
PRYOR PROPERTY

THURSTON COUNTY, WASHINGTON

CRITICAL AREAS REPORT

Prepared By:



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Senior Biologist and Principal



14 March 2022

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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 or within three hundred (300) feet of the subject property. Potential wetlands and their buffers were evaluated on the subject property and within three hundred (300) feet of the subject property. This Critical Areas Report has been prepared to satisfy Thurston County reporting requirements.

This study also analyzes recent Critical Areas and buffer impacts on the subject property. A mitigation plan has been prepared to off-set potential Critical Areas and buffer impacts. The project proposes to remove gravel and structures installed in the wetland buffer without permits. The project also proposes a single-family residence within the wetland buffer area under a Reasonable Use Exception (RUE).

1.2 Property Location

The 1.79-acre subject property is located in Thurston County (**Figure 1, Table 1**).

Table 1. Parcels Comprising Subject Property

No#	Property Address	Parcel Number	Map Coordinates	Property Size (Acres)
1	2725 137TH LN SW	11922230100	Section 9 Township 16 N Range 02 W	1.79
1 Parcel	Total Size			1.79 acres

The permitting jurisdiction is Thurston County.

1.3 Site Evaluation

A wetland and stream evaluation were performed on the subject property on 14 May 2021.

1.4 Property Description

The subject property consists of a single-family lot bordered on the north by 137th Land SW. The pre-existing condition on the site is forested with an emergent wet area located on the eastern portion of the property. The existing condition on the subject property consists of areas of gravel and clearings in the buffer. Wetland and stream impacts will be analyzed as part of this study. Surrounding properties consist of large single-family lots, forests, and agriculture.

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, and throughout the duration of project design, biologists reviewed existing information to identify wetlands, streams, vegetation patterns, topography, soils, wildlife habitats, and other natural resources in the project area. 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 on-site as well as off-site 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.

Under the Thurston County Code, wetlands are defined as areas that are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands. Wetland determination data forms were recorded for each wetland (**Appendix K**).

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 J**).

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 project area 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) in. (thirty [30] cm) or less below the soil surface, during the growing season at a minimum frequency of five (5) years in 10 (fifty percent [50%] 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 were 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 were rated using the revised Washington State Wetland Rating System for Western Washington.

3.0 STUDY RESULTS

3.1 Background Information

3.1.1 Thurston County Geodata Soils

Two (2) soil types are mapped on the subject property by the Thurston County Geodata Center database (**Appendix B, Table 3**). One (1) hydric soil type, Everson clay loam, is mapped on the subject property. One (1) non-hydric soil type, cathcart gravelly loam 3-15% slopes is mapped on the subject property:

Table 3. Thurston County Geodata Soil Summary

Soil Unit	Hydric	Comments
Everson clay loam	Yes	Covers southeastern portion of subject property
Cathcart gravelly loam, 3 to 15% slope	No	Covers northwestern portion of subject property

3.1.2 Thurston County Geodata Center Wetlands & Streams

No wetlands or streams are mapped on the subject property by Thurston County Geodata Center database (**Appendix C**). One (1) off-site wetland is mapped near the northeast property boundary.

3.1.3 The WDFW SalmonScape Database

No salmonids or streams are mapped on the subject property or within the largest stream buffer in the Thurston County Code of two hundred fifty (250 ft) foot by the Washington Department of Fish and Wildlife SalmonScape database (**Appendix D**). One salmon stream is mapped approximately eight hundred fifty-five (855) feet east of the subject property.

3.1.4 Department of Natural Resources (DNR) Stream Typing Database

One (1) Type F stream is mapped on the subject property extending from the southern property boundary to the northeastern corner of the subject property by the Department of Natural Resources (DNR) stream typing database (**Appendix E**).

3.1.5 The WDFW Priority Habitat Species (PHS) Database

No priority species are mapped onsite according to the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database (**Appendix F**). A freshwater forested/shrub wetland is mapped east and south of the subject property.

3.1.6 Clean Water Act 303(d) List

No 303(d) listed water body is mapped on the subject property by the Department of ecology (DOE) Water Quality Atlas (**Appendix G**).

3.1.7 Total Maximum Daily Load (TMDL)

An “approved” TMDL is mapped on the subject property by the Department of Ecology Water Quality Atlas (**Appendix H**).

3.1.8 Thurston County Geodata Center FEMA Flood Areas

No FEMA floodplain is mapped on the subject property or immediately downstream of the subject property by the Thurston County Geodata Center database (**Appendix I**).

3.1.9 Thurston County Geodata Center High Ground Water Hazard Area

No High Groundwater Hazard Area is mapped on the subject property by Thurston County Geodata center database (**Appendix J**). A Hight Groundwater Hazard Review Area is mapped on majority of the subject property.

3.2 Field Results

One (1) wetland, labeled Wetland A, has been identified and delineated on the eastern portion of the subject property (**Figure 2; Appendix A, Photo 30**). One (1) off-site wetland, labeled Wetland B, was identified and previously delineated by EnviroVector in the past. A stream, labeled Stream Sa, has been identified and the Ordinary High Water Mark (OHWM) has been delineated on the subject property (**Appendix A, Photos 23-30**).

A summary of the Critical Areas study can be found in **Table 4**.

Table 4. Summary of Critical Areas Results

Wetlands						
Wetland	Area of Wetland		Cowardin Class	Buffer Condition	Habitat Features	Comments
	Onsite	Total				
Wetland A	8,430 sf (0.19 acres)	10,779 sf (0.25 acres)	PEMC ¹ PFOC ²	Forested, roads, agriculture, recent disturbance	Amphibian habitat	Seasonal standing water. On-site wetland vegetation has been removed
Wetland B	0 sf (0 acres)	1,924,167 sf (44 acres)	PEMC ¹	Agriculture, roads, and some forest	Amphibian habitat	Seasonal standing water. On-site wetland vegetation has been removed
Streams						
Stream	Reach Onsite	Depth & Width	Stream Bed	Fish	Riparian Habitat	Comments
Stream Sa	1,187 ft	Depth 0.5 ft Width 2-3 ft	Mud	None	Cleared of vegetation onsite	Mapped as fish-bearing by DNR

1. PEMC: Palustrine Emergent Seasonally-flooded

2. PFOC: Palustrine Forested Seasonally-flooded

3.3 Wetlands

3.3.1 Wetland A

Wetland A is located on the eastern portion of the subject property and extends to the east of the subject property (**Figure 2; Appendix A, Photos 7-16**). Wetland A has been GNSS located using a Trimble Geo 7x device with sub-foot accuracy. Wetland data has been collected at test plots located on either side of the wetland boundary (**Appendix K; Appendix A, Photos 14 & 15**). The wetland boundary has been marked using orange ribbon flagging labeled sequentially A-1 through A-8 (**Figures 3; Appendix A, Photos 10 & 11**). Wetland data has been collected at test plots (**Appendix K; Appendix A, Photos 14 & 15**). The eastern edge of Wetland A was delineated as part of a past project on the property located east of the subject property.

Wetland Conditions

Wetland A is classified as a Cowardin (1979) Palustrine Emergent Seasonally-flooded (PEMC), and Palustrine Forested Seasonally-flooded (PFOC) wetland.

The emergent portion of the wetland has been impacted by clearing the wetland vegetation and dredging of Stream Sa (**Appendix A, Photos 9-11**).

Less than ten percent (<10%) of the area within one hundred fifty (150) feet of Wetland A contains potential sources of pollutants (**Figure 10**). Wetlands were rated as pre-existing conditions.

Habitat within one (1) kilometer is shown in **Figure 11**, and the wetland contributing basin is shown in **Figure 12**.

Hydrology

Hydrology derives from Stream Sa, which also acts as an outlet through a twenty-four (24) inch culvert that extends under 137th Lane SW into Wetland B.

Vegetation

Dominant plant species identified in the forested portion of Wetland A include:

- Red alder (*Alnus rubra*, FAC)
- Salmonberry (*Rubus spectabilis*, FAC)
- Scouler's willow (*Salix Scouleriana*, FAC)
- Reed canarygrass (*Phalaris arundinacea*, FACW)

Dominant plant species identified in the emergent portion of Wetland A include:

- Reed canarygrass (*Phalaris arundinacea*, FACW)
- Water parsley (*Oenanthe sarmentosa*, OBL)
- Slough sedge (*Carex obnupta*, OBL)
- Skunk cabbage (*Lysichiton americanus*, OBL)
- Field horsetail (*Equisetum arvense*, FAC)
- Small fruited bullrush (*Scirpus microcarpus*, OBL)
- Creeping buttercup (*Ranunculus repens*, FAC)

Dominant upland plant species in the wetland buffer include:

- Red alder (*Alnus rubra*, FAC)
- Big leaf maple (*Acer macrophyllum*, FACU)
- Salmonberry (*Rubus spectabilis*, FAC)
- Sword fern (*Polystichum munitum*, FACU)
- Trailing blackberry (*Rubus ursinus*, FACU)
- Siberian Spring beauty (*Claytonia sibirica*, FAC)

Soils

Soils in Wetland A consists of a black (10YR 2/1) silty loam from the surface to twenty (20) inches below the surface (**Appendix A, Photo 14; Appendix K**).

Upland soils adjacent to the wetland consist of a dark reddish brown (10YR 2/2) fine sandy silt from surface to twenty (20) inches (**Appendix A, Photo 15; Appendix K**).

Habitat Features

Amphibian habitat was identified in Wetland A.

3.3.2 Wetland B

Wetland B has been classified as Palustrine Emergent Seasonally-flooded (PEMC) and Palustrine Scrub-shrub Seasonally-flooded (PSSC) wetland. Wetland B is located north of the subject property and was delineated, rated, and described in the EnviroVector (2017) *Richard and Viola Mae Woods Wetlands and Stream Summary Report*.

Wetland Condition

Wetland B is dominated by grasses, including reed canarygrass (*Phalaris arundinacea*, FACW), and Douglas spirea (*Spiraea douglasii*, FACW). Wetland hydrology derives from Beaver Creek located along the northern property boundary and its tributaries and other smaller tributaries. A large portion of Wetland B consists of maintained grass fields. The eastern on-site portion of Wetland B consists of a monotypic stand of Douglas spirea.

Wetland Vegetation

Dominant Wetland B vegetation consists of:

- Douglas spirea (*Spiraea douglasii*)
- Reed canarygrass (*Phalaris arundinacea*, FACW)
- Slough sedge (*Carex obnupta*, OBL)

Dominant upland vegetation in the Wetland B buffer consists of:

- Velvet grass (*Holcus lanatus*, FAC)
- Big leaf maple (*Acer macrophyllum*, FACU)
- Beaked hazelnut (*Corylus cornuta*, FACU)
- Red huckleberry (*Vaccinium parvifolium*, FACU)
- Trailing blackberry (*Rubus ursinus*, FACU)
- Red fescue (*Festuca rubra*, FAC)

Wetland and Buffer Soils

Wetland B soils consist of a very dark gray (10YR 3/1) sandy loam from zero (0) to two (2) inches below the surface and of a black (10YR 2/1) silt with dark yellowish brown (10YR 4/6) mottles below two (2) inches of the surface.

Upland soils consist of a very dark yellowish brown (10YR 3/4) very fine sandy silt from zero (0) to seven (7) inches of a test pit and of a very dark yellowish brown (10YR 4/4) sandy gravelly loam below seven (7) inches of a test pit.

3.4 Stream Sa

Stream Sa is located on the eastern portion of the subject property, flowing north to northeast (**Appendix A, Photos 19-30**). Stream Sa has been GNSS located using a Trimble Geo 7x device with sub-foot accuracy. The stream boundary has been marked using pink ribbon flagging labeled sequentially S-1 through S-6 (**Figures 3; Appendix A, Photos 23 & 24**).

Stream Sa has been impacted through soil excavation through Wetland A. The stream has been widened and deepened into a ditch (**Appendix A, Photos 11, 19, 20, 21-26, 28, & 30**). The stream bottom is gravel and mud.

The State DNR mapped the drainage as Fish-bearing. Although, no salmonid fish has been mapped in the drainage. Potential fish access occurs onto the subject property through Stream Sa during the wet season, when this seasonal drainage contains more water. The drainage flows northward to Beaver Creek, which is mapped as a salmonid stream.

4.0 REGULATORY CONSIDERATIONS

Wetland and stream regulatory considerations have been summarized in **Table 5** and illustrated in **Figure 4**.

Table 5. Summary of Regulatory Considerations

Wetlands							
Wetland	Area of Wetland		Category	Habitat Score	Standard Buffer	Reduced Buffer	Comments
	Onsite	Total					
Wetland A	8,430 sf (0.19 acres)	10,779 sf (0.25 acres)	III	7 (LHH)	260 ft	195 ft	Buffer covers almost entire property outside of wetland
Wetland B	0 sf (0 acres)	1,924,167 sf (44 acres)	III	7 ¹ (HMM)	240 ft	180 ft	Located entirely offsite across 127 th Lane SW
Streams							
Stream	Reach Onsite	Width	Stream Type		Stream Buffer		Comments
			DNR Mapped	This Study			
Stream Sa	1,187 ft	Width 6 ft	F	F	150 ft		The stream on the subject property has been impacted

1. EnviroVector (2017) Richard and Viola Mae Woods Wetlands and Stream Summary Report

4.1 Wetlands

4.1.1 Wetland A

Wetland A has been classified as a Category III wetland using the Department of Ecology (2014) Wetland Rating Form for Western Washington as required under Thurston County Code (TCC) Chapter 24.30.030---*Wetland categories*. Wetland A is a depressional wetland under the Department of Ecology (2014) Wetland Rating System.

Under TCC Chapter 24.30.045 ---*Wetland buffers—Standard width*, wetland buffers are calculated based on the habitat score determined by the Washington State Department of Ecology (2014) Wetland Rating System. Wetland A scored a “Low (L)” potential to provide habitat, a “High (H)” landscape potential to support habitat, and a “High (H)” potential value to society. Wetlands that rate as an L, H, H (order of ratings are not important) receive a score of seven (7) points for total habitat functions (**Appendix K**).

The standard buffer for wetlands that score seven (7) points for Habitat Functions provided by the rating of L, H, H require a buffer width of two hundred sixty (260) feet (TCC Table 24.30-1---*Standard Wetland Buffer Widths*) (**Figure 4; Table 5**). Under TCC Chapter 24.30.045---*Wetland Buffers-Standard width*, the standard buffer width can be reduced with mitigation. Thereby, the two hundred sixty (260) foot buffer on Wetland A could be reduced to one hundred ninety-five (195) feet pursuant to compliance with criteria under TCC Chapter 24.30.050.

4.1.2 Wetland B

Wetland B has been rated as a Category III wetland using the Department of Ecology (2014) Wetland Rating Form for Western Washington as required under Thurston County Code (TCC) Chapter 24.30.030---*Wetland categories* (**Table 5**). Wetland rating form for this off-site wetland is provided in EnviroVector (2017) *Richard and Viola Mae Woods Wetlands and Stream Summary Report*.

Under Thurston County Code (TCC) Chapter 24.30.045 ---*Wetland buffers—Standard width*, wetland buffers are calculated based on the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System. Wetland B scores seven (7) points (HMM) under habitat functions. The standard buffer for wetlands that score seven (7) points (HMM) for Habitat Functions is 240 feet (TCC Table 24.30-1---*Standard Wetland Buffer Widths*) (**Figure 4, Table 5**).

Under TCC 24.30.050(B)---*Isolated Buffers*, Thurston County may reduce the standard buffer width required by Habitat Scores to the minimum extent needed to exclude the portion of the buffer physically separated and functionally isolated by a road. The buffer from the off-site wetland across 137th Lane SW would not extend across the road onto the subject property.

4.2 Streams

Stream Sa is rated as a Type F stream using the DNR Stream Typing Database, WAC 222-16-020, and TCC 24.03.010- *Definitions- Stream and water body types*. The DNR Stream Typing Database maps Stream Sa as Type F (**Appendix E**).

Under Thurston County Code, Type F waters include all segments of aquatic areas that are not Type S waters and that contain fish or fish habitat including waters diverted for use by a Federal, State or tribal fish hatchery from the point of diversion for one thousand five hundred (1,500) feet or the entire tributary if the tributary is highly significant for protection of downstream water quality.

Type F streams less than five (<5) feet wide maintain a one hundred fifty (150)-foot buffer under TCC Table 24.25-1--- *Standard Freshwater Riparian Habitat Area Widths (Insert 1)*. The one hundred fifty (150)-foot stream buffer may not be reduced for fish bearing streams without the approval of a reasonable use exception (TCC 24.25.025---*Reduced riparian habitat area width*).

Insert 1. Thurston County Stream Typing and Stream Buffers under TCC Table 24.25-1.

