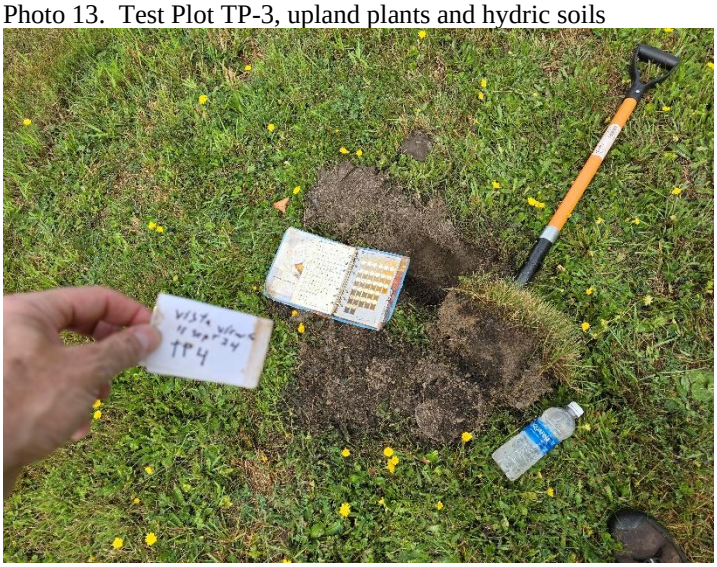


Photo 15. Test Plot TP-4, upland plants and hydric soils

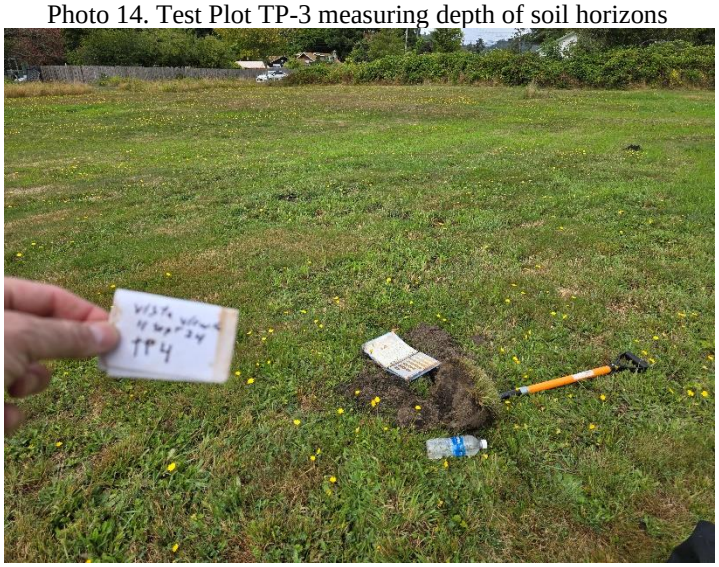


Photo 16. Test Plot TP-4, upland plants and hydric soils


Photo 17. Charcoal found at TP-4


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

Photo 19. Test Plot TP-5, upland plants and hydric soils

Photo 20. Test Plot TP-5, upland plants and hydric soils

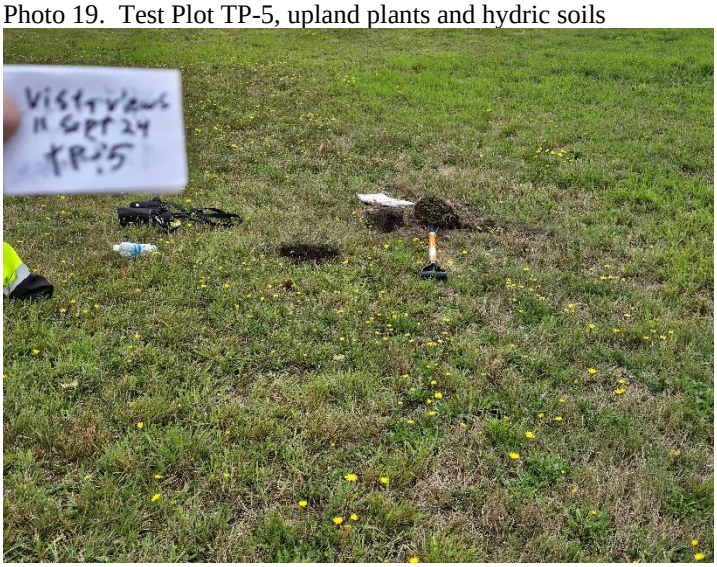


Photo 21. Test Plot TP-5, upland plants and hydric soils

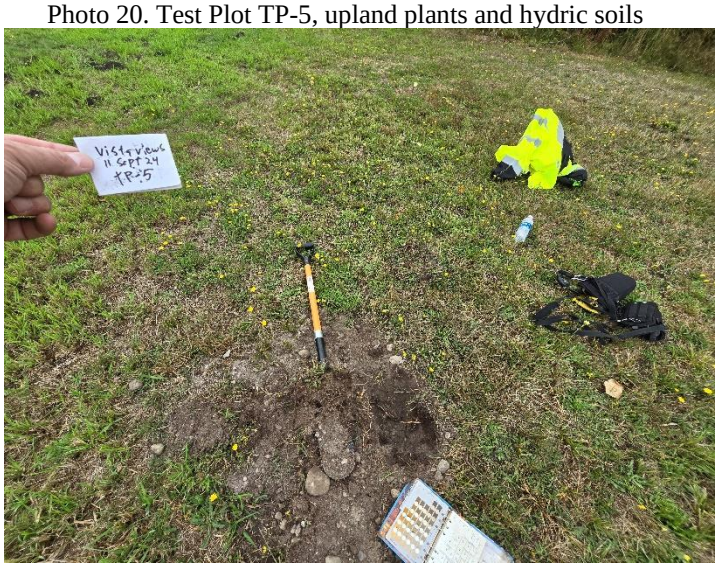


Photo 22. Test Plot TP-5, upland plants and hydric soils

Wetland Delineation


Photo 23. Wetland Flag A-1 on Wetland A

Photo 24. Wetland Flag A-2 on Wetland A

Photo 25. Wetland Flag A-6 on Wetland A

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

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

Photo 28. Corrugated Metal Pipe on Ditch Sa onsite

Photo 29. Wetland Flag A-8 on Wetland A

Photo 30. Wetland Flag B-1 on Wetland B

Photo 31. Wetland Flag B-2 on Wetland B

Photo 32. Wetland Flag B-4 on Wetland B

Photo 33. Wetland Flag B-5 on Wetland B

Photo 34. Wetland Flag B-8 on Wetland B

Photo 35. 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 38. Wetland Flag B-10 on Wetland B

