ADDENDUM TO THE SR 167 COMPLETION PROJECT – STAGE 2 WETLAND AND STREAM ASSESSMENT REPORT

SR 167 Completion Project – Stage 2

SR 167/I-5 to SR 161 – New Expressway Project

Pierce County, Washington

Work Order: XL-5105
WIN: C16706T
PIN: 316706

August 14, 2023

Prepared By:

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Olympic Region

WSDOT

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1. Introduction

This addendum modifies and supplements the State Route (SR) 167 Stage 2 Wetland and Stream Assessment Report (Stage 2 WSAR) prepared for the Washington Department of Transportation (WSDOT) in support of the SR 167 Completion Project Phase 1 Improvements. This addendum provides corrections to the Stage 2 WSAR (WSDOT 2022a), revises previously estimated wetland boundaries with delineated boundaries, and identifies additional wetlands in the Stage 2 WSAR Addendum study area (Addendum study area) (Figure 1). This report should be read in conjunction with the Stage 2 WSAR. The Addendum study area, which is in addition to the study area reported in the Stage 2 WSAR, is within the Hylebos Creek and Fennel Creek-Puyallup River drainage basins and includes areas in unincorporated Pierce County and the cities of Fife, Milton, and Sumner, Washington (Figure 1). Revised and additional wetlands in the Addendum study area are shown in Figures 2-A through 2-C.

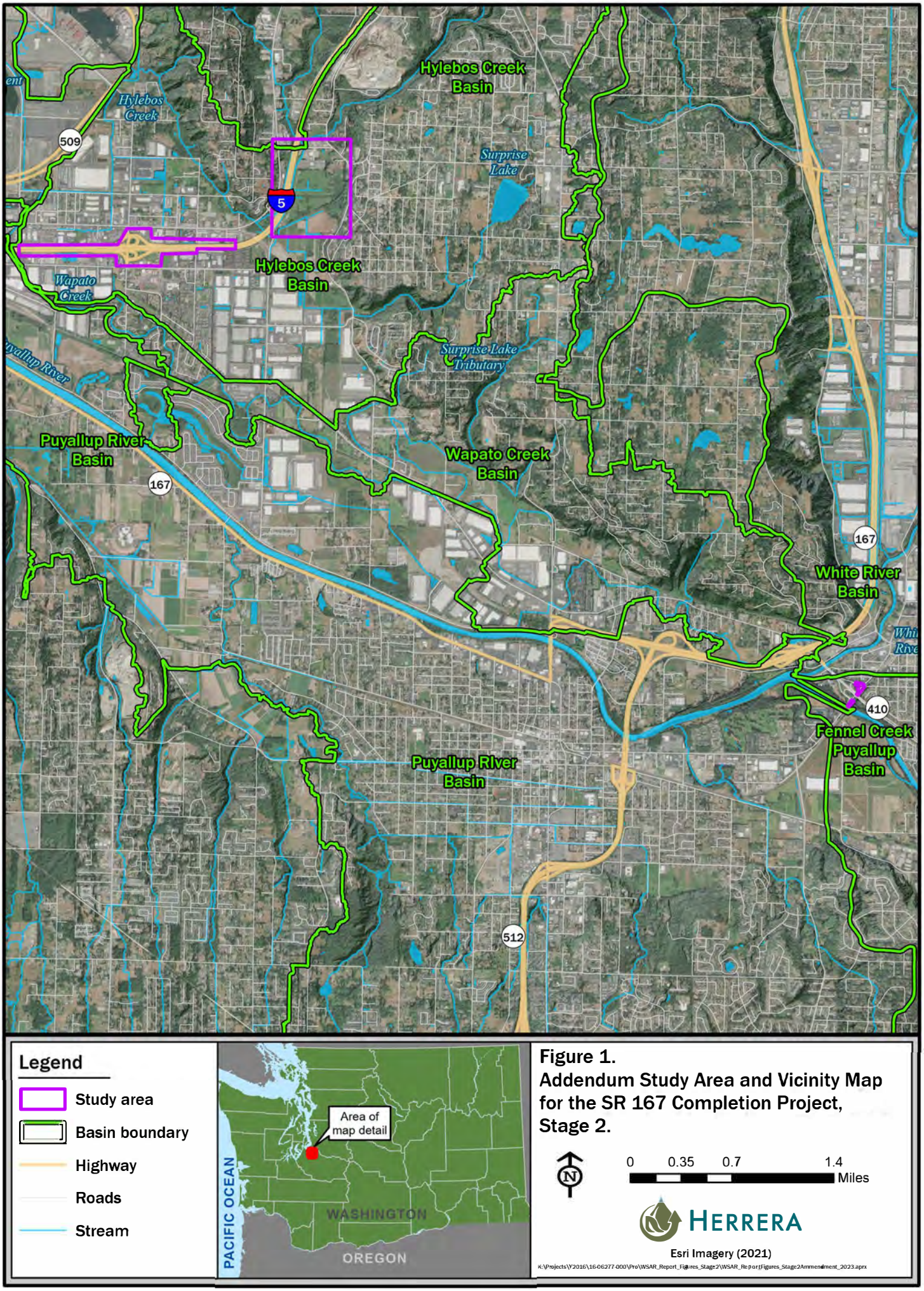
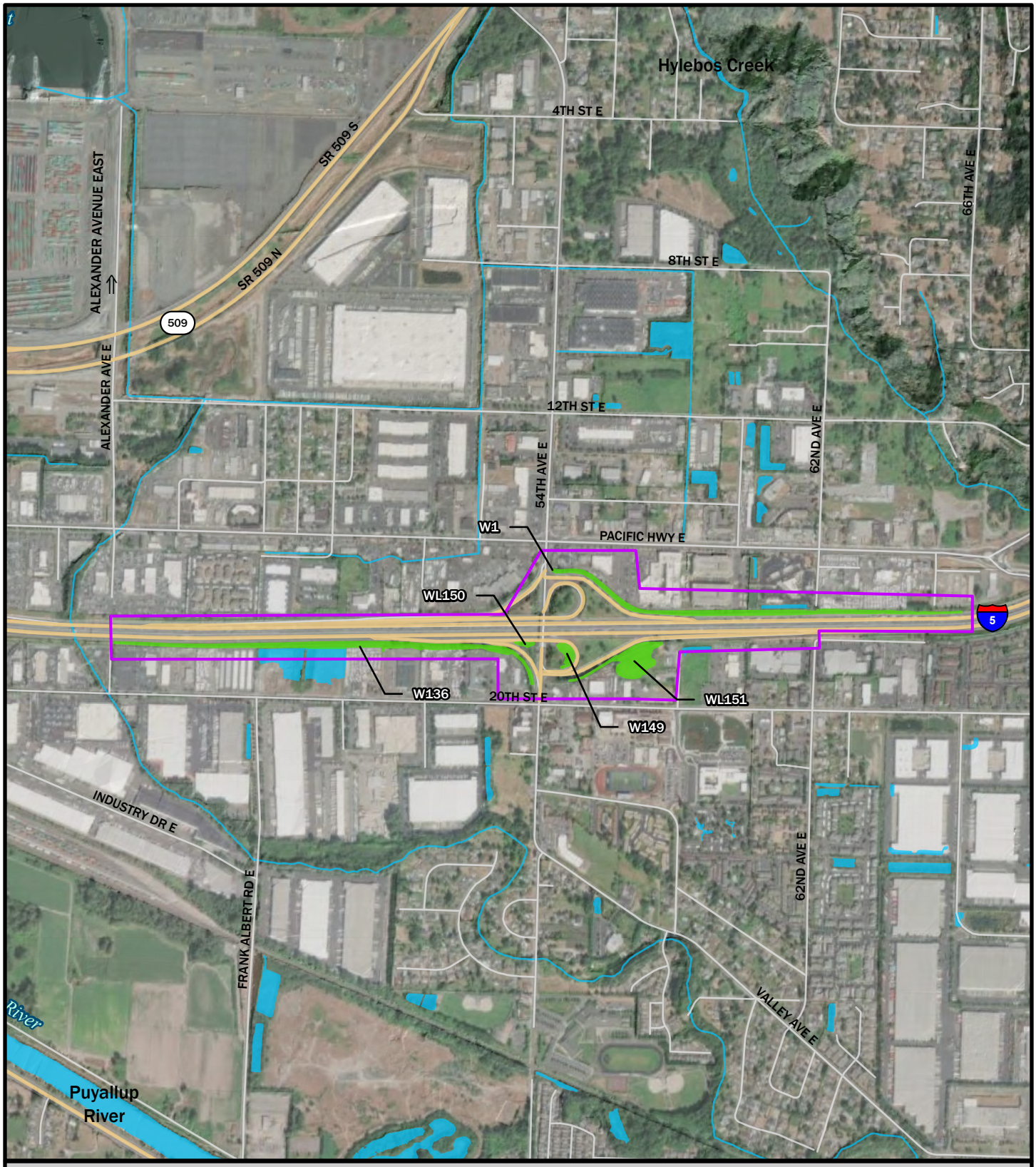


Figure 1.
Addendum Study Area and Vicinity Map for the SR 167 Completion Project, Stage 2.



Legend

- Study area
- Stream area
- Wetland area
- Stream
- Flow Direction

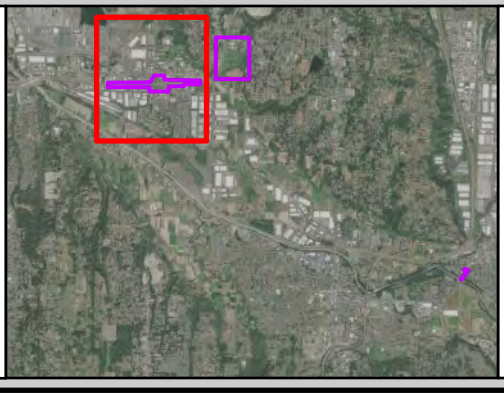


Figure 2-A.
Revised and Additional Wetland Locations in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 487.5 975 1,950 Feet

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Esri Imagery (2022)

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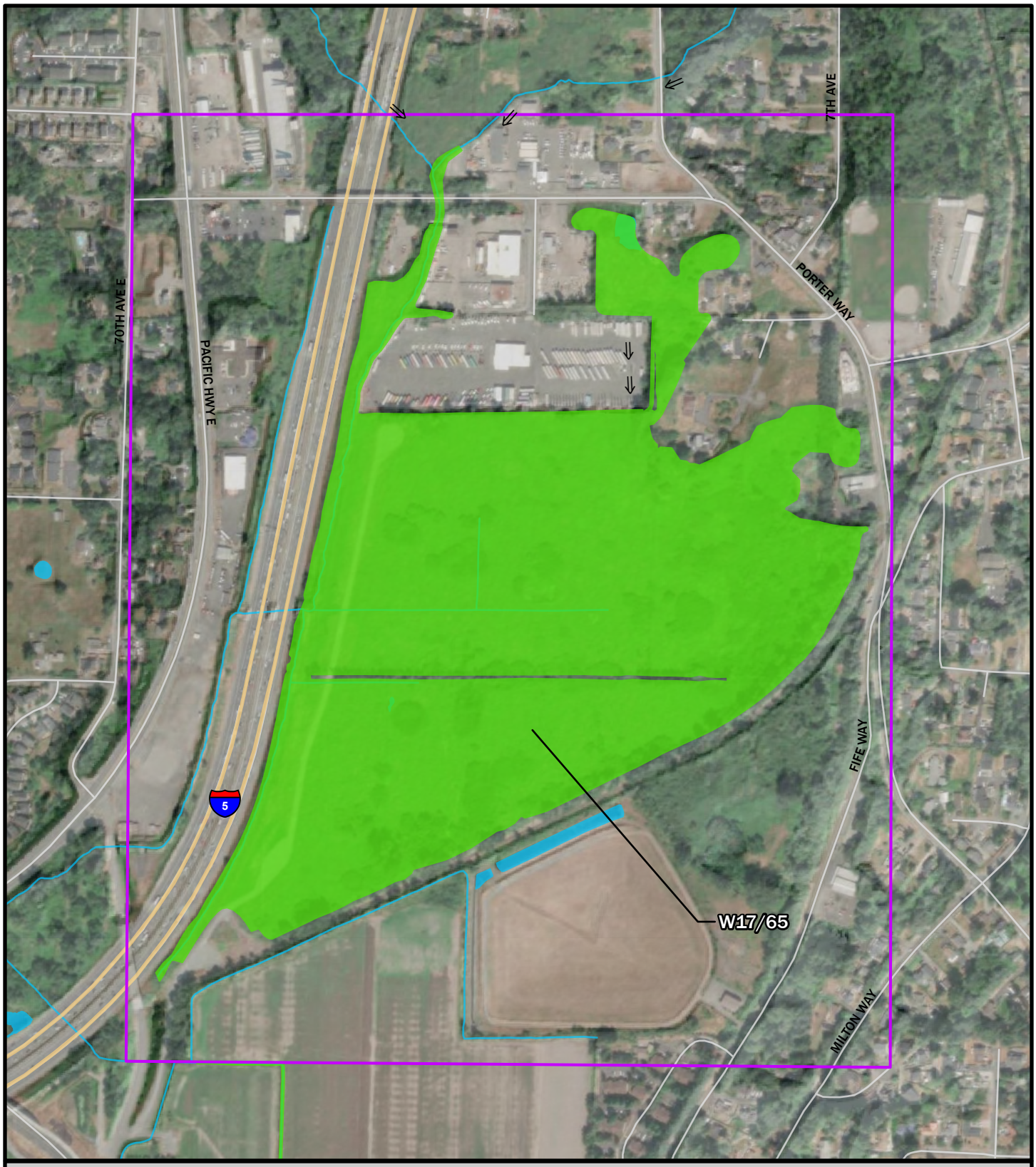