Stream type	Buffer zone size
Type S streams	250'
Type F streams greater than 20 feet in width (for all stream types, width is defined as bankfull width)	250'
Type F streams from 5—20 feet wide	200'
Type F streams less than 5 feet wide	150'
Type Np and Ns streams draining to Type S or F streams or directly to Puget Sound	150'
Type Np and Ns streams with high mass wasting potential	225'
Other streams not listed above, including streams without a surface connection to other waters	100'

4.3 Wetland Buffer Reduction

TCC Chapter 24.30.045---*Wetland Buffers-Standard width* allows for the reduction of the standard buffer with mitigation under TCC Chapter 24.30.050. Thereby, wetland buffers could be reduced pursuant to compliance with criteria under TCC Chapter 24.30.050 and Table 24.30-1---*Standard Wetland Buffer Widths*.

Under TCC Chapter 24.30.050---*Wetland buffers—Reduced width*, the buffer width specified in Table 24.30-1 may be reduced if the buffer reduction shall not adversely affect the functions of the adjacent wetlands and if the applicant shall demonstrate compliance with all the criteria under TCC Chapter 24.30.050(A).

Under TCC Chapter 24.30.050(A)---*Reduced Impacts*, if a wetland or buffer mitigation plan is submitted that meets the criteria in Table 24.30-2 (**Insert 2**), Thurston County may reduce the standard buffer width required by Habitat Scores by twenty-five percent (25%), or to the extent that it equals the buffer width required in Table 24.30-1 to maintain water quality, whichever produces the wider buffer.

In addition to meeting the criteria of Table 24.30-2 (**Insert 2**), buffer reduction under TCC Chapter 24.30.050(A)---*Reduced Impacts* must also satisfy the following:

1. The approval authority determines that the proposed reduction in buffer width, coupled with the proposed mitigation plan, would result in better protection of the wetland or better wetland or buffer functions than the standard buffer without such enhancement. The approval authority shall make this determination based on the applicant's proposed mitigation plan and a comparative analysis of all wetland and buffer functions under existing and enhanced conditions (e.g., filtration of sediments, excess nutrients, and pollutants; flood storage; erosion control; moderation of stormwater impacts; and shading for water temperature moderation) prepared by the applicant's qualified wetland scientist.

Factors to be considered include, but are not limited to, meeting the criteria of Table 24.30-2, the surface roughness of the buffer (e.g., the presence of fallen trees and other material that slow the flow of water and increase the buffer's ability to retain sediment and infiltrate stormwater); the composition and density of vegetation; the wetland's position in the landscape; slope; and soils. The approval authority may consult with Ecology or others with expertise as necessary to evaluate the applicant's proposal.

2. The degradation of the wetland and buffer was not caused while the property was in the applicant's ownership or within the previous seven (7) years, whichever is greater. This does not apply to damage from lawful land uses prior to the effective date of the ordinance codified in this title; and
3. The applicant submits maintenance and monitoring plan and performance surety consistent with Chapter 24.70 TCC.
4. The buffer reduction is consistent with all other applicable requirements of this chapter.

This report provides a proposed conceptual mitigation plan to comply with criteria to allow buffer reduction under TCC Chapter 24.30.050(A)---*Wetland buffers—Reduced width*.

Insert 2. Table 24.30-2. Measures to Mitigate Wetland Impacts

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> Direct lights away from wetlands and buffers.
Noise	<ul style="list-style-type: none"> Locate activity that generates noise away from wetland. If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source. For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10 feet heavily vegetated buffer strip immediately adjacent to the outer wetland buffer.
Toxic runoff	<ul style="list-style-type: none"> Treat and contain any toxic runoff. Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered. Establish covenants limiting use of pesticides within 150 feet of wetland. Apply integrated pest management standards.
Stormwater runoff	<ul style="list-style-type: none"> To improve existing water quality runoff that may be impacting wetland functions. Retrofit existing stormwater detention and treatment for roads and existing adjacent development. Prevent channelized flow from lawns that directly enters the buffer. Use Low Intensity Development techniques (per PSAT publication on LID techniques).
Change in water regime	<ul style="list-style-type: none"> In order to maintain wetland hydrology and discharge only clean stormwater toward the wetland. Stormwater should be treated; then infiltrated, detained, and/or dispersed outside the wetland buffer for any new runoff from impervious surfaces and new lawns. Permanent improvements to the site hydrology that would improve wetland functions and not create off-site flooding. This may include, but is not limited to, removal of a lawfully established agricultural ditch draining a wetland or delivering sediment, pollutants or excess nutrients to a wetland.
Pets and human disturbance	<ul style="list-style-type: none"> Use privacy fencing at buffer edge OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion. Place wetland and its buffer in a separate tract or protect with a conservation easement.
Dust	<ul style="list-style-type: none"> During construction or for commercial or industrial activities, use best management practices to control dust.
Disruption of corridors or connections/habitat enhancement	<ul style="list-style-type: none"> In order to improve habitat quality and connectivity, a vegetation enhancement plan that improves areas with minimal trees and vegetation and proposes removal of invasive vegetation and replacing it with ground cover and shrubs that will provide dense vegetative cover at maturity. Planting noninvasive plants that provide improved filtration of sediment, excess nutrients, and pollutants that may be present. Maintain habitat connections to off-site areas that are undisturbed. Restore corridors or connections to off-site habitats by replanting.

4.4 Wetland Buffer Averaging

Wetland buffer reconfiguration is allowed if needed to achieve optimal buildable area and maintain ongoing activities on the subject property. Wetland buffer averaging, allowed under TCC 24.30.060---*Wetland buffers---Reconfiguration*, would permit decreasing a buffer size to accommodate for the building area and adding the lost buffer to areas where no impacts will occur. Therefore, a zero-net loss of a total buffer will be achieved through this process.

The approval authority may authorize or require reconfiguration of wetland buffers under TCC 24.30.060(B) as follows:

The approval authority may reconfigure the buffer width to accommodate proposed development in compliance with all of the criteria below:

1. The proposed use cannot be accommodated on the site without reconfiguration of the buffer;
2. The scale, design, or orientation of the proposed land use has been adjusted to the extent practical to minimize buffer alteration;
3. The reduction in buffer width will occur where it will have the least potential impact on the wetland and buffer functions. Area will be added to portions of the buffer where it would most benefit wetland and buffer functions. The reconfigured buffer shall maintain all wetland functions.
4. Any landscaped area shall extend no more than fifteen feet from the edge of the structure's footprint (outside wall at the foundation) toward the wetland if the buffer width reduction allows the landscaped area to intrude into the area that was formerly buffer;
5. The reconfigured buffer shall be no less than one hundred feet wide at any point, or no less than seventy-five percent of the standard buffer, whichever is more. The reconfigured buffer shall contain the same square footage as the standard buffer. It shall not exceed one hundred percent of square footage of the standard buffer, as modified pursuant to TCC 24.30.050(B) or 24.30.055, without the landowner's consent;
6. The reconfiguration is accomplished within the project site boundaries or in an abutting conservation easement or tract approved by the county that protects the buffer from alteration, except as provided for in this section.

4.5 TCC 24.30.050(B)---*Isolated Buffers*

Under TCC 24.30.050(B)---*Isolated Buffers*, Thurston County may reduce the standard buffer width required by Habitat Scores to the minimum extent needed to exclude the portion of the buffer physically separated and functionally isolated by a road. The buffer from the off-site wetland across 137th Lane SW would not extend across the road onto the subject property.

4.6 Reasonable Use Exception (RUE)

A RUE applies if adherence to the provisions under the Thurston County Critical Areas Ordinance (CAO) and under Thurston County Code would deny all reasonable use of the subject property as a whole, due to the property's size, topography, or location relative to the critical area and any associated buffer. Because no other reasonable alternative method of development is provided under the CAO and the Thurston County Code (TCC), the reasonable use exception applies and should be granted under provisions of TCC Chapter 24.45---*Reasonable Use Exception*.

The subject property is completely encumbered by features that Thurston County regulates as Critical Areas, buffers, and setbacks under TCC Chapter 24.25.

The proposed land use and single-family development must comply with the conditions of a reasonable use exception in compliance with TCC Chapter 24.45.030---*Review Criteria* as follows:

- A. No other reasonable use of the property as a whole is permitted by this title; and
- B. No reasonable use with less impact on the critical area or buffer is possible. At a minimum, the alternatives reviewed shall include a change in use, reduction in the size of the use, a change in the timing of the activity, a revision in the project design. This may include a variance for yard and setback standards required pursuant to Titles 20, 21, 22, and 23 TCC; and
- C. The requested use or activity will not result in any damage to other property and will not threaten the public health, safety or welfare on or off the development proposal site, or increase public safety risks on or off the subject property; and
- D. The proposed reasonable use is limited to the minimum encroachment into the critical area and/or buffer necessary to prevent the denial of all reasonable use of the property; and
- E. The proposed reasonable use shall result in minimal alteration of the critical area including but not limited to impacts on vegetation, fish and wildlife resources, hydrological conditions, and geologic conditions; and
- F. A proposal for a reasonable use exception shall ensure no net loss of critical area functions and values. The proposal shall include a mitigation plan consistent with this title and best available science. Mitigation measures shall address unavoidable impacts and shall occur on-site first, or if necessary, off-site; and
- G. The reasonable use shall not result in the unmitigated adverse impacts to species of concern; and
- H. The location and scale of existing development on surrounding properties shall not be the sole basis for granting or determining a reasonable use exception.

Under TCC 24.45.060---*Subject to conditions*, the hearings examiner may grant a reasonable use exception subject to conditions and safeguards designed to ensure no net-loss to critical area functions and values. No net loss of Critical Area functions and values is expected as a result of this project. Functions and values are expected to improve with the proposed habitat enhancements.

Under TCC Chapter 24.45.090---*Time limits—Expiration*, a reasonable use exception will expire if the use or activity for which it is granted is not commenced within three (3) years of final approval by the hearings examiner. The reasonable use exception also will expire when the use or activity is vacated for a period of three (3) years. Knowledge of the expiration date is the responsibility of the applicant.

The subject property is encumbered with slopes, critical areas, and their respectively buffers. Approval of the reasonable use exception with mitigation is the only viable option for the proposed plan. A three thousand five hundred square foot (3,500 sf) buildable area is allowable in the Critical Areas buffer.

4.7 Variance

Under 17.15.420---Administrative actions---Variances:

- A. The review authority may grant an administrative variance from any buffer or setback required by this chapter within the half of the buffer or setback farthest from the critical area, subject to the provisions of TCC Chapter 20.07, and based upon analysis of the special reports required by this chapter.
- B. When granting a variance, the review authority shall impose conditions necessary to serve the purposes of this chapter and may require mitigation under an approved mitigation plan if necessary.

5.0 PROPOSED PROJECT

5.1 Project Description and Existing Unpermitted Land Use

Unpermitted land use had occurred on the subject property within wetland and stream buffers. Gravel has been installed on the subject property totaling ten thousand five hundred six (10,506) sf is area (**Figure 5**). Mobile storage contains have been parked on the southern portion of the graveled area. A mobile RV is parked on the northern portion of the graveled area. The applicant is living in the mobile RV until a single-family residence can be constructed on the subject property.

Almost the entire subject property is encumbered by Critical Areas and their buffers. Allowable buffer reduction or buffer averaging would not reduce buffers enough to allow existing gravel or mobile structures in buffers or to place a single-family residence outside of buffers.

Reasonable use exception RUE, allowed under TCC Chapter 24.45---*Reasonable Use Exception*, would permit three thousand five hundred (3,500) square feet of buildable area. A mitigation plan had been provided to accommodate for the existing impacts to achieve no less loss of buffer functions.

This mitigation strategy employs RUE to optimize usable area while restoring and enhancing wetlands and buffers. A mitigation plan was prepared to satisfy Thurston County requirements, which would allow the mitigation concept upon approval by Thurston County.

5.2 Impacts Analysis

Existing impacts to Critical Areas within permits include (**Figure 5**):

- Clearing forest and installing gravel (10,506 sf)
- Clearing forest and bare ground (3,311 sf)
- RV camper parked
- Mobile storage structures parked
- Wetland Impacts (7,045 sf)
- Stream Impacts (1,255 sf)

Existing buffer impacts include the clearing of forest and the installation of gravel over ten thousand five hundred six (10,506) sf of combined wetland and stream buffer area (**Appendix A, Photo 2**). Patches of bare ground occur in cleared areas of the buffer where no gravel was installed totaling three thousand three hundred-eleven (3,311) sf in area.

Wetland buffer vegetation has been impacted within the on-site portion of Wetland A totaling seven thousand forty-five (7,045) sf (**Appendix A, Photos 8, 9, 19-22**). Existing native wetland vegetation in Wetland A can be seen in **Appendix A, Photo 7**. Stream Sa has been excavated into a ditch, eliminating channel diversity, and dewatering the wetland (**Appendix A, Photos 19-22**).

6.0 MITIGATION

A summary of impacts and proposed restoration and mitigation measures are provided in **Table 6** and **Figure 6**.

6.1 Mitigation Summary

The strategy of the mitigation plan consists of:

1. Wetland Restoration

Restore the wetland and stream to pre-existing conditions and to restore and enhance wetland buffer functions. A planting plan proposes to restore native herbaceous vegetation that occurs in the non-disturbed portion of Wetland A east of the subject property. The seed bank of native plants likely remains in the soils. Thereby, with avoidance of further disturbance and restoration of hydrology, native plants will likely germinate and revegetate the wetland. Wetland hydrology will be restored through installing ten (10) check dams of woven sticks installed to the stream bottom. Check dams will catch sediment flowing downstream restoring channel diversity. The check dams will fill the excavated channel with sediment, restoring channel diversity.

2. Buffer Restoration and Enhancement

Remove portable containers and RV from the wetland buffer (**Figure 6**). Containers will be moved offsite. Remove four thousand thirty (4,930) sf of gravel from the wetland buffer in the area of the containers. Plant native vegetation within cleared buffer areas, including areas of removed gravel, totaling eight thousand seven hundred thirty (8,730) sf (**Figure 7**). Install twenty eight (28) western red cedar trees at the outer portion of the wetland buffer to create a visual screen between the wetland and the land use. Minimize the development footprint through Reasonable Use Exception (RUE).

Western red cedar acidifies soils inhibiting germination of non-native invasive weeds, provides large woody debris to the wetland, stream, and buffer area, shades out non-native invasive weeds, and provides habitat for wildlife species. A planting plan would enhance the buffer into a vibrant forested vegetation community. A monitoring and maintenance plan would ensure that installed native plant species successfully grow into a forested plant community.

3. Stream Restoration

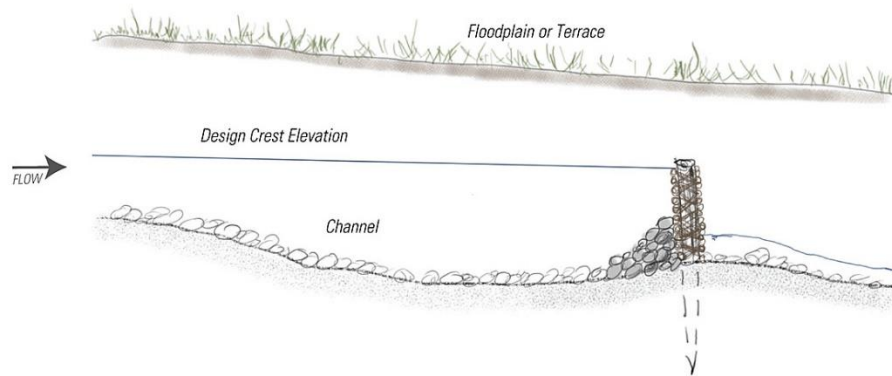
Restore two thousand one hundred fifty-five (2,155) sf of stream reach onsite for a length of approximately one hundred seventy-six (176) feet. Ten (10) check dams will be installed in the on-site portion of Stream Sa to catch sediment as it flows downstream, restoring channel diversity and backing up water in Wetland A (**Figures 6 & 7**). Check dams will consist of woven branches and large woody debris fastened to the stream bottom. If check dams come loose or decay during the monitoring period, they will be replaced and restored unless final result is achieved.

The design of the check dams was prepared in consultation with the WDFW Habitat Biologist for Thurston County. The design is based on beaver dam analogues using woody debris, which, according to the WDFW Area Habitat Biologist are more likely to be approved with an HPA. The design would include two (2) to three (3) branches or wooden posts driven into the ground with smaller branches woven in around the driven branches, avoiding tying/fastening wood together or to the ground. The WDFW Area Habitat Biologist provided an illustration as an example of the beaver dam analog check dam (**Insert 3**).