Photo 39. Wetland Flag B-11 on Wetland B

Photo 40. Wetland Flag B-11 on Wetland B

Photo 41. Wetland Flag B-12 on Wetland B

Photo 42. Flag Sa-3 on Ditch Sa

Photo 43. Flag Sa-7 on Ditch Sa

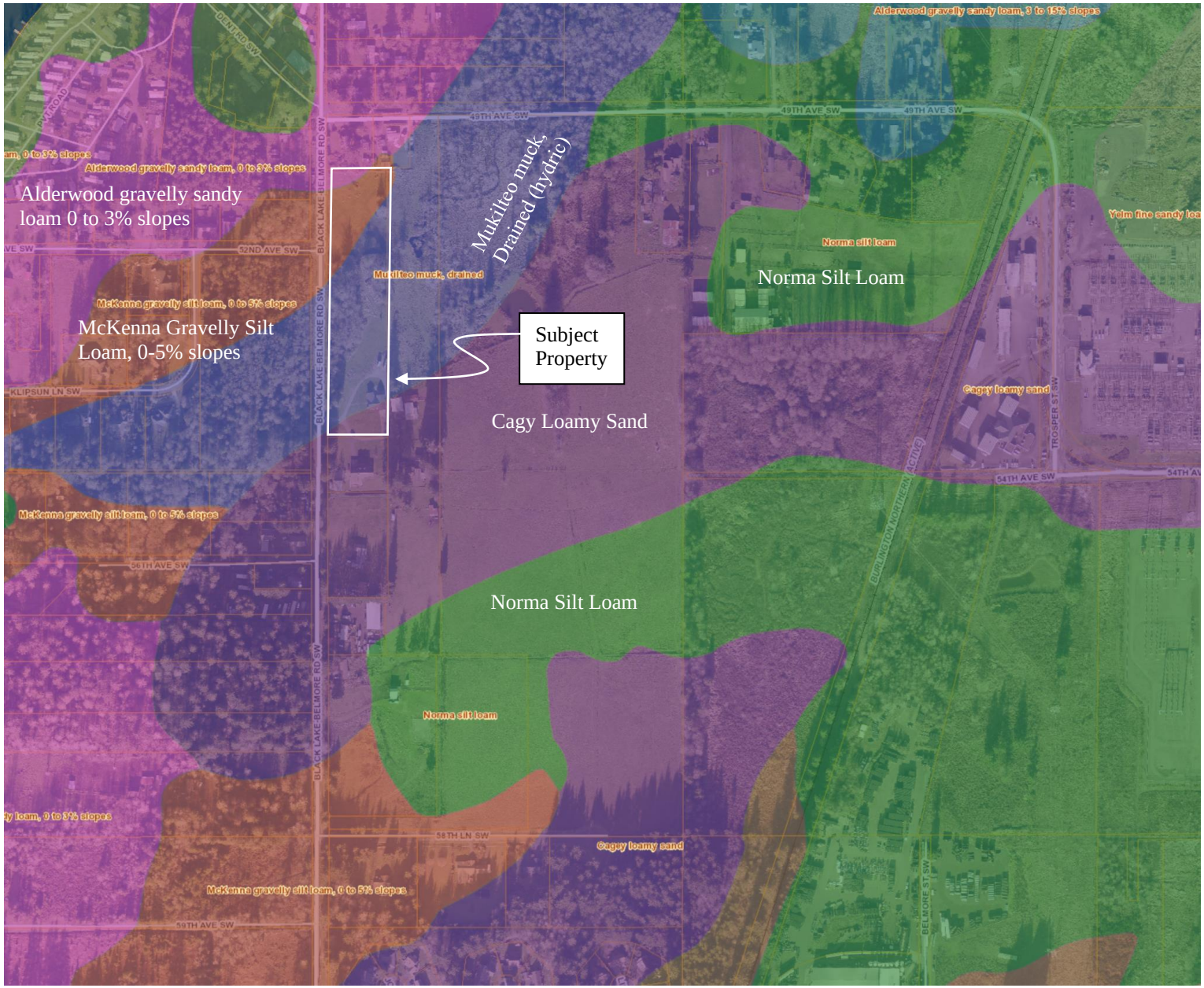
Photo 44. Flag Sa-8 on Ditch Sa

Appendix B

Thurston County

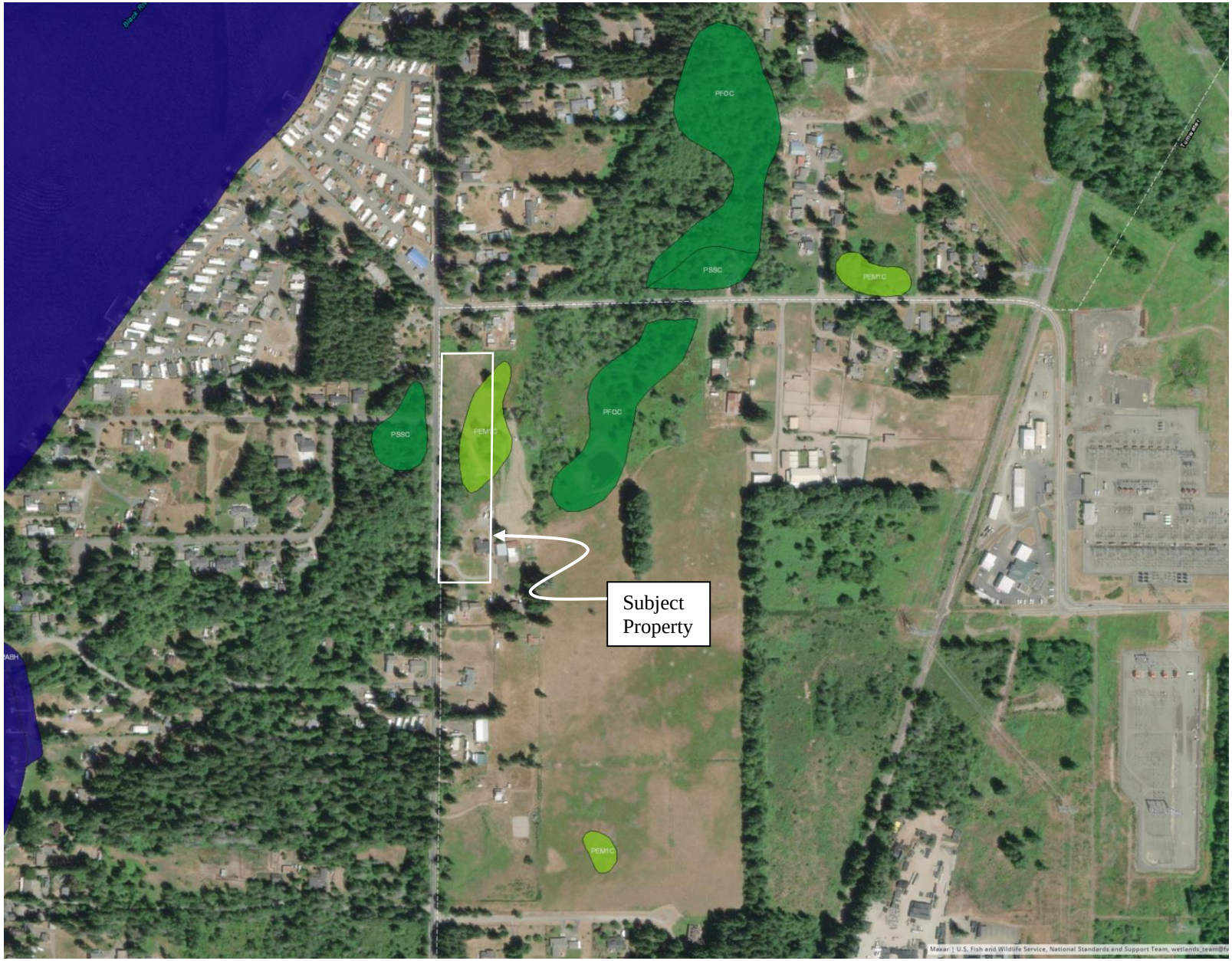
Geodata Center

Soils Survey


Alderwood gravelly sandy loam 0 to 3% slopes
Mukilteo muck, Drained (hydric)
Norma Silt Loam
McKenna Gravelly Silt Loam, 0-5% slopes
Subject Property
Cagy Loamy Sand
Norma Silt Loam
49TH AVE SW
92ND AVE SW
KLIPSUN LN SW
96TH AVE SW
58TH LN SW
59TH AVE SW
54TH AVE SW
BLACK LAKE-BELMORE RD SW
BELMORE ST SW
TROSPER ST SW
BURLINGTON NORTHERN (ACTIVE)

Appendix C

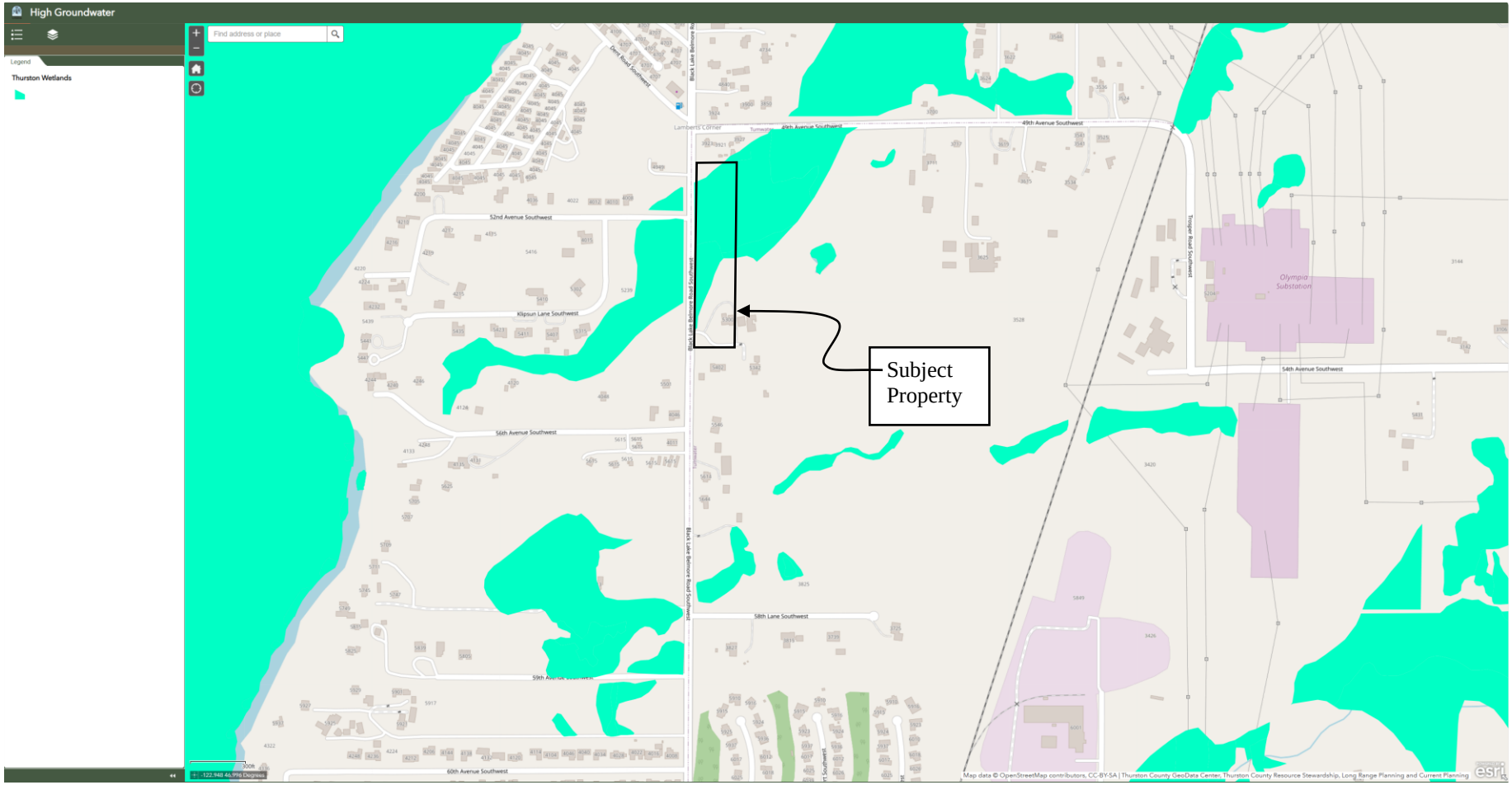
National Wetlands Inventory (NWI)