Legend

- Study area
- Stream area
- Wetland area
- Stream
- Flow Direction

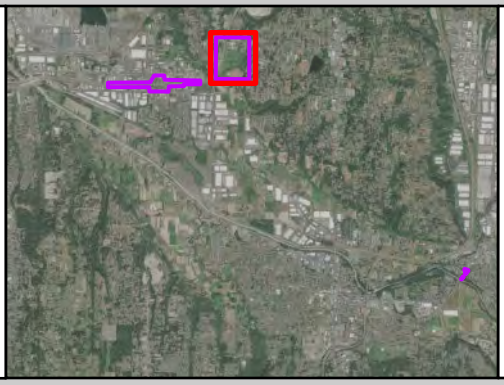

Figure 2-B.
Revised and Additional Wetland Locations in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 200 400 800 Feet

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Esri Imagery (2022)

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Legend

- Study area
- Stream area
- Stream
- Flow Direction

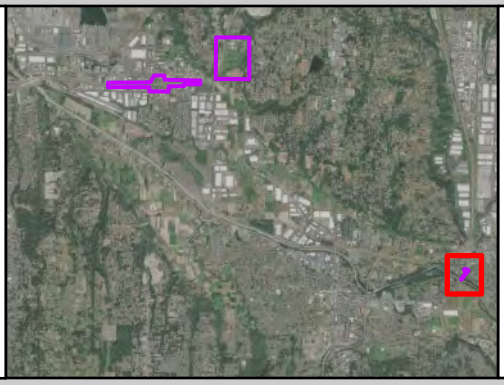

Figure 2-C.
Revised and Additional Wetland Locations in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 150 300 600 Feet

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2. Climate and Precipitation

Section 4.2.1 in the Stage 2 WSAR incorrectly states historical average precipitation measurements were based on data for the period of record 1981 to 2021. Actual historical average precipitation measurements were based on data for the period of record 1981 to 2010. The period of record error in the Stage 2 WSAR does not affect the results of the precipitation analysis described in that report.

Additional precipitation evaluations were conducted for the 3-month periods prior to field investigations on May 19 and June 12, 2023, to determine if precipitation conditions were normal, drier than normal, or wetter than normal (Table 1). These analyses indicate that drier than normal precipitation conditions were present during the May and June field work.

Precipitation data for the 10 days preceding field work was also obtained to determine if light, moderate, or heavy precipitation occurred prior to field work. Based on precipitation data obtained from the Natural Resource Conservation Service (NRCS) Tacoma No. 1 WETS station, it did not rain in the 10 days preceding field work in May, and there was 0.20 inch of rain in the 10 days preceding field work in June (NRCS 2023; NOAA 2023) (Tables 2 and 3).

Observations of new seedling growth within the Addendum study area indicated that the field work was being conducted within the growing season. Daily high temperatures in the 10 days preceding field work averaged 77.5 degrees and 73.6 degrees Fahrenheit in May and June, respectively (NOAA 2023).

Table 1. Monthly Precipitation Data for Tacoma, Washington.

Month	Long-Term Rainfall Records		Rainfall	Condition Dry, Wet, Normal[a]	Results of Precedent Precipitation Analysis: Drier than Normal, Normal, Wetter than Normal
	3 Yrs. in 10 Less Than	3 Yrs. in 10 More Than			
June 2023	1.00	1.89	0.32	Dry	Drier than normal
May 2023	1.15	2.50	0.62	Dry	Drier than normal
April 2023	1.98	3.54	3.30	Normal	Drier than normal
March 2023	3.18	4.78	2.41	Dry	Drier than normal
February 2023	2.29	4.40	1.79	Dry	Normal

[a] Conditions are considered normal if they fall within the low and high range around the average.

Table 2. Precipitation 10 Days Prior to May Field Work, TACOMA NO. 1, WA: May 9–May 18, 2023.

Date	Precipitation (inches)
2023-05-09	0.00
2023-05-10	0.00
2023-05-11	0.00
2023-05-12	0.00
2023-05-13	0.00
2023-05-14	0.00
2023-05-15	0.00
2023-05-16	0.00
2023-05-17	0.00
2023-05-18	0.00
Total	**0.00**

Table 3. Precipitation 10 Days Prior to June Field Work, TACOMA NO. 1, WA: June 2–June 11, 2023.

Date	Precipitation (inches)
2023-06-02	0.00
2023-06-03	0.00
2023-06-04	0.00
2023-06-05	0.00
2023-06-06	0.00
2023-06-07	0.00
2023-06-08	0.00
2023-06-09	0.14
2023-06-10	0.06
2023-06-11	0.00
Total	**0.20**

3. Wetlands

3.1. Revised Wetland Boundaries

Based on additional field work and review of delineation data, the boundaries of three wetlands described in the Stage 2 WSAR, Wetland 01 (W01), Wetland 136 (W136), and Wetland 17/65 (W17/65), have been revised (Figures 3-A, 3-B, and 3-F). The Stage 2 WSAR incorrectly used an estimated boundary instead of the delineated boundary at the western end of W01, and this has now been corrected to show the delineated boundary. Portions of the estimated boundaries of W136 and W17/65 have been updated to reflect delineations conducted on May 19 and June 12, 2023, respectively. The revised boundaries resulted in the following changes in wetland areas: W01 decreased by 0.02 acre, W136 decreased by 0.46 acre, and W17/65 increased by 0.07 acre. Table 4 includes the revised wetland areas.

Changes to the wetland boundaries do not affect the wetlands' classifications, ratings, or functions, nor do they have a substantial effect on buffer widths due to the presence of impervious surfaces that constrain buffers. The Stage 2 Mitigation Plan (WSDOT 2022b) is currently being revised to include an impact assessment to evaluate potential effects to the wetlands based on the revised boundaries and will be included with permit application submittals.

3.2. Additional Wetlands

Three additional wetlands, Wetland 149 (W149), Wetland 150 (W150), and Wetland 151 (W151), were identified within the Addendum study area (Table 4) (Figures 3-C, 3-D, and 3-E). The wetlands, delineated on May 19, 2023, are within the city of Fife and have a total area of 2.51 acres. They are rated as Category IV wetlands with palustrine emergent (PEM) vegetation and depressional hydrogeomorphic (HGM) classes. Portions of W151 boundaries were estimated by desktop analysis.

The areas surrounding three sign structures near the intersection of SR 410 and Traffic Avenue in Sumner were investigated for the presence of wetlands on June 12, 2023 (Figure 2-C). No wetlands were identified in these areas.

3.3. Summary of Revised and Additional Wetlands

Revised and additional wetlands within the Addendum study area are summarized in Table 4 and shown in Figures 3-A through 3-F. These figures also show the locations of wetland and upland soil pits. Detailed descriptions of each wetland are included in Tables 5 through 10.

Addendum Appendix A includes wetland delineation data sheets. See Section 3.4 of this addendum for additional information on wetland functions and Addendum Appendices B and C for wetland rating forms and detailed functional assessment summaries.

Table 4. Revised and Additional Wetlands in the Addendum Study Area.

Wetland[a]	Revised/ Additional	Wetland Classification					Wetland Size (acre)	Buffer Width (feet)
		Cowardin[b]	HGM[c]	Ecology[d]	Local Jurisdiction	Previous Wetland Size (acre)		
1	Revised	PEM	Depressional	III	III	2.30	2.28	60[e]
17/65	Revised	PEM, PSS, PFO	Depressional	I	I	71.13	71.20	150[f]/165[g]
136	Revised	PEM	Depressional	III	III	3.48	3.02[h]	60[e]
149	Additional	PEM	Depressional	IV	IV	NA	0.40	40[e]
150	Additional	PEM	Depressional	IV	IV	NA	0.09	40[e]
151	Additional	PEM	Depressional	IV	IV	NA	2.02[h]	40[e]
					Total	**76.91**	**79.01**	**NA**

[a] Wetland identifier.

[b] Federal Geographic Data Committee or NWI Class based on vegetation:
PEM = palustrine emergent, PSS = palustrine scrub-shrub PFO = palustrine forested.

[c] Hydrogeomorphic classification of wetland based on source and direction of hydrologic conditions and local geomorphology.

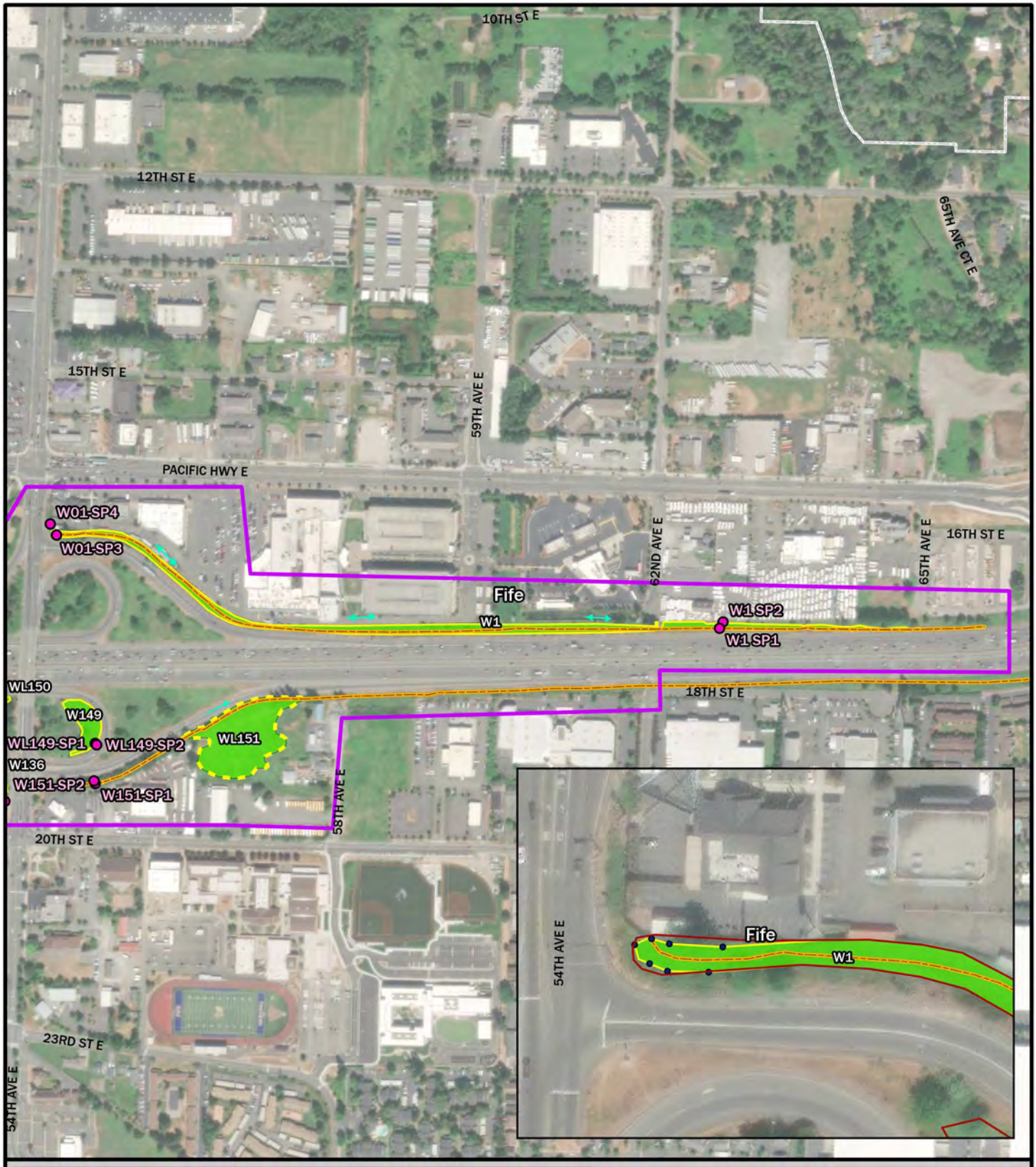
[d] Ecology rating, which is consistent with the local jurisdiction requirements of the City of Fife.