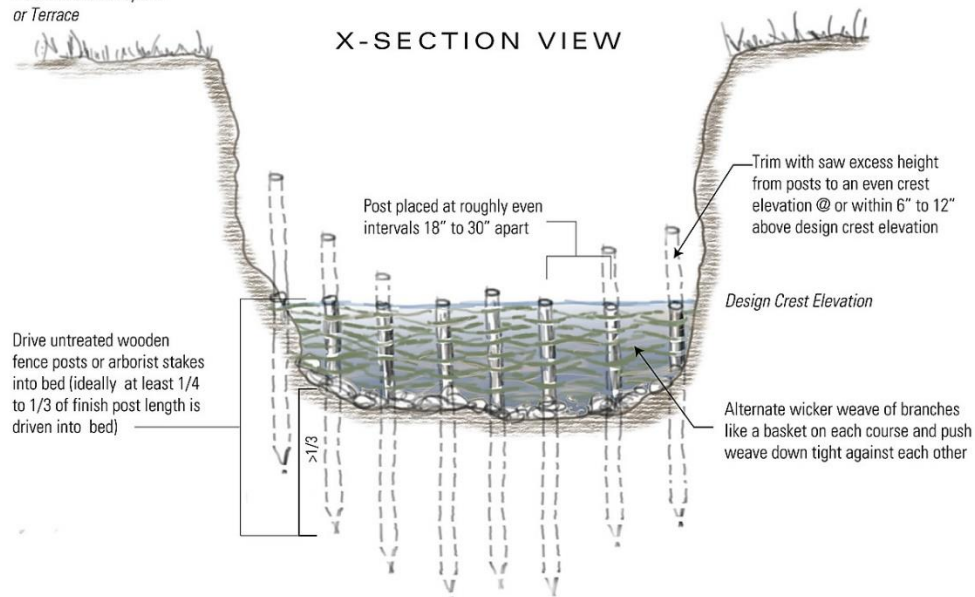
The purpose of the check dam is to trap sediment naturally flowing down stream to restore channel diversity and to back up water, restoring wetland hydrology. The check dams would increase channel sinuosity and create pools, riffles, and glides used as habitat by fish species, including juvenile salmonids.

Insert 3. Beaver Dam Analog Check Dam Design Example Provided by WDFW

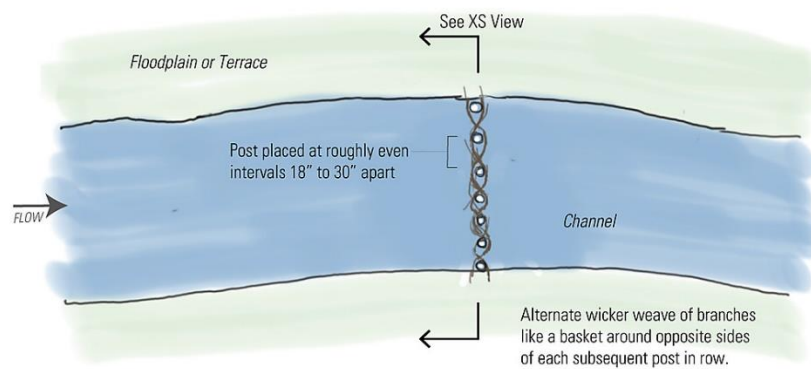
PROFILE VIEW



X-SECTION VIEW



PLANFORM VIEW



NOT-TO-SCALE

Table 6. Impacts and Proposed Mitigation Measures

Critical Areas	Impacts			Mitigation			
	Impact	Description	Area	Proposed Mitigation	Description	Area	Comments
Wetland A	Clearing of Vegetation & Dewatering	Clearing of herbaceous vegetation in in wetland and ditching the stream	7,045 sf	Wetland Restoration	Planting plan to restore vegetation and stream restoration to restore wetland hydrology to emergent wetland.	7,045 sf	Restore emergent wetland to pre-existing conditions
Buffers	Clearing Forest & Installing Gravel	Forest & vegetation have been cleared. Gravel installed in clearing. Mobile structures installed	10,506 sf	Buffer Restoration and Enhancement	1. Reasonable Use Exception to develop site.	3000 sf	Mitigation for no net loss of buffer functions to propose land use under RUE
					2. Install cedar trees to minimize edge effect and to discourage invasive weeds.	28 trees: 2 rows of cedars at 9 feet on center.	
	3. Remove gravel in buffer				4,930 sf		
	4. Remove portable containers and RV				7 structures		
	Placement of mobile structures						
	Clearing forest & bare ground	Bare ground installed in part of clearing	3,311 sf	5. Restore and enhance buffer through planting plan	8,730 sf		
Stream Sa	Excavating stream	Stream channel excavated into ditch	2,155 sf	Stream Restoration	Install ten (10) check dams to catch sediment as it flows downstream creating channel diversity and backing up water to restore wetland hydrology.	2,155 sf	Check dams will consist of woven branches fastened to the stream bottom

6.2 Mitigation Measures Under TCC Table 24.30-2

Proposed mitigation will include measures under TCC Table 24.30-2---*Measures to Mitigate Wetland Impacts* includes:

1. **Light Reduction**

Direct lights away from wetland and streams.

2. **Noise Reduction**

- Locate activity that generates noise away from wetland and streams.
- 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, if necessary.
- Apply integrated pest management standards, in necessary.

4. **Manage Stormwater Runoff**

- Prevent channelized flow from lawn that directly enters the buffer.
- Use Low Intensity Development techniques (per PSAT publication on LID techniques) where necessary.

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 would be dispersed outside the wetland buffer for any new runoff from impervious surfaces and new lawns.

6. **Pets and Human Disturbance**

- Plant cedar trees to delineate buffer edge and 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 plants (Western red cedar) that provide improved filtration of sediment, excess nutrients, and pollutants that may be present.
- Maintain habitat connections to off-site areas that are undisturbed.

6.3 Wetland and buffer Restoration

A planting plan is proposed to restore Wetland A and a portion of its buffer into a vibrant wetland plant community, providing high quality habitat for wildlife species. A monitoring and maintenance plan would ensure that installed native plant species successfully grow into a forested wetland buffer plant community.

6.3.1 Planting Plan

6.3.1.1 Planting Areas

Wetland Restoration

Wetland vegetation will be restored through a planting emergent wetland plant species that occur in the undisturbed portion of Wetland A located east of the subject property (**Figure 7**). The wetland planting area would total seven thousand forty-five (7,045) sf in size. The plant legend is provided in **Figure 8**.

Buffer Restoration and Enhancement

Wetland buffer vegetation would be restored in areas cleared of vegetation, including areas of gravel removal, totaling eight thousand seven hundred thirty (8,730) sf in size (**Figure 7**). The plant legend is provided in **Figure 8**.

6.3.1.2 Planting Specification

The wetland planting plan calls for herbaceous ground cover in the footprint of the removed wetland vegetation (**Figure 7; Table 7**).

The buffer planting plan calls for the installation of dense vegetation typical of a forested wetland buffer (**Figure 7; Table 8**).

The cost for plant stock covering the mitigation area is estimated at **\$3,449**. The planting plan is summarized in **Tables 7 & 8** and is illustrated in **Figure 7**.

Fertilizer and Irrigation.

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

Table 7. Wetland Mitigation Planting Plan

Wetland Restoration Area Planting Plan						
Herbs	Plant species	Scientific Name	Number	Container		
OBL	Slough sedge	<i>Carex obnupta</i>	39	1-gal	\$8.00	\$312.00
OBL	Small-fruited bullrush	<i>Scirpus microcarpus</i>	39	1-gal	\$8.00	\$312.00
FACW	Soft rush	<i>Juncus effusus</i>	39	1-gal	\$8.00	\$312.00
OBL	Skunk cabbage	<i>Lysichiton americanus</i>	39	1-gal	\$8.00	\$312.00
FACW	Dagger-leaf rush	<i>Juncus ensifolius</i>	40	1-gal	\$8.00	\$320.00
	Total		196			\$1,568.00
Plant Types		Feet on center	Area (sf)	Plants/Acre	Plants/sf	# Plants
Herbs		6	7,045	1210	0.0278	196
Herbs		Est. cost per plant		# Plants	Total Cost	
		\$8.00		196	\$1,568.00	
		Total		196	\$1,568.00	
Total Cost of Plants			\$1,568.00			

Table 8. Wetland Buffer Mitigation Planting Plan

Wetland Buffer Planting						
Trees	Plant species	Scientific Name	Number	Container	Cost/plant	Cost
FACU	Western Hemlock	<i>Tsuga heterophylla</i>	19	6-ft	\$15.00	\$285.00
FACU	Douglas fir	<i>Pseudotsuga menziesii</i>	20	1-gal	\$4.00	\$80.00
	Total		39			\$365.00
Shrubs	Plant species	Scientific Name	Number	Container		
FACU	Thimbleberry	<i>Rubus parviflorus</i>	17	1-gal	\$4.00	\$68.00
FACU	Osoberry	<i>Oemleria cerasiformis</i>	17	1-gal	\$4.00	\$68.00
FACU	Red elderberry	<i>Sambucus racemosa</i>	17	1-gal	\$4.00	\$68.00
FAC	Vine Maple	<i>Acer circinatum</i>	17	1-gal	\$4.00	\$68.00
FAC	Clustered rose	<i>Rosa pisocarpa</i>	17	1-gal	\$4.00	\$68.00
FAC	Salmonberry	<i>Rubus spectabilis</i>	17	1-gal	\$4.00	\$68.00
FAC	Nootka rose	<i>Rosa nutkana</i>	17	1-gal	\$4.00	\$68.00
FACU	Snowberry	<i>Symphoricarpos albus</i>	17	1-gal	\$4.00	\$68.00
	Total		136			\$544.00
Herbs	Plant species	Scientific Name	Number	Container		
FACU	Trailing blackberry	<i>Rubus Ursinus</i>	49	1-gal	\$4.00	\$196.00
FACU	Cascade Oregongrape	<i>Mahonia repens</i>	49	1-gal	\$4.00	\$196.00
FACU	salal	<i>Gaultheria shallon</i>	49	1-gal	\$4.00	\$196.00
FACU	Sword Fern	<i>Polystichum munitum</i>	49	1-gal	\$4.00	\$196.00
FAC	Deer Fern	<i>Blechnum spicant</i>	47	1-gal	\$4.00	\$188.00
	Total		243			\$972.00
	Plant Types	Feet on center	Area (sf)	Plants/Acre	Plants/sf	# Plants
	Trees	15	8,730	193.6	0.0044	39
	Shrubs	8	8,730	680.625	0.0156	136
	Herbs	6	8,730	1210	0.0278	243
		Est. cost per plant	# Plants	Total Cost		
	Trees	\$4.00	39	\$365.00		
	Shrubs	\$4.00	136	\$544.00		
	Herbs	\$4.00	243	\$972.00		
	Total			418	\$1,881.00	
Total Cost of Plants			\$1,881.00			

6.3.2 Monitoring and Contingency Plan

6.3.2.1 Monitoring Methodology

The monitoring program will be performed 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:

TCC 24.35.017(6)(a):

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

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.

6.3.2.2 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.

6.3.2.3 Success Criteria

Success of plant establishment within the restoration areas 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 (80) percent survival rate following each monitoring event. Successful plant establishment will also be met if there is at least a sixty (60) percent areal cover of a combination of planted species and equivalent recruitment of native woody species by the end of the third (3rd) to fifth (5th)-year monitoring period.

6.3.2.4 Performance Standards

Vegetation in Planting Areas

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

6.3.2.5 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 wetland and buffer restoration 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 and 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 Thurston County. 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).

6.4 Stream Restoration

If check dams come loose or decay during the monitoring period, they will be replaced and restored unless final result is achieved. Final result consists of a sinuous stream channel containing pools, riffles, and glides, as well as the restoration of wetland hydrology.

6.5 Additional Mitigation Measures

This mitigation plan will provide a visual screen between the wetland and the proposed land use and will enhance buffer functions around the proposed building area.

Other potential Construction impacts

No stockpiling of soils will occur in wetlands or their buffers. 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 one hundred (100) feet of wetlands. 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.

7.0 CONCLUSION

The purpose of this Critical Areas Report is to:

1. To identify and map Critical Areas on the subject property or within three hundred (300) feet of the subject property.
2. Prepare a mitigation to plan to restore and enhance the wetland and buffer.
3. Propose a site plan based on a Reasonable Use Exception.

One (1) wetland, labeled Wetland A, has been identified and delineated on the southeastern portion of the subject property. One (1) off-site wetland, labeled Wetland B, was identified and previously delineated by EnviroVector in the past. A stream, labeled Stream Sa, has been identified and the Ordinary High Water Mark (OHWM) has been delineated on the subject property.

Wetland A has been classified as a Category III wetland using the Department of Ecology (2014) Wetland Rating Form for Western Washington as required under Thurston County Code (TCC) Chapter 24.30.030---*Wetland categories*. Wetland A is a depressional wetland under the Department of Ecology (2014) Wetland Rating System.

The standard buffer for wetlands that score seven (7) points for Habitat Functions provided by the rating of L, H, H require a buffer width of two hundred sixty (260) feet (TCC Table 24.30-1--*Standard Wetland Buffer Widths*) (**Figure 4; Table 5**). Under TCC Chapter 24.30.045---*Wetland Buffers-Standard width*, the standard buffer width can be reduced with mitigation. Thereby, the two hundred sixty (260) foot buffer on Wetland A could be reduced to one hundred ninety-five (195) feet pursuant to compliance with criteria under TCC Chapter 24.30.050.

Wetland B has been rated as a Category III wetland using the Department of Ecology (2014) Wetland Rating Form for Western Washington as required under Thurston County Code (TCC) Chapter 24.30.030---*Wetland categories* (**Table 5**). Wetland rating form for this off-site wetland is provided in EnviroVector (2017) *Richard and Viola Mae Woods Wetlands and Stream Summary Report*.

Under Thurston County Code (TCC) Chapter 24.30.045 ---*Wetland buffers—Standard width*, wetland buffers are calculated based on the habitat score determined by the 2014 Washington State Department of Ecology Wetland Rating System. Wetland B scores seven (7) points (HMM) under habitat functions. The standard buffer for wetlands that score seven (7) points (HMM) for Habitat Functions is 240 feet (TCC Table 24.30-1---*Standard Wetland Buffer Widths*) (**Figure 4, Table 5**).

Under TCC 24.30.050(B)---*Isolated Buffers*, Thurston County may reduce the standard buffer width required by Habitat Scores to the minimum extent needed to exclude the portion of the buffer physically separated and functionally isolated by a road. The buffer from the off-site wetland across 137th Lane SW would not extend across the road onto the subject property.

Stream Sa is rated as a Type F stream using the DNR Stream Typing Database, WAC 222-16-020, and TCC 24.03.010- *Definitions- Stream and water body types*. The DNR Stream Typing Database maps Stream Sa as Type F (**Appendix E**).

Type F streams less than five (<5) feet wide maintain a one hundred fifty (150)-foot buffer under TCC Table 24.25-1--- *Standard Freshwater Riparian Habitat Area Widths (Insert 1)*. The one hundred fifty (150)-foot stream buffer may not be reduced for fish bearing streams without the approval of a reasonable use exception (TCC 24.25.025---*Reduced riparian habitat area width*).

Unpermitted land use had occurred on the subject property within wetland and stream buffers. Gravel has been installed on the subject property totaling ten thousand five hundred six (10,506) sf is area (**Figure 5**). Mobile storage containers have been parked on the southern portion of the graveled area. A mobile RV is parked on the northern portion of the graveled area. The applicant is living in the mobile RV until a single-family residence can be constructed on the subject property.

The entire subject property is encumbered by Critical Areas and their buffers. Allowable buffer reduction or buffer averaging would not reduce buffers enough to remove existing gravel or mobile structures from buffers or to place a single-family residence outside of buffers.

Reasonable use exception RUE, allowed under TCC Chapter 24.45---*Reasonable Use Exception*, would permit three thousand five hundred (3,500) square feet of buildable area. A mitigation plan had been provided to accommodate for the existing impacts to achieve no net loss of buffer functions (**Figure 6**).

This mitigation strategy employs RUE to optimize usable area while restoring and enhancing wetlands and buffers (**Figure 6**). A mitigation plan was prepared to satisfy Thurston County requirements, which would allow the mitigation concept upon approval by Thurston County.

A summary of impacts and proposed restoration and mitigation measures are provided in **Table 6** and **Figure 6**. The strategy of the mitigation plan is to restore the wetland and stream to pre-existing conditions and to restore and enhance wetland buffer functions. The containers and RV would be removed from the property. Gravel around the storage containers would be removed and the area would be restored to buffer.

A planting plan proposes to restore native herbaceous vegetation that occurs in the non-disturbed portion of Wetland A east of the subject property. The seed bank of native plants likely remains in the soils. Thereby, with avoidance of further disturbance and restoration of hydrology, native plants will likely germinate and revegetate the wetland. Hydrology will be restored through installing ten (10) check dams of woven sticks installed to the stream bottom. Check dams will catch sediment flowing downstream restoring channel diversity.