PFOC
PSSC
PEM1C
PFOC
PSSC
PEM1C
PEM1C
Subject Property

Appendix D

City of Tumwater

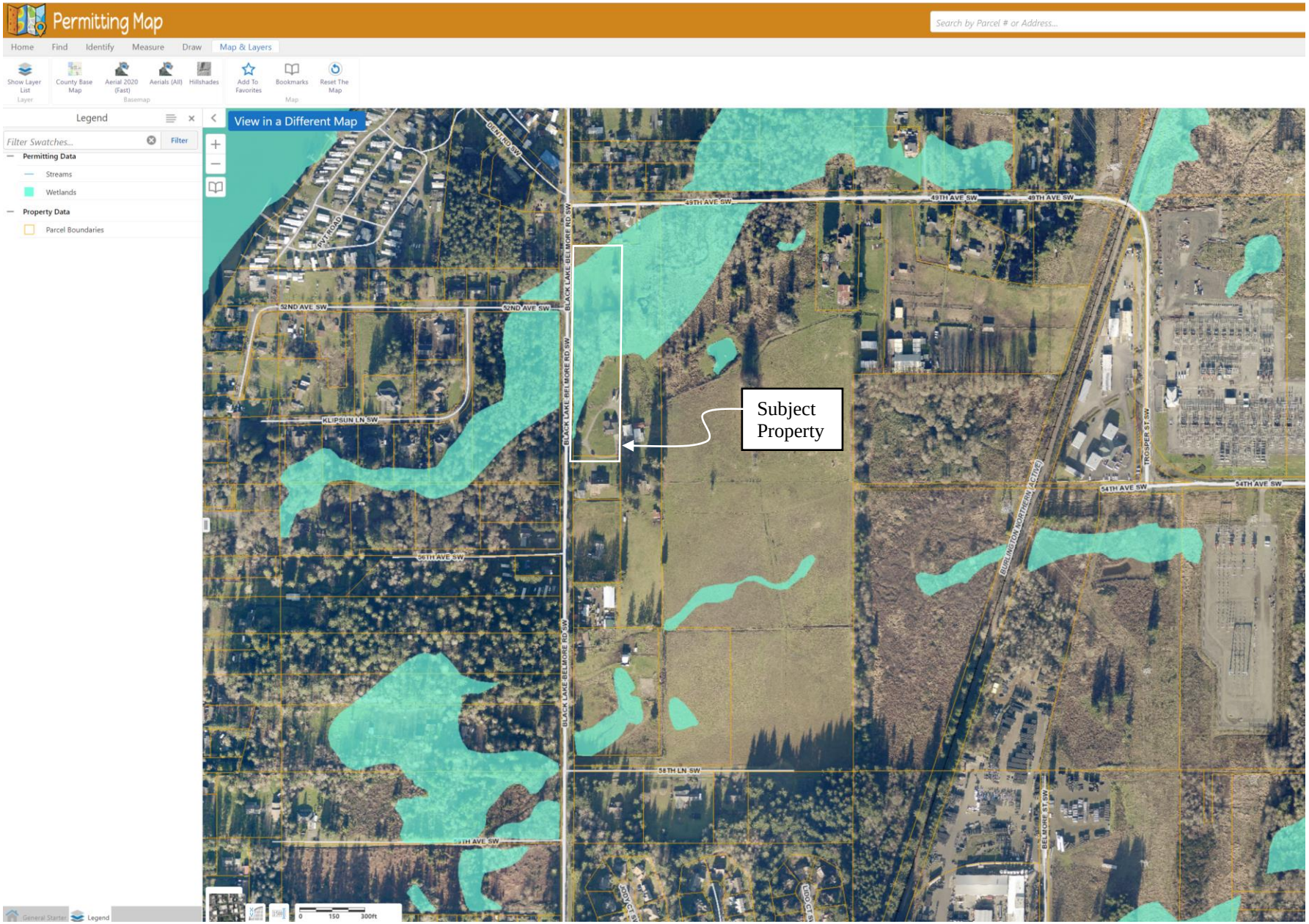
Wetlands and Streams


High Groundwater
Legend
Thurston Wetlands
Find address or place
Subject Property
Olympia Substation
52nd Avenue Southwest
Klipsun Lane Southwest
56th Avenue Southwest
58th Lane Southwest
59th Avenue Southwest
60th Avenue Southwest
54th Avenue Southwest
49th Avenue Southwest
Black Lake Bellmore Road Southwest
Tumwater
Lambert's Corner
esri

Appendix E

Thurston County

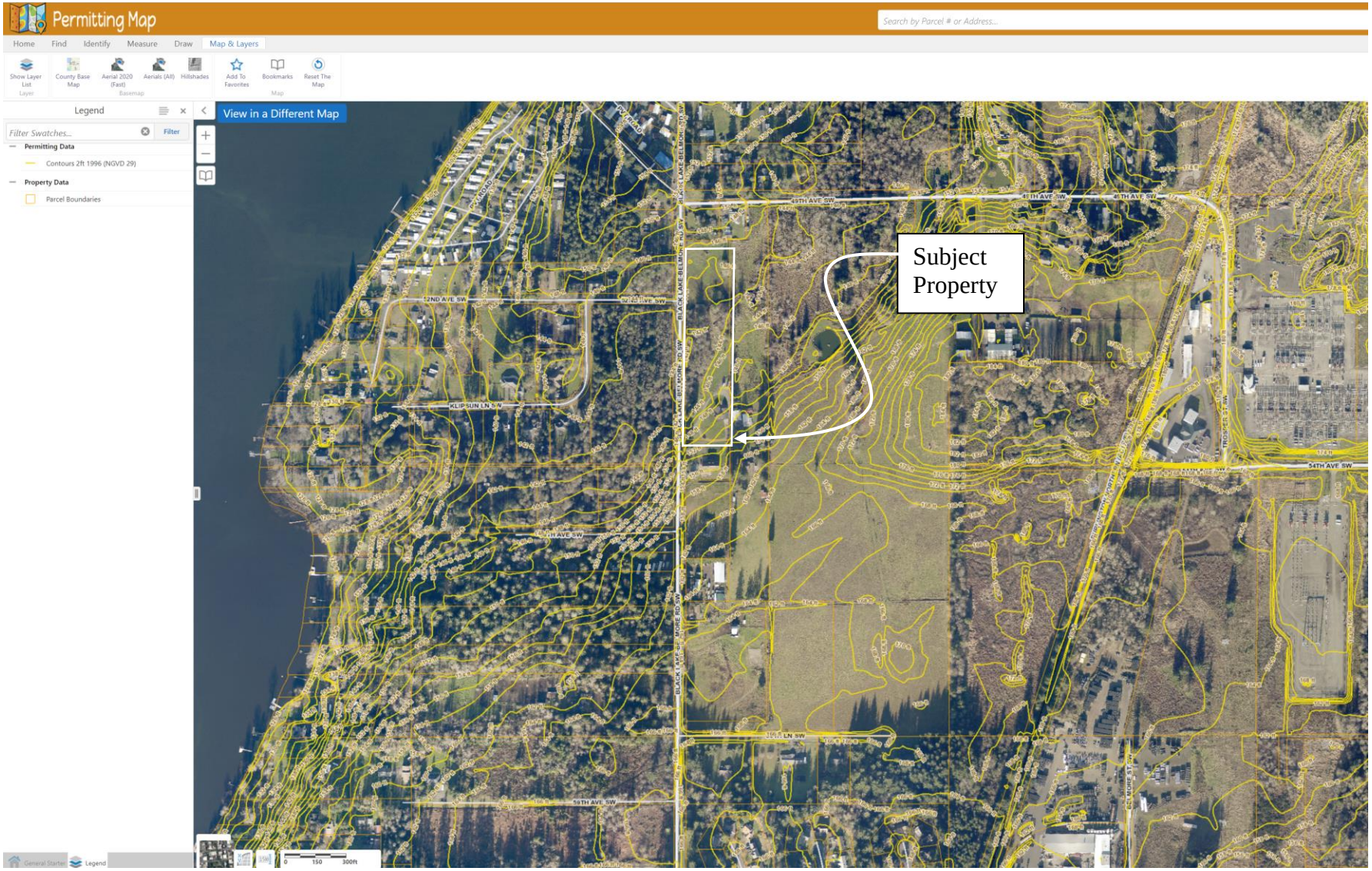
Geodata Center Database


Permitting Map
Search by Parcel # or Address...
Home
Find
Identify
Measure
Draw
Map & Layers
Legend
Filter Swatches...
Filter
Permitting Data
Streams
Wetlands
Property Data
Parcel Boundaries
View in a Different Map
Subject Property
49TH AVE SW
52ND AVE SW
KLIPSUN LN SW
56TH AVE SW
58TH LN SW
54TH AVE SW
BLACK LAKE-BELMORE RD SW
BURLINGTON NORTHERN (ACTIVE)
TROSPER ST SW
BELMORE ST SW