[e] Wetland buffer width according to the City of Fife Wetlands Ordinance (Fife Municipal Code 17.17.230).

[f] Wetland buffer width according to the City of Milton Wetlands Ordinance (Milton Municipal Code 18.16.320.C).

[g] Wetland buffer width according to Pierce County Wetland Ordinance (Pierce County Code 18E.20.020).

[h] Wetland extends outside of the study area.



Legend

- Soil pit
- Flow Direction
- Study area
- Estimated ditch centerline
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland area
- City limit
- Previous Wetland Boundary
- Survey Points

Figure 3-A.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 270 540 1,080 Feet

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Esri, Aerial (2022)

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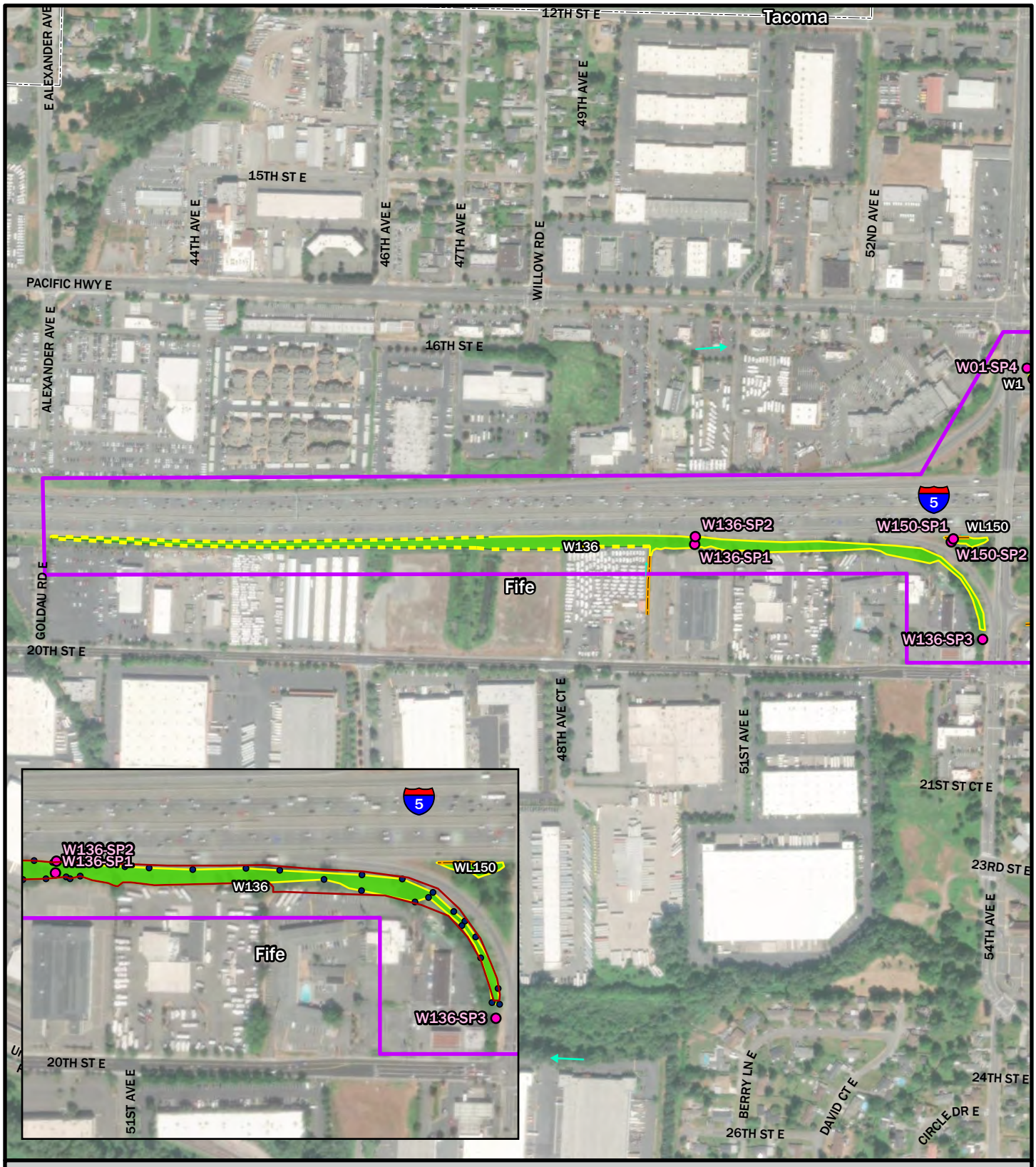

Legend

- Soil pit
- Flow Direction
- Study area
- Estimated ditch centerline
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland area
- City limit
- Previous Wetland Boundary
- Survey Points

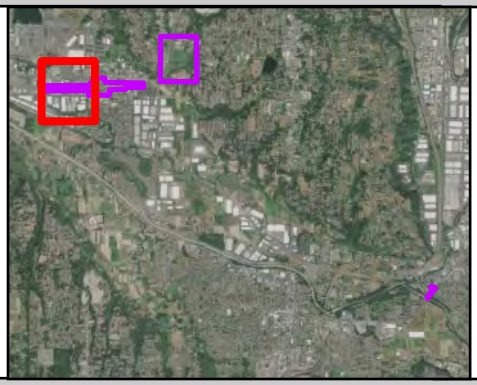

Figure 3-B.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 280 560 1,120 Feet

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Esri, Aerial (2022)

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Legend

- Soil pit
- Flow Direction
- Study area
- Estimated ditch centerline
- Delineated wetland boundary
- Wetland area
- City limit
- Previous Wetland Boundary
- Survey Points

Figure 3-C.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 20 40 80 Feet

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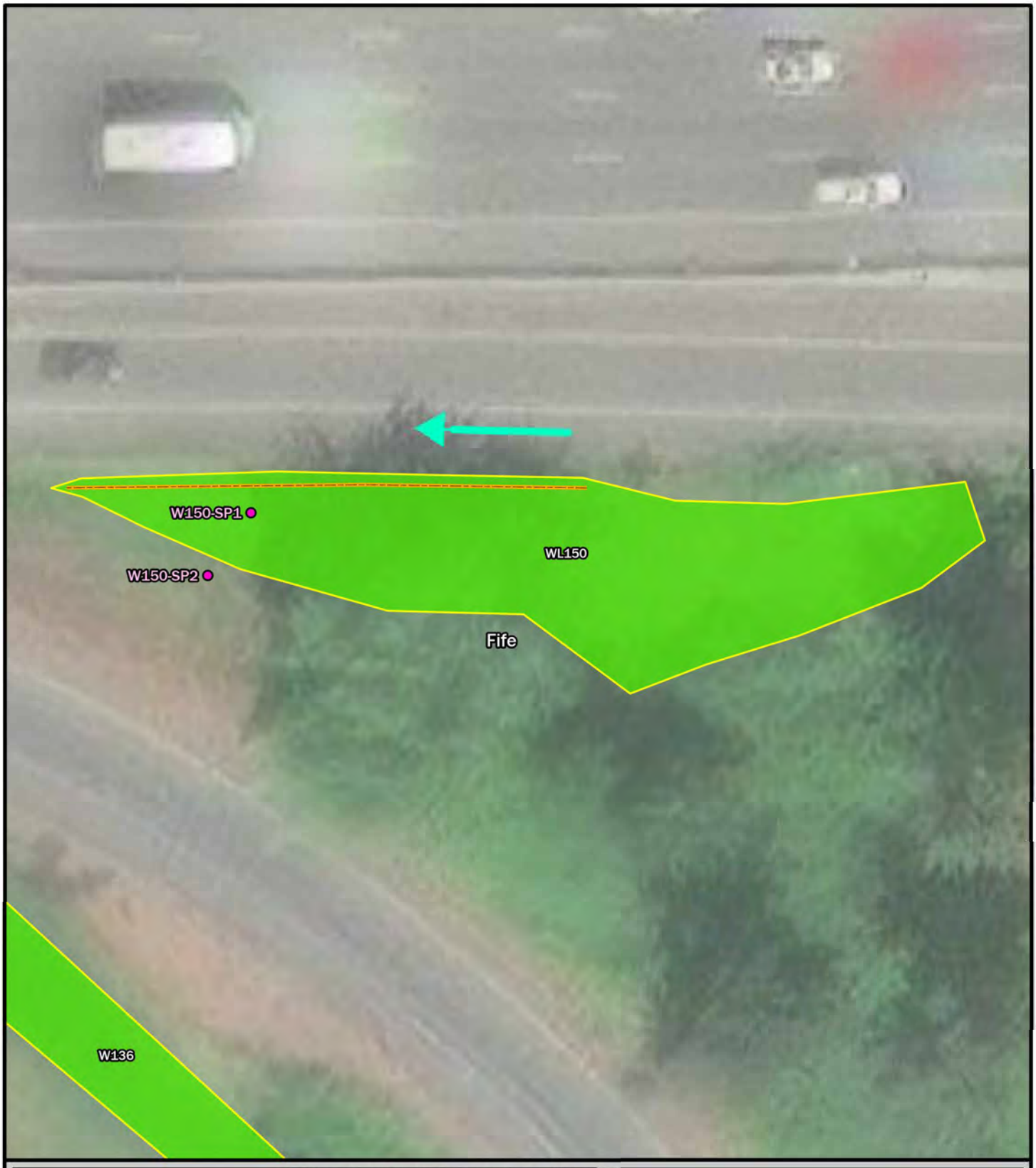
Esri, Aerial (2022)



Legend

- Soil pit
- Flow Direction
- Study area
- Estimated ditch centerline
- Delineated wetland boundary
- Wetland area
- City limit
- Previous Wetland Boundary
- Survey Points

Figure 3-D.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 12.5 25 50 Feet

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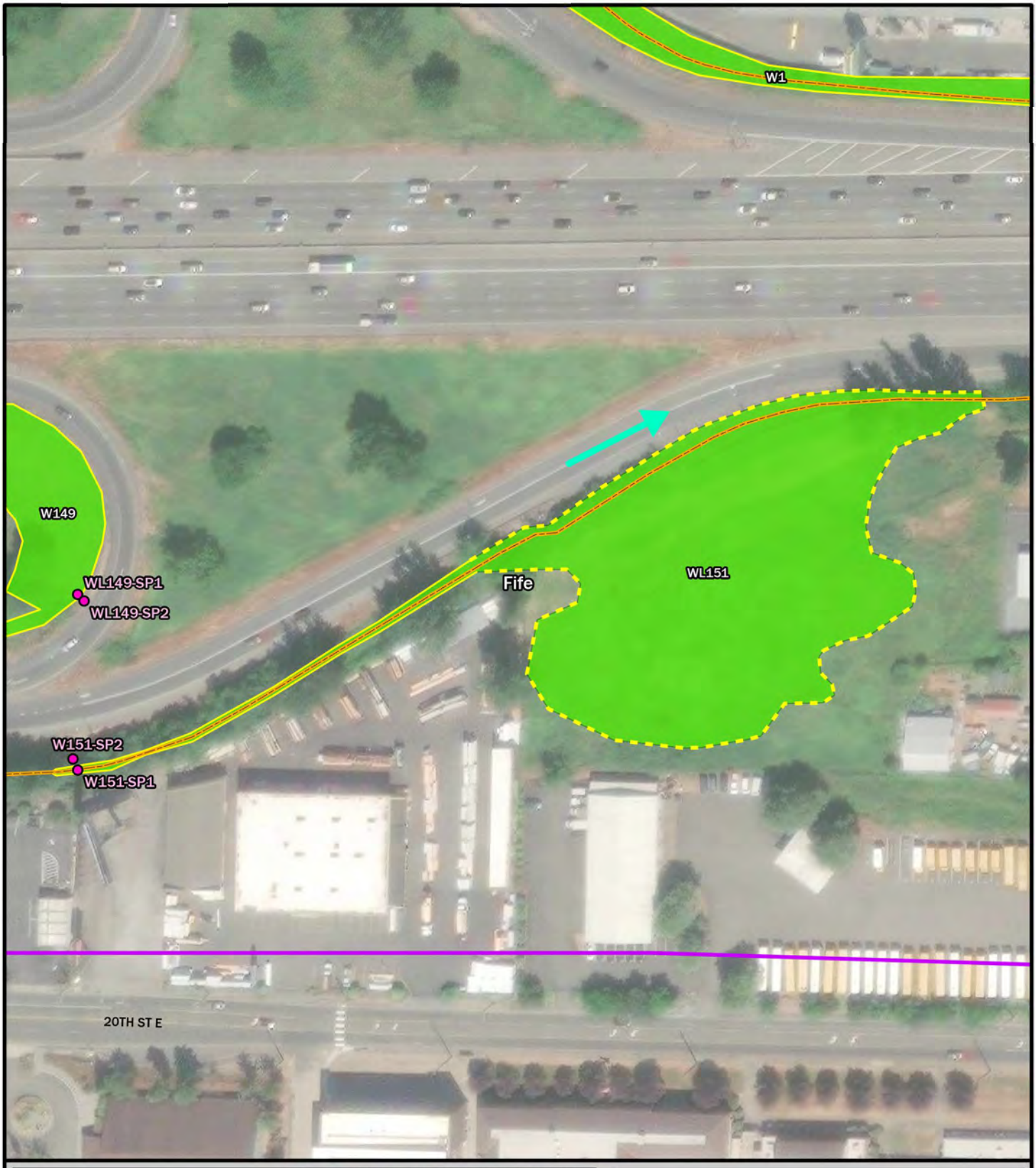