A planting plan proposes to restore the forested plant community in the cleared areas of the buffer that contained the storage containers (**Figure 7**). Twenty-eight (28) western red cedar trees would be installed at the edge of the wetland to create a visual screen between the wetland and the land use. Western red cedar acidifies soils inhibiting germination of non-native invasive weeds, provides large woody debris to the wetland, stream, and buffer area, shades out non-native invasive weeds, and provides habitat for wildlife species. A planting plan would enhance

the buffer into a vibrant forested vegetation community. A monitoring and maintenance plan would ensure that installed native plant species successfully grow into a forested plant community.

Wetland hydrology will be restored through the installation of check dams, which will back up water within the wetland as the check dams catch sediment flowing downstream (**Figures 6 & 7**). The check dams will fill the excavated channel with sediment, restoring channel diversity.

The monitoring program will be performed 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.

We believe this satisfies the requirements to lift the violation on the property and to approve the environmental requirements of the RUE.

8.0 REFERENCES

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- U.S. Department of Agriculture, Soil Conservation Service. June, 1991. *Hydric Soils of the United States*.
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FIGURES

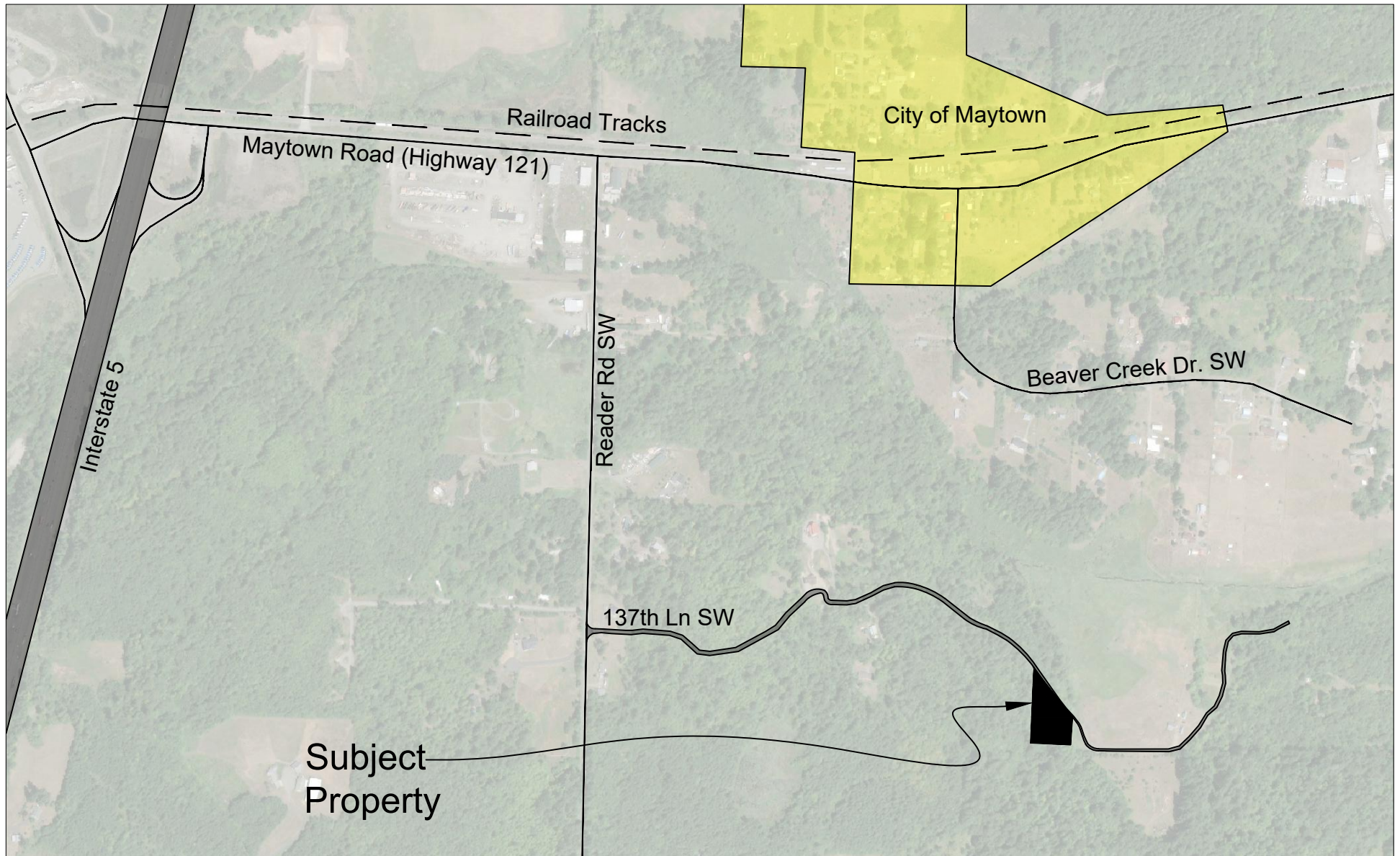
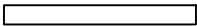


Figure 1

Pryor Property

Vicinity Map



Scale: 1" = 800

 0 800

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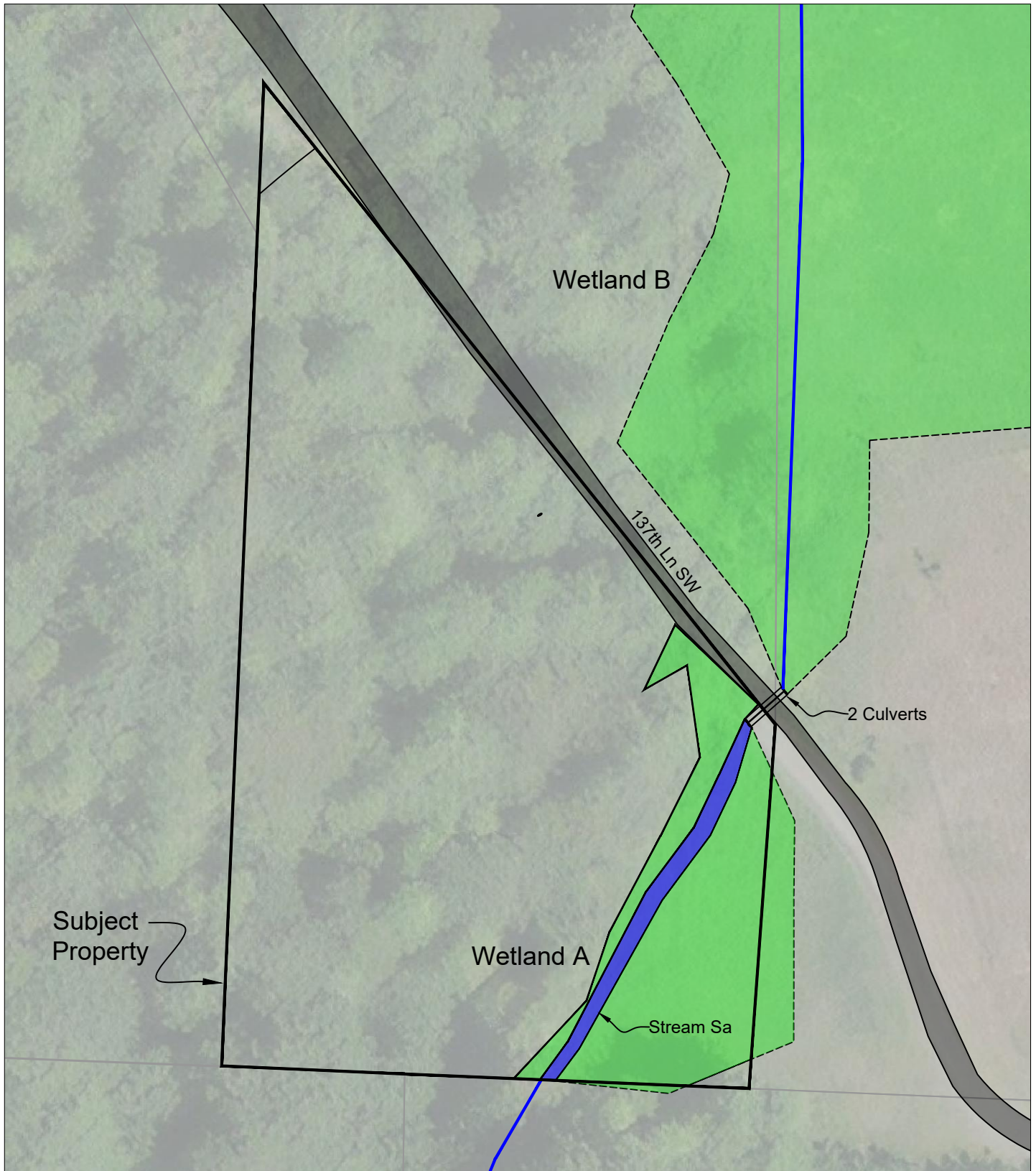
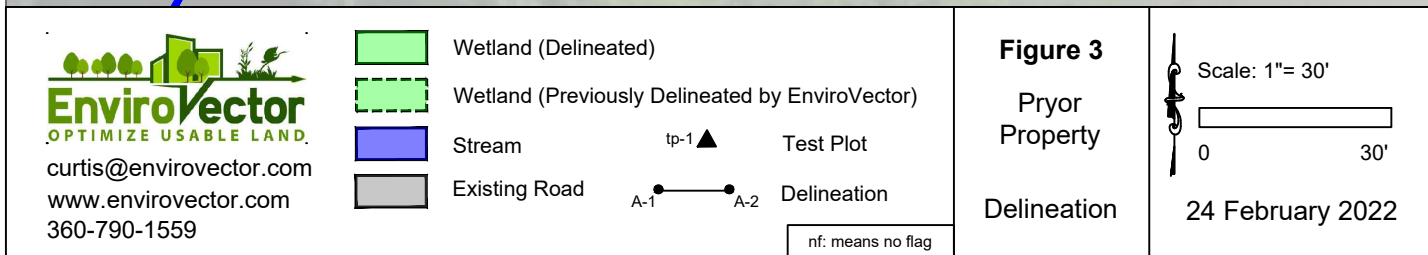


Figure 2


Pryor
Property

Existing
Conditions



Delineation

Scale: 1" = 30'



0 30'

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www.envirovector.com
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- Wetlands (Delineated)
- Wetlands (Previously Delineated by EnviroVector)
- Stream
- Wetland A Buffer (260 feet)
- Reduced Wetland Buffer (195 feet)
- Stream Buffer (150 feet)

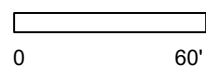
Figure 4

Pryor
Property

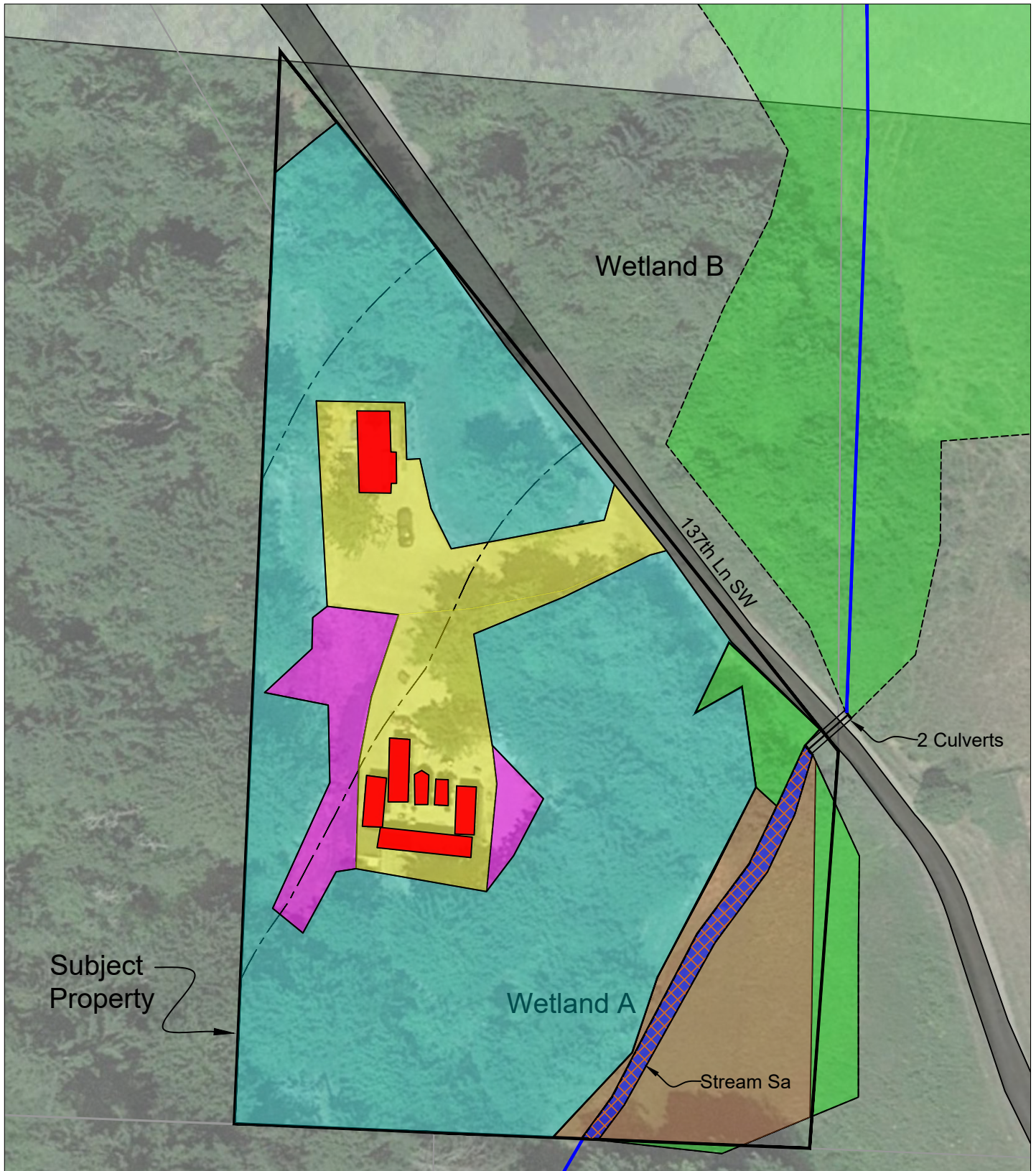
Critical Areas
Buffers



Scale: 1"= 60'



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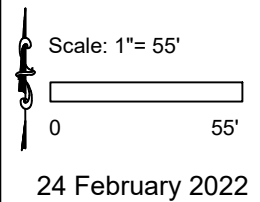
EnviroVector
OPTIMIZE USABLE LAND
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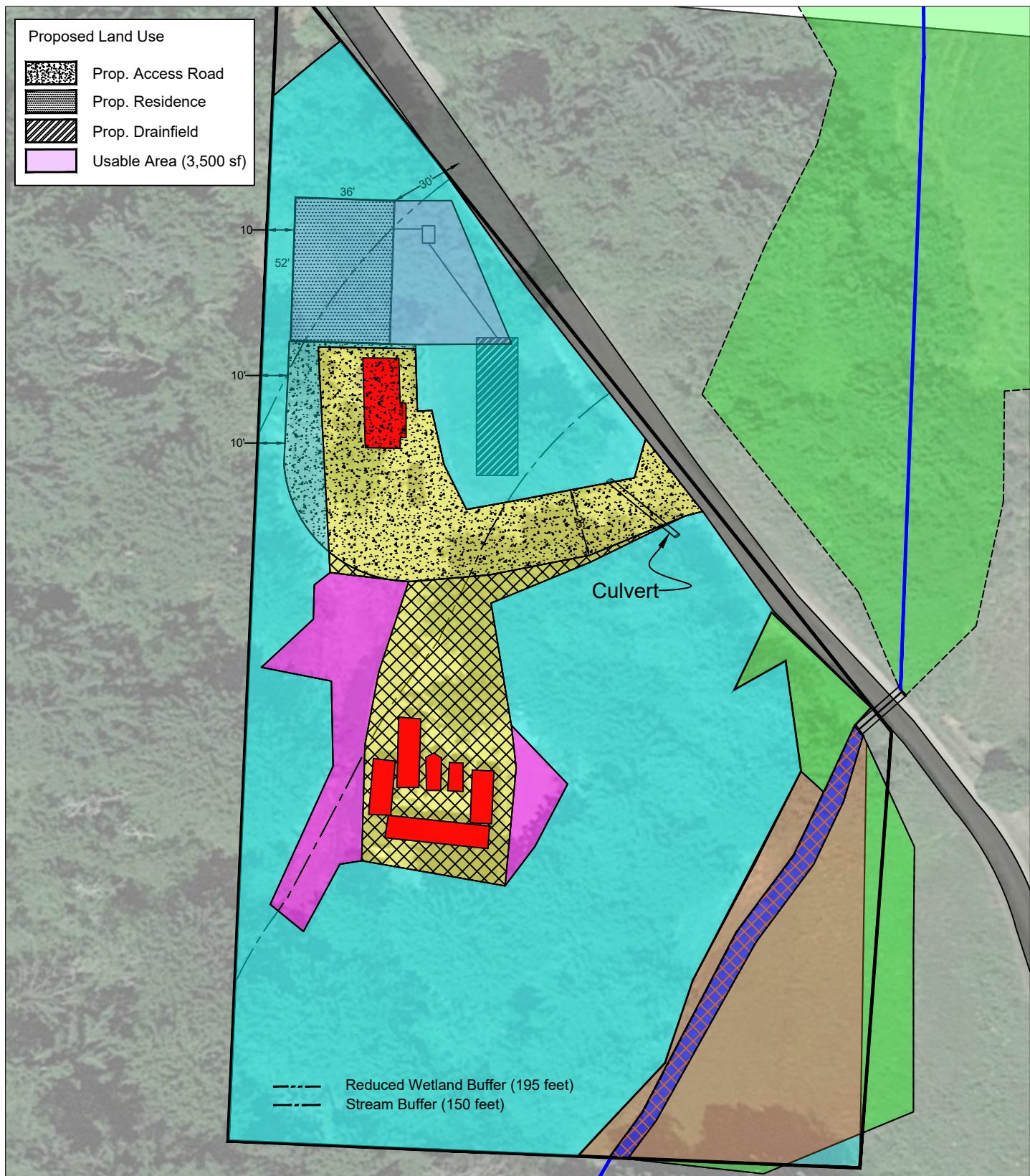
	Wetland (Delineated)		Wetland Buffer
	Wetland (Previously Delineated by EnviroVector)		Clearing in Buffer (3,311 sf)
	Roads		Wetland Impacts (7,045 sf)
	Gravel (10,506 sf)		Reduced Wetland Buffer (195 feet)
	Structures		Stream Buffer (150 feet)
	Stream Impacts (1,255 sf)		