Appendix F

Thurston County

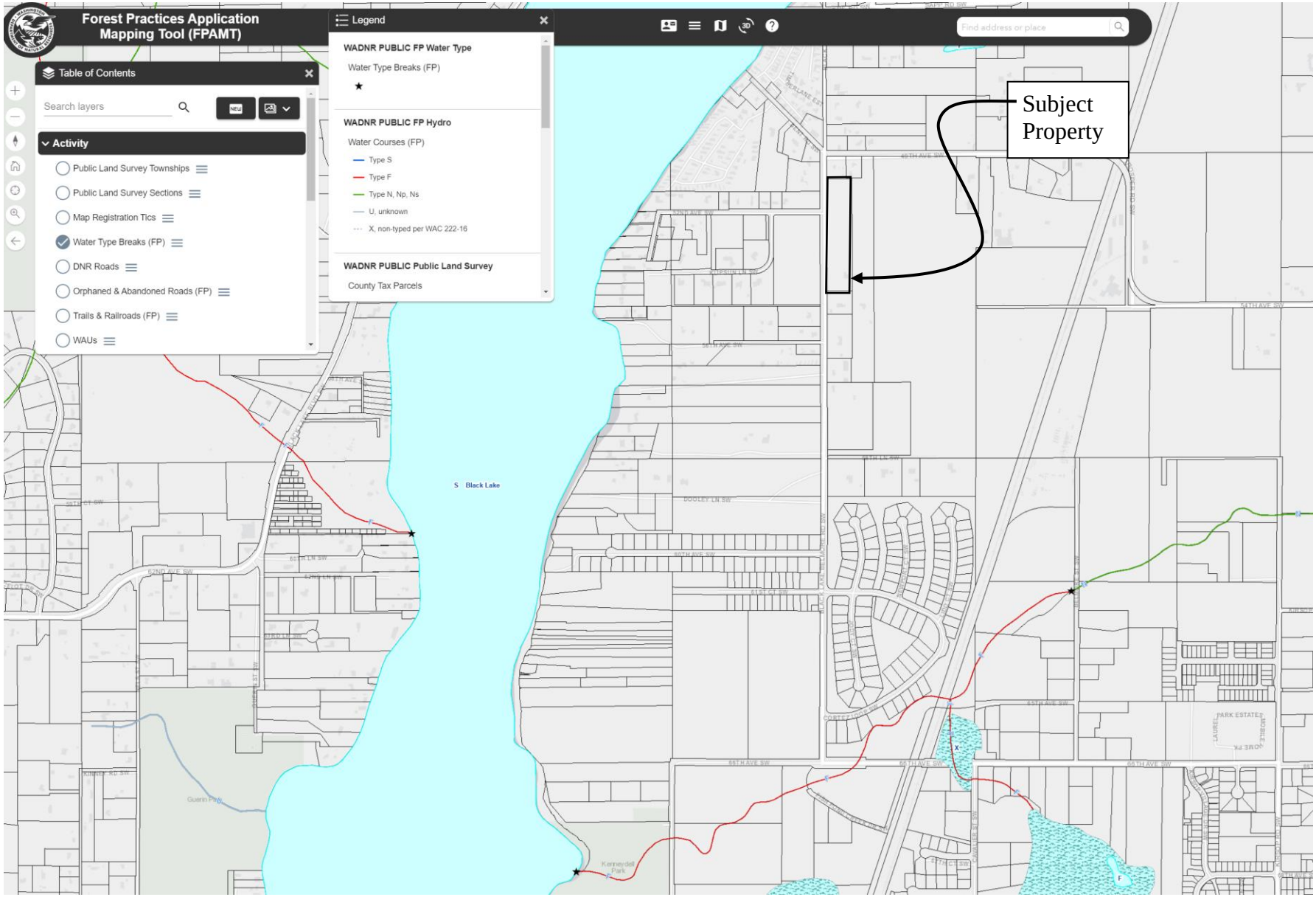
Contours


Permitting Map
Search by Parcel # or Address...
Home
Find
Identify
Measure
Draw
Map & Layers
Legend
Filter Swatches...
Filter
Permitting Data
Contours 2ft 1996 (NGVD 29)
Property Data
Parcel Boundaries
View in a Different Map
Subject Property
45TH AVE SW
42ND AVE SW
KLIPSUN LN SW
54TH AVE SW
56TH AVE SW
BLACK LAKE BLVD SW
BLACK LAKE-BELMORE RD SW
BELMORE ST SW
TROSPER ST SW

Appendix G

State Department of Natural Resources (DNR)

Water Typing Database

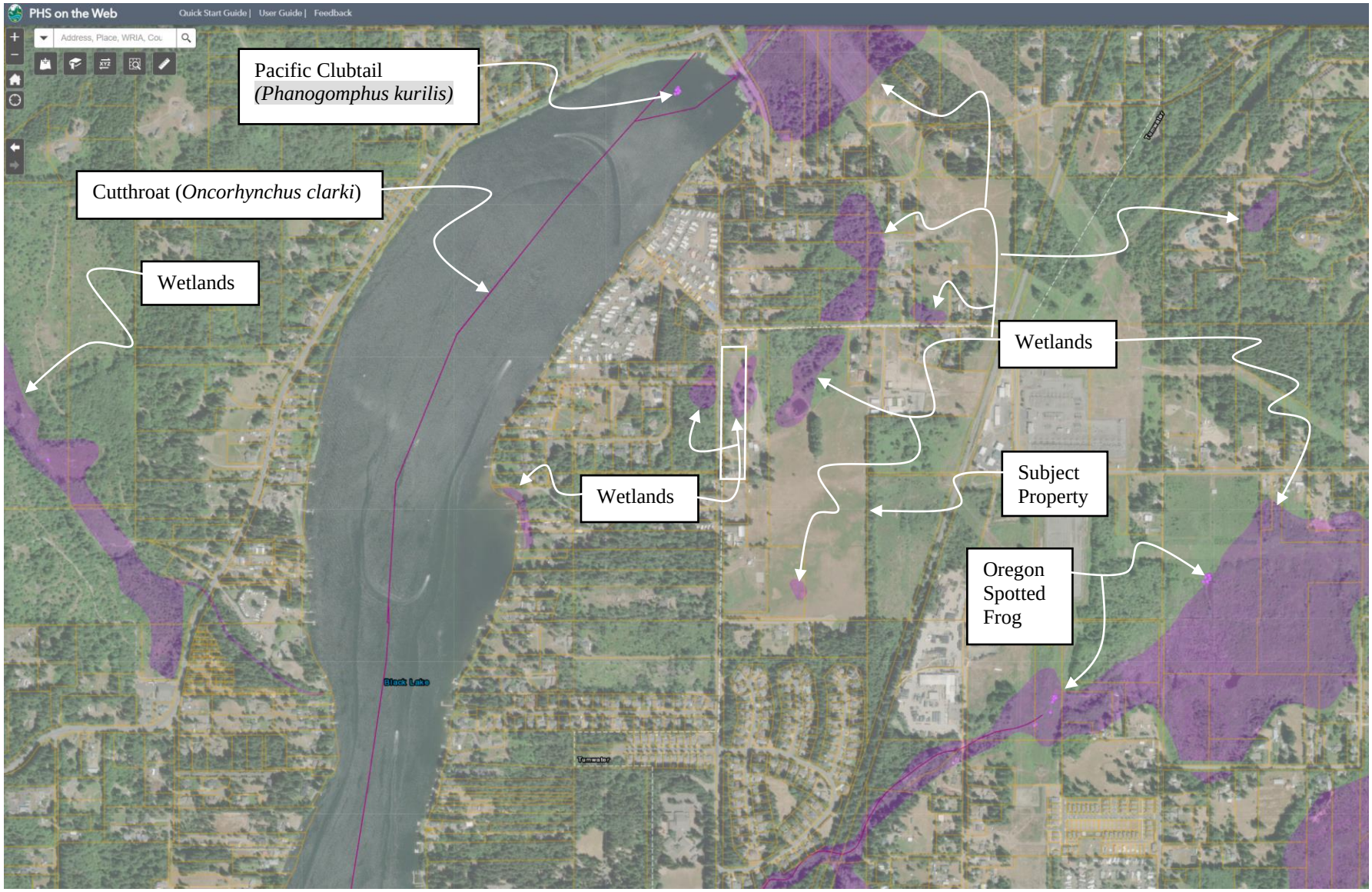

Forest Practices Application Mapping Tool (FPAMT)
Legend
WADNR PUBLIC FP Water Type
Water Type Breaks (FP)
WADNR PUBLIC FP Hydro
Water Courses (FP)
Type S
Type F
Type N, Np, Ns
U, unknown
X, non-typed per WAC 222-16
WADNR PUBLIC Public Land Survey
County Tax Parcels
Table of Contents
Search layers
Activity
Public Land Survey Townships
Public Land Survey Sections
Map Registration Tics
Water Type Breaks (FP)
DNR Roads
Orphaned & Abandoned Roads (FP)
Trails & Railroads (FP)
WAUs
Find address or place
Subject Property
S Black Lake

