
HENDERSON BOULEVARD PROPERTY

THURSTON COUNTY, WASHINGTON

CRITICAL AREAS REPORT

Prepared By:



Curtis Wambach, M.S.
Senior Biologist and Principal



15 September 2021

360-790-1559

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Soundbuilt

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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 and within three hundred (300) feet of the subject property. This Critical Areas Report has been prepared to satisfy City of Tumwater reporting requirements.

1.2 Property Location

The 9.73-acre subject property is located in Tumwater, WA Section 02 Township 17 North and Range 2 West (**Figure 1; Table 1**).

Table 1. Parcels Comprising Subject Property

No#	Property Address	Parcel Number	Section Township Range	Property Size (Acres)
1	---	12701320105	Section 02 Township 17N Range 2W	0.34
2	---	79300000101		4.77
3	---	79300000100		4.62
3 Parcels	Total Size			9.73 acres

The permitting jurisdiction is City of Tumwater.

1.3 Site Evaluation

Critical Areas evaluations were performed on the subject property on 7 July 2021.

1.4 Subject Property

The site is made up of three (3) contiguous parcels (**Figures 2 & 3**). The eastern portion of the subject property contains building and internal roads (**Appendix A, Photos 5-8**). The western portion of the subject property is forested with a herbaceous understory (**Appendix A, Photos 1 & 3**). Maintained lawn and grassy areas are located throughout the property (**Appendix A, Photos 2, 4-8**). The parcel west of the subject property is currently under development (**Appendix A, Photos 9 & 10**).

The property is bordered by Henderson Blvd SE to the east, single family homes to the east and south, undeveloped single-family lots to the north. The property to the west is currently under construction. The neighboring properties include high intensity single-family lots smaller than one (1) acre in size.

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 Habitats and 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 (TCC), 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.

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. **Insert 1** 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.

Insert 1. 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

No test plots or soil samples were collected. No wetlands were identified on the subject property (See Results Section)

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

No hydric soils are mapped on the subject property. Two (2) non-hydric soil types are mapped on the subject property by Thurston County Geodata (**Appendix B; Table 2**). Mukilteo muck is a hydric soil type mapped off-site immediately south of the subject property.

Table 2. Thurston County Geodata Soil Summary

Soil Unit	Hydric	Comments
Indianola loamy sand, 0 to 3% slopes	No	Covers eastern half of subject property
Indianola loamy sand, 3 to 15% slopes	No	Covers western half of subject property

3.1.2 Thurston County Geodata Wetlands & Streams

No wetlands are mapped on the subject property by Thurston County Geodata (**Appendix C**). Two (2) off-site wetlands are mapped five hundred sixty-five (565) feet west and three hundred sixty-two (362) feet to the east of the subject property across Henderson Boulevard SE.

3.1.3 WDFW Priority Habitats and Species (PHS) Database

No priority habitats or species are mapped on the subject property by the Washington Department of Fish and Wildlife (WDFW) PHS database (**Appendix D**). The Mazama pocket gopher is mapped directly south of subject property. Freshwater emergent wetland is mapped just over four hundred (400) feet west of the subject property. Freshwater Forested/shrub wetland is mapped just over three hundred (300) feet east of the subject property. The Big Brown bat and Townsend's bat is mapped in the township.

3.1.4 Clean Water Act 303(d) List

No 303(d) listed waterbodies are mapped on the subject property. One (1) 303(d) listed waterbody is mapped 0.27 miles north of the subject property by the Department of Ecology Water Quality Atlas Map (**Appendix E**). The site and surrounding basin drains to the south.

3.1.5 Total Maximum Daily Load (TMDL)

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

3.1.6 High Groundwater Hazard Area

No High Groundwater Hazard Area is mapped on the subject property by Thurston County Geodata (**Appendix G**).

3.1.7 FEMA Floodplain

No FEMA floodplain is mapped on the subject property by the Thurston County Geodata Center database (**Appendix H**). FEMA floodplains are mapped to over three hundred (300) feet the subject property east of Henderson Blvd (**Appendix H**).

3.2 Field Results

No wetlands or streams have been identified on the subject property during this study (**Figures 2 & 3; Table 3**). One (1) off-site wetland, labeled Wetland A, has been identified south of the subject property

Wetland A has not been delineated because it is located offsite. Permission was not obtained to delineate off-site wetlands.

No streams were identified onsite or within three hundred (300) feet of the subject property.

A summary of the Critical Areas study can be found in **Table 3**.

Table 3. Summary of Critical Areas Results

Wetlands						
Wetland	Area of Wetland		Cowardin Class	Buffer Condition	Habitat Features	Comments
	On-site	Total				
Wetland A	0 sf (0 acres)	44,753.00 sf (1.03 acres)	PSSC ¹	Upland vegetation at buffer	None Observed	Shallow depression

1. PSSC: Palustrine Scrub-shrub Seasonally-flooded

3.2.1 Wetland A

The off-site Wetland A is located south of the subject property. The wetland boundary is well-defined by skunk cabbage (

Wetland A is a shallow depression that holds water during the wet season (**Figures 2 & 3**). The Cowardin classification is Palustrine Scrub-shrub Seasonally flooded (PSSC). The Department of Ecology (DOE; 2014) Wetland Rating System describes vegetation classes and hydroperiods as emergent and seasonally ponded, respectively (**Figure 6**).

Wetland Conditions

Wetland A consists of a relatively undisturbed shallow topographic depression.

No potential sources of pollutants occur within one hundred fifty (150) feet as defined in the DOE (2014) Wetland Rating System (**Figure 7**). Habitat within one (1) kilometer is shown in **Figure 8**, and the wetland contributing basin is shown in **Figure 9**.

Hydrology

Hydrology derives from local precipitation and groundwater. Water accumulates and ponds in this shallow depression during the wet season. No outlet was identified during the site evaluation.

Vegetation

Dominant plant species identified in Wetland A include (**Appendix A, Photos 11-14 & 14-21**):

- Douglas spirea (*Spiraea douglasii*, FACW)
- Pacific crabapple (*Malus fusca*, FACW)
- Skunk cabbage (*Lysichiton americanus*, OBL)
- Slough sedge (*Carex obnupta*, OBL)
- Oregon Ash (*Fraxinus latifolia*, FACW)
- Salmonberry (*Rubus spectabilis*, FAC)
- Water parsley (*Oenanthe sarmentosa*, OBL)
- Red cedar (*Thuja plicata*, FAC)

Dominant upland plant species adjacent to wetland include (**Appendix A, Photo 914**):

- Bracken fern (*Pteridium aquilinum*, FACU)
- Queen Anne's Lace (*Daucus carota*, FACU)
- Oxeye daisy (*Leucanthemum vulgare*, FACU)
- Hawksbeard (*Crepis tectorum*, FACU)
- Hair cat's ear (*Hypochaeris radicata*, FACU)
- Ocean spray (*Holodiscus maxim*, FACU)
- Fox glove (*Digitalis purpurea*, FACU)
- Salal (*Gaultheria shallon*, FACU)
- Sweet vernal grass (*Anthoxanthum odoratum*, FACU)
- Sword fern (*Polystichum munitum*, FACU)
- Oregon grape (*Mahonia aquifolium*, FACU)
- Big leaf maple (*Acer macrophyllum*, FACU)

Soils

Soils were not excavated as the wetland is located on private property not controlled by the applicant. Thereby, no test plot data was collected.

Habitat Features

No habitat features were identified in Wetland A.

4.0 REGULATORY CONSIDERATIONS

Wetland regulatory considerations have been summarized in **Table 4** and illustrated in **Figures 4 & 5**.

Table 4. Summary of Regulatory Considerations

Wetlands								
Wetland	Area of Wetland		Category	Habitat Score	Land Use Intensity	Standard Buffer	Reduced Buffer	Comments
	Onsite	Total						
Wetland A	0 sf (0.00 acres)	44,753 sf (1.03 acres)	III	5 (L, M, M)	High	150 ft	110 ft	Off-site wetland, buffer extends onsite

4.1 Wetland A

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

Under Tumwater Municipal Code, Chapter 16.28.170 --- *Wetland buffers*, wetland buffers are calculated based on the habitat score determined by the DOE (2014) Wetland Rating System. The Habitat Functions score for Wetland A is “Low (L)” potential to provide habitat, “Medium (M)” landscape potential to support habitat, and “Medium (M)” potential value to society. Wetlands that rate as L, M, M (order of ratings are not important) for habitat receive a score of five (5) points for total habitat functions (**Appendix I**).

The standard buffer for wetlands that score five (5) points for Habitat Functions provided by the rating of L, M, M require a standard buffer width of one hundred fifty (150) feet (TMC 16.28.080---*Wetland buffers*) (**Figures 4 & 5; Table 5**).

4.2 Wetland Buffer Reduction

Under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction*, the buffer widths recommended for land uses with high-intensity impacts to wetlands can be reduced to those widths recommended for moderate-intensity impacts under the following conditions:

1. For wetlands that score moderate or high for habitat (five points or more), the width of the buffer around the wetland can be reduced if both the following criteria are met:
 - a. A relatively undisturbed vegetated corridor at least one hundred feet wide is protected between the wetland and any other priority habitats as defined by the Washington State Department of Fish and Wildlife. The corridor must be protected for the entire distance between the wetland and the priority habitat via some type of legal protection such as a conservation easement; and
 - b. Measures to minimize the impacts of different land uses on wetlands, such as the examples summarized in Table 16.28.170(5), are applied (**Insert 2**).