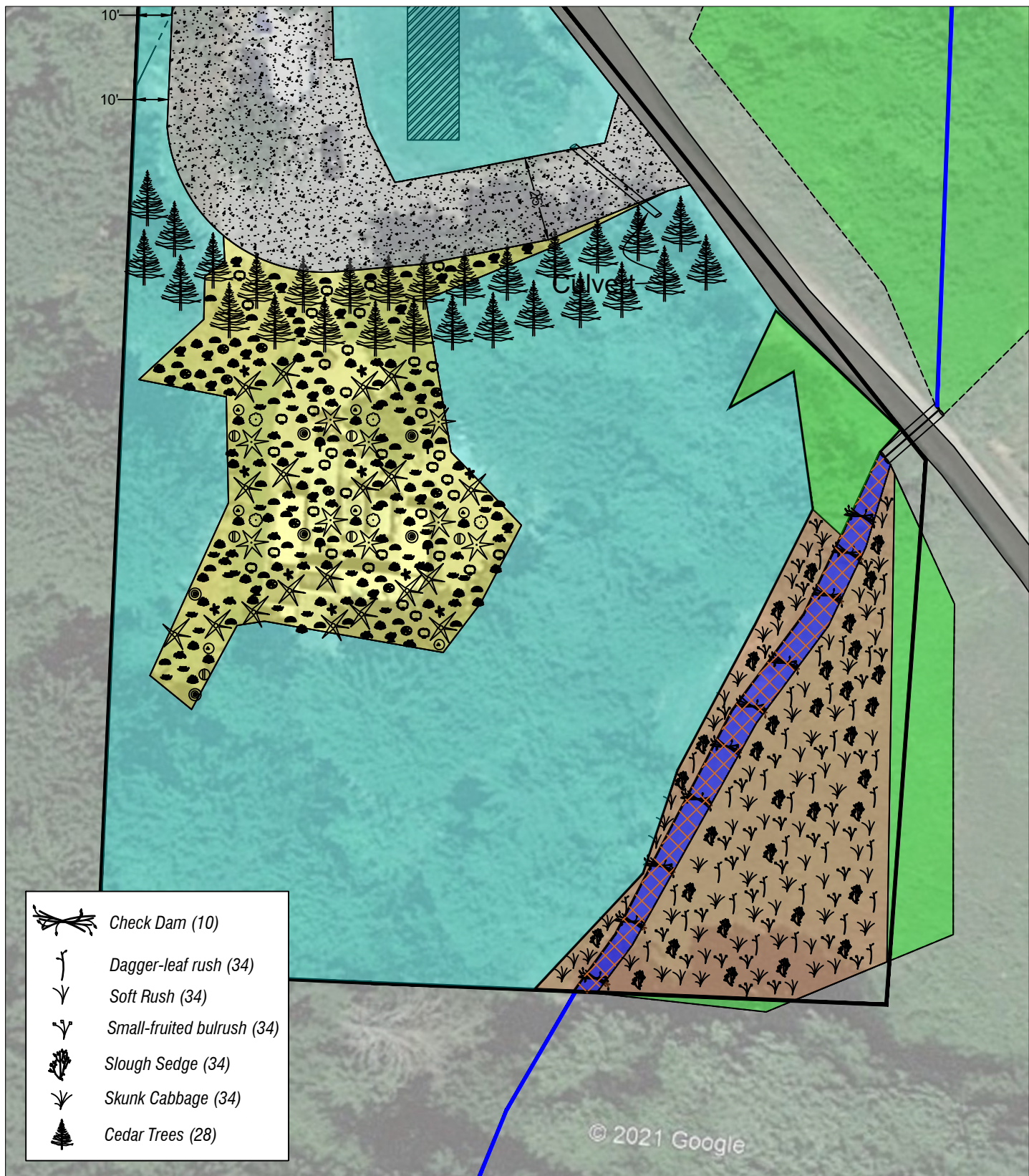
Figure 5








Pryor
Property

Existing
Impacts







-  Check Dam (10)
-  Dagger-leaf rush (34)
-  Soft Rush (34)
-  Small-fruited bulrush (34)
-  Slough Sedge (34)
-  Skunk Cabbage (34)
-  Cedar Trees (28)



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


-  Wetland (Delineated)
-  Wetland (Previously Delineated by EnviroVector)
-  Roads
-  Proposed Access Road
-  Buffer Planting Plan (8,730 sf)
-  Wetland Restoration (7,045 sf)
-  Stream Restoration (1,255 sf)

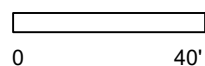
Figure 7

Pryor
Property

Planting Plan


















Scale: 1"= 40'

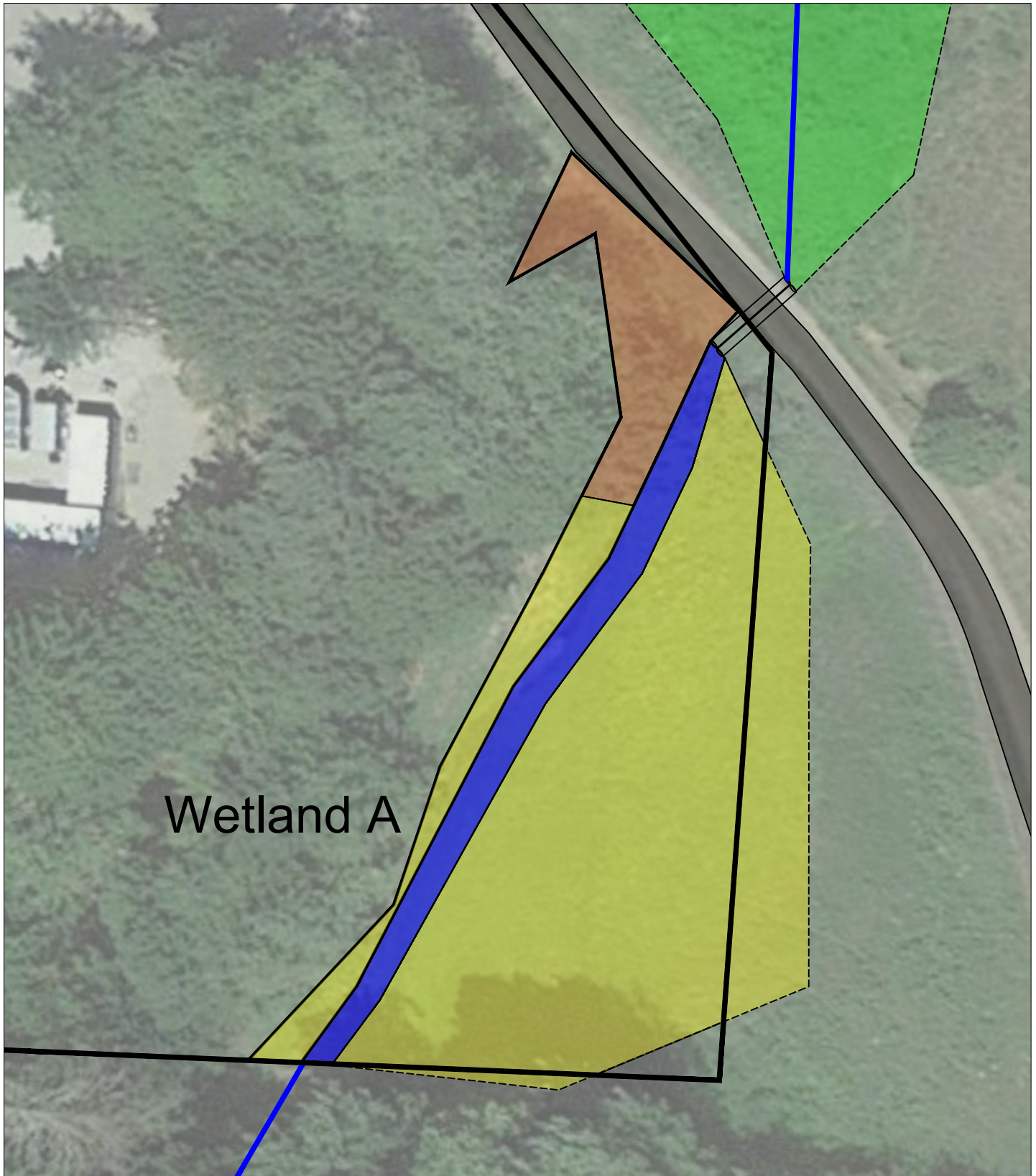


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Buffer Planting Schedule

	<i>Douglas Fir</i>		<i>Clustered Rose</i>
	<i>Western Hemlock</i>		<i>Nootka Rose</i>
	<i>Red Elderberry</i>		<i>Snowberry</i>
	<i>Salmonberry</i>		<i>Trailing Blackberry</i>
	<i>Vine Maple</i>		<i>Cascade Oregongrape</i>
	<i>Osoberry</i>		<i>Salal</i>
	<i>Thimbleberry</i>		<i>Deer Fern</i>
			<i>Sword Fern</i>





Wetland A



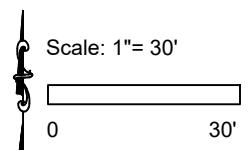
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- Forested Seasonally-flooded
- Emergent Seasonally-flooded
- Stream

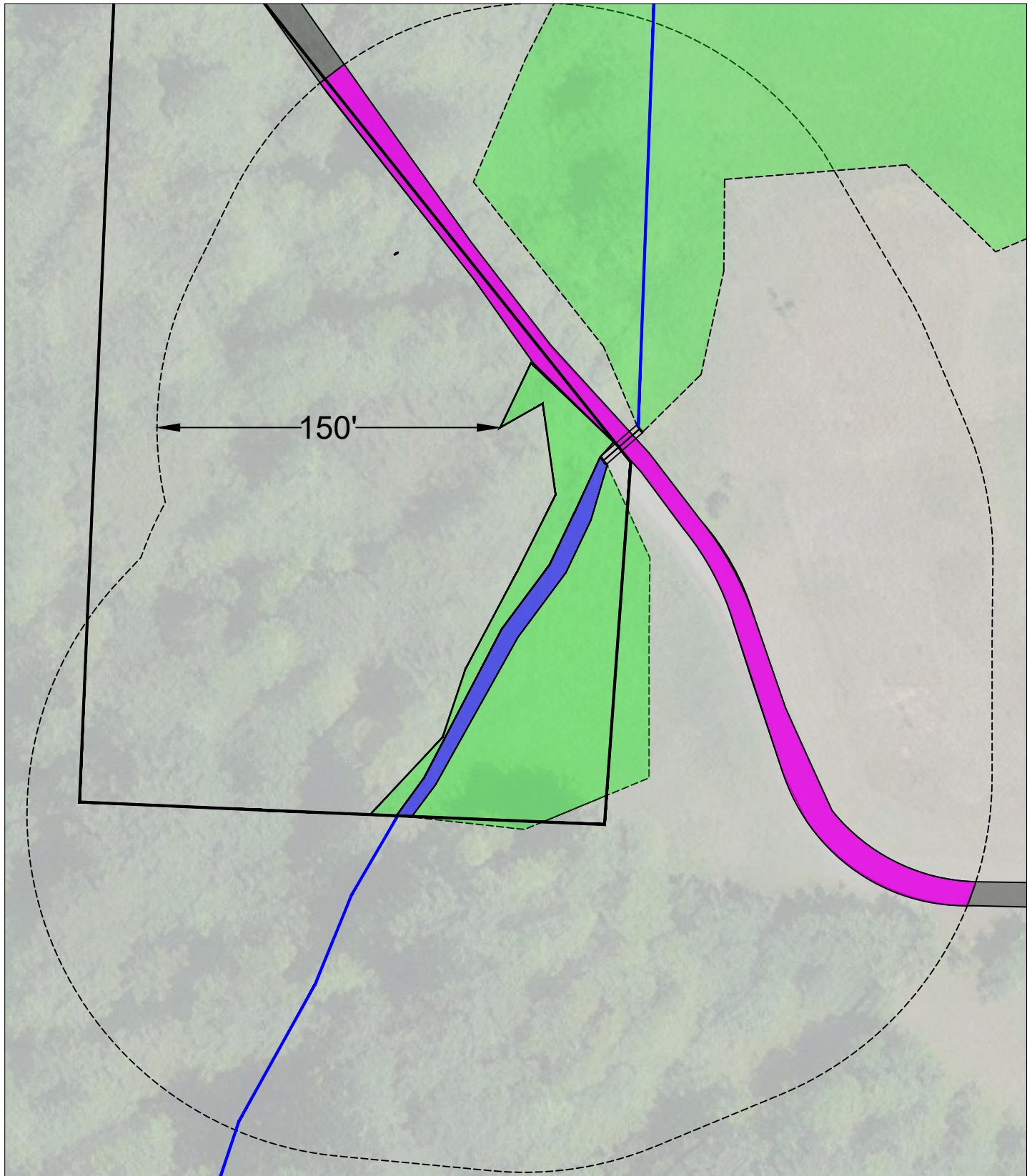
Figure 9

Pryor
Property

Vegetation Classes
& Hydroperiods



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Potential Pollutants 6%

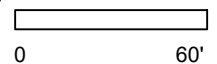
Figure 10

Pryor
Property

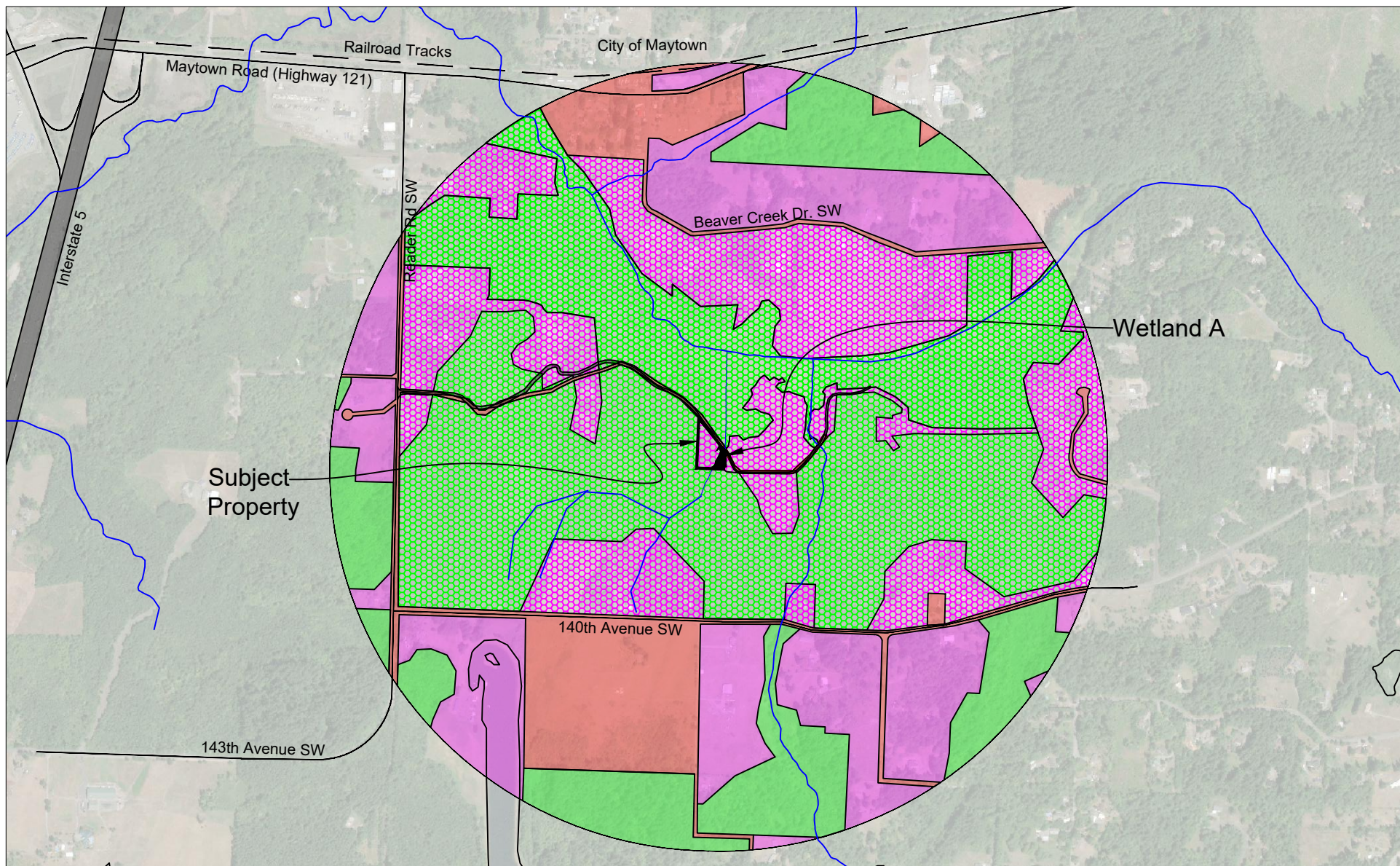
Potential Pollutants



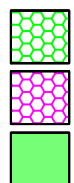
Scale: 1"= 60'