Appendix H

Washington Department of Fish and Wildlife (WDFW)

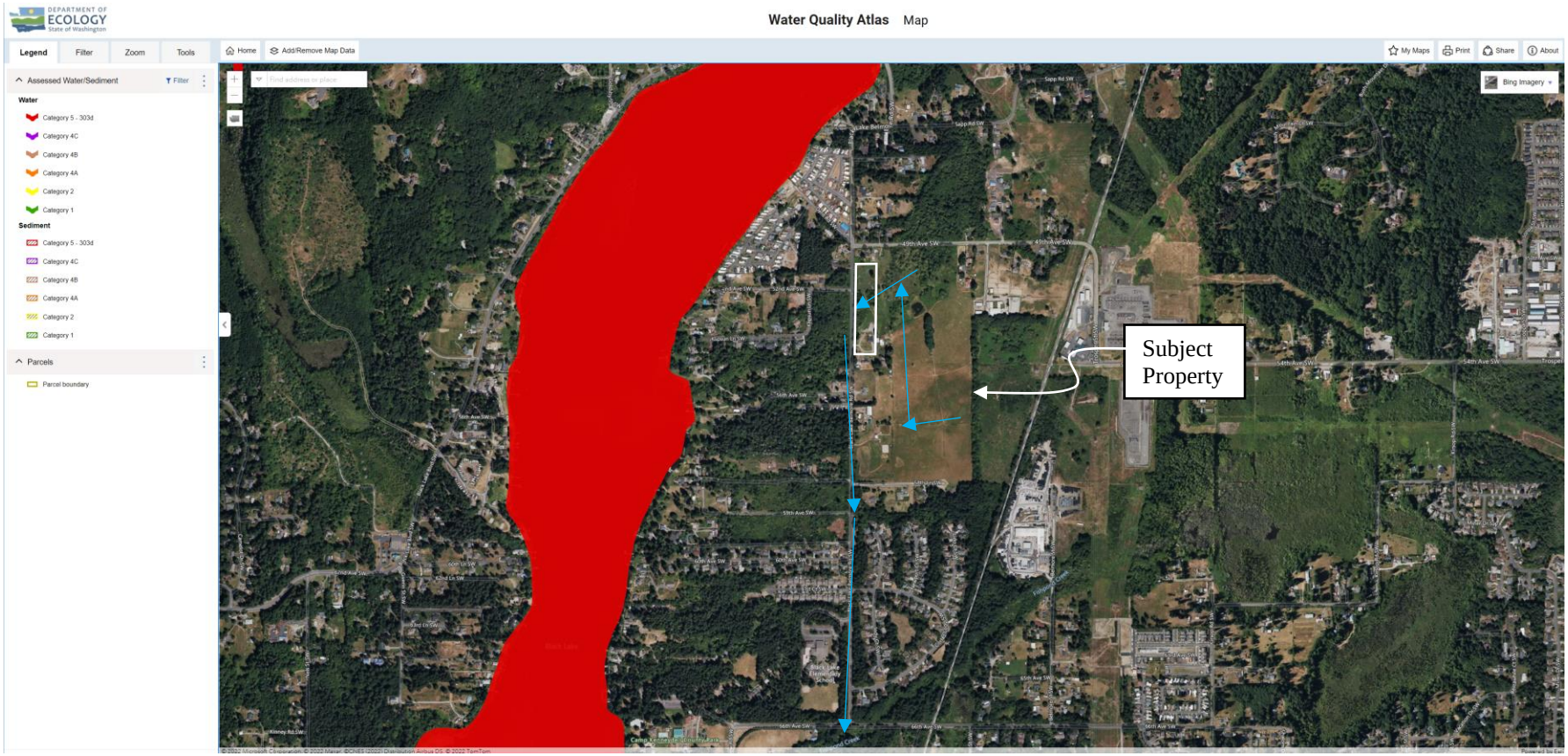
Priority Habitats and Species (PHS)

Database


PHS on the Web
Quick Start Guide | User Guide | Feedback
Address, Place, WRIA, Cou
Pacific Clubtail (*Phanogomphus kurilis)*
Cutthroat (*Oncorhynchus clarki*)
Wetlands
Wetlands
Wetlands
Subject Property
Oregon Spotted Frog
Black Lake
Tumwater

Appendix I

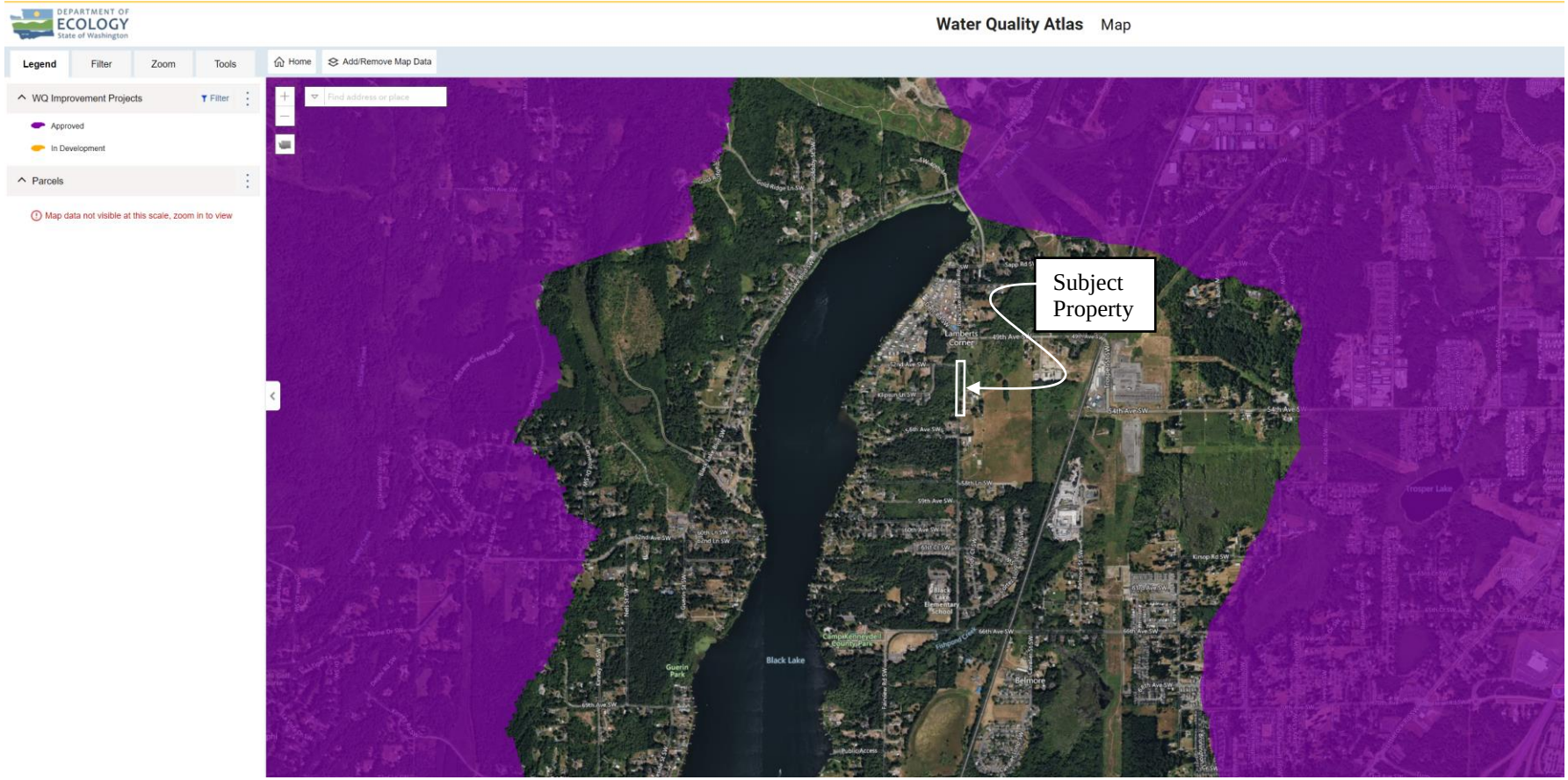
303(d)