Insert 2. Table 16.28.170(5): Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, residential
Noise	Locate activity that generates noise away from wetland	Manufacturing, residential
Toxic runoff (1)	*Route all new runoff away from wetland while ensuring that wetland is not dewatered *Establish covenants limiting use of pesticides within 150 ft of wetland *Apply integrated pest management	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Stormwater runoff	*Retrofit stormwater detention and treatment for roads and existing adjacent development *Prevent channelized flow from lawns that directly enters the buffer	Parking lots, roads, manufacturing, residential areas, commercial, landscaping
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns	Impermeable surfaces, lawns, tilling
Pets and human disturbance	*Use privacy fencing *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	Residential areas
Dust	Utilize best management practices to control dust	Tilled fields

The proposed project would reduce buffers in compliance with TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction* by 1) reducing the buffer from the one hundred fifty (150)-foot high land use intensity to the one hundred ten (110)-foot moderate land use intensity, 2) protect a relatively undisturbed vegetated corridor at least one hundred feet wide, and by 3) applying measures to minimize the impacts of different land uses on wetlands, such as the examples summarized in Table 16.28.170(5).

4.3 Wetland Buffer Averaging

Under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (E)---*Standard Wetland Buffer Width Averaging*, standard wetland buffer zones may be modified by averaging buffer widths if it will improve the protection of wetland functions, or if it is the only way to allow for reasonable use of a parcel. Averaging cannot be used in conjunction with the provisions for reductions in buffer widths. Wetland buffer width averaging shall be allowed to improve wetland protection only where a qualified wetlands professional demonstrates all of the following:

1. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a “dual-rated” wetland with a category I area adjacent to a lower rated area;

2. The buffer is increased adjacent to the higher functioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower functioning or less sensitive portion;
3. The total area contained in the buffer area after averaging is not less than that which would be contained within the standard buffer; and
4. The buffer at its narrowest point is never less than three-fourths of the required width.

Under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (F), averaging to allow reasonable use of a parcel may be permitted when all of the following are met:

1. There are no feasible alternatives to the site design that could be accomplished without buffer averaging;
2. The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated in the critical area report;
3. The total buffer area after averaging is equal to the area required without averaging; and
4. The buffer at its narrowest point is never less than three-fourths of the required width.

4.4 Stormwater in Buffers

Under TMC 16.28.170--*Wetland buffers*, Subsection (H)---*Permitted Uses in a Wetland Buffer Zone*, surface level stormwater management facilities may be allowed in the outer twenty-five percent (25%) of the wetland buffer using best management practices; provided the community development director makes all of the following determinations:

- a. No other location is feasible.
- b. The location of such facilities will not degrade the functions or values of the wetland.

5.0 PROPOSED LAND USE

No land use is proposed at this time.

Recommendations include:

- Buffer reduction from one hundred fifty (150) feet to one hundred ten (110) feet with mitigation measures under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction*.
- Stormwater management facilities can be located within the outer twenty-five percent (25%) of the wetland buffer. The lowest portion of the subject property.

6.0 CONCLUSION

No wetlands or streams have been identified on the subject property during this study. One (1) off-site wetland, labeled Wetland A, has been identified near the southern subject property boundary (**Figures 2 & 3**).

Wetland A has not been delineated because it is located offsite. Permission was not obtained to delineate off-site wetlands. The off-site Wetland A is located fifty-eight (58) feet south of the subject property. No streams were identified onsite or within three hundred (300) feet of the subject property.

Wetland A is a shallow depression that holds water during the wet season (**Figures 2 & 3**). The Cowardin classification is Palustrine Scrub-shrub Seasonally Flooded (PSSC). The Department of Ecology (DOE; 2014) Wetland Rating System describes vegetation classes and hydroperiods as scrub-shrub and seasonally flooded, respectively.

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

Under Tumwater Municipal Code, Chapter 16.28.170 --- *Wetland buffers*, wetland buffers are calculated based on the habitat score determined by the DOE (2014) Wetland Rating System. The Habitat Functions score for Wetland A is “Low (L)” potential to provide habitat, “Medium (M)” landscape potential to support habitat, and “Medium (M)” potential value to society. Wetlands that rate as L, M, M (order of ratings are not important) for habitat receive a score of five (5) points for total habitat functions.

The standard buffer for wetlands that score five (5) points for Habitat Functions provided by the rating of L, M, M require a standard buffer width of one hundred fifty (150) feet (TMC 16.28.080---*Wetland buffers*) (**Figures 4 & 5**).

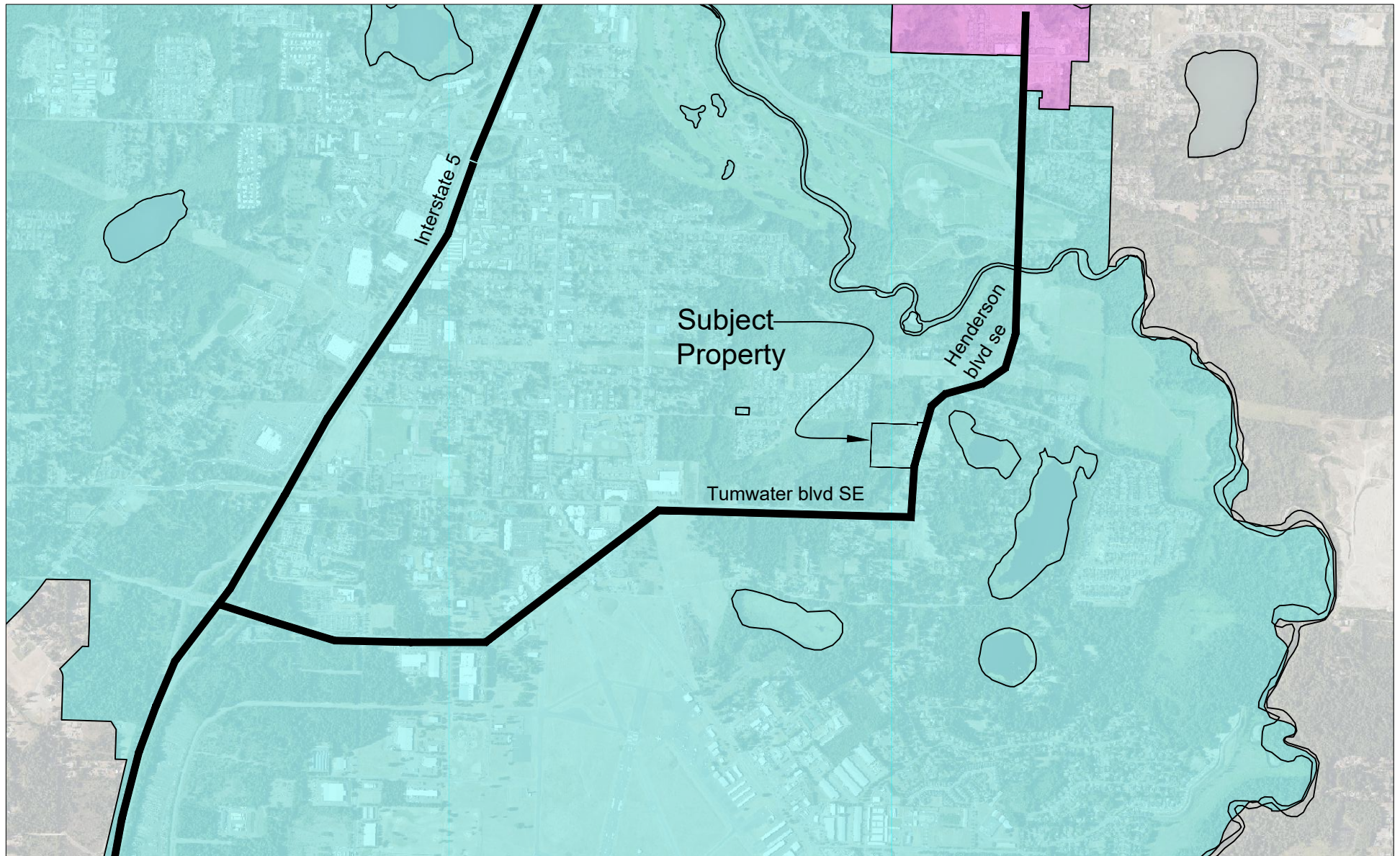
Recommendations include:

- Buffer reduction from one hundred fifty (150) feet to one hundred ten (110) feet with mitigation measures under TMC Chapter 16.28.170---*Wetland buffers*, Subsection (C)---*Buffer Width Reduction*.
- Stormwater management facilities can be located within the outer twenty-five percent (25%) of the wetland buffer. The lowest portion of the subject property.