Legend

- Soil pit
- Flow Direction
- Study area
- Estimated ditch centerline
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland area
- City limit
- Previous Wetland Boundary
- Survey Points

Figure 3-E.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

N

0 62.5 125 250 Feet

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Esri, Aerial (2022)

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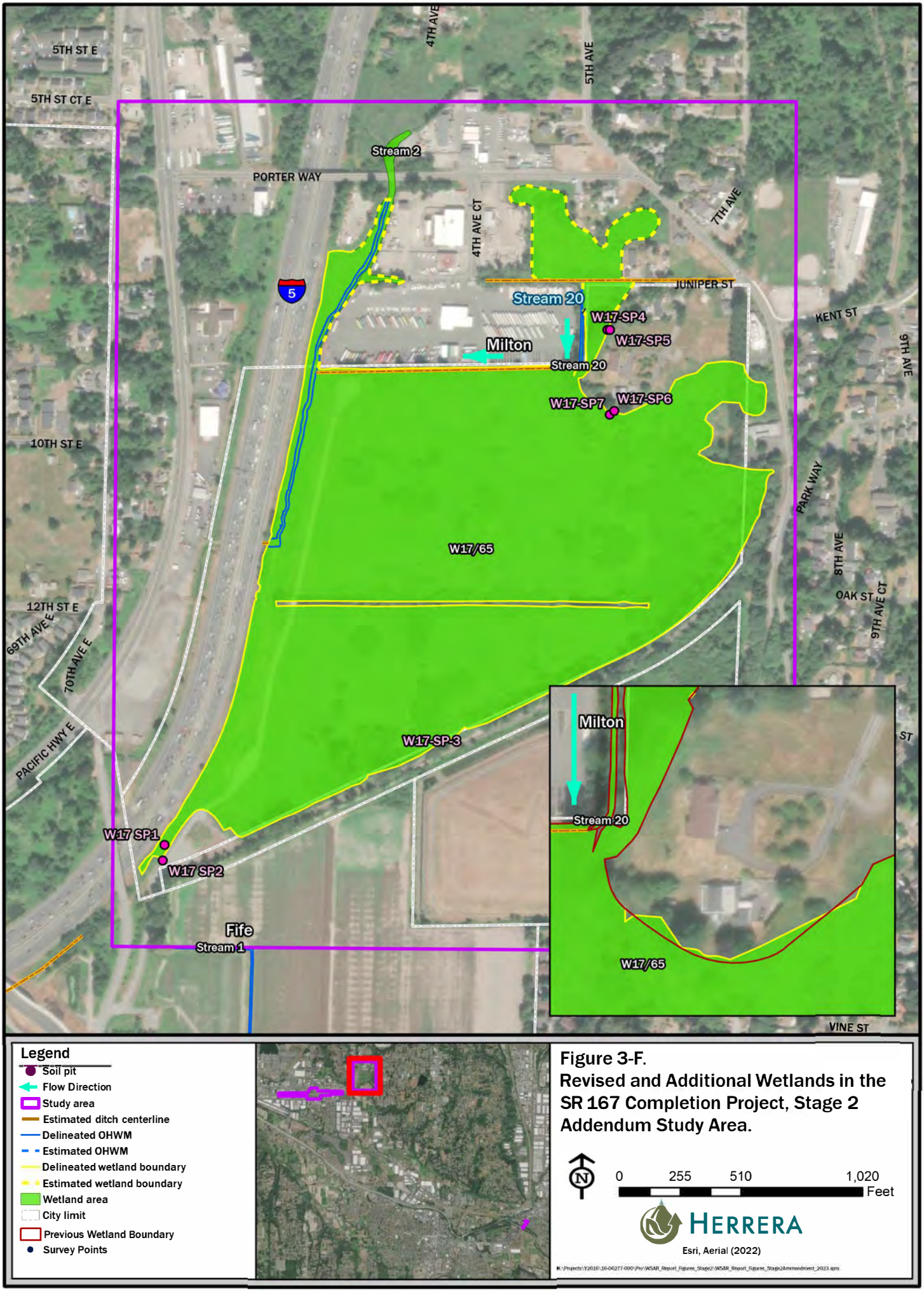

Figure 3-F.
Revised and Additional Wetlands in the SR 167 Completion Project, Stage 2 Addendum Study Area.

Table 5. Wetland 1 Summary.

WETLAND 1 – INFORMATION SUMMARY	
Location	North side of I-5, from approximately 54th Avenue East, east to 65th Avenue East
Date(s) Evaluated	7/13/2018, 3/23/2022[a]

Local Jurisdiction	Fife, WA
Ecology Rating (2014)	Category III
Local Rating	Category III
City of Fife Buffer Width	60 feet with mitigation measures
Wetland Size	2.28 acres[a]
Cowardin Class	PEM
HGM Class	Depressional
Wetland Data Sheet(s)	Appendix A: W1-SP1, W1-SP3
Upland Data Sheet(s)	Appendix A: W1-SP2, W1-SP4

Wetland Delineation	
Dominant Vegetation	Herbaceous: reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), velvet grass (*Holcus lanatus*), and *Agrostis* spp.
Soils	Wetland 1 contained hydric soils. Soil matrices of 10YR 2/2, 10YR 3/1, 10YR 3/2, 10YR 4/2, and Gley 3/N were observed within the upper 16 inches of the soil profile. This included layers with redoximorphic concentrations that met soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6).
Hydrology	Groundwater and surface flows are the primary sources of hydrology for this wetland. Primary indicators high water table (A2) and saturation (A3) were met.
Rationale for Delineation	All three wetland parameters were met.
Wetland Rating and Functions	
Rationale for Local Rating	The City of Fife Municipal Code (FMC) classifies wetlands based on the Washington State Wetland Rating System (FMC 17.17.020). Wetland 1 rates as a Category III.
Functions	The wetland has moderate hydrologic functions, high water quality functions, and low habitat functions.
Wetland Buffers	
Buffer Condition	The wetland buffer condition is poor, consisting of a narrow, mowed strip of grass with I-5 on one side and commercial development on the other side. 54th Avenue East borders the wetland to the west. The buffer is also disturbed by the presence of encampments of people experiencing homelessness.

[a] Wetland size was corrected to reflect field work conducted March 23, 2022.

Table 6. Wetland 17/65 Summary.

Wetland 17/65 Information Summary		
Location	East of and adjacent to I-5, north of the Interurban Trail	
Date(s) Evaluated	8/13/2018, 4/29/2019, 6/5/2019, 3/16/2022, 6/12/2023[a]	
	**Local Jurisdiction**	Unincorporated Pierce County, WA; Milton, WA
	Ecology Rating (Hruby 2014)	Category I
	Pierce County and City of Milton Rating	Category I
	Pierce County and City of Milton Buffer Widths	150 feet/165 feet
	Wetland Size	71.20 acres[a]
	Cowardin Classification	PEM, PSS, PFO
	HGM Classification	Depressional
Wetland Data Sheet(s)	Appendix A: W17-SP1, W17-SP3, W17-SP4, W17-SP7, W65-SP1, W65-SP3	
Upland Data Sheet(s)	Appendix A: W17-SP2, W17-SP5, W17-SP6, W65-SP2	
Wetland Delineation		
Dominant Vegetation	Wetland 17/65 (W17/65) contains PEM, PSS, and PFO communities. PEM vegetation is dominated by reed canarygrass. The PSS community is dominated by Pacific willow (*Salix lasiandra*) and Douglas spirea (*Spiraea douglasii*). The PFO community is dominated by Pacific willow and black cottonwood (*Populus balsamifera* ssp. *trichocarpa*).	
Soils	Soils in the southwestern PEM portion of the wetland (W17-SP1) meet indicators for depleted matrix (F3) and redox dark surface (F6), while soils in the northeastern PEM portion (W65-SP1) meet the indicator for histosol (A1). Soils in the PSS portion (W17-SP3) meet the indicator for hydrogen sulfide (A4). Soils in the PFO portion (W65-SP3) meet the indicator for depleted matrix (F3). Nearby uplands are described in data sheets W17-SP2 and W65-SP2. Soils in W17/65 are mapped by the NRCS (2019b) as Sultan silt loam, Semiahmoo muck, and Tisch silt, all of which are hydric.	
Hydrology	Soils in the PSS, PFO, and northeastern PEM areas were saturated to the surface during the 2019 field visits. Soil was not saturated in the southwestern PEM portion in August of 2018, but oxidized rhizospheres along living roots (C3) were observed. Groundwater, precipitation, and overbank flooding contribute to the hydrology of this wetland. Hylebos Creek runs through this wetland and is the outlet of the wetland. Ditches flow out of the wetland into Hylebos Creek. Stream 20 flows out of and back into the wetland in the northeast corner of the wetland.	
Rationale for Delineation	All three wetland parameters were met.	
Wetland Rating and Functions		
Rationale for Local Rating	Pierce County and the City of Milton use the 2014 Ecology rating system (Hruby 2014) to classify wetlands per Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D, and MMC 18.16.310.B, respectively.	
Functions	Water quality and hydrologic functions are of high quality. The wetland provides moderate habitat functions.	
Wetland Buffers		
Buffer Condition	The condition of the buffer surrounding W17/65 is poor. The buffer is highly disturbed, consisting of interstate highway, paved trail, residential and industrial development, the Interurban Trail, and agricultural fields.	

[a] Wetland size was updated based on field work conducted June 12, 2023.

Table 7. Wetland 136 Summary.

WETLAND 136 – INFORMATION SUMMARY			
Location:	South of I-5, west of 54th Avenue East		
Date(s) Evaluated	3/23/22, 5/19/2023[a]		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Fife Buffer Width	60 feet with mitigation measures
		Wetland Size	3.02 acres[a]
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix A: W136-SP1
		Upland Data Sheet(s)	Appendix A: W136-SP2, W136-SP3
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Wetland 136 contained hydric soils. Soil matrices of 10YR 4/1 and 2.5YR 4/1 were observed within the upper 16 inches of the soil profile. This included a layer with redoximorphic concentrations that met hydric soil indicators Depleted Matrix (F3) and hydrogen sulfide (A4).		
Hydrology	Groundwater and surface flows are the primary sources of hydrology for this wetland. Primary indicators high water table (A2), saturation (A3), and hydrogen sulfide odor (C1) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System (FMC 17.17.020). Wetland 136 rates as a Category III.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition and consists of I-5 to the north, 54th Avenue East to the east and commercial and industrial development to the south. Wapato Creek and additional commercial development is located to the west.		

[a] Wetland size was updated based on field work conducted May 19, 2023.

Table 8. Wetland 149 Summary.

Wetland 149 Information Summary			
Location	South of I-5, east of 54th Avenue East		
Date(s) Evaluated	5/19/23		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	40 feet with mitigation measures
		Wetland Size	0.40 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix A: W149-SP1
		Upland Data Sheet(s)	Appendix A: W149-SP2
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry (*Rubus armeniacus*) Herbaceous: reed canarygrass, catchweed bedstraw (*Galiam aparine*)		
Soils	Soil pit SP1 dug in Wetland 149 contained hydric soils. Indicators included thick dark surface (A12).		
Hydrology	Precipitation provides the primary hydrologic inputs to this wetland. Primary indicators high water table (A2) and saturation (A3) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System (FMC 17.17.020). Wetland 149 rates as a Category IV.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Function summaries are provided Table 11 and Appendix C.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition. Roads and industrial development surround the wetland. I-5 North and a freeway offramp are to the north, south, and east. 54th Avenue East borders the wetland's western boundary.		

Table 9. Wetland 150 Summary.