DEPARTMENT OF ECOLOGY
State of Washington
Water Quality Atlas Map
Legend
Filter
Zoom
Tools
Home
Add/Remove Map Data
My Maps
Print
Share
About
Assessed Water/Sediment
Water
Category 5 - 303d
Category 4C
Category 4B
Category 4A
Category 2
Category 1
Sediment
Category 5 - 303d
Category 4C
Category 4B
Category 4A
Category 2
Category 1
Parcels
Parcel boundary
Bing Imagery
Subject Property

Appendix J

Department of Ecology Water Quality Atlas Database

TMDL


DEPARTMENT OF ECOLOGY State of Washington
Water Quality Atlas Map
Legend
Filter
Zoom
Tools
Home
Add/Remove Map Data
WQ Improvement Projects
Filter
Approved
In Development
Parcels
Map data not visible at this scale, zoom in to view
Find address or place
Subject Property
Lamberts Corner
Black Lake
Guerin Park
Belmore
Black Lake Elementary School

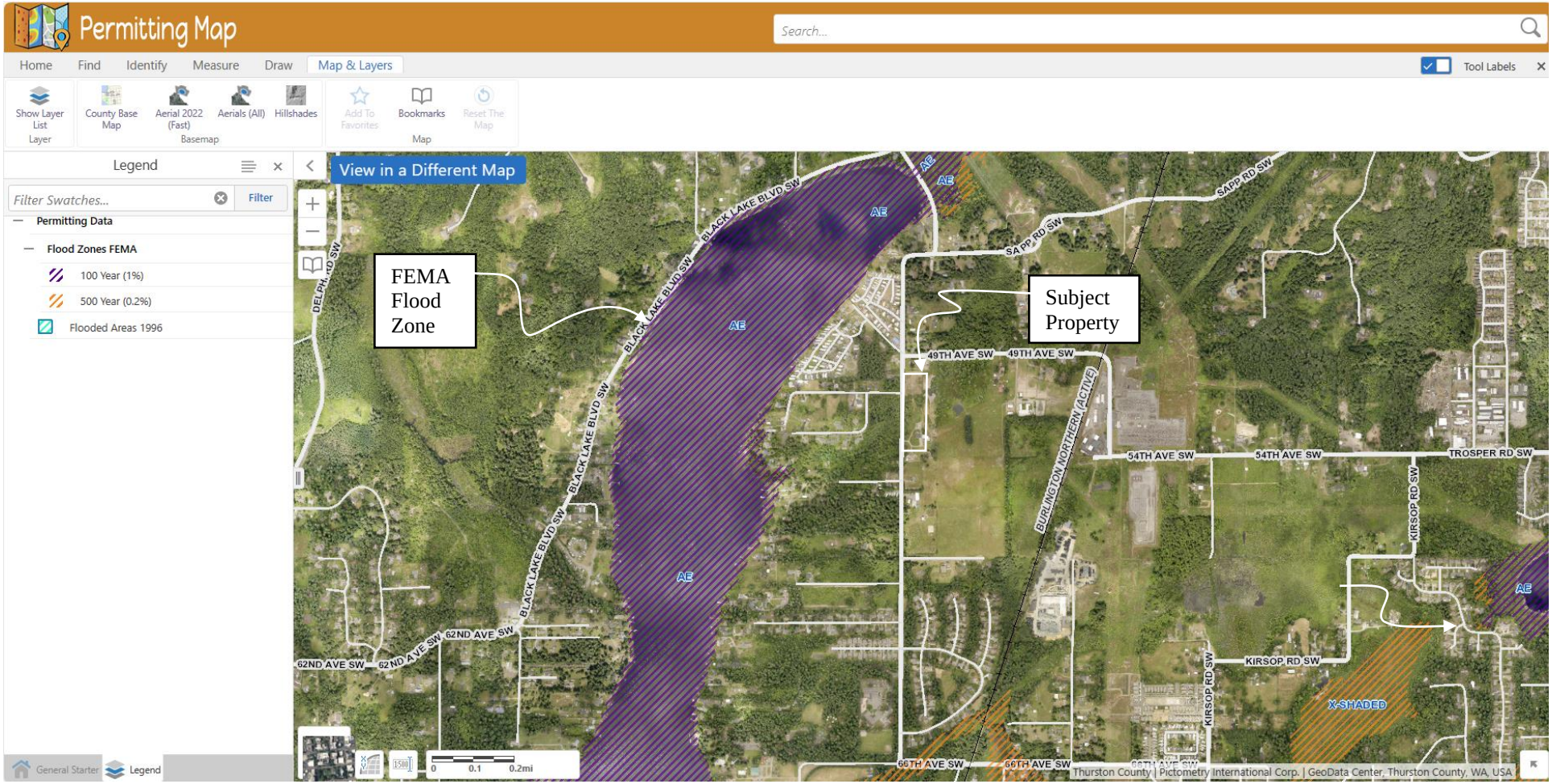
Appendix K

Thurston County

Geodata Center

&

FEMA Flooding


Permitting Map
Search...
Home
Find
Identify
Measure
Draw
Map & Layers
Tool Labels
Show Layer List
County Base Map
Aerial 2022 (Fast)
Aerials (All)
Hillshades
Add To Favorites
Bookmarks
Reset The Map
Layer
Basemap
Map
Legend
Filter Swatches...
Filter
Permitting Data
Flood Zones FEMA
100 Year (1%)
500 Year (0.2%)
Flooded Areas 1996
View in a Different Map
FEMA Flood Zone
Subject Property
AE
X-SHADED
BLACK LAKE BLVD SW
DELPHI RD SW
SAPP RD SW
49TH AVE SW
54TH AVE SW
62ND AVE SW
66TH AVE SW
BURLINGTON NORTHERN (ACTIVE)
KIRSOP RD SW
TROSPER RD SW
0 0.1 0.2mi
Thurston County | Pictometry International Corp. | GeoData Center, Thurston County, WA, USA
General Starter
Legend

Appendix L

Rating Forms

Wetland name or number Wet A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 3-Oct-22

Rated by Curtis Wambach Trained by Ecology? ☑ Yes ☐ No Date of training Continual

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☑ No

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

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			List appropriate rating (H, M, L)	
Site Potential	M	M	M	
Landscape Potential	H	H	M	
Value	M	M	M	**Total**
Score Based on Ratings	7	7	6	**20**

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	

Wetland name or number Wet A

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	Figure 13
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
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 (*can be added to another figure*)	S 4.1	
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number Wet A

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☑ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
- ☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The wetland is on a slope (*slope can be very gradual*),
- ☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- ☐ The water leaves the wetland **without being impounded.**

☑ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- ☐ The overbank flooding occurs at least once every 2 years.

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

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

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

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

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

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

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

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number Wet A

DEPRESSIONAL AND FLATS WETLANDS

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

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an 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	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions*). Yes = 4 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 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	**8**

Rating of Site Potential If score is: ☐ **12 - 16 = H** ☑ **6 - 11 = M** ☐ **0 - 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	**3**

Rating of Landscape Potential If score is: ☑ **3 or 4 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

Wetland name or number Wet A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		0
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	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*		3
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	
☑ 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 area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*		3
☐ The area of the basin is less than 10 times the area of the unit	points = 5	
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	points = 0	
☐ Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	**6**

Rating of Site Potential If score is: ☐ **12 - 16 = H** ☑ **6 - 11 = M** ☐ **0 - 5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	**3**

Rating of Landscape Potential If score is: ☑ **3 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*		1
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
☐ • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
☑ Flooding from groundwater is an issue in the sub-basin.	points = 1	
☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. 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 conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	**1**

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

Wetland name or number Wet A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4	4
☑ Emergent	3 structures: points = 2	
☑ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points - 1	
☑ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if:

☑ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3	0
☑ Seasonally flooded or inundated	3 types present: points = 2	
☐ Occasionally flooded or inundated	2 types present: points = 1	
☐ Saturated only	1 types present: points = 0	
☐ Permanently flowing stream or river in, or adjacent to, the wetland		
☐ Seasonally flowing stream in, or adjacent to, the wetland		
☐ **Lake Fringe wetland**	**2 points**	
☐ **Freshwater tidal wetland**	**2 points**	

H 1.3. Richness of plant species

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

2

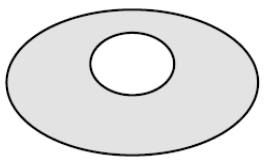
If you counted:	> 19 species	points = 2
	5 - 19 species	points = 1
	< 5 species	points = 0

H 1.4. Interspersion of habitats

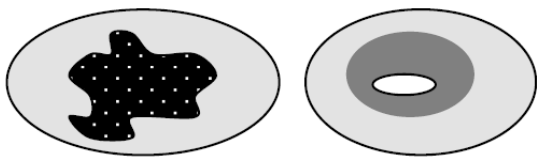
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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