7.0 REFERENCES

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FIGURES

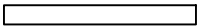


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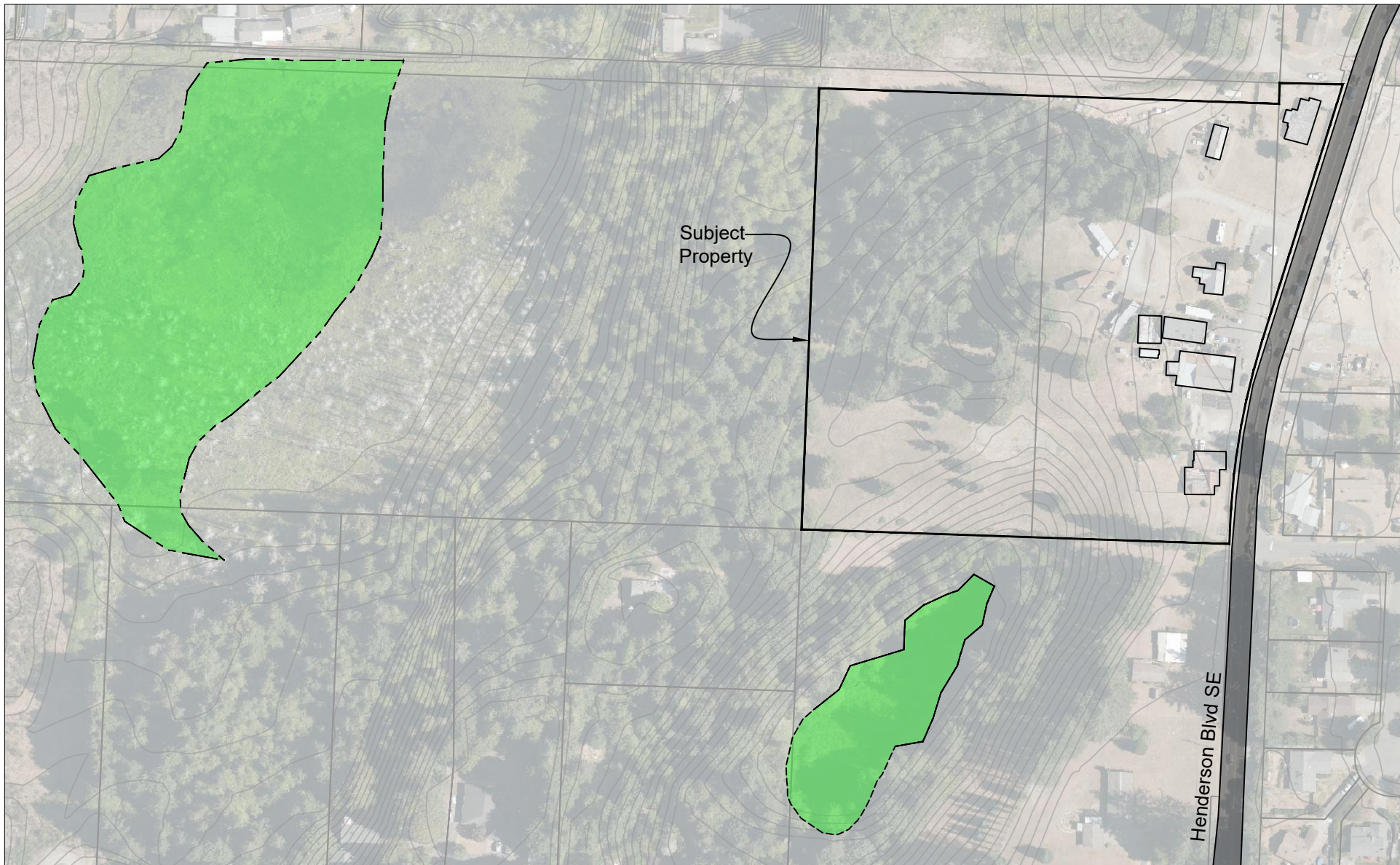
- City of Tumwater
- City of Olympia

Figure 1
 Henderson
 Property
 Vicinity Map



Scale: 1" = 2000'

 0 2000'

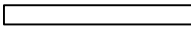
15 September 2021



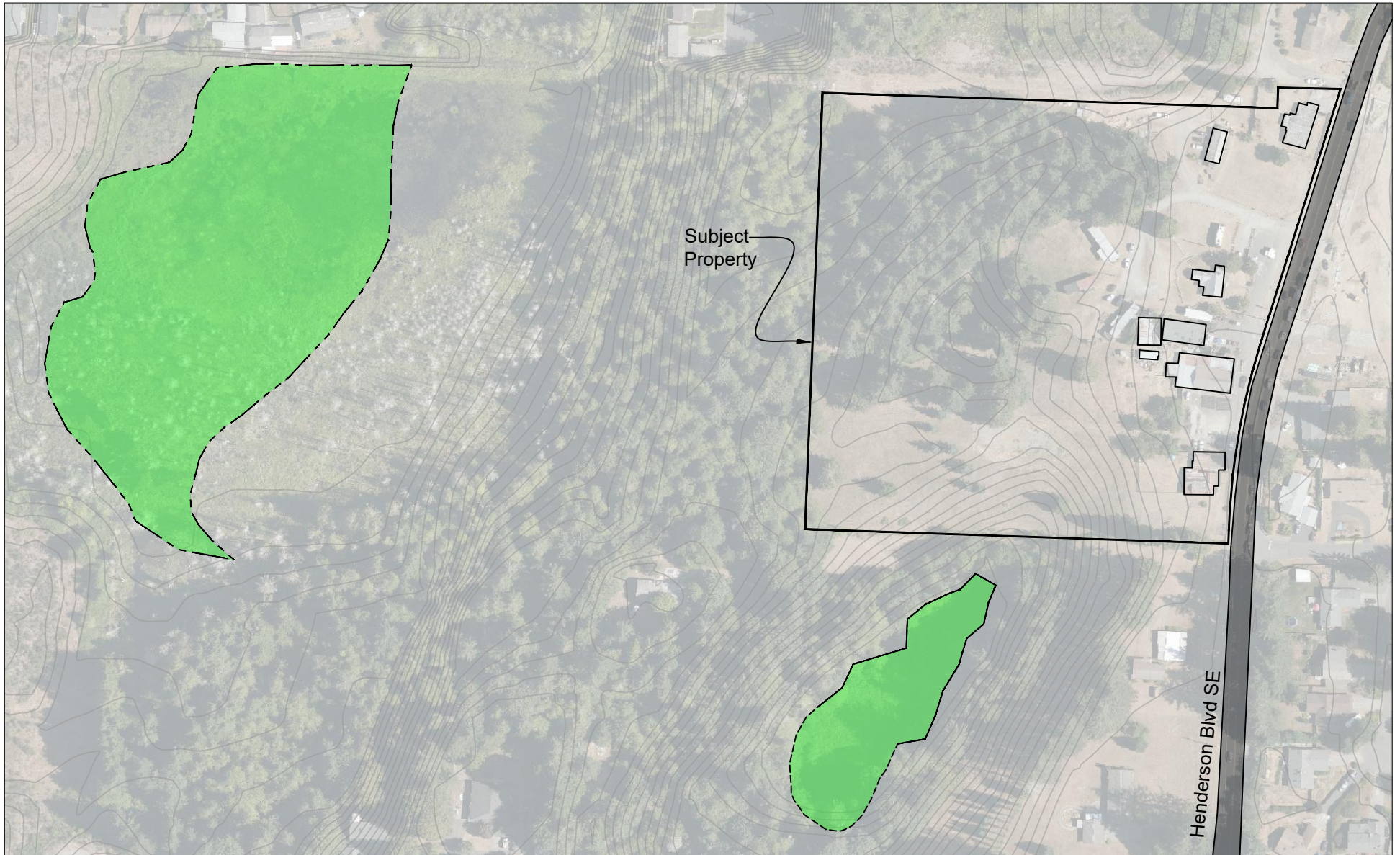
-  Wetland (Verified)
-  Wetland (Potential)
-  Wetland (Thurston Co. Geodata)

Figure 2
 Henderson
 Property
 Existing
 Conditions



Scale: 1" = 200'

 0 200'

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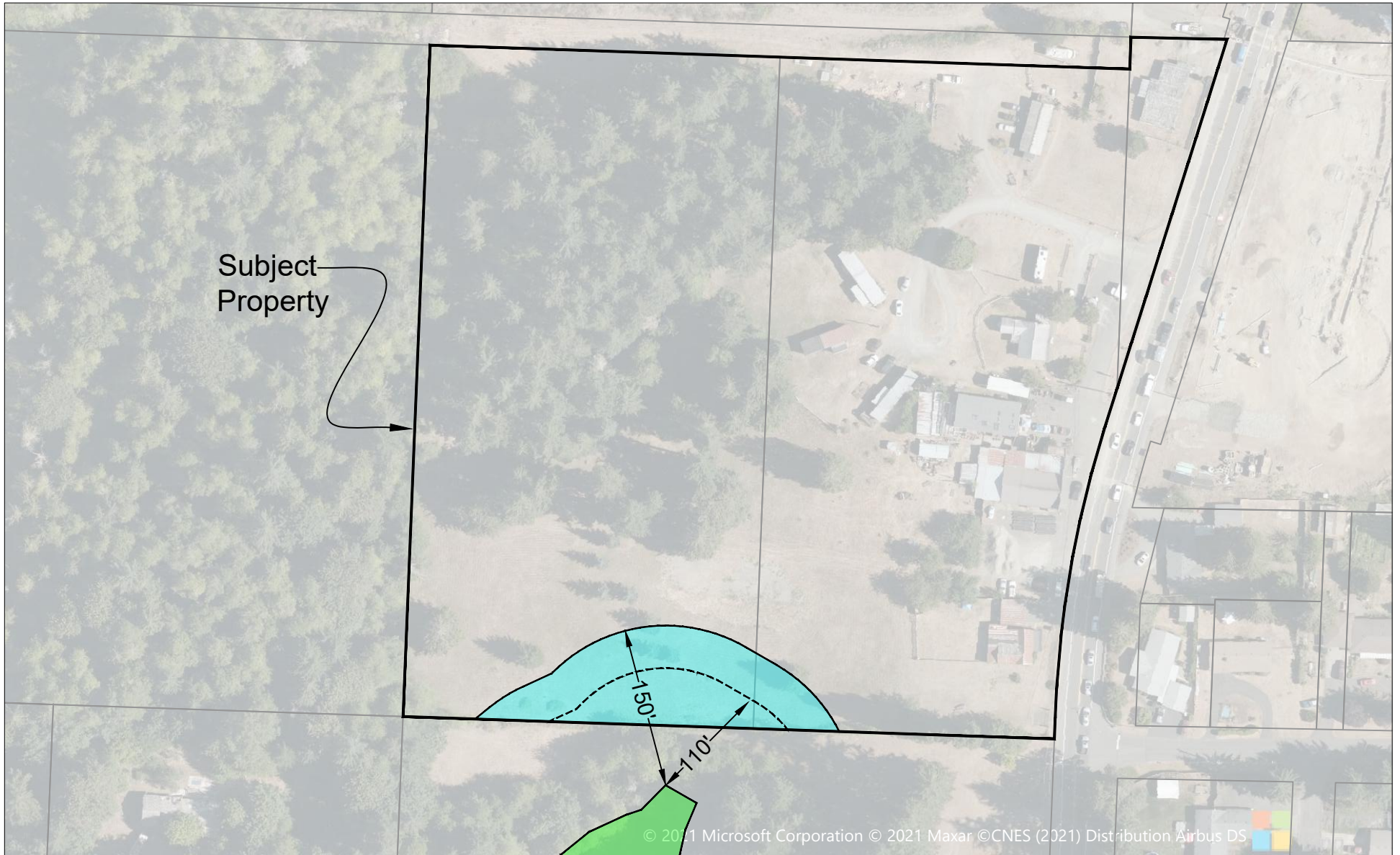
- Wetland (Verified)
- Wetland (Potential)
- Wetland (Thurston Co. Geodata)