Wetland 150 Information Summary			
Location	South of I-5, west of 54th Avenue East		
Date(s) Evaluated	5/19/23		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	40 feet with mitigation measures
		Wetland Size	0.09 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix A: W150-SP1
		Upland Data Sheet(s)	Appendix A: W150-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil pit SP1 dug in Wetland 150 contained hydric soils. Indicators included hydrogen sulfide (A4). There was prominent redox from 0 to 12 inches.		
Hydrology	Precipitation provides the primary hydrologic inputs to this wetland. Primary indicators high water table (A2) and saturation (A3) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System and on habitat score (FMC 17.17.020). Wetland 150 rates as a Category IV.		
Functions	The wetland has moderate hydrologic functions, and low high water quality and low habitat functions. Function summaries are provided Table 11 and Appendix C.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition. Roads and industrial development surround the wetland. I-5 North and a freeway offramp are to the north, south, and west. 54th Avenue East borders the wetland's eastern boundary.		

Table 10. Wetland 151 Summary.

Wetland 151 Information Summary			
Location	South of I-5, east of 54th Avenue East to 62nd Avenue East		
Date(s) Evaluated	5/19/23		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	40 feet
		Wetland Size	2.02 acres
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix A: W151-SP1
		Upland Data Sheet(s)	Appendix A: W151-SP2
Wetland Delineation			
Dominant Vegetation	Tree: black cottonwood Shrub: Himalayan blackberry Herbaceous: reed canarygrass, creeping buttercup		
Soils	Soil pit SP1 dug in Wetland 151 contained hydric soils. Indicators included sandy gleyed matrix (S4) and loamy gleyed matrix (F2).		
Hydrology	The wetland is located in a ditch. Precipitation provides the primary hydrologic inputs to this wetland. Primary indicator saturation (A3) was met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System and on habitat score (FMC 17.17.020). Wetland 151 rates as a Category IV.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Function summaries are provided Table 11 and Appendix C.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition. Roads and industrial development surround the wetland. I-5 North is to the north and 54th Avenue East is to the west. Industrial development and disturbed grass fields are to the south and east.		

3.4. Functions of Additional Wetlands

In general, the additional wetlands analyzed for this addendum (W149, W150, and W151) provide moderate levels of water quality functions, moderate levels of hydrologic functions, and low levels of habitat functions (Table 11; Appendices B and C). Functions provided by the additional wetlands in the Addendum study area are summarized in Table 11 and are further described for each wetland below.

Table 11. Functions and Values of Wetlands in the Study Area.

Function/Value[a]	Wetland		
	W149	W150	W151
Sediment Removal	–	–	–
Nutrient and Toxicant Removal	+	+	+
Flood Flow Alteration	+	+	+
Erosion Control and Shoreline Stabilization	–	–	–
Production and Export of Organic Matter	x	x	x
General Habitat Suitability	–	–	–
Habitat for Aquatic Invertebrates	–	–	–
Habitat for Amphibians	–	–	–
Habitat for Wetland Associated Mammals	–	–	–
Habitat for Wetland–Associated Birds	–	–	–
General Fish Habitat	–	–	–
Native Plant Richness	–	–	–
Educational or Scientific Value	–	–	–
Uniqueness and Heritage	–	–	–

[a] "–" means that the function is not present; "x" means that the function is present is of lower quality; and "+" means the function is present and is one of the principal wetland functions.

W149, W150, and W151 are depressional wetlands in median areas (W149 and W150) or roadside ditches (W151) associated with I-5. They have moderate potential to improve water quality due to intermittent outflow, which increases retention time for stormwater and other pollutants that discharge to the wetlands from adjacent development. The wetlands are in a highly developed drainage basin with degraded water quality issues, which increases their value to society.

W149 and W151 provide moderate hydrologic functions, and W150 provides low hydrologic functions. All wetlands receive direct stormwater inputs from surrounding land surfaces and have the capacity to store water during flood events due to intermittent outflow.

W149, W150, and W151 have low potential to provide habitat functions due to the lack of vegetation structure, habitat features, and connectivity to other functional habitats. The wetlands are surrounded by high-intensity development and land uses that further decrease their potential to provide habitat in the area.

4. References

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WSDOT. 2022a. Wetland and Stream Assessment Report. SR 167 Completion Project, Stage 2: SR 167/I-5 to SR 161 – New Expressway Project. Washington State Department of Transportation SR 167 Completion Project, Puget Sound Gateway Program. September.

WSDOT. 2022b. Stage 2 Mitigation Plan. SR 167 Completion Project, Stage 2: SR 167/I-5 to SR 161 – New Expressway Project. Washington State Department of Transportation SR 167 Completion Project, Puget Sound Gateway Program. September.

Appendix A. Wetland Delineation Data Sheets

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

Project Site: SR 167 Completion, Stage 1A City/County: Fife/Pierce Sampling Date: 7/13/18

Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP1

Investigator(s): D.Miller, M.Hagedorn, E.Henrichsen Section, Township, Range: Sec.7, T.20N, R.4E

Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): A Lat: 47.241446 Long: -122.345927 Datum: NAD 1983 HARN

Soil Map Unit Name: Sultan silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☒, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: A portion of the area that we delineated was mowed, thus disturbed. Some tire tracks from mowing, but not a "significant disturbance." Point is in Pierce County, although the western portion of Wetland 1 is in Fife.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 1 M)			
1. *Phalaris arundinacea*	89%	yes	FACW
2. *Ranunculus acriformis*	1%	no	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 45, 20% = 18	90%	= Total Cover	
Woody Vine Stratum (Plot size: NA)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 10%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: Vegetative cover would likely be 100% if not for tire tracks.

Project Site: SR 167 Completion, Stage 1A

SOIL Sampling Point: W1-SP1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1.5	10YR 2/2	100					silt loam	
1.5-10.5	10YR 3/1	95	10YR 3/6	5	C	M	sandy silt loam	
10.5-15.5	Gley1 3/N	100					loamy sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	14"
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	surface

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

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

Project Site: SR 167 Completion, Stage 1A City/County: Fife/Pierce Sampling Date: 7/13/18

Applicant/Owner: WSDOT State: WA Sampling Point: W1-SP2

Investigator(s): D.Miller, M.Hagedorn, E.Henrichsen Section, Township, Range: Sec.7, T.20N, R.4E

Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR): A Lat: 47.241516 Long: -122.345874 Datum: NAD 1983 HARN

Soil Map Unit Name: Sultan silt loam NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Near Flag W1-30, a portion of the area that we delineated was mowed, thus disturbed. Some tire tracks from mowing, but not a "significant disturbance." Point is in Pierce County, although the western portion of Wetland 1 is in Fife.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 1 M)			
1. *Phalaris arundinacea*	38	yes	FACW
2. *Ranunculus repens*	35	yes	FAC
3. *Plantago lanceolata*	2	no	FACU
4. *Poa sp.*	5	no	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 40, 20% = 16	80	= Total Cover	
Woody Vine Stratum (Plot size: NA)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: Dead grass by fence about 20% of plot. (R.V. lot may spray herbicide.)

Project Site: SR 167 Completion, Stage 1A

SOIL

Sampling Point: W1-SP2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					silt loam	small gravel, likely from adjacent R.V. lot
4-16	7.5YR 3/2	100					silt loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: No indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks: No indicators observed.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W01-SP3**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 7 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Ditch **Local relief (concave, convex, none):** concave **Slope:** 5.0 **% /** 2.9 **°**

Subregion (LRR): LRR A **Lat.:** 47.242030 **Long.:** 122.356655 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Lat/Long estimated from aerial image. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at site. Sampled area is within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size: 1 m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	100	**x 2 =**	200
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		200 **(B)**

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Site meets the rapid test, dominance test, and prevalence index indicators. Hydrophytic vegetation is present at site.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W01-SP3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	100						Silt Loam	
3-16	10YR	4/2	60	5YR	4/4	20	C	M	Sand	w/gravel
				Gley 1	3/10GY	20	D	M	Sand	w/gravel

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Disturbed profile and matrix. Depletions in large chunks. Meets the hydric soil indicator for depleted matrix (F3). Hydric soil is present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Site meets the indicators for high water table (A2) and saturation (A3). Site contains wetland hydrology.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W01-SP4**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 7 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Gulch or Gully **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 **°**

Subregion (LRR): LRR A **Lat.:** 47.241986 **Long.:** -122.356687 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Lat/Long estimated from aerial image. Sampled area is not within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Prunus laurocerasus	20	☑ 100.0%	UPL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Hypochaeris radicata	4	☐ 3.6%	FACU
2. Vicia americana	4	☐ 3.6%	FAC
3. Phalaris arundinacea	8	☐ 7.2%	FACW
4. Agrostis gigantea	95	☑ 85.6%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	111	= Total Cover	
Woody Vine Stratum (Plot size: 1 m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	8	**x 2 =**	16
FAC species	99	**x 3 =**	297
FACU species	4	**x 4 =**	16
UPL species	20	**x 5 =**	100
Column Totals:	131	**(A)**	429 **(B)**

Prevalence Index = B/A = 3.275

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
No hydrophytic vegetation indicators are met at site.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W01-SP4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR	2/1	50						sand	mixed matrix
0-5	10YR	4/3	50						sand	mixted matrix
5-16	10YR	4/3	100						Sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Mixed matrix in first 5 inches. No hydric soil indicators met.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No evidence of wetland hydrology.

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

Project/Site: SR 167, Stage 1B **City/County:** Milton / Pierce County **Sampling Date:** 13-Aug-18

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W17-SP1**

Investigator(s): G. Richotte, A. Hoenig **Section, Township, Range:** **S** 7 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 **% /** 0.0 **°**

Subregion (LRR): LRR A **Lat.:** 47.243534 **Long.:** -122.33514 **Datum:** NAD 1983

Soil Map Unit Name: Tisch silt, Semiahmoo muck **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
No wetland indicators present. Climatic conditions are drier than normal (WETS table, Port of Tacoma station)

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	100	**x 2 =**	200
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		200 **(B)**

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Vegetation meets rapid test for hydrophytic Vegetation, dominance test, and prevalence index

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W17-SP1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	3/2	95	7.5YR	3/4	5	C	M	silty loam	
8-14	10YR	4/1	80	7.5YR	3/4	20	C	M	silty loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil meets hydric soil indicator A12.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Hydrology indicator C3 is present. Secondary indicator D5 is also met.

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

Project/Site: SR 167, Stage 1B **City/County:** Milton / Pierce County **Sampling Date:** 13-Aug-18

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W17-SP2**

Investigator(s): G. Richotte, A. Hoenig **Section, Township, Range:** **S** 7 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** concave **Slope:** 0.1 **% /** 0.0 **°**

Subregion (LRR): LRR A **Lat.:** 47.243534 **Long.:** -122.33514 **Datum:** NAD 1983

Soil Map Unit Name: Tisch silt, Semiahmoo muck **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:

No wetland indicators are present. Climatic conditions are drier than normal (WETS table, Port of Tacoma station). Vegetation is regularly mowed due to Olympic pipeline right of way.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size: 1 m)			
1. Tanacetum vulgare	60	☑ 60.0%	FACU
2. Poa annua	30	☑ 30.0%	FAC
3. Rubus armeniacus	5	☐ 5.0%	FAC
4. Phalaris arundinacea	5	☐ 5.0%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size: 1 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	5	**x 2 =**	10
FAC species	35	**x 3 =**	105
FACU species	60	**x 4 =**	240
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		355 **(B)**

Prevalence Index = B/A = 3.550

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Vegetation does not meet any hydrophytic vegetation criteria. Vegetation is mowed.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W17-SP2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR	3/2	100						sandy loam	gravel in profile

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Very compact soils in gas pipeline corridor. No hydric soil indicators are present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydology indicators present.

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

Project/Site: SR 167, Stage 1B **City/County:** Pierce County **Sampling Date:** 29-Apr-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W17-SP3**

Investigator(s): S. Wall, J. LeCerc **Section, Township, Range:** **S** 5 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR): LRR A **Lat.:** 47.24468 **Long.:** -122.33122 **Datum:** NAD 1983

Soil Map Unit Name: Tisch silt **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

PSS wetland pit. All three wetland parameters present.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m)			
1. Salix lasiandra	70	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	70	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea	90	☑ 98.9%	FACW
2. Solanum dulcamara	1	☐ 1.1%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	91	= Total Cover	
Woody Vine Stratum (Plot size: 1m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	160	x 2 =	320
FAC species	1	x 3 =	3
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	161 (A)		323 (B)

Prevalence Index = B/A = 2.006

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Rapid test, dominance test, and prevalence index indicators were met.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W17-SP3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
+3-0										organic matter
0-8	10YR	2/2	100						silt	
8-11	2.5Y	5/3	100						ash	ash? Puffy texture
11-16	10YR	5/2	50	7.5YR	5/8	50	C	M	silt	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

A4 indicator present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Water table present at surface. Indicators A1, A2, A3, B5, B9, C1, and D5 present.