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Accessible Habitat (12,522,612 sf, 299 acres, 37%)

Accessible Moderate to Low Intensity Land Use
(7,462,393 sf, 171 acres, 21%)

Total Undisturbed Habitat + Accessible Habitat
(17,463,150 sf, 401 acres, 49%)



Low to Moderate Intensity Land Use
+ accessible Low to Moderate
(14,277,799 sf, 328 acres, 40%)

High Intensity Land Use
(3,874,134 sf, 89 acres, 11%)

1km Polygon
35,628,052 sf, 818 acres

H2.1: $37\% + 21\%/2 = 47.5\%$ (3 points) H2.2: $49\% + 40\%/2 = 69\%$ (3 point) H2.3: High Intensity = 11% (0 points)

Figure 11

Pryor Property

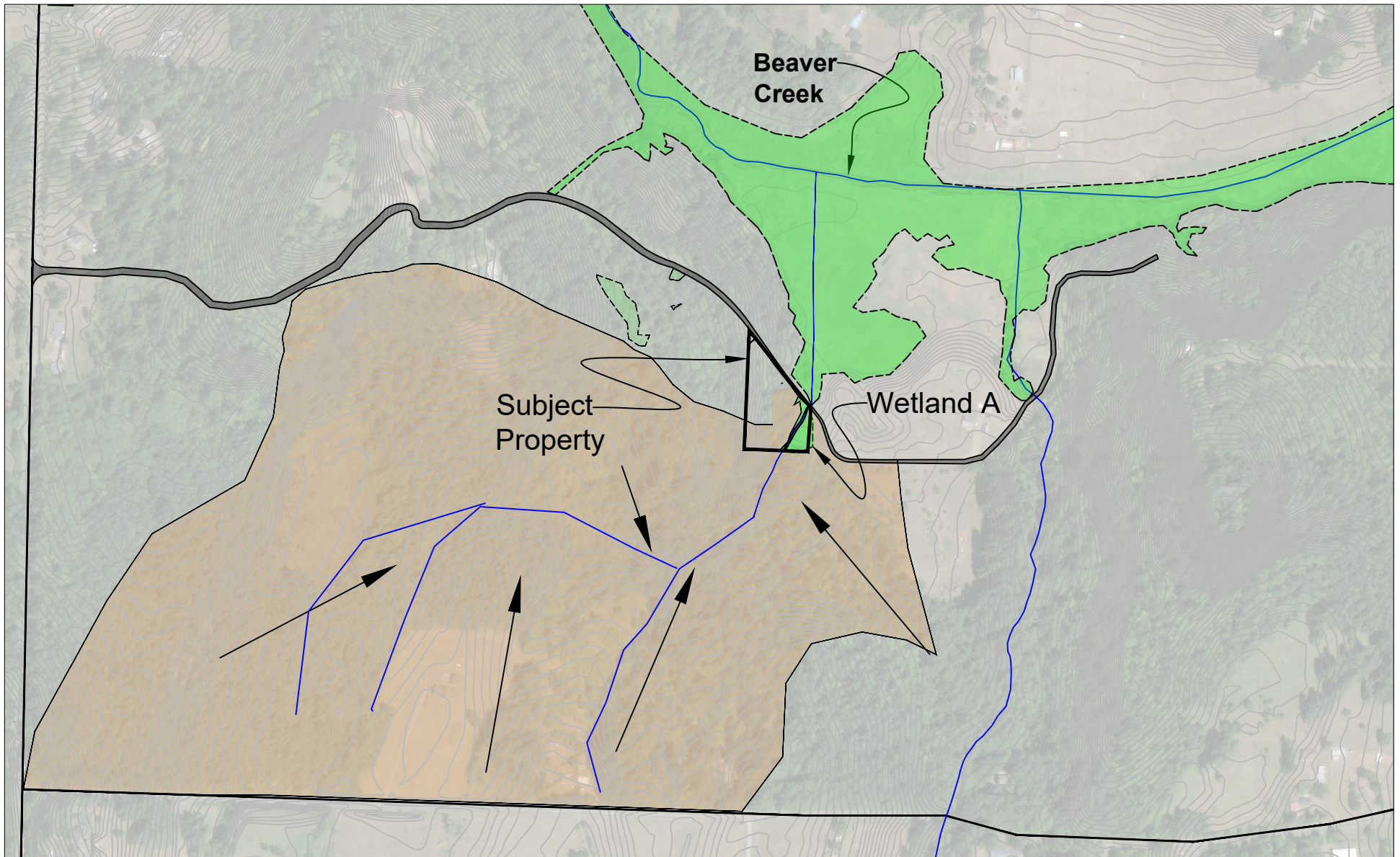
1 KM Polygon



Scale: 1" = 1200'

0 1200'

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Contributing Basin
>100x Wetlands A

Figure 12

Pryor Property

Contributing Basin



Scale: 1" = 500'

0 500'