Figure 3
 Henderson
 Property
 Existing
 Conditions



Scale: 1" = 200'
 0 200'

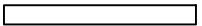
15 September 2021



-  Wetland (Verified)
-  Wetland (Potential)
-  Wetland (Thurston Co. Geodata)
-  Wetland Buffers (150 feet)
-  Reduced Wetland Buffer (110 feet)

Figure 4
 Henderson
 Property
 Critical Areas
 Buffers



Scale: 1" = 130'

 0 130'

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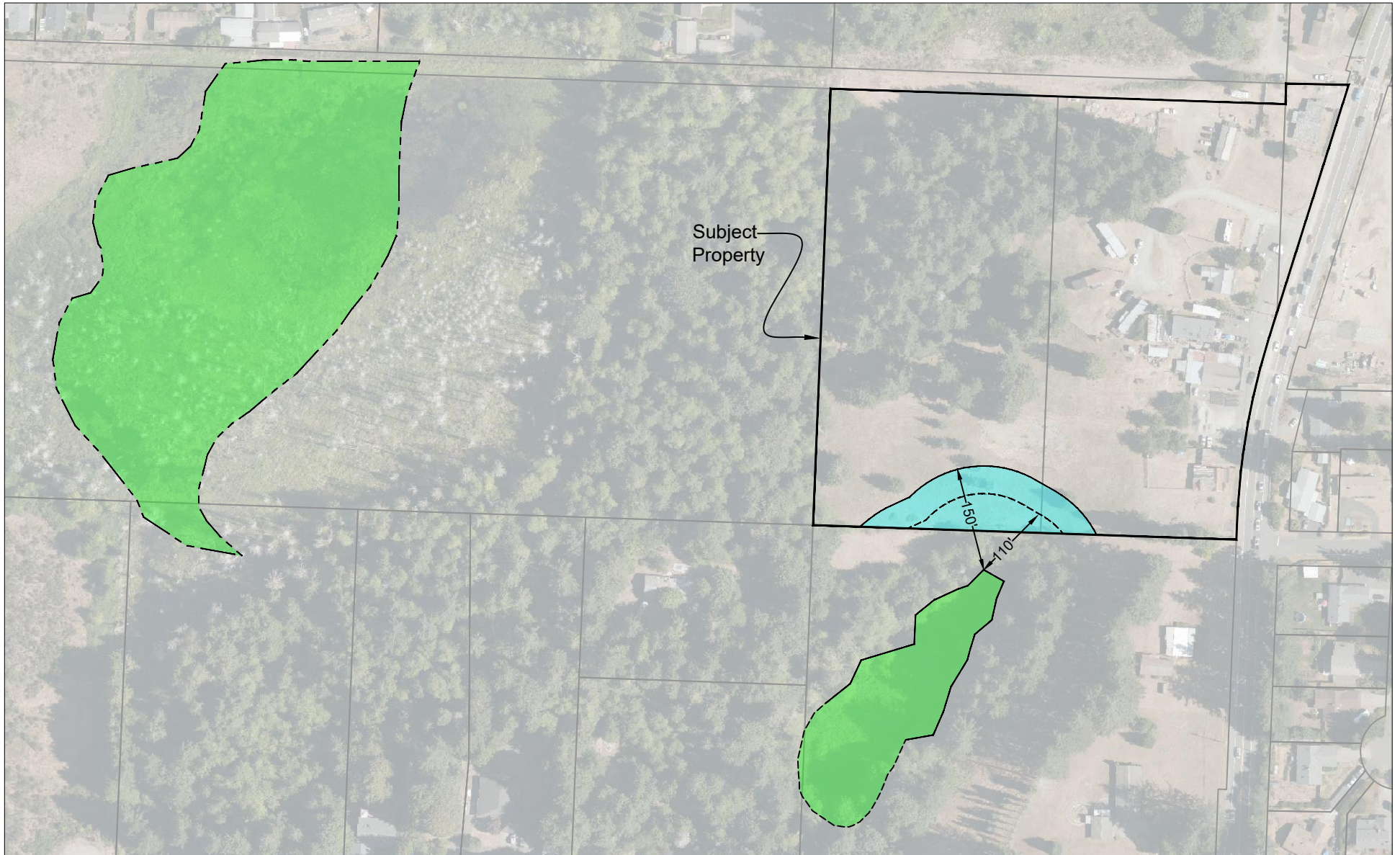
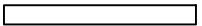
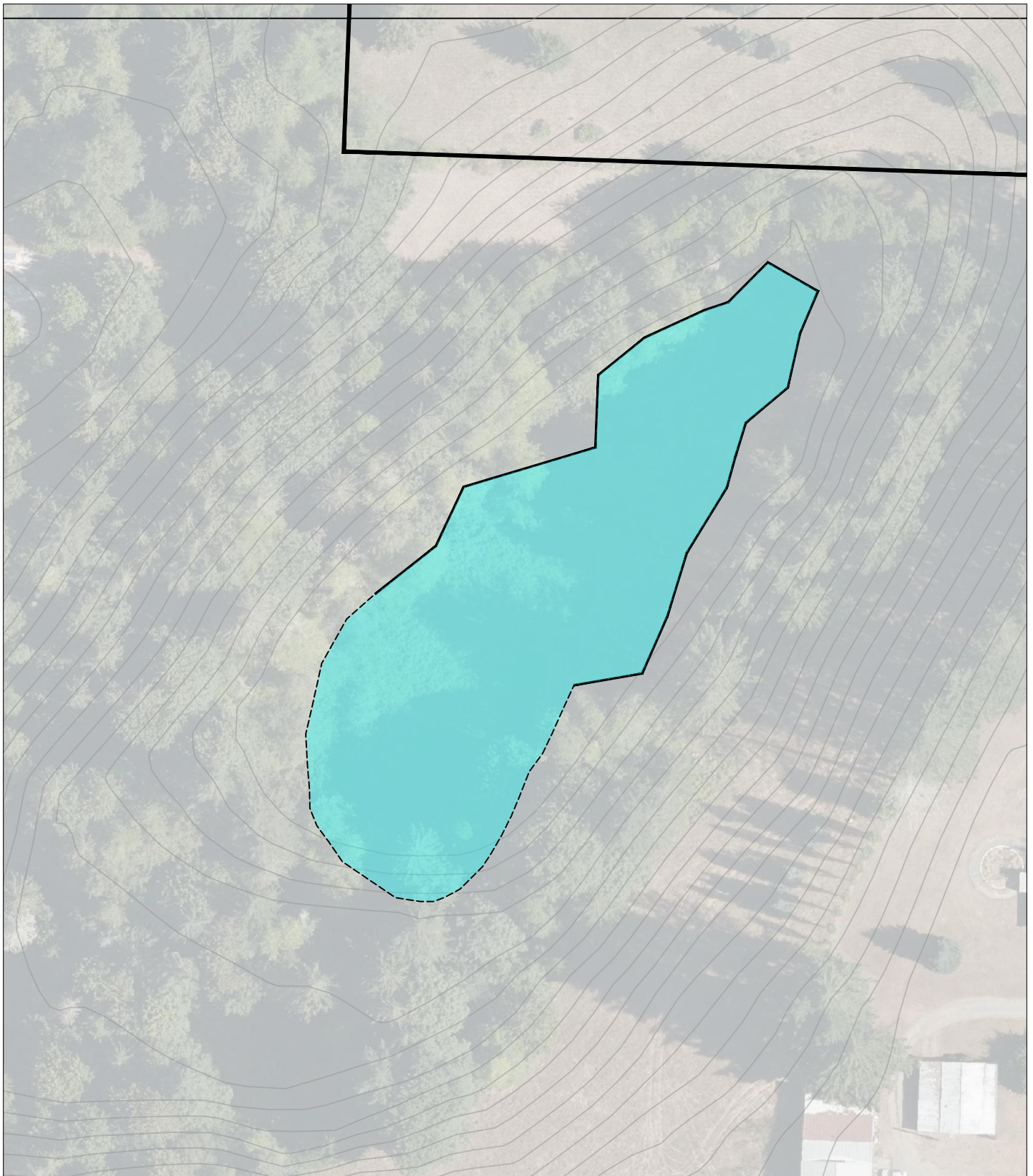


Figure 5
 Henderson
 Property
 Critical Areas
 Buffers



Scale: 1" = 200'