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

Project/Site: SR 167 Stage 2 **City/County:** Milton/Pierce **Sampling Date:** 16-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W17-SP4**

Investigator(s): GP, NB **Section, Township, Range:** **S** 1 **T** 20N **R** 04E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 **% /** 0.6 **°**

Subregion (LRR): LLR A **Lat.:** 47.235078 **Long.:** -122.324411 **Datum:** NAD 1983 H

Soil Map Unit Name: Briscot loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
All three wetland parameters are met.Wetland is located approximatley 50 feet south of cottonwood at fence line.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m)			
1. Populus balsamifera	60	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	60	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea	100	☑ 95.2%	FACW
2. Ranunculus occidentalis	5	☐ 4.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	105	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	105	**x 2 =**	210
FAC species	60	**x 3 =**	180
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	165	**(A)**	390 **(B)**

Prevalence Index = B/A = 2.364

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Vegetation meet the rapid test for hydrophytic vegetation, dominance test, and prevelance index.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W17-SP4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	2/1	100						Silty Clay	
8-16	7.5YR	3/1	95	2.5YR	5/4	5	C	M	Silty Clay Loam	gravelly

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator F6 is met.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Soil pit located at the edge of the wetland. Standing water observed within 10 feet of test pit. Dense clay layer at 16 inches may cause aquitard. Secondary hydrology indicators D2 and D5 are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Milton/Pierce **Sampling Date:** 16-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W17-SP5**

Investigator(s): GP, NB **Section, Township, Range:** **S** 1 **T** 20N **R** 04E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 **% /** 0.6 **°**

Subregion (LRR): LRR A **Lat.:** 47.235078 **Long.:** -122.324411 **Datum:** NAD 1983 H

Soil Map Unit Name: Briscot loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Upland pit located approximatley 8feet east of SP-1, on slope up to fallow agricultrual field.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m)			
1. Populus balsamifera	40	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	40	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m)			
1. Rubus armeniacus	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	5	**= Total Cover**	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea	25	☑ 23.4%	FACW
2. Ranunculus occidentalis	5	☐ 4.7%	FACW
3. Agrostis capillaris	50	☑ 46.7%	FAC
4. Cirsium arvense	20	☐ 18.7%	FAC
5. Rumex crispus	5	☐ 4.7%	FAC
6. Vicia americana	2	☐ 1.9%	FAC
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	107	**= Total Cover**	
Woody Vine Stratum (Plot size: 1 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	30	**x 2 =**	60
FAC species	122	**x 3 =**	366
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	152	**(A)**	426 **(B)**

Prevalence Index = B/A = 2.803

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Vegetation meet dominance test and prevelance index.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W17-SP5

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	2/2	100						Silty Clay	
8-16	2.5YR	4/3	98	7.5YR	4/4	2	C	M	Silt Loam	Gravelly

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydric soil indicators not present at soil pit.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Secondary hydrology indicator D5 is present. No primary indicators are present.

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

Project/Site: SR 167 Stage 2 City/County: Unincorporated Pierce County Sampling Date: 2023-06-12

Applicant/Owner: WSDOT State: Washington Sampling Point: W17-SP6

Investigator(s): RP, JH Section, Township, Range: S5, T20N, R4E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): A Lat: 47.248689 Long: -122.327732 Datum: NAD 83

Soil Map Unit Name: Semiahmoo muck NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland test pit located upslope of W17-SP7. No wetland indicators present. When considering the three prior months (March, April, May) as a whole, drier than normal precipitation conditions were present prior to field work on June 12, 2023.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Robinia pseudoacacia	90	✔	FACU
2. Prunus avium	10		FACU
3.			
4.			
	100%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Lolium perenne	70	✔	FAC
2. Lolium arundinaceum	40	✔	FACU
3. Hordeum murinum	10		FAC
4. Phalaris arundinacea	3		FACW
5. Malva neglecta	2		
6.			
7.			
8.			
9.			
10.			
11.			
	125%	= Total Cover	
Woody Vine Stratum (Plot size: 1m)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	80	x 3 =	240
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals:	223 (A)		806 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Vegetation does not meet any indicators for hydrophytic vegetation.

SOIL

Sampling Point: W17-SP6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/2	100					Silt Loam	Cobble throughout
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Hydric soil indicators not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

Wetland hydrology indicators not present.

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

Project/Site: SR 167 Stage 2 City/County: Unincorporated Pierce County Sampling Date: 2023-06-12

Applicant/Owner: WSDOT State: Washington Sampling Point: W17-SP7

Investigator(s): RP, JH Section, Township, Range: S5, T20N, R4E

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 47.248501 Long: -122.326634 Datum: NAD 83

Soil Map Unit Name: Semiahmoo muck NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

All three wetland indicators are present. When considering the three prior months (March, April, May) as a whole, drier than normal precipitation conditions were present prior to field work on June 12, 2023.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	60	✔	FACW
2. Lolium perenne	50	✔	FAC
3. Typha latifolia	20	✔	OBL
4. Ranunculus repens	10		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	140% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	60	x 2 =	120
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		320 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: W17-SP7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Silt Loam	Partially decayed organic material throughout
16 - 20	10YR 5/1	100					Sand	
20 -		100					Silty Clay	layers from 20+ were accessed with a soil auger
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soil indicator A12 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ✔ No ___ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Primary hydrology indicators A2 and A3 are present. Secondary hydrology indicator D5 is also present.

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

Project/Site: SR 167, Stage 1B **City/County:** Milton / Pierce County **Sampling Date:** 05-Jun-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W65-SP1**

Investigator(s): JH, RLB (Stell) **Section, Township, Range:** **S** 5 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): **Local relief (concave, convex, none):** concave **Slope:** 1.0 **% /** 0.6 **°**

Subregion (LRR): LRR A **Lat.:** 47.24876 **Long.:** -122.32656 **Datum:** NAD 1983

Soil Map Unit Name: Semiahmoo muck **NWI classification:** PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

Peat soil! W65 was later determined to share hydrology with W17. Later referenced as W17/65. Conditions are drier than normal. Vegetation disturbed from agricultural activities. All three wetland parameters present.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Agricultural pasture; plants have been historically disturbed--> more heavily and recently ~40' to the north. Rapid test, dominance test, and prevalence index present.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W65-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 3/1	100					Muck	roots & undecomposed organics
6-16+								all peat/decomposed organic material (5YR 4/3)

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

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

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

Indicators for Problematic Hydric Soils[3]:

- [ ] 2 cm Muck (A10)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Very organic "soil" -> no mineral/or very little muck 0-6" and then peat 6-16+ in the lower layer. A1 indicator present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Several algal mats. Areas of ponding to the north and east of plot within PEM portion of W65. A2 and A3 indicators present.

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

Project/Site: SR 167, Stage 1B **City/County:** Milton / Pierce County **Sampling Date:** 05-Jun-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W65-SP2**

Investigator(s): JH, RLB (Stell) **Section, Township, Range:** **S** 5 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** concave **Slope:** 7.0 % / 4.0 °

Subregion (LRR): LRR A **Lat.:** 47.24904 **Long.:** -122.32668 **Datum:** NAD 1983

Soil Map Unit Name: Alderwood gravelly sandy loam 8-15% **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:

W65 was later determined to share hydrology with W17 and was combined into one wetland for rating (W17/65). Plot located just upslope of wetland edge in very disturbed, weedy pasture. Conditions drier than normal. Vegetation indicator present, but no hydrology or soil indicators.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Trifolium repens	25	☑ 28.4%	FAC
2.	25	☑ 28.4%	FAC
3.	20	☑ 22.7%	FAC
4. Matricaria chamomilla	10	☐ 11.4%	UPL
5. Plantago lanceolata	5	☐ 5.7%	FACU
6. Senecio vulgaris	2	☐ 2.3%	FACU
7.	1	☐ 1.1%	FAC
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	88	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	71	x 3 =	213	
FACU species	7	x 4 =	28	
UPL species	10	x 5 =	50	
Column Totals:	88	(A)	291	(B)

Prevalence Index = B/A = 3.307

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

#2 in herb stratum is Geranium sp., presumed FAC. #3 is Sonchus sp., presumed FAC, #7 is Rumex sp., presumed FAC. Dominance test indicator present.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W65-SP2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	5/2	76	10YR	4/6	2	C	M	Silty Clay	redox depletions
0-16				10YR	6/1	20	D	M	Silty Clay	
0-16				2.5YR	5/8	2	C	M	Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Chunks of redox concentrations, depletions, rocks (gravel/cobble) mixed throughout soil profile. No hydric soil indicators present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydology indicators present.

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

Project/Site: SR 167, Stage 1B **City/County:** Milton / Pierce County **Sampling Date:** 05-Jun-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W65-SP3**

Investigator(s): JH, RLB (Stell) **Section, Township, Range:** **S** 5 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): toe of slope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 **°**

Subregion (LRR): LRR A **Lat.:** 47.24680 **Long.:** -122.32580 **Datum:** NAD 1983

Soil Map Unit Name: Semiahmoo muck **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:

W65 was later determined to share hydrology with W17 and was combined into one wetland for rating (W17/65). Conditions drier than normal. All three wetland parameters present.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m)			
1. Populus balsamifera	70	☑ 63.6%	FAC
2. Salix lasiandra	30	☑ 27.3%	FACW
3. Salix sitchensis	10	☐ 9.1%	FACW
4.	0	☐ 0.0%	
	110	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 3m)			
1. Spiraea douglasii	15	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	**= Total Cover**	
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	50	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	50	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 50

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	105	**x 2 =**	210
FAC species	70	**x 3 =**	210
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	175 **(A)**		420 **(B)**

Prevalence Index = B/A = 2.400

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Rapid test, dominance test, and prevalence index indicators were met.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W65-SP3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/1	100						Clay Loam	w/ gravel; duff and roots
4-9	10YR	3.5/1	98	10YR	3/6	2	C	PL	Clay Loam	large cobble
9-14+	10YR	5/1	98	10YR	5/8	2	C	M	Sandy Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: old pipe

Depth (inches): 12

Hydric Soil Present? Yes ◉ No ○

Remarks:

Pockets of sand. F3 indicator present.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Saturated to the surface. Primary indicators A3 and B8 present. Secondary indicators B9, B10, D2, and D5 also present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W136-SP1**

Investigator(s): LD, JH **Section, Township, Range:** **S** 12 **T** 20N **R** 3E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR): LRR A **Lat.:** 47.240395 **Long.:** -122.361799 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:

All three wetland parameters are met. Wetland is in a ditch adjacent to the northbound lanes of I-5. Vegetation, soils and hydrology are significantly disturbed due to regular ditch maintenance.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Vegetation meets rapid test, dominance test, and prevelance index.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W136-SP1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR	4/1	100						Loamy clay	
9-16	2.5YR	4/1	70	5YR	4/4	30	C	M	Loamy clay	Prominent depletions

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicators A4 and F3 are met.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Hydrology indicators A3 and C1 are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W136-SP2**

Investigator(s): LD, JH **Section, Township, Range:** **S** 12 **T** 20N **R** 3E

Landform (hillslope, terrace, etc.): Slope **Local relief (concave, convex, none):** none **Slope:** 40.0 **%** / 21.8 **°**

Subregion (LRR): LRR A **Lat.:** 47.240420 **Long.:** -122.361808 **Datum:**

Soil Map Unit Name: Sultan silt loam **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ○ No ◉

Wetland Hydrology Present? Yes ○ No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Upland pit on road slope adjacent to I-5

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Agrostis gigantea	99	☑ 92.5%	FAC
2. Plantago lanceolata	6	☐ 5.6%	FACU
3. Vicia americana	2	☐ 1.9%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	107	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	101	x 3 =	303
FACU species	6	x 4 =	24
UPL species	0	x 5 =	0
Column Totals:	107 (A)		327 (B)

Prevalence Index = B/A = 3.056

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Vegetation meets dominance test.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W136-SP2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	100						Gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators met.

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No evidence of wetland hydrology

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W136-SP3

Investigator(s): RP, LD Section, Township, Range: S12, T20N, R3E

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 47.23939350 Long: -122.35738733 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

When considering the three prior months (Feb, March, April) as a whole, drier than normal precipitation conditions were present prior to the field visit on May 19, 2023. Hydrophytic vegetation present. Test pit lacks hydric soil and hydrology indicators.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 2 m)			
1. Rubus armeniacus	10	✔	FAC
2.			
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot size: 1 m)			
1. Equisetum arvense	60	✔	FAC
2. Lolium perenne	20	✔	FAC
3. Galium aparine	2		FACU
4. Plantago lanceolata	2		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	84% = Total Cover		
Woody Vine Stratum (Plot size: 1 m)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	94 (A)		286 (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: W136-SP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 3/2	**100**					Sandy Loam	Approx. 20% gravel
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No wetland hydrology indicators present.