2

None = 0 points

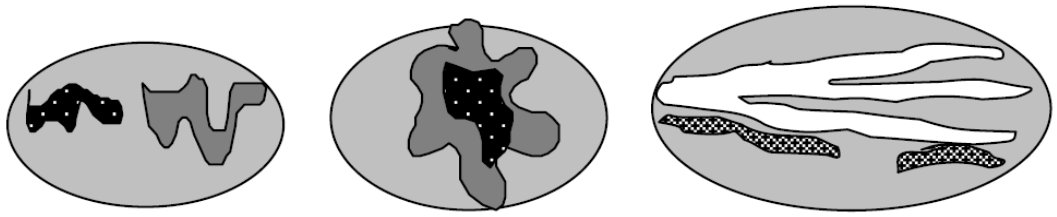


Low = 1 point



Moderate = 2 points

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



Wetland name or number Wet A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☑ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) ☑ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☑ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	**11**

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

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 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 points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 5.4 % undisturbed habitat + (60 % moderate & low intensity land uses / 2) = 35.4% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	**1**

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

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

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

Wetland name or number Wet A

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.
http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here:
http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests**: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☑ **Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Wet A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes - Go to **SC 1.1** ☐ No = **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☐ No - Go to **SC 1.2**	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina* , see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☐ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☐ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions*** . SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes - Go to **SC 3.3** ☐ No - Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes - Go to **SC 3.3** ☐ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☐ No - Go to **SC 3.4** **NOTE**: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☐ No = **Is not a bog**	

SC 4.0. Forested Wetlands

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

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

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

SC 5.0. Wetlands in Coastal Lagoons

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

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

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

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

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

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

SC 6.0. Interdunal Wetlands

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

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

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

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

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

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

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

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

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

Category of wetland based on Special Characteristics

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

Wetland name or number Wet B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 16-Sep-24

Rated by Curtis Wambach Trained by Ecology? ☑ Yes ☐ No Date of training Continual

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☑ No

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

OVERALL WETLAND CATEGORY III (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			List appropriate rating (H, M, L)	
Site Potential	M	L	M	
Landscape Potential	M	L	M	
Value	M	M	H	**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	

Wetland name or number Wet B

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	Figure 13
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
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 (*can be added to another figure*)	S 4.1	
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number Wet B

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☑ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
- ☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The wetland is on a slope (*slope can be very gradual*),
- ☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- ☐ The water leaves the wetland **without being impounded.**

☑ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- ☐ The overbank flooding occurs at least once every 2 years.

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

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

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

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

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

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

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

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number Wet B

DEPRESSIONAL AND FLATS WETLANDS

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

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an 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	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions*). Yes = 4 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 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	**6**

Rating of Site Potential If score is: ☐ **12 - 16 = H** ☑ **6 - 11 = M** ☐ **0 - 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 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? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☑ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

Wetland name or number Wet B

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		0
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	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*		3
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	
☑ 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 area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*		0
☐ The area of the basin is less than 10 times the area of the unit	points = 5	
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	points = 0	
☐ Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	**3**

Rating of Site Potential If score is: ☐ **12 - 16 = H** ☐ **6 - 11 = M** ☑ **0 - 5 = L** *Record the rating on the first page*

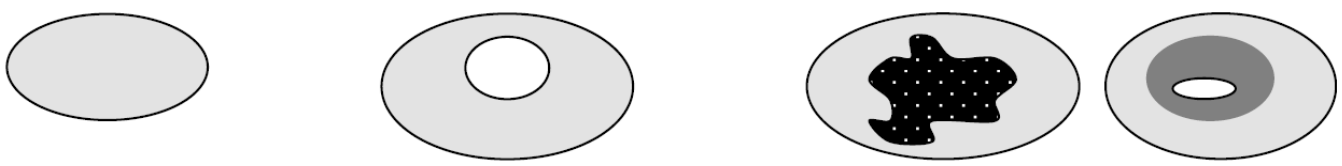
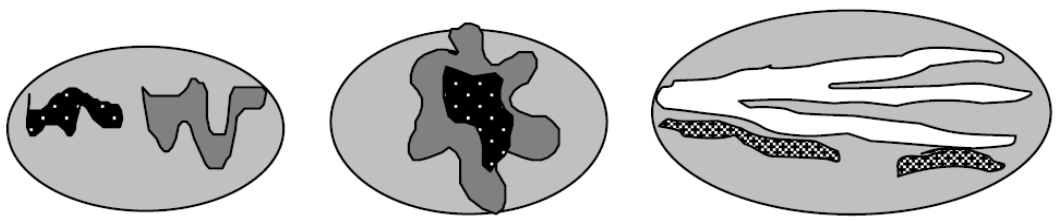
D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	**0**

Rating of Landscape Potential If score is: ☐ **3 = H** ☐ **1 or 2 = M** ☑ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*		1
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
☐ • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
☑ Flooding from groundwater is an issue in the sub-basin.	points = 1	
☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. 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 conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	**1**

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

Wetland name or number Wet B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☐ Emergent — 3 structures: points = 2 ☐ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1 ☑ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if*: ☑ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	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 (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☑ Seasonally flooded or inundated — 3 types present: points = 2 ☐ Occasionally flooded or inundated — 2 types present: points = 1 ☐ Saturated only — 1 types present: points = 0 ☑ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	1
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. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points — **Low** = 1 point — **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3 points 	0

Wetland name or number Wet B

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

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

H 2.0. Does the landscape have the potential to support the habitat 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 points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 5.4 % undisturbed habitat + (60 % moderate & low intensity land uses / 2) = 35.4% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	**1**

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

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

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

Wetland name or number Wet B

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.
http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here:
http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests**: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☑ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☑ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☑ **Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Wet B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes - Go to **SC 1.1** ☐ No = **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☐ No - Go to **SC 1.2**	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina* , see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☐ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☐ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions*** . SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes - Go to **SC 3.3** ☐ No - Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes - Go to **SC 3.3** ☐ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☐ No - Go to **SC 3.4** **NOTE**: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☐ No = **Is not a bog**	

SC 4.0. Forested Wetlands

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

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

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

SC 5.0. Wetlands in Coastal Lagoons

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

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

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

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

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

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

SC 6.0. Interdunal Wetlands

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

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

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

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

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

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

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

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

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

Category of wetland based on Special Characteristics

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

Appendix M

Datasheets

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

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: TP-1

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	80	Y	FACU
2. Kentucky bluegrass (Poa pretenses)	30	Y	FAC
3. Red fescue (Festuca rubra)	10	N	FAC
4. Common plantain (Plantago lancelata)	5	N	FACU
5. Red clover (Trifolium pratense)	5	N	FACU
6. Orchard grass (Dactylis glomerata)	5	N	FACU
7. Sweet vernal grass (Anthoxanthum odoratum)	5	N	FACU
8. Chickweed (Stellaria media)	1	N	FACU
9. Common bentgrass (Agrostis stolonifera)	1	N	FAC
10. Slough Sedge (Carex obnupta)	1	N	OBL
11.			
	143 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 1	x 1 = 1
FACW species	x 2 =
FAC species 41	x 3 = 123
FACU species 101	x 4 = 404
UPL species	x 5 =
Column Totals: 143 (A)	528 (B)

Prevalence Index = B/A = 3.69

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 3/2-3/3		none					Sandy Gravelly Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-2

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	80	Y	FACU
2. Chickweed (Stellaria media)	20	Y	FACU
3. Kentucky bluegrass (Poa pretenses)	10	N	FAC
4. Common plantain (Plantago lancelata)	5	N	FACU
5. Red fescue (Festuca rubra)	5	N	FAC
6. Tansy regwort (Senecio jacobaea)	1	N	FACU
7.			
8.			
9.			
10.			
11.			
	121 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 15	x 3 = 75
FACU species 106	x 4 = 424
UPL species _____	x 5 = _____
Column Totals: 121 (A)	499 (B)

Prevalence Index = B/A = 4.12

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: TP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 3/3		none					Sandy Gravelly Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-3

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	70	Y	FACU
2. Chickweed (Stellaria media)	20	N	FACU
3. Red fescue (Festuca rubra)	20	N	FAC
4. Dandilion (Taraxacum officinale)	10	N	FACU
5. Slough sedge (Carex obnupta)	10	N	OBL
6. Velvet grass (Holcus lanatus)	2	N	FACU
7.			
8.			
9.			
10.			
11.			
	132 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	102	x 4 =	408
UPL species		x 5 =	
Column Totals:	124 (A)		470 (B)

Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/1		None					Silt loam
6-12"	10YR 4/2		None					Sandy Silty Clay Loam
12-20"	10YR 4/2		10YR 6/8					Sandy Silty Clay Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks: Borderline hydric. May be technically not hydric because redox does not appear within twelve inches of the surface at this test plot.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-4

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 year? 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.)