 0 200'

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Scrub-shrub Seasonally-flooded

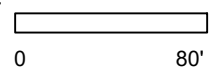
Figure 6

Henderson
 Property

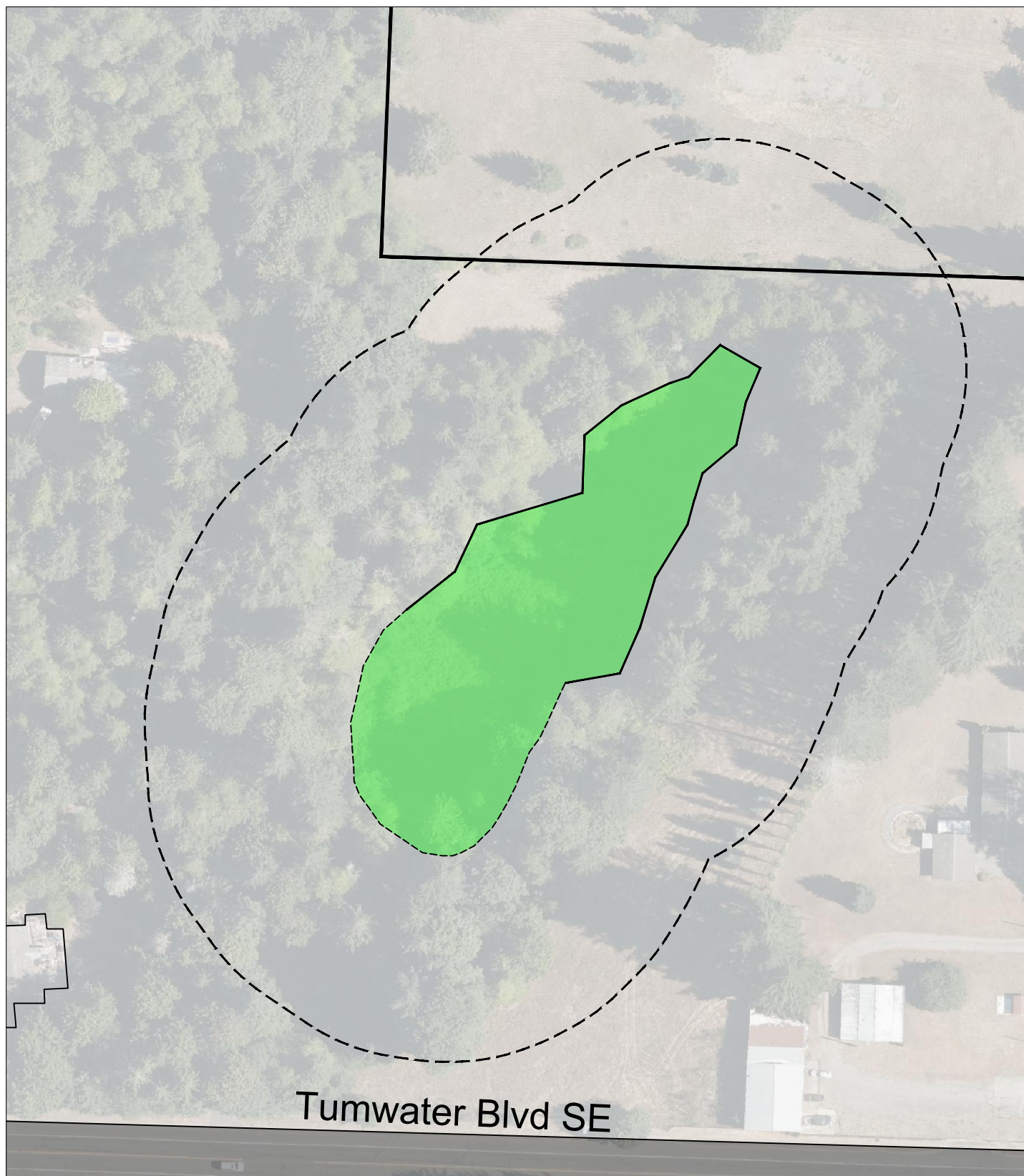
Vegetation Classes
 & Hydroperiods



Scale: 1" = 80'



15 September 2021



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Potential Pollutants (0%)
150 ft Polygon (267916 sf)
Potential Pollutants (0 sf)



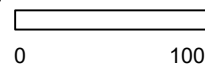
150-foot Polygon

Figure 7

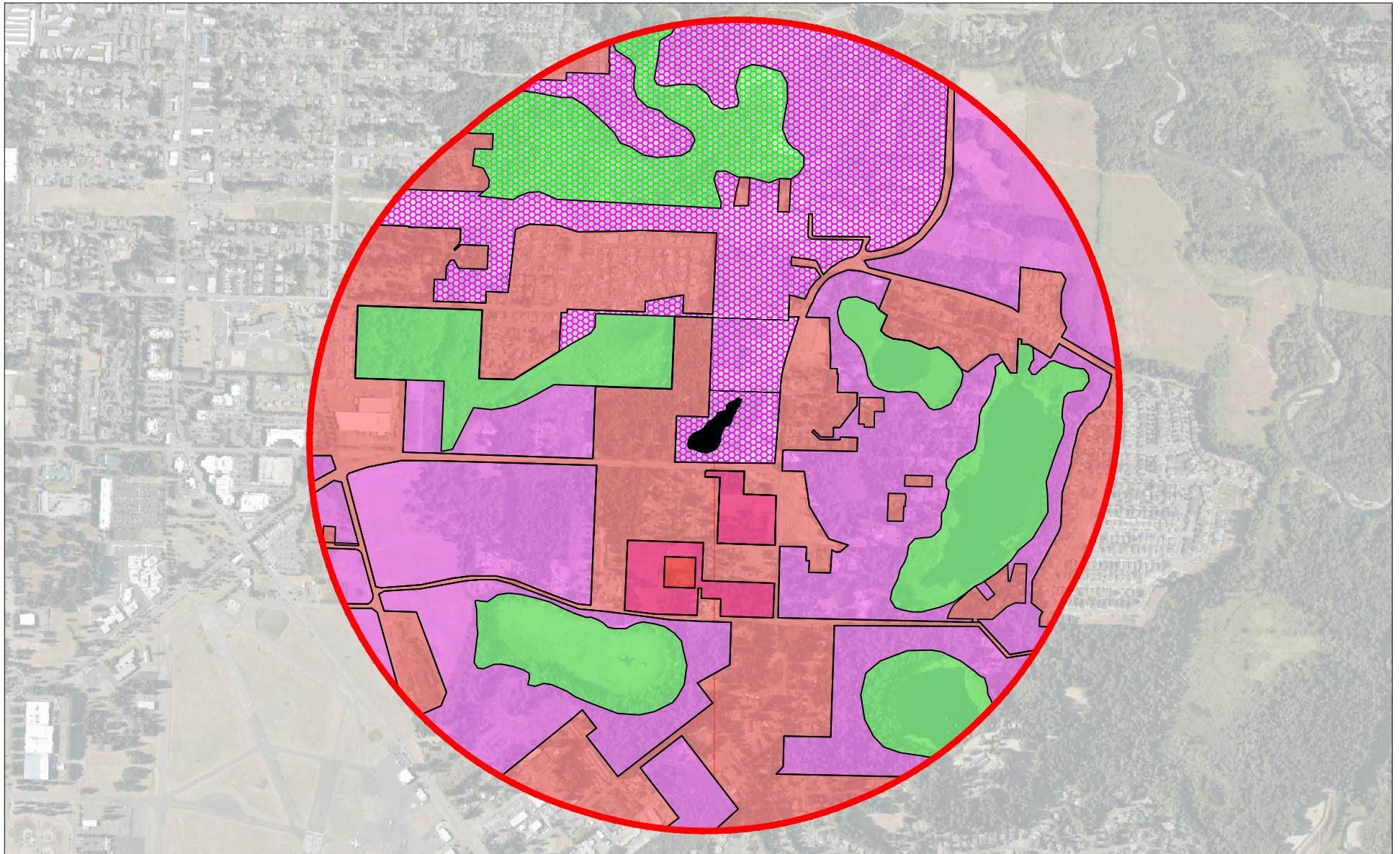
Henderson
Property
Potential Pollutants
within 150 ft of
wetland



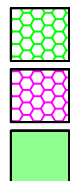
Scale: 1"= 100'



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Accessible Habitat (2,272,993 sf, 52 acres, 6%)

Accessible Moderate to Low Intensity Land Use
(6,237,797sf, 143 acres, 16%)

Total Undisturbed Habitat + Accessible Habitat
(5,851,362 sf, 134 acres, 15%)



Low to Moderate Intensity Land Use
+ accessible Low to Moderate
(18,670,333 sf, 429 acres, 48%)

High Intensity Land Use
(11,738,338 sf, 270 acres, 31%)