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W149-SP1

Investigator(s): RP, LD Section, Township, Range: S7, T20N, R4E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 47.24003383 Long: 122.35598533 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland test pit located in area between I-5 northbound and freeway off ramp. All three wetland indicators are present. When considering the three prior months as a whole, drier than normal precipitation conditions were present prior to field work.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2 m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea	98	✔	FACW
2. Galium aparine	2		FACU
3. **Rubus armeniacus**	2		**FAC**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	102% = Total Cover		
Woody Vine Stratum (Plot size: 1 m)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	98	x 2 =	196
FAC species	**2**	x 3 =	**6**
FACU species	**2**	x 4 =	**8**
UPL species	0	x 5 =	0
Column Totals:	**102** (A)		**210** (B)

Prevalence Index = B/A = **2.06**

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Vegetation meets the dominance test, rapid test, and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: W149-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 2/1						Silt Loam	Partially decomposed organic material present.
14 - 20	10YR 4/1	70	7.5YR 5/6	30	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soil indicator A12 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ✔ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Hydrology indicators A2 and A3 present. Secondary indicator D5 also present.

Remarks:

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W149-SP2

Investigator(s): RP, LD Section, Township, Range: S7, T20N, R4E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 3

Subregion (LRR): Lat: 47.24000403 Long: -122.35599176 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland test pit located on road slope upslope of W149-SP1. Hydrophytic vegetation is present. Test pit lacks hydric soils and wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2 m)			
1. Rubus armeniacus	10	✔	FAC
2.			
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	70	✔	FACW
2. Holcus lanatus	30	✔	FAC
3. Galium aparine	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105% = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	40	x 3 =	120
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	115 (A)		280 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: W149-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 5/3	100					Loamy Sand	Gravel throughout
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil indicators are not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✔

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

No primary hydrology indicators are present. One secondary hydrology indicator, D5 is present.

Remarks:

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W150-SP1

Investigator(s): LD Section, Township, Range: S12, T20N, R3E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 47.24051344 Long: -122.35790938 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

All three wetland indicators are present. Wetland located between I-5 offramp and northbound lanes. When considering the three prior months (February, March, April) as a whole, drier than normal precipitation conditions were present prior to field work.

VEGETATION – Use scientific names of plants.

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

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Vegetation meets the rapid test, dominance test, and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: W150-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/2	98	7.5YR 4/6	2	C	M	Silt Loam	
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Compacted gravel and cobble

Depth (inches): 12

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soil indicator A4 is present. Prominent redox from 0-12 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ✔ No ___ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Primary hydrology indicators A2 and A3 are present.

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W150-SP2

Investigator(s): LD Section, Township, Range: S12, T20N, R3E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 20

Subregion (LRR): Lat: 47.240422 Long: -122.357951 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland test pit located upslope of W150-SP1. Hydrophytic vegetation present. Test pit lacks hydric soils and wetland hydrology. When considering the three prior months (February, March, April) as a whole, drier than normal precipitation conditions were present during field work.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	90	✔	FACW
2. Vicia sativa	3		UPL
3. Equisetum arvense	2		FAC
4. Galium aparine	1		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	96% = Total Cover		
Woody Vine Stratum (Plot size: 1m)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	2	x 3 =	6
FACU species	1	x 4 =	4
UPL species	3	x 5 =	15
Column Totals:	96 (A)		205 (B)

Prevalence Index = B/A = 2.14

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Vegetation meets the rapid test and dominance test for hydrophytic vegetation.

SOIL

Sampling Point: W150-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 3/2	100					Silt Loam	Fill material throughout
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Hydric soil indicators not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

Primary hydrology indicators not present. Secondary hydrology indicator D5 is present.

Rubus armeniacus

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W151-SP1

Investigator(s): RP, LD Section, Township, Range: S7, T20N, R4E

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A Lat: 47.23961632 Long: -122.35591415 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

All three wetland indicators are present. Wetland is in roadside ditch adjacent to south side of I-5 onramp. When considering the three prior months (February, March, April) as a whole, drier than normal precipitation conditions were present prior to field work.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	80	✔	FAC
2.			
3.			
4.			
	80%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	75	✔	FACW
2. Ranunculus repens	3		FAC
3. Rubus armeniacus	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80%	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	85	x 3 =	255
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	160 (A)		405 (B)

Prevalence Index = B/A = 2.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Vegetation meets the dominance test and prevalence index for hydrophytic vegetation.

SOIL

Sampling Point: W151-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	N 5/	100					Sand	Gley 1. Organic material in top 2 inches
7 - 9	N 5/	90	7.5YR 5/8	10	C	M	Silty Clay Loam	Gley 1
9 - 16	N 3/1	100					Silty Clay Loam	Gley 1
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soil indicators S4 and F2 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ✔ No ___ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 7

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Primary hydrology indicator A3 is present. Secondary hydrology indicators D5 and C2 present. Water table at 14 inches below the soil surface.

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

Project/Site: SR 167 Stage 2 City/County: Fife/Pierce Sampling Date: 2023-05-19

Applicant/Owner: WSDOT State: Washington Sampling Point: W151-SP2

Investigator(s): RP, LD Section, Township, Range: S7, T20N, R4E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 3

Subregion (LRR): A Lat: 47.2396409 Long: -122.3559182 Datum: NAD 83

Soil Map Unit Name: Sultan silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland test pit located upslope of W151-SP1. Hydrophytic vegetation present. Test pit lacks hydric soils and wetland hydrology. When considering the three prior months (February, March, April) as a whole, drier than normal precipitation conditions were present prior to field work.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	85	✔	FAC
2.			
3.			
4.			
	85%	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	65	✔	FAC
2.			
3.			
4.			
5.			
	65%	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	20	✔	FACW
2. Holcus lanatus	20	✔	FAC
3. Ranunculus repens	5		FAC
4. Galium aparine	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50%	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	175	x 3 =	525
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	195 (A)		565 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Vegetation meets the dominance test for hydrophytic vegetation.

SOIL

Sampling Point: W151-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 3/2	100					Silt Loam	cobble throughout
-								
-								
-								
-								
-								
-								
-								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Hydric soil indicators not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

Wetland hydrology not present.

Appendix B. Wetland Rating Summaries and Figures

Wetland name or number: Wetland 1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion – Wetland 1 Date of site visit: 7/13/2018, 3/23/2022

Rated by D. Miller, E. Henrichsen Trained by Ecology? ☒ Yes ☐ No Date of Training Sept. 2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2021

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

1. Category of wetland based on FUNCTIONS

Category III – Total score = 16 – 19

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	L	
Landscape Potential	M	H	L	
Value	M	H	M	**TOTAL**
Score Based on Ratings	6	8	4	18

Score for each function based on three ratings

(*order of ratings is not important*)

9 = H,H,H

8 = H,H,M

7 = H,H,L

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	B-1
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-2
Flow directions and associated features	n/a	B-2a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-2
Map of the contributing basin	D 4.3, D 5.3	B-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	B-4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B-6

Wetland name or number: Wetland 1

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 has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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 > 1/2 of area | points = 3	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > 1/2 total area of wetland | points = 4	4
Total for D 1 Add the points in the boxes above (F9 key)	8

Rating of Site Potential If score is: 6–11 = M *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source: _____ No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: 1 or 2 = M *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? No = 0	0
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: The wetland is in Hyelbos Creek-Frontal Commencement Bay subwatershed (HUC 12) which does not have TMDLs in place at the site. Wapato Creek is in the HUC 12 and has a 303d listing for bacteria wetland outlet is >1mile from Wapato Creek.

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 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 are at least 0.5 ft to <2 ft from surface or bottom of outlet | points = 3	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 10 to 100 times the area of the unit | points = 3	3
Total for D 4 Add the points in the boxes above	6

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 1

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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 subbasin that is immediately down-gradient of unit | points = 2 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS:

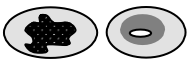
These questions apply to wetlands of all HGM classes.

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☐ Scrub-shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1 structure | points = 0	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☒ Permanently flooded or inundated ☒ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☒ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** ☐ **Freshwater tidal wetland**	3 types present | points = 2 **2 points** **2 points**	2

Wetland name or number: Wetland 1

H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: 5–19 species | points = 1	1
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.* Choose an item. **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☐ Standing snags (dbh >4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	3

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.0**+** [(% moderate and low intensity land uses)0.0/2] 0.0 **=** **0.0**% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 3.6**+** [(% moderate and low intensity land uses)11.9/2] 5.9 **=** **9.5**% Undisturbed habitat <10% of 1 km Polygon | points = 0	0
H 2.3. Land use intensity in 1 km Polygon: If >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-2

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 1

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.* WDFW Priority Habitats within 100 m: ☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Herbaceous Balds ☐ Old Growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Westside Prairies ☐ Instream ☐ Nearshore ☐ Caves ☐ Cliffs ☐ Talus ☒ Snags and Logs (*Priority habitats listed by WDFW: For complete descriptions of WDFW priority habitats, and the counties in which they can be found, see: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington,* <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>, *or access the list from here:* <https://wdfw.wa.gov/species-habitats/at-risk/phs/list>.) Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (checked above) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (checked above) points = 1 Site does not meet any of the criteria above points = 0	1
Rating of Value If score is: 1 = M *Record the rating on the first page*	

Legend

Delineated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure B-1.
Cowardin Classes for Wetland 1.

N

0 270 540 1,080 Feet

HERRERA

ESRI, Aerial (2021)

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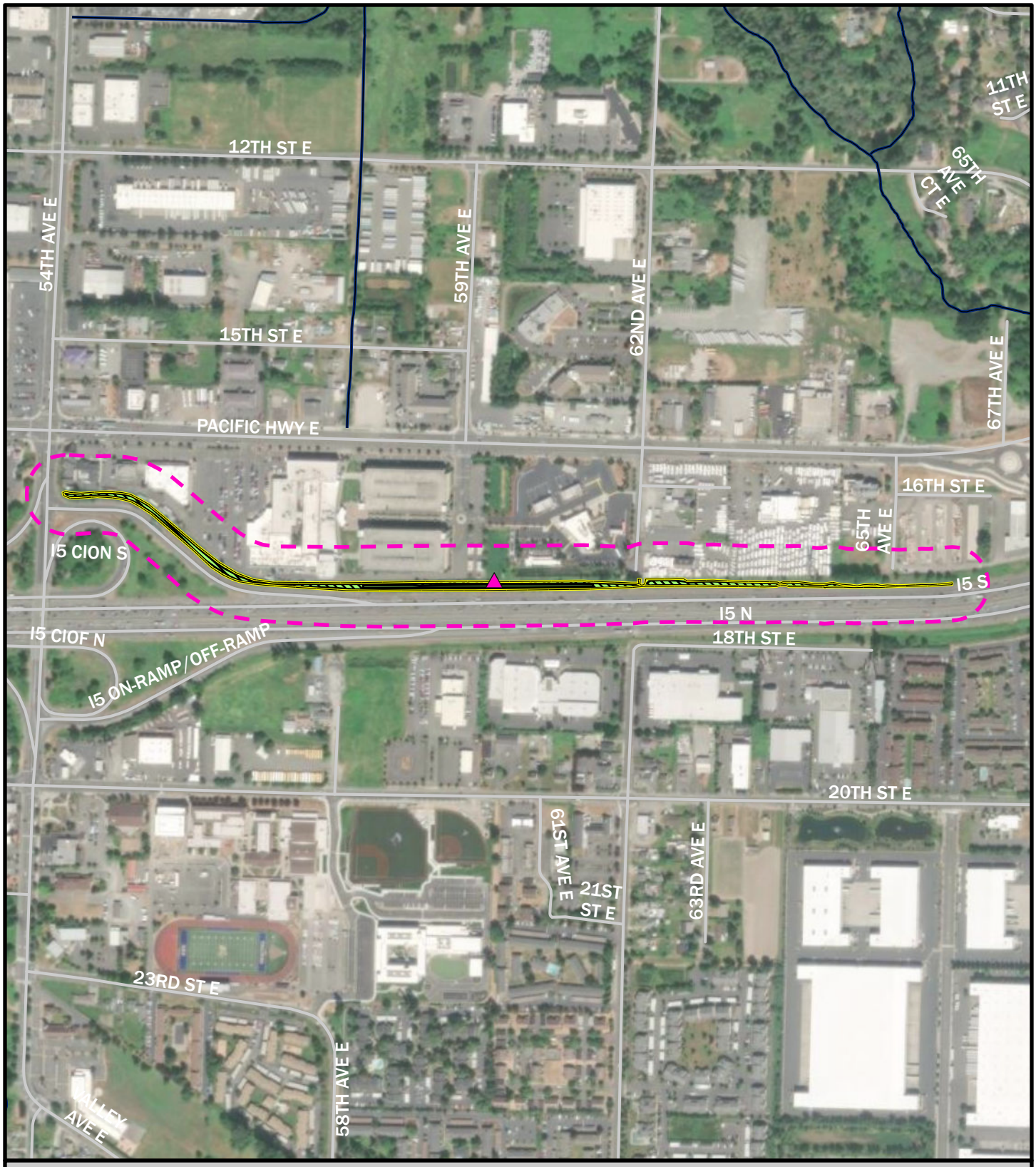

Legend

- Stream (Pierce County 2021)
- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Permanently flooded
- Saturated only
- Seasonally flooded

Figure B-2.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 1.