24 February 2022

APPENDIX A

Photographs

Subject Property



Photo 1. 137TH Ln SW dividing Wetland's A and B



Photo 2. Gravel and shipping containers on subject property



Photo 3. Wetland A extending offsite



Photo 4. Buffer vegetation



Photo 5. Gravel portion of subject property in background



Photo 6. Wetland buffer vegetation

Wetland A



Photo 7. Vegetation in off-site portion of wetland



Photo 8. Vegetation impacted left of fence line in Wetland A



Photo 9. Impacted vegetation in Wetland A will be restored



Photo 10. Wetland A flagging



Photo 11. Wetland A onsite and offsite in background



Photo 12. Collecting test plot data in Wetland A



Photo 13. Hydric indication at TP-1



Photo 14. TP-1 soil profile on shovel



Photo 15. TP-2 soil profile and plants



Photo 16. Trailing blackberry (FACU) at TP-2

Stream Sa



Photo 19. Stream Sa going through Wetland A



Photo 20. Stream Sa



Photo 21. Stream Sa through Wetland A



Photo 22. Stream Sa through Wetland A



Photo 23. Twenty four (24) inch Culvert under 137th Lane



Photo 24. Marking the ordinary high water mark on Stream Sa



Photo 25. Stream Flag S-3 on Stream Sa



Photo 26. Lath marking Stream Sa OHW



Photo 27. Red-legged frog in Stream Sa



Photo 28. Stream Sa through Wetland A



Photo 29. Plastic Culvert at stream flag S-1 main channel

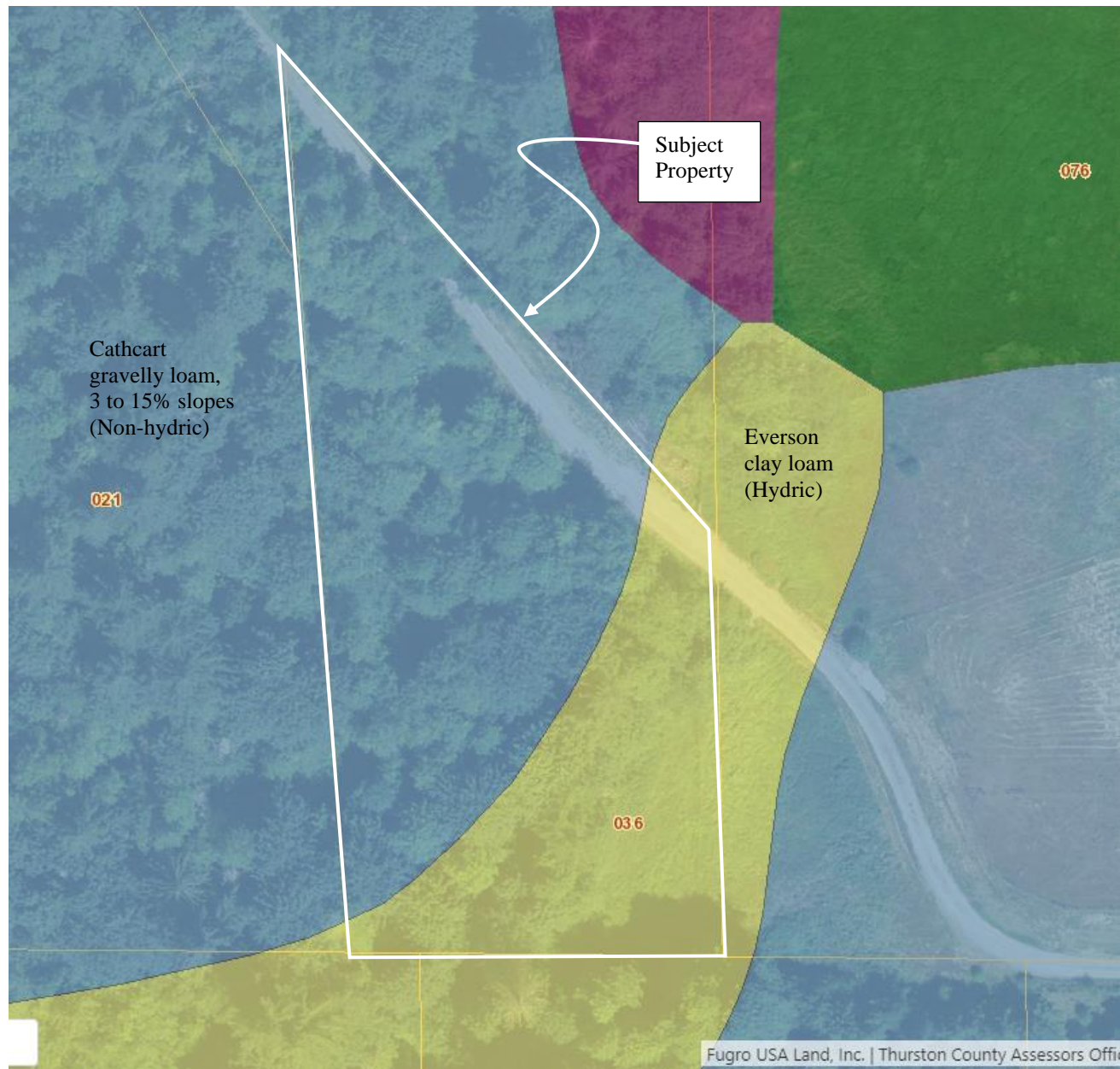


Photo 30. Stream Sa through Wetland A

Appendix B

Thurston County Geodata

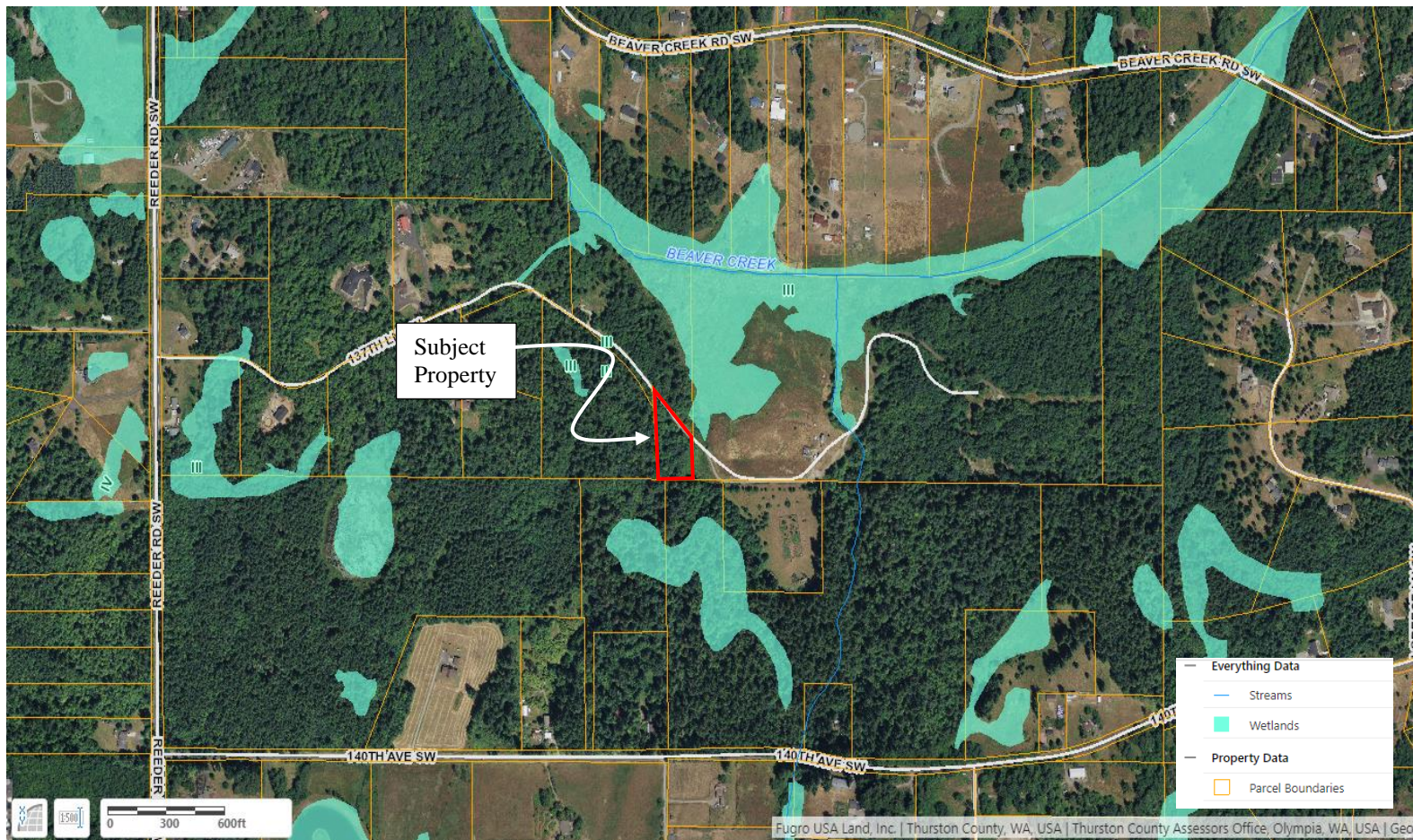
Soils



Appendix C

Thurston County Geodata

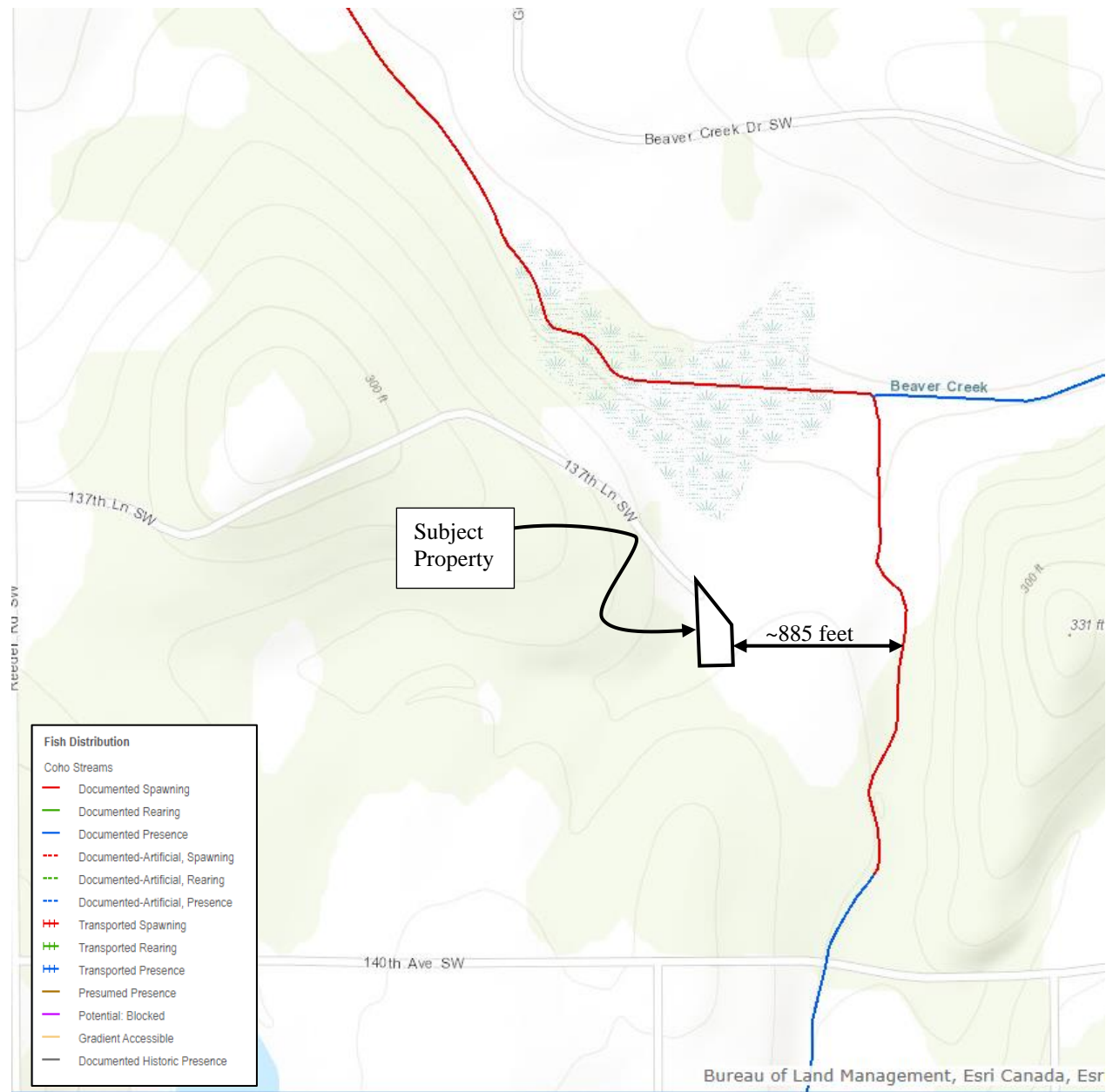
Wetlands



Appendix D

Washington Department of Fish and Wildlife (WDFW)

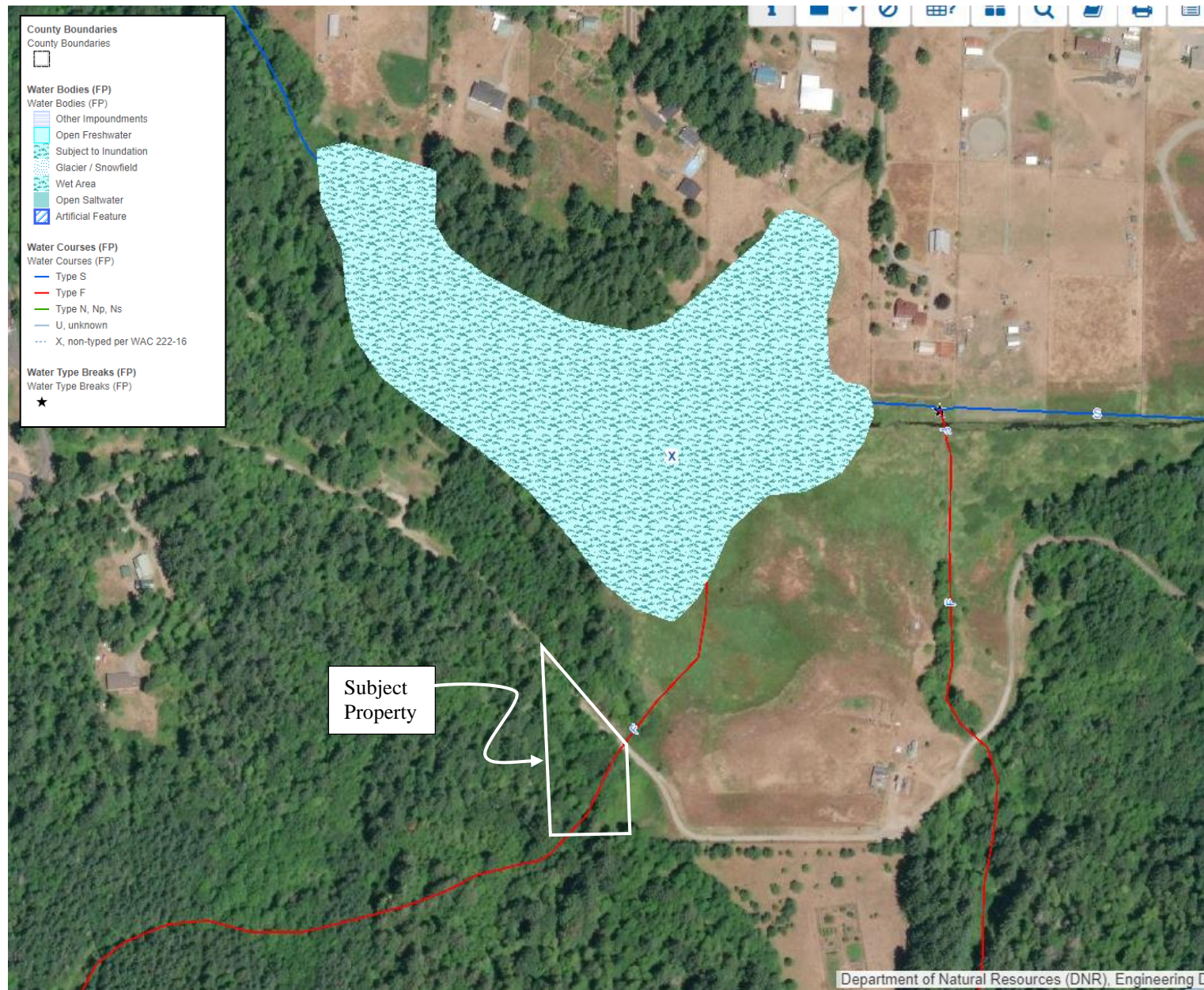
SalmonScape Database



Appendix E

Department of Natural Resources (DNR)

Stream Typing Database

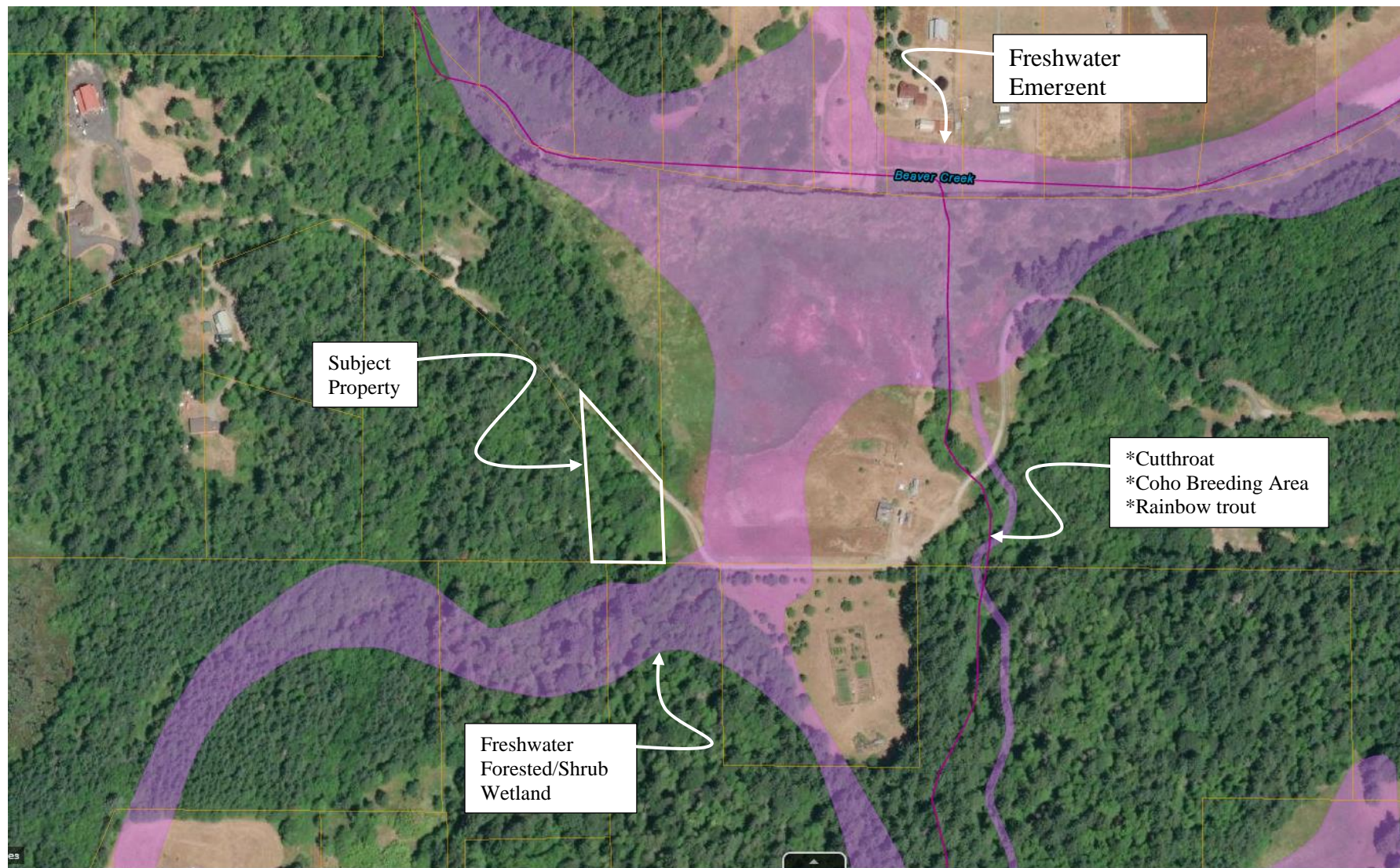


Appendix F

Washington Department of Fish and Wildlife (WDFW)

Priority Habitats and Species (PHS)

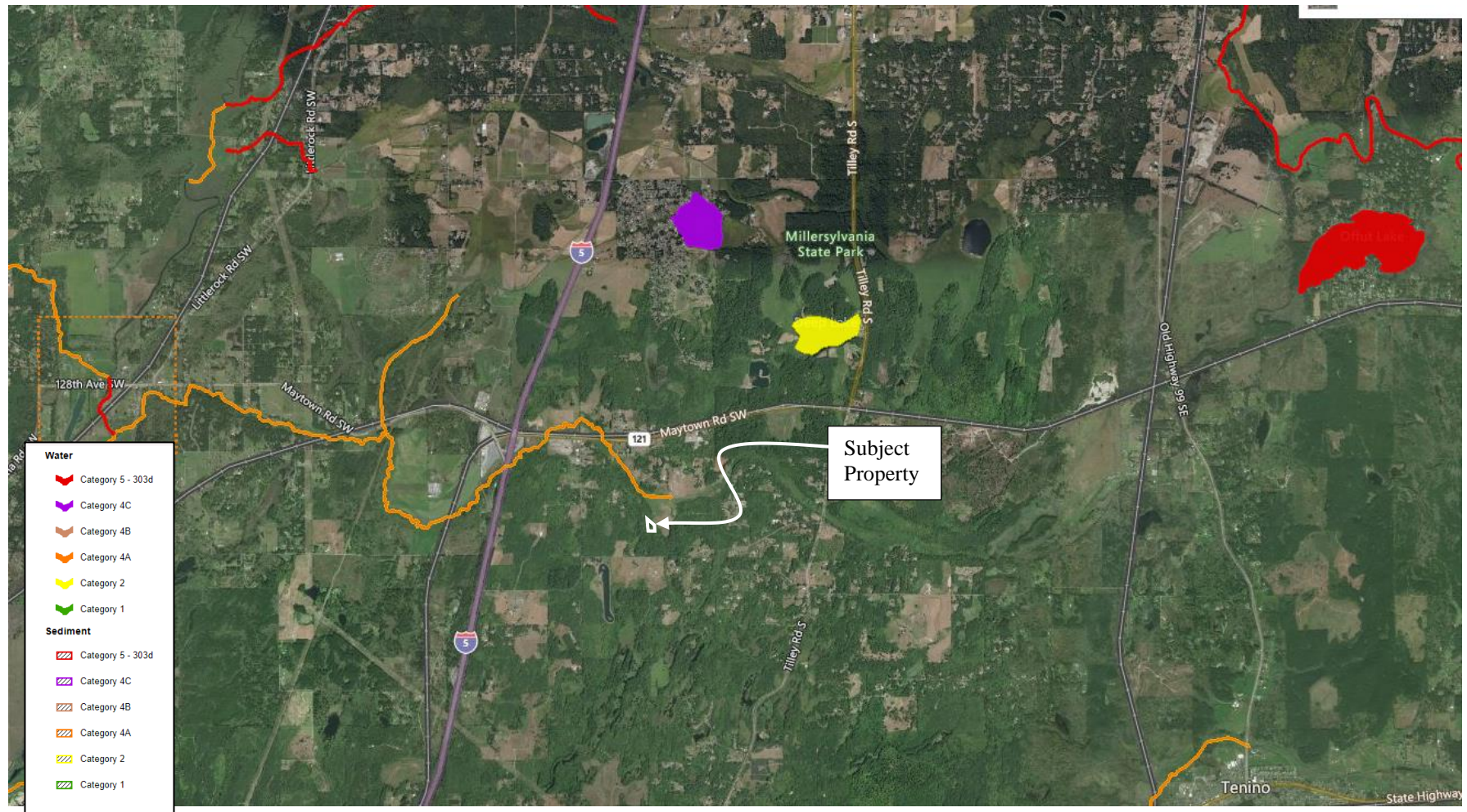
Database



Appendix G

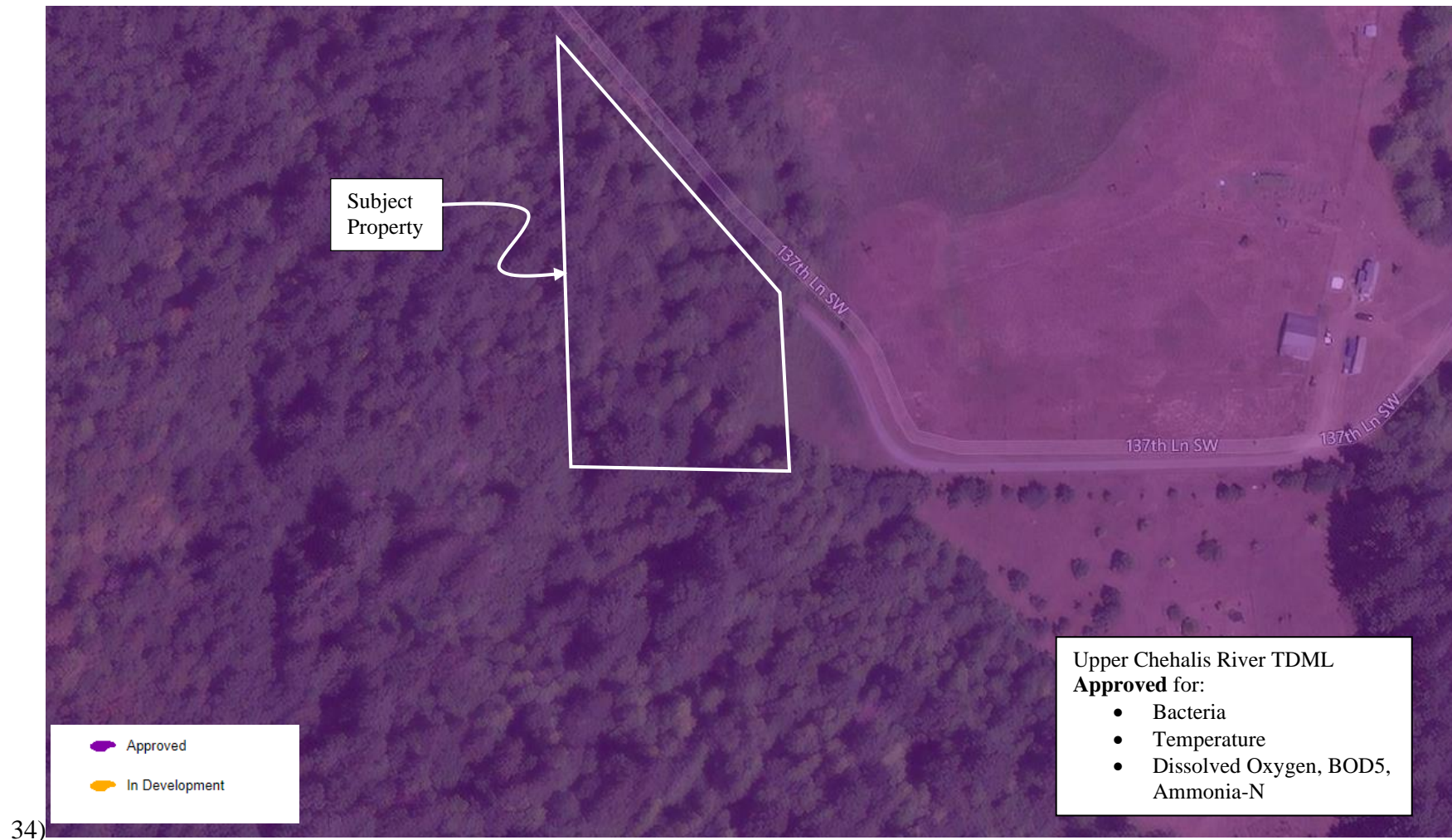
Clean Water Act

303d List



Appendix H

Total Maximum Daily Load (TMDL)