1km Polygon
38,547,237 sf, 885 acres

Figure 8

Henderson
Property

1 KM Polygon

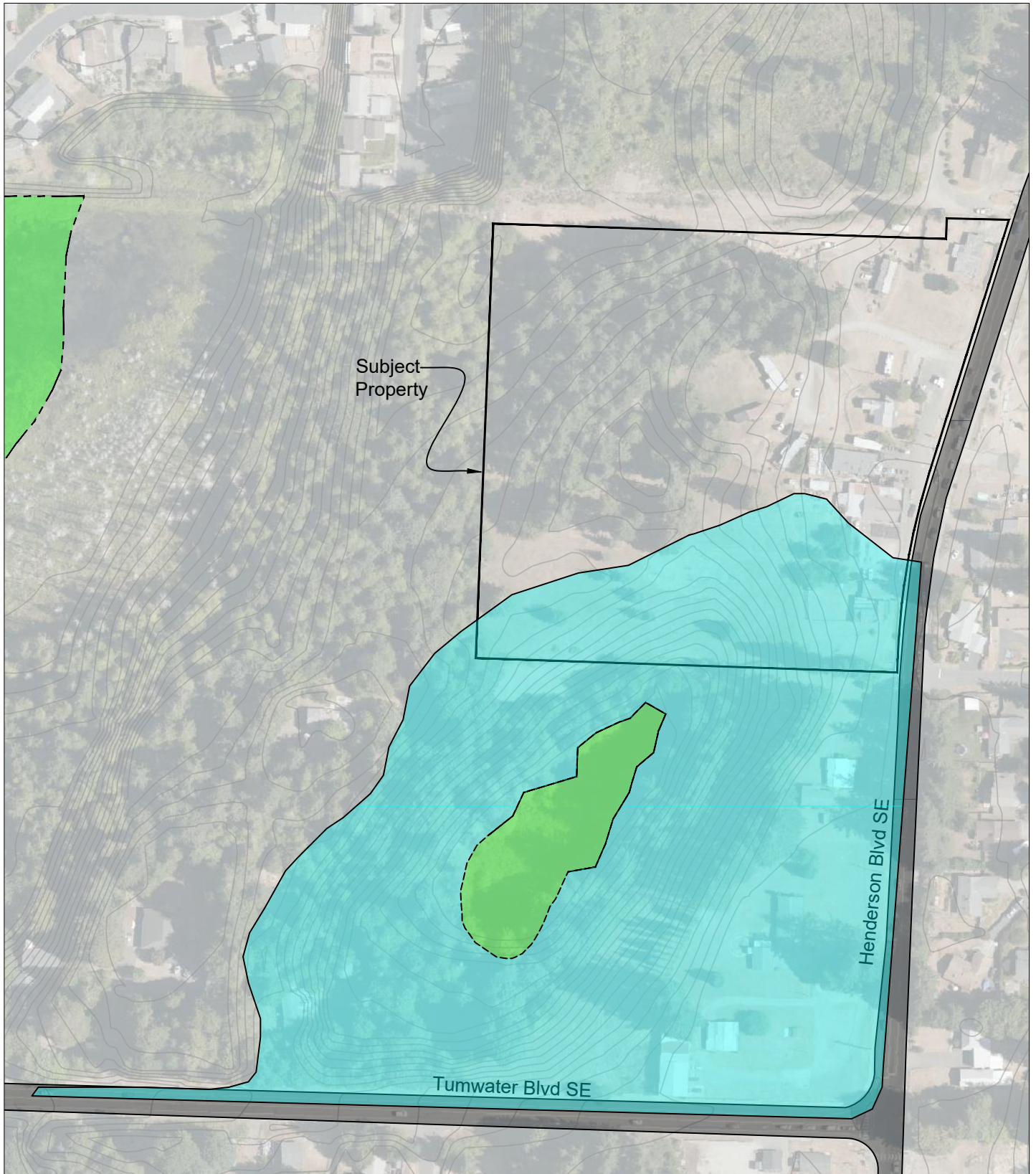


Scale: 1" = 1200'

0 1200'

15 September 2021

H2.1: $5.9\% + 44\%/2 = 16\%$ (1 points) H2.2: $21\% + 48\%/2 = 45\%$ (1 point) H2.3: High Intensity = 31% (0 points)



APPENDIX A

Photographs

Subject Property and Vicinity



Photo 1. Western portion of subject property



Photo 2. Grassland on subject property



Photo 3. Area of bracken fern



Photo 4. Maintained grass lawn on subject property



Photo 5. Frontage of subject property



Photo 6. Maintained lawn and fences on subject property



Photo 7. Internal roads on eastern portion of property



Photo 8. Eastern portion of subject property



Photo 9. Development east of subject property



Photo 10. Development occurring east of subject property

Wetland A



Photo 11. Skunk cabbage (OBL) in Wetland A



Photo 12. Water Parsley (OBL) in Wetland A



Photo 13. Wetland vegetation



Photo 14. Slough sedge (OBL) within wetland



Photo 15. Upland buffer area



Photo 16. Bare ground and hydric soil



Photo 17. Water parsley (OBL) and bare ground in wetland



Photo 18. Bare ground and hydric soil



Photo 19. Douglas spirea (FACW) & pacific crabapple (FACW)



Photo 20. Water parsley (OBL) and pacific crabapple (FACW)

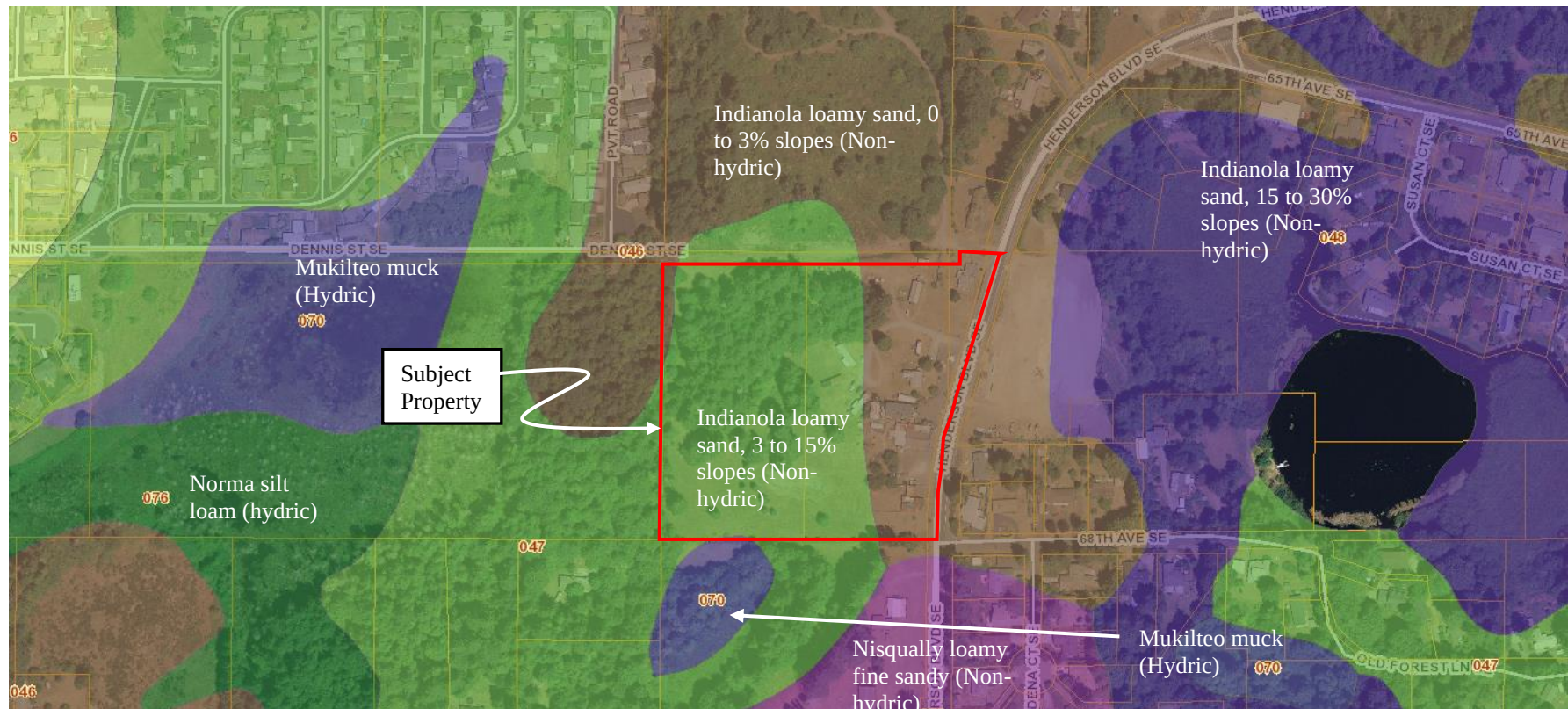


Photo 21. Creeping Buttercup (FAC) & skunk cabbage (OBL)