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

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

Remarks: Marginal hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	60	Y	FACU
2. Red fescue (Festuca rubra)	40	Y	FAC
3. Sweet vernal grass (Anthoxanthum odoratum)	30	Y	FACU
4. Kentucky bluegrass (Poa pretenses)	10	N	FACU
5. Velvet grass (Holcus lanatus)	2	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	142 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 42	x 3 = 126
FACU species 100	x 4 = 400
UPL species _____	x 5 = _____
Column Totals: 142 (A)	526 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/2		None					Sandy gravelly silt loam
12-20"	10YR 6/2		None					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks: Borderline hydric. May be technically not hydric because redox does not appear within twelve inches of the surface at this test plot.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-5

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 year? 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.)

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

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

Remarks: Drained hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	60	Y	FACU
2. Chickweed (Stellaria media)	30	Y	FACU
3. Sweet vernal grass (Anthoxanthum odoratum)	20	N	FACU
4. Red fescue (Festuca rubra)	10	N	FAC
5. Reed canarygrass (Phalaris arundinacea)	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 5	x 2 = 10
FAC species 10	x 3 = 30
FACU species 110	x 4 = 440
UPL species _____	x 5 = _____
Column Totals: 125 (A)	480 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9"	10YR 4/2		None					Sandy gravelly silt loam
9-10"	10YR 6/2		None					Hard pan
10-20"	10YR 6/2		10YR 6/8					Silt very gravelly clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-6

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 year? 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.)

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

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

Remarks: Drained hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	70	Y	FACU
2. Sweet vernal grass (Anthoxanthum odoratum)	20	Y	FACU
3. Chickweed (Stellaria media)	10	N	FACU
4. Red fescue (Festuca rubra)	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 10	x 3 = 30
FACU species 100	x 4 = 400
UPL species _____	x 5 = _____
Column Totals: 110 (A)	430 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2		None					Sandy gravelly silt loam
10-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-7

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 year? 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.)

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

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

Remarks: Drained hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	60	Y	FACU
2. Sweet vernal grass (Anthoxanthum odoratum)	20	Y	FACU
3. Chickweed (Stellaria media)	20	Y	FACU
4. Red fescue (Festuca rubra)	5	N	FAC
5. Slough sedge (Carex obnupta)	5	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species _____	x 2 = _____
FAC species 5	x 3 = 15
FACU species 100	x 4 = 400
UPL species _____	x 5 = _____
Column Totals: 110 (A)	420 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2		None					Sandy gravelly silt loam
10-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-8

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 year? 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.)

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

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

Remarks: Drained hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Hairy cat's ear (Hypochaeris radicata)	70	Y	FACU
2. Sweet vernal grass (Anthoxanthum odoratum)	20	Y	FACU
3. Common plantain (Plantago lancelata)	15	Y	FACU
4. Red fescue (Festuca rubra)	5	N	FAC
5. Slough sedge (Carex obnupta)	5	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species	x 2 =
FAC species 5	x 3 = 15
FACU species 105	x 4 = 420
UPL species	x 5 =
Column Totals: 110 (A)	440 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: TP-8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2		None					Sandy gravelly silt loam
10-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

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

Project/Site: 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: TP-Aa1

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6')			
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: TP-Aa1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2		None					Sandy gravelly loam
6-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

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

Project/Site: 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: TP-Ab1

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Red alder (Alnus rubra)	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 12')			
1. Himalayan blackberry (Rubus Armediacus)	20	Yes	FAC
2. Douglas spirea	10	Yes	FACW
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 6')			
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: TP-Ab1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2		None					Sandy gravelly loam
6-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

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

Project/Site: 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: TP-Bb1

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 year? 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.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Red alder (Alnus rubra)	30	Yes	FAC
2. Oregon ash (Fraxinus latifolia)	15	Yes	FACW
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 12')			
1. Himalayan blackberry (Rubus Armediacus)	30	Yes	FAC
2. Douglas spirea (Spiraea douglasii)	10	Yes	FACW
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: 6')			
1. Reed canarygrass (Phalaris arundinacea)	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: TP-Bb1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2		None					Sandy gravelly loam
6-20	10YR 6/2		10YR 6/8					Silty clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks: Near ditch filled with water

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

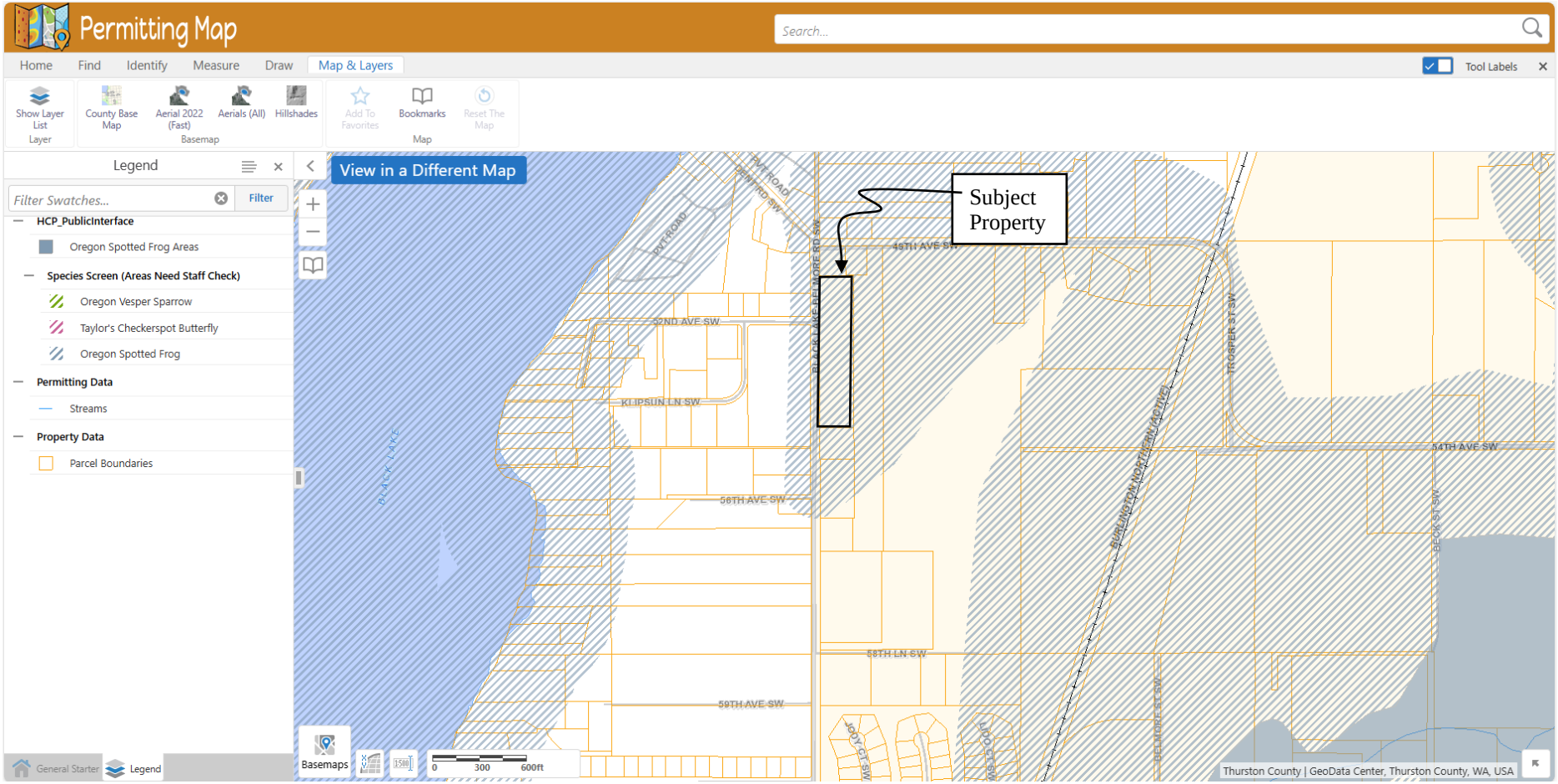
Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Appendix N

Oregon Spotted Frog Screening


Permitting Map
Search...
Home
Find
Identify
Measure
Draw
Map & Layers
Tool Labels
Show Layer List
County Base Map
Aerial 2022 (Fast)
Aerials (All)
Hillshades
Add To Favorites
Bookmarks
Reset The Map
Layer
Basemap
Map
Legend
Filter Swatches...
Filter
HCP_PublicInterface
Oregon Spotted Frog Areas
Species Screen (Areas Need Staff Check)
Oregon Vesper Sparrow
Taylor's Checkerspot Butterfly
Oregon Spotted Frog
Permitting Data
Streams
Property Data
Parcel Boundaries
View in a Different Map
Subject Property
49TH AVE SW
52ND AVE SW
KLIPSUN LN SW
56TH AVE SW
58TH LN SW
59TH AVE SW
54TH AVE SW
BLACK LAKE BELMORE RD SW
TROSPER ST SW
BURLINGTON NORTHERN RAILROAD
BELMORE ST SW
BLACK LAKE
Basemaps
0 300 600ft
Thurston County | GeoData Center, Thurston County, WA, USA
General Starter
Legend