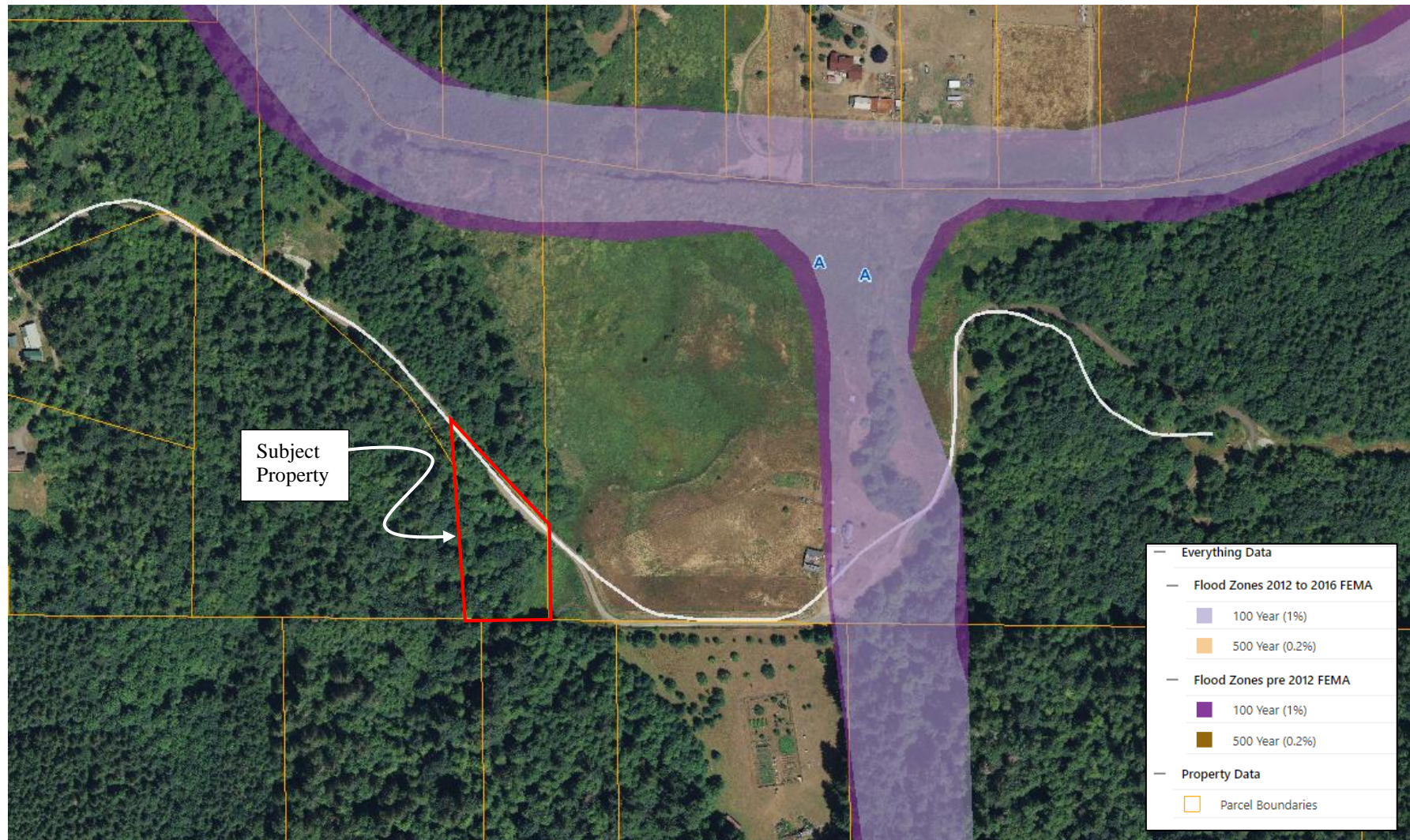


34)

Appendix I

Thurston County Geodata Center

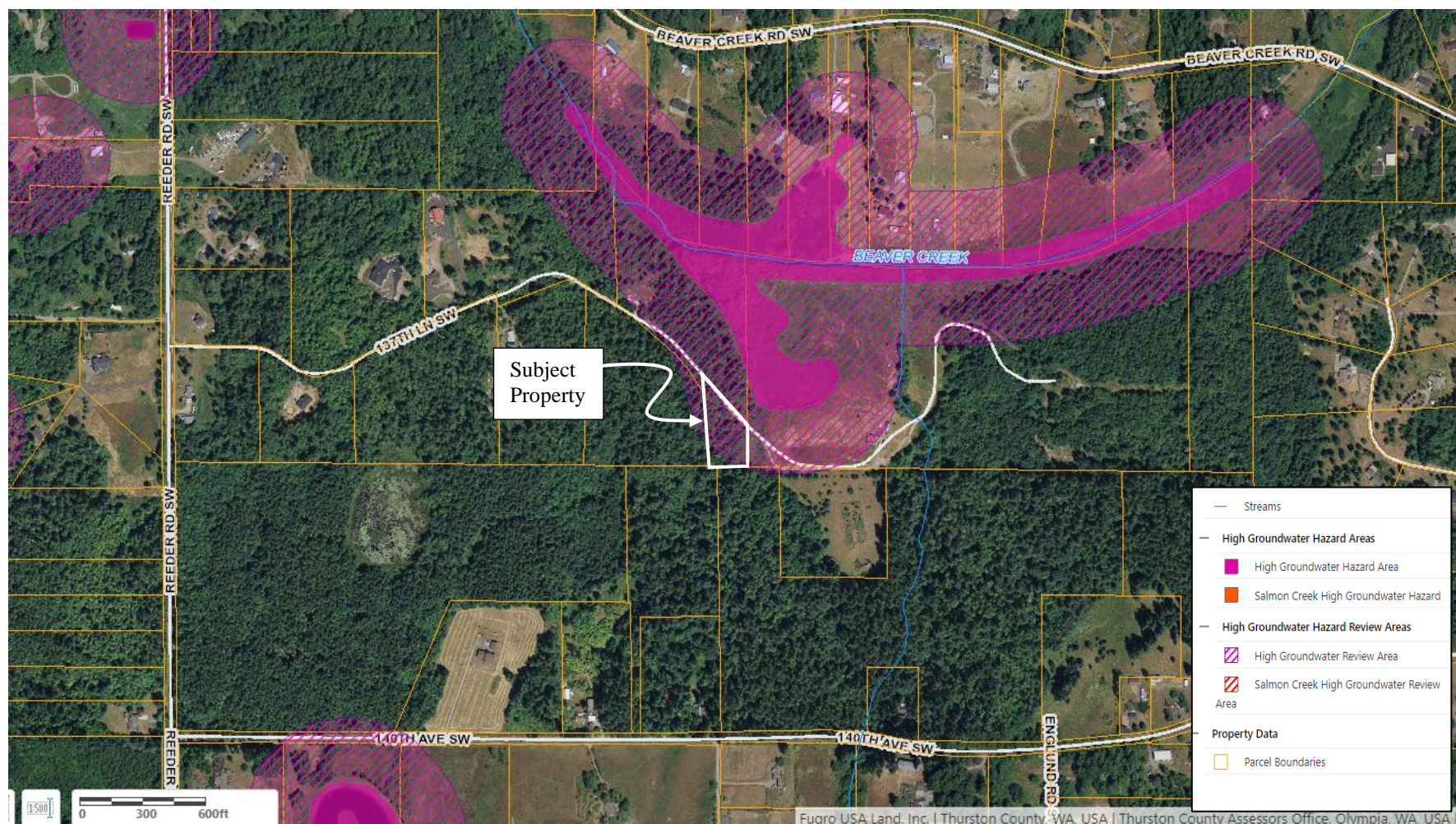
FEMA Flood Zones



Appendix J

Thurston County Geodata

High Groundwater Hazard Area



Appendix K

Datasheets

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

Project/Site: Pryor Property City/County: Tenino, WA Sampling Date: 14 May 2021
 Applicant/Owner: Steve Pryor State: WA Sampling Point: TP-A1
 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 no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: <u>20</u>)</p> <table style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Red Alder (Alnus rubra)</u></td> <td style="text-align: center;"><u>75</u></td> <td style="text-align: center;"><u>Y</u></td> <td style="text-align: center;"><u>FAC</u></td> </tr> <tr> <td>2. _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>3. _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>4. _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td colspan="2"></td> <td style="text-align: center;"><u>75</u></td> <td style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>12</u>)</p> <table style="width: 100%;"> <tbody> <tr><td>1. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>2. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>3. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>4. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>5. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td colspan="2"></td><td style="text-align: center;">_____</td><td style="text-align: center;">= Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>6</u>)</p> <table style="width: 100%;"> <tbody> <tr><td>1. <u>Creeping Buttercup (Ranunculus repens)</u></td><td style="text-align: center;"><u>15</u></td><td style="text-align: center;"><u>Y</u></td><td style="text-align: center;"><u>FAC</u></td></tr> <tr><td>2. <u>Reed Canary Grass (Phalaris arundinacea)</u></td><td style="text-align: center;"><u>10</u></td><td style="text-align: center;"><u>Y</u></td><td style="text-align: center;"><u>FACW</u></td></tr> <tr><td>3. <u>Orchard Grass (Dactylis Glomerata)</u></td><td style="text-align: center;"><u>5</u></td><td style="text-align: center;"><u>N</u></td><td style="text-align: center;"><u>FACU</u></td></tr> <tr><td>4. <u>Speedwell (Veronica officinalis)</u></td><td style="text-align: center;"><u>3</u></td><td style="text-align: center;"><u>N</u></td><td style="text-align: center;"><u>UPL</u></td></tr> <tr><td>5. <u>Field Mint (Mentha arvensis)</u></td><td style="text-align: center;"><u>2</u></td><td style="text-align: center;"><u>N</u></td><td style="text-align: center;"><u>FACW</u></td></tr> <tr><td>6. <u>Small Fruited Bulrush (Scirpus Microcarpus)</u></td><td style="text-align: center;"><u>1</u></td><td style="text-align: center;"><u>N</u></td><td style="text-align: center;"><u>OBL</u></td></tr> <tr><td>7. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>8. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>9. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>10. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>11. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td colspan="2"></td><td style="text-align: center;"><u>36</u></td><td style="text-align: center;">= Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width: 100%;"> <tbody> <tr><td>1. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td>2. _____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr> <tr><td colspan="2"></td><td style="text-align: center;">_____</td><td style="text-align: center;">= Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum _____</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Red Alder (Alnus rubra)</u>	<u>75</u>	<u>Y</u>	<u>FAC</u>	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____			<u>75</u>	= Total Cover	1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____			_____	= Total Cover	1. <u>Creeping Buttercup (Ranunculus repens)</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	2. <u>Reed Canary Grass (Phalaris arundinacea)</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	3. <u>Orchard Grass (Dactylis Glomerata)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	4. <u>Speedwell (Veronica officinalis)</u>	<u>3</u>	<u>N</u>	<u>UPL</u>	5. <u>Field Mint (Mentha arvensis)</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	6. <u>Small Fruited Bulrush (Scirpus Microcarpus)</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	7. _____	_____	_____	_____	8. _____	_____	_____	_____	9. _____	_____	_____	_____	10. _____	_____	_____	_____	11. _____	_____	_____	_____			<u>36</u>	= Total Cover	1. _____	_____	_____	_____	2. _____	_____	_____	_____			_____	= Total Cover	<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species _____</td><td>x 1 = _____</td></tr> <tr><td>FACW species _____</td><td>x 2 = _____</td></tr> <tr><td>FAC species _____</td><td>x 3 = _____</td></tr> <tr><td>FACU species _____</td><td>x 4 = _____</td></tr> <tr><td>UPL species _____</td><td>x 5 = _____</td></tr> <tr><td>Column Totals: _____</td><td>(A) _____ (B) _____</td></tr> <tr><td colspan="2">Prevalence Index = B/A = _____</td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Wetland Non-Vascular Plants¹</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	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 = _____	
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SOIL

Sampling Point: TP-A1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6in	10yr 2/1							Silt
6-20in	10YR 2/1							Silty loam

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)				Secondary Indicators (2 or more required)			
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)					

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): Surface (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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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: Pryor Property City/County: Tenino, WA Sampling Date: 14 May 2021
 Applicant/Owner: Steve Pryor State: WA Sampling Point: TP-A2
 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 no, Soil no, or Hydrology no 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
1. <u>Big Leaf Maple (Acer macrophyllum)</u>	<u>95</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>143</u> x 4 = <u>584</u> UPL species _____ x 5 = _____ Column Totals: <u>146</u> (A) <u>593</u> (B) Prevalence Index = B/A = <u>4.06</u>
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>95</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 12)				
1. <u>Salmonberry (Rubus spectabilis)</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	<u>3</u>	= Total Cover		
Herb Stratum (Plot size: 6)				
1. <u>Sword Fern (Polystichum munitum)</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Trailing Blackberry (Rubus ursinus)</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Spring Beauty (Claytonia virginica)</u>	<u>8</u>	<u>N</u>	<u>FACU</u>	
4. <u>Long Leaf Bedstraw (Galium aparine)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____	<u>48</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: TP _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-6in	10YR 2/2							fine sandy silt

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

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

Remarks:

Appendix L

Wetland Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 14-May-21

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: GoogleEarth, AutoDesk, Thurston Geodataa

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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	L	L	H	
Value	H	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	X

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	Figures 11, 12
Hydroperiods	D 1.4, H 1.2	Figures 11, 12
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	Figure 11
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	Figure 8
Map of the contributing basin	D 4.3, D 5.3	Figure 10
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 7
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 (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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 (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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	

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:

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	1
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		0
Yes = 4 No = 0		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 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	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		8

Add the points in the boxes above

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	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	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 0	
Total for D 2		0

Add the points in the boxes above

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

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

Add the points in the boxes above

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

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:**

- 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

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.

- 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

3

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit 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

0

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.**

- 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

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6 Add the points in the boxes above **1****Rating of Value** If score is: ☐ 2 - 4 = H ☒ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 2 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> 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).

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> 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 ft². *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

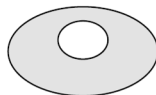
- If you counted:
- | | | |
|----------------|------------|---|
| > 19 species | points = 2 | 1 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

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



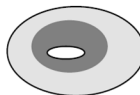
None = 0 points



Low = 1 point

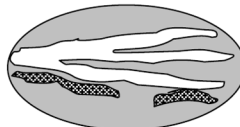


Moderate = 2 points



1

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



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		1
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> 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) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1 Add the points in the boxes above		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 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: 37 % undisturbed habitat + (21 % moderate & low intensity land uses / 2) = 47.5%		
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	3	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 49 % undisturbed habitat + (40 % moderate & low intensity land uses / 2) = 69%		
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	3	
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		
Total for H 2 Add the points in the boxes above		6
Rating of Landscape Potential If Score is: <input checked="" type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input type="checkbox"/> < 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 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	2	
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		
Rating of Value If Score is: <input checked="" type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland </div>	
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? <div style="text-align: right;"> <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2 </div>	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <div style="text-align: right;"> <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II </div>	
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? <div style="text-align: right;"> <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input checked="" type="checkbox"/> No - Go to SC 2.3 </div> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <div style="text-align: right;"> <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV </div> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf <div style="text-align: right;"> <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input checked="" type="checkbox"/> No = Not WHCV </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV </div>	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - Go to SC 3.2 </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog </div> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 </div> <p>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> 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? <div style="text-align: right;"> <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog </div>	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	