APPENDIX B

Thurston County Geodata

Soils



APPENDIX C

Thurston County Geodata

Wetlands & Streams

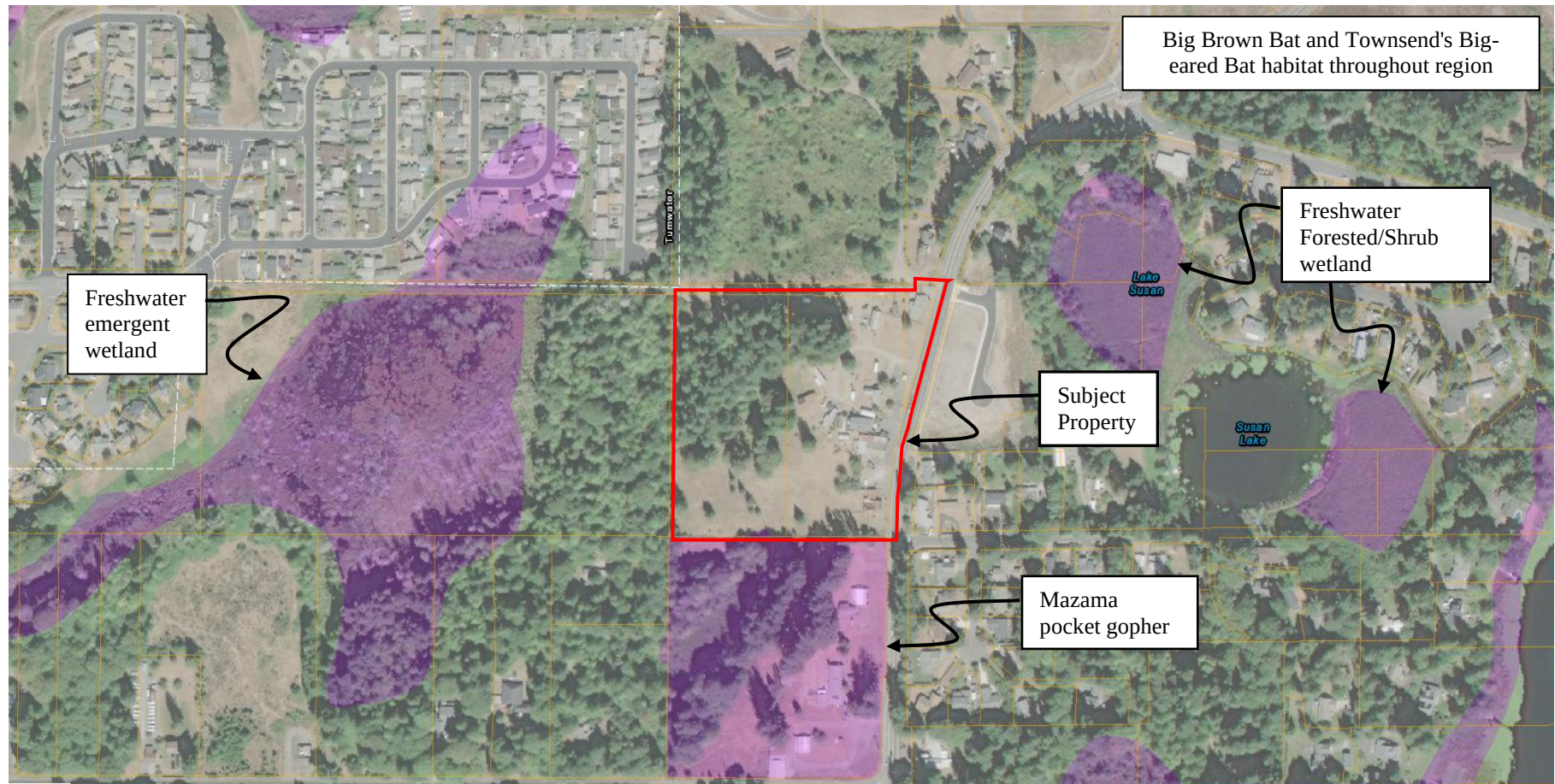


APPENDIX D

Washington Department of Fish and Wildlife (WDFW)

Priority Habitats and Species (PHS)

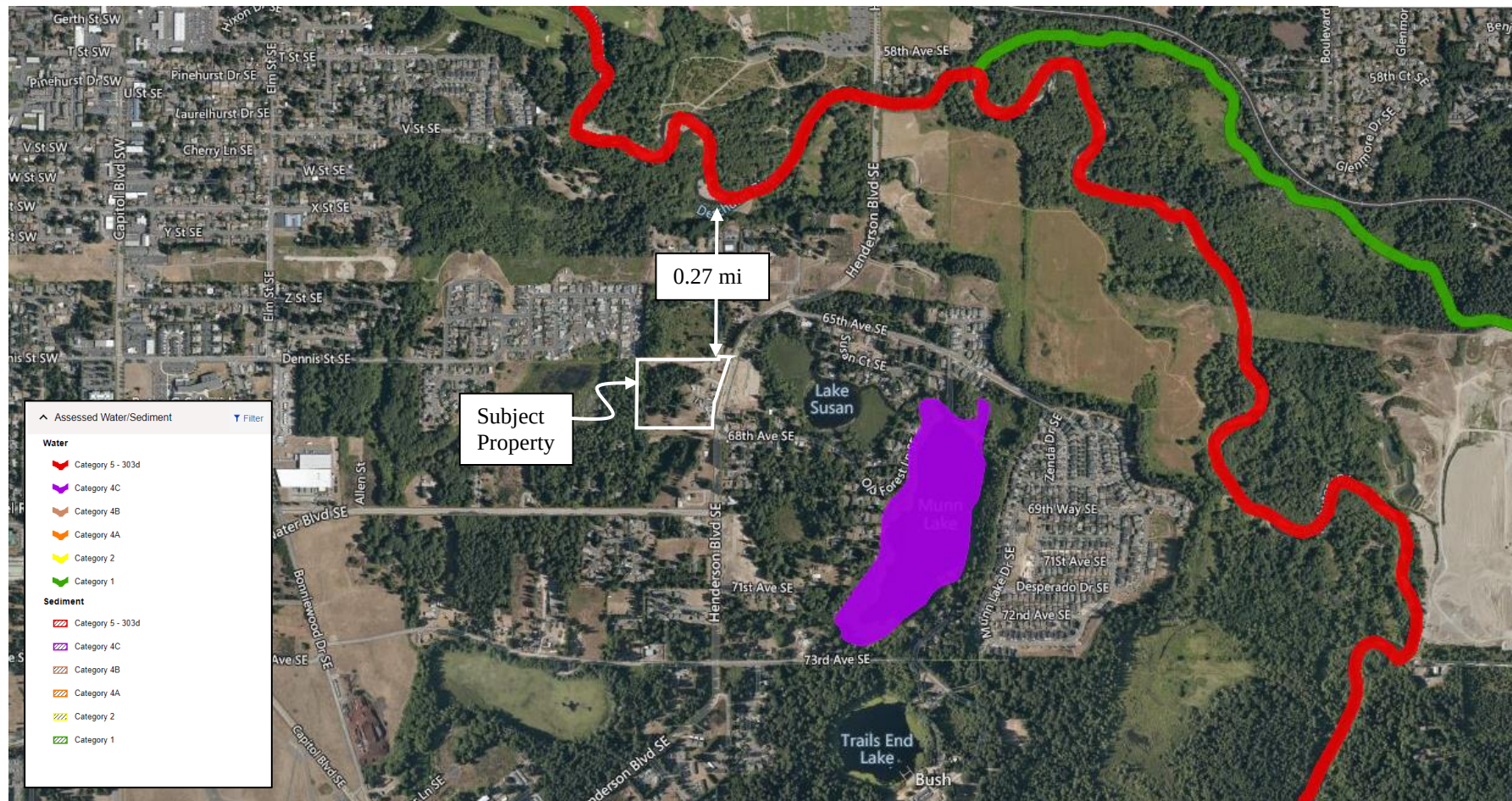
Database



APPENDIX E

Clean Water Act

303(d) List



APPENDIX F

Total Maximum Daily Load

(TMDL)

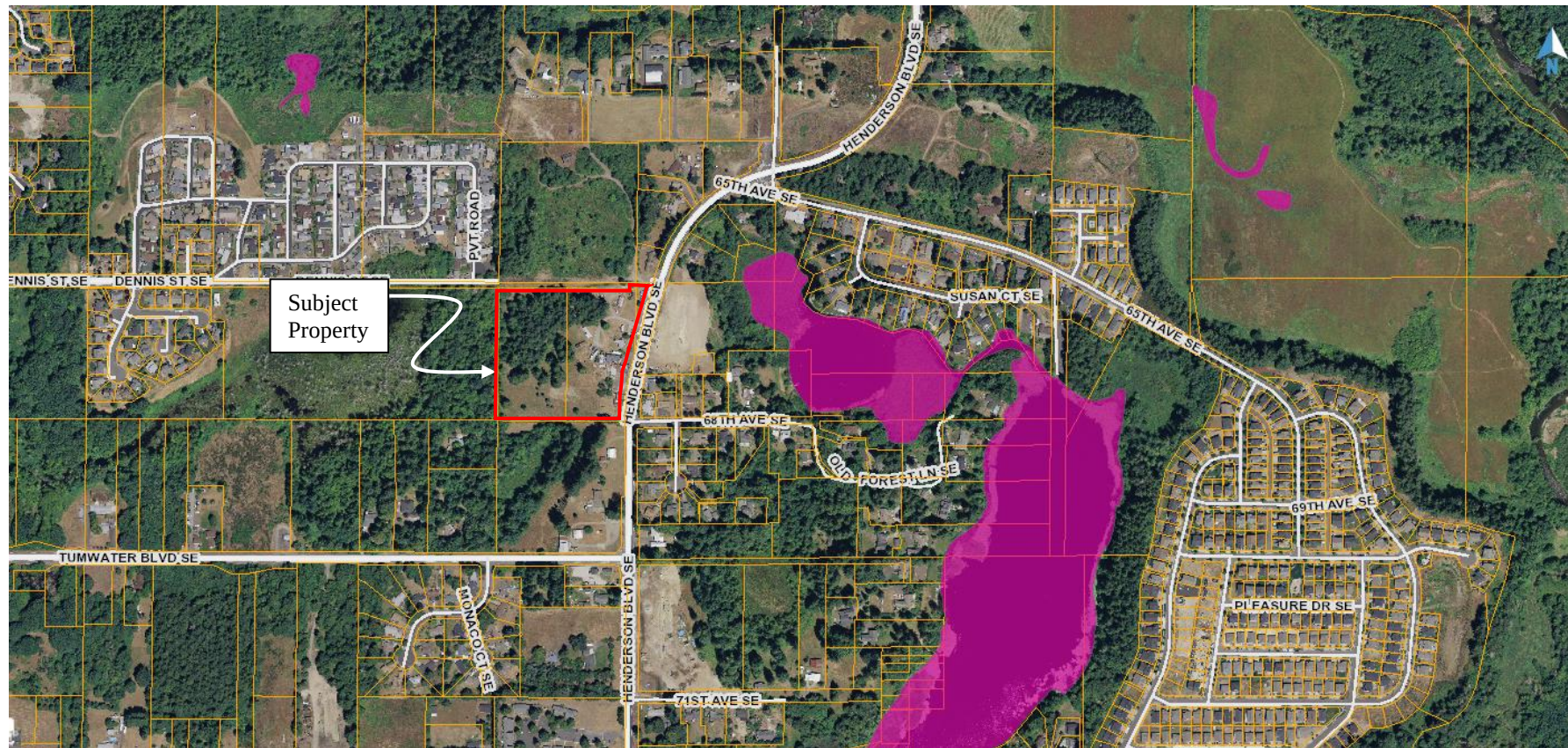


- Bacteria
- Temperature
- Dissolved Oxygen, pH

APPENDIX G

Thurston County Geodata

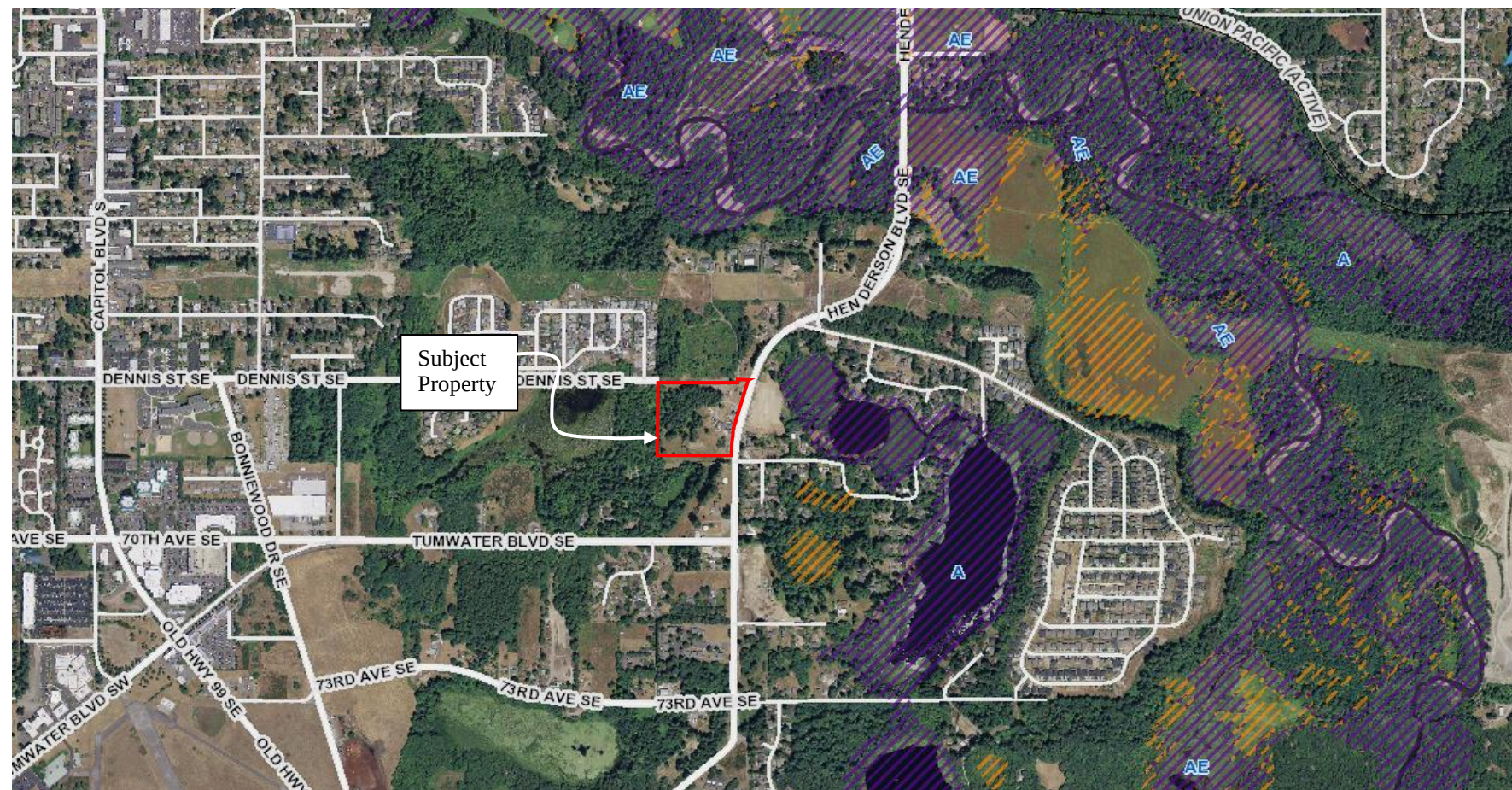
High Groundwater Hazard Area



- High Groundwater Hazard Areas
- High Groundwater Hazard Area

APPENDIX H

FEMA Floodplain



APPENDIX I

Wetland Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 7-Jul-21Rated by Curtis Wambach Trained by Ecology? ☒ Yes ☐ No Date of training ContinualHGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map Google Earth**OVERALL WETLAND CATEGORY** III (based on functions ☐ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	M	M	
Value	H	L	M	Total
Score Based on Ratings	7	5	5	17

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

9 = H, H, H

8 = H, H, M

7 = H, H, L

7 = H, M, M

6 = H, M, L

6 = M, M, M

5 = H, L, L

5 = M, M, L

4 = M, L, L

3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map 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:

Wetland name or number

DEPRESSIONAL AND FLATS WETLANDS**Water Quality Functions** - Indicators that the site functions to improve water quality**D 1.0. Does the site have the potential to improve water quality?****D 1.1. Characteristics of surface water outflows from the wetland:**

- Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).

Yes = 4 No = 0

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- Wetland has persistent, ungrazed, plants > 95% of area points = 5
- Wetland has persistent, ungrazed, plants > 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:*This is the area that is ponded for at least 2 months. See description in manual.*

- Area seasonally ponded is > 1/2 total area of wetland points = 4
- Area seasonally ponded is > 1/4 total area of wetland points = 2
- Area seasonally ponded is < 1/4 total area of wetland points = 0

Total for D 1

Add the points in the boxes above

10**Rating of Site Potential** If score is: ☐ 12 - 16 = H ☒ 6 - 11 = M ☐ 0 - 5 = L Record the rating on the first page**D 2.0. Does the landscape have the potential to support the water quality function of the site?****D 2.1. Does the wetland unit receive stormwater discharges?** Yes = 1 No = 0 1**D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?** Yes = 1 No = 0 0**D 2.3. Are there septic systems within 250 ft of the wetland?** Yes = 1 No = 0 1**D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?** Yes = 1 No = 0 0

Total for D 2

Add the points in the boxes above

2**Rating of Landscape Potential** If score is: ☐ 3 or 4 = H ☒ 1 or 2 = M ☐ 0 = L Record the rating on the first page**D 3.0. Is the water quality improvement provided by the site valuable to society?****D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?** Yes = 1 No = 0 1**D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?** Yes = 1 No = 0 1**D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?** Yes = 2 No = 0 2

Total for D 3

Add the points in the boxes above

4**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 | 4 |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|--|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| ☒ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| ☐ The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

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

- | | | |
|---|------------|---|
| ☐ The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| The area of the basin is 10 to 100 times the area of the unit | points = 3 | |
| The area of the basin is more than 100 times the area of the unit | points = 0 | |
| ☐ Entire wetland is in the Flats class | points = 5 | |

Total for D 4 Add the points in the boxes above **10**

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

D 5.0. Does the landscape have the potential to support hydrologic function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 **1**

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 **0**

Total for D 5 Add the points in the boxes above **2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. 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): | | 0 |
| ☐ • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| ☐ • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| ☐ Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| ☒ There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 **0**

Wetland name or number

Total for D 6

Add the points in the boxes above

0

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.*

- | | | |
|---|----------------------------------|---|
| ☐ Aquatic bed | 4 structures or more: points = 4 | 0 |
| ☐ Emergent | 3 structures: points = 2 | |
| ☒ Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| ☐ Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

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

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

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 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*

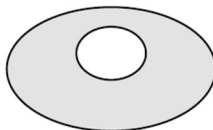
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

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



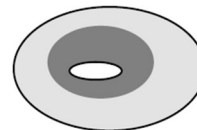
None = 0 points



Low = 1 point

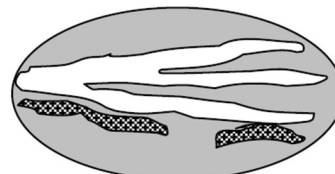
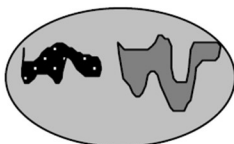


Moderate = 2 points



0

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>		3
☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) ☒ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) ☒ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
4		
Rating of Site Potential If Score is: ☐ 15 - 18 = H ☐ 7 - 14 = M ☒ 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 5.9 % undisturbed habitat + (16 % moderate & low intensity land uses / 2) = 13.9%		
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		1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 21 % undisturbed habitat + (48 % moderate & low intensity land uses / 2) = 45%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		0
Total for H 2		
Add the points in the boxes above		2
Rating of Landscape Potential If Score is: ☐ 4 - 6 = H ☒ 1 - 3 = M ☐ < 1 = L Record the rating on the first page		

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

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Rating of Value If Score is: ☐ **2 = H** ☒ **1 = M** ☐ **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

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

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in Table 4 provide more than 30% of the cover under the canopy?

☐ Yes = **Is a Category I bog**

☐ No = **Is not a bog**

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