N

0 287.5 575 1,150 Feet

HERRERA

Esri, Aerial (2021)

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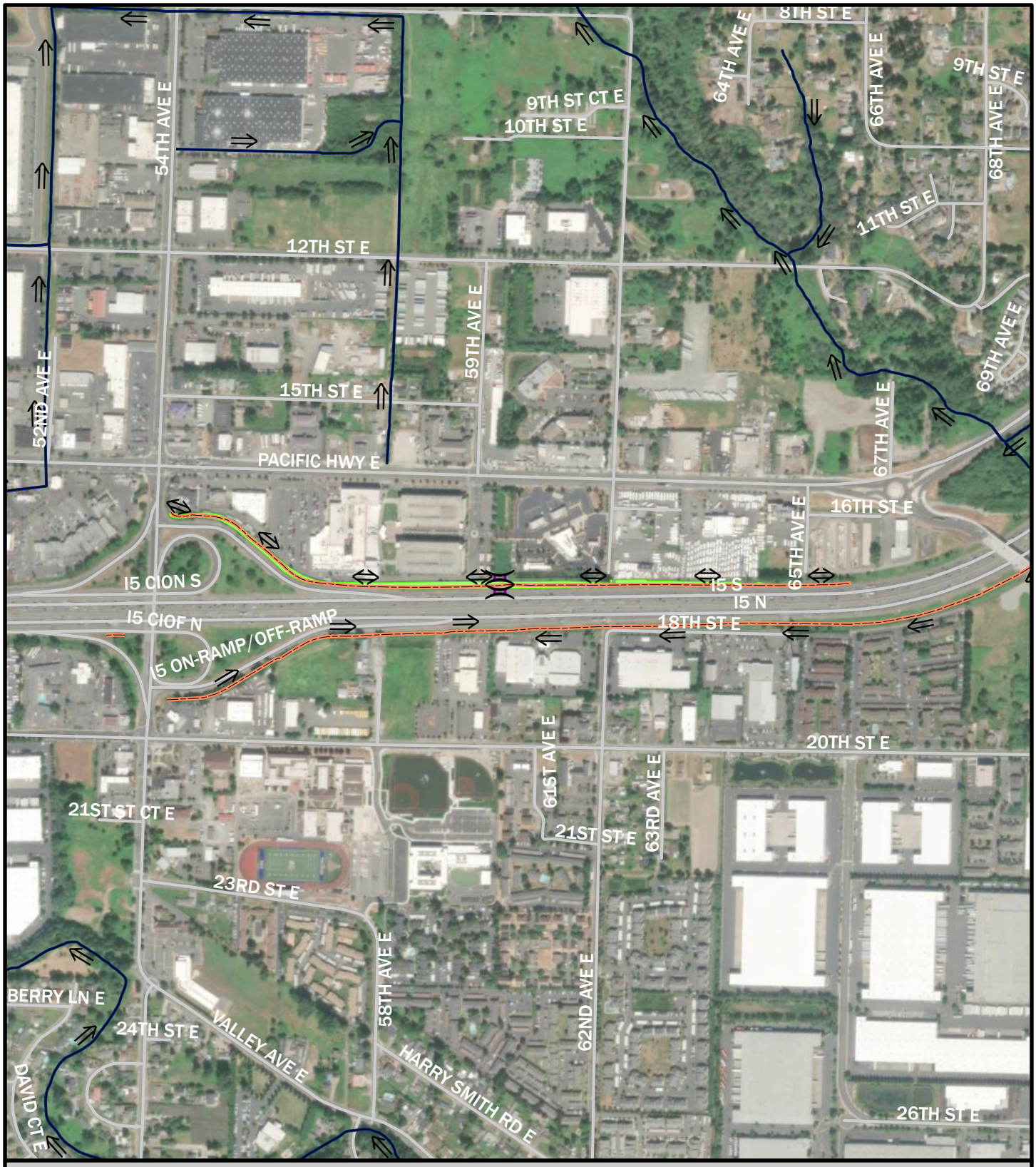

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland

Figure B-2a.
Flow Directions and Features Associated with Wetland 1.

N

0 375 750 1,500 Feet

HERRERA

Esri, Aerial (2021)

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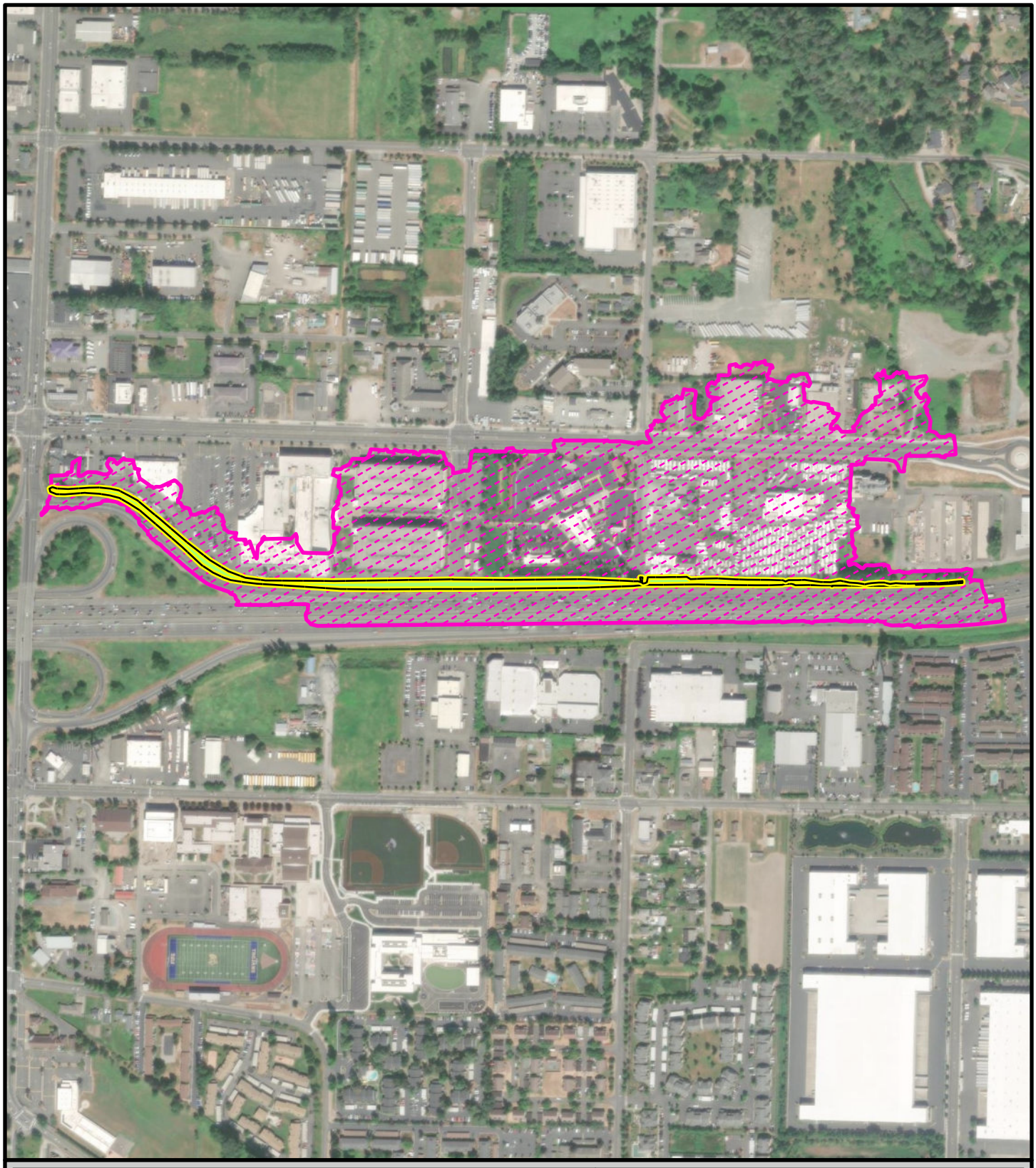

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure B-3.
Map of Contributing Basin for Wetland 1.

N

0 280 560 1,120 Feet

HERRERA

Esri, Aerial (2021)

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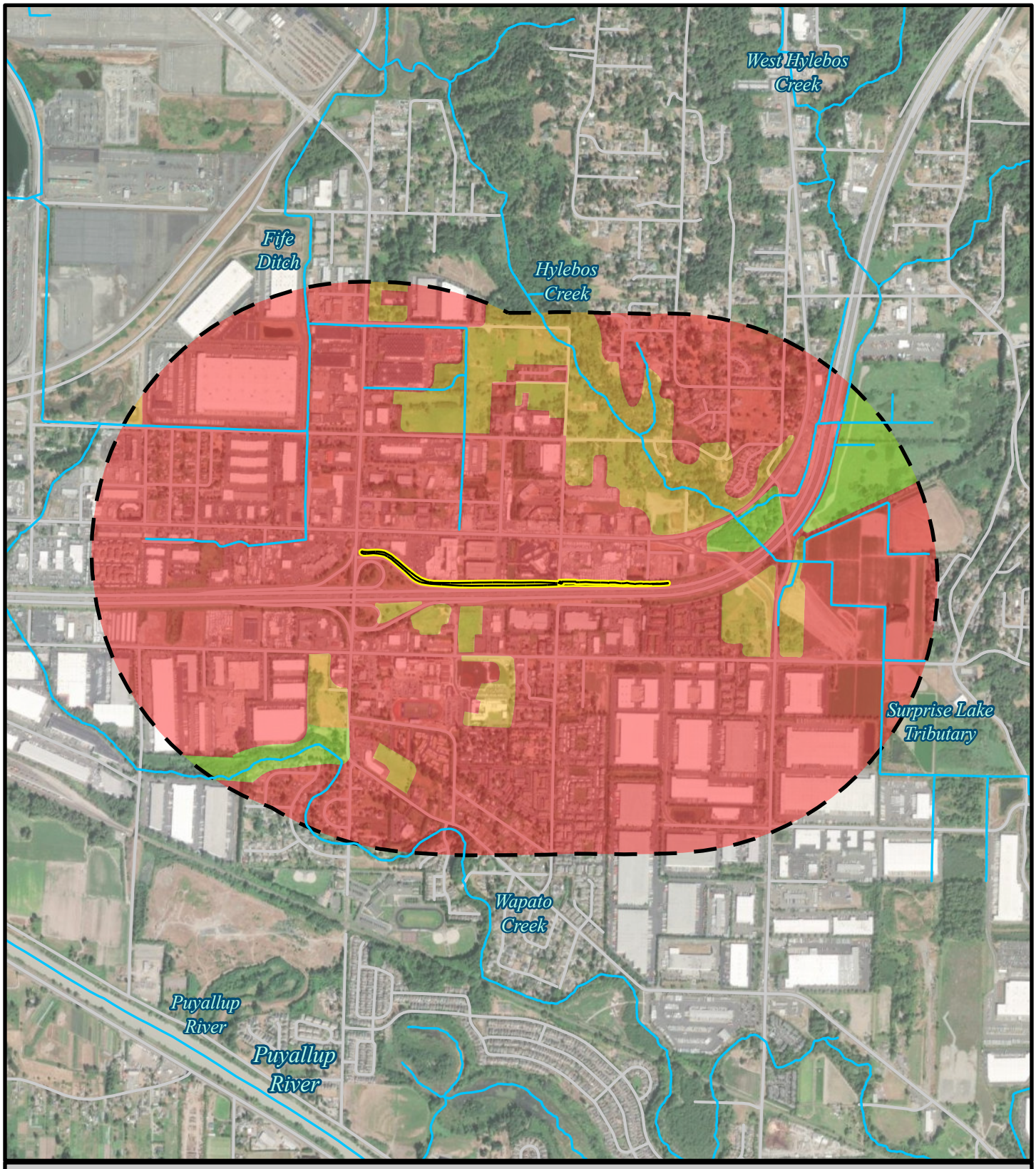

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure B-4.
Habitat Within a 1-km Boundary of Wetland 1.

N

0 500 1,000 2,000
Feet

HERRERA

Esri, Aerial (2021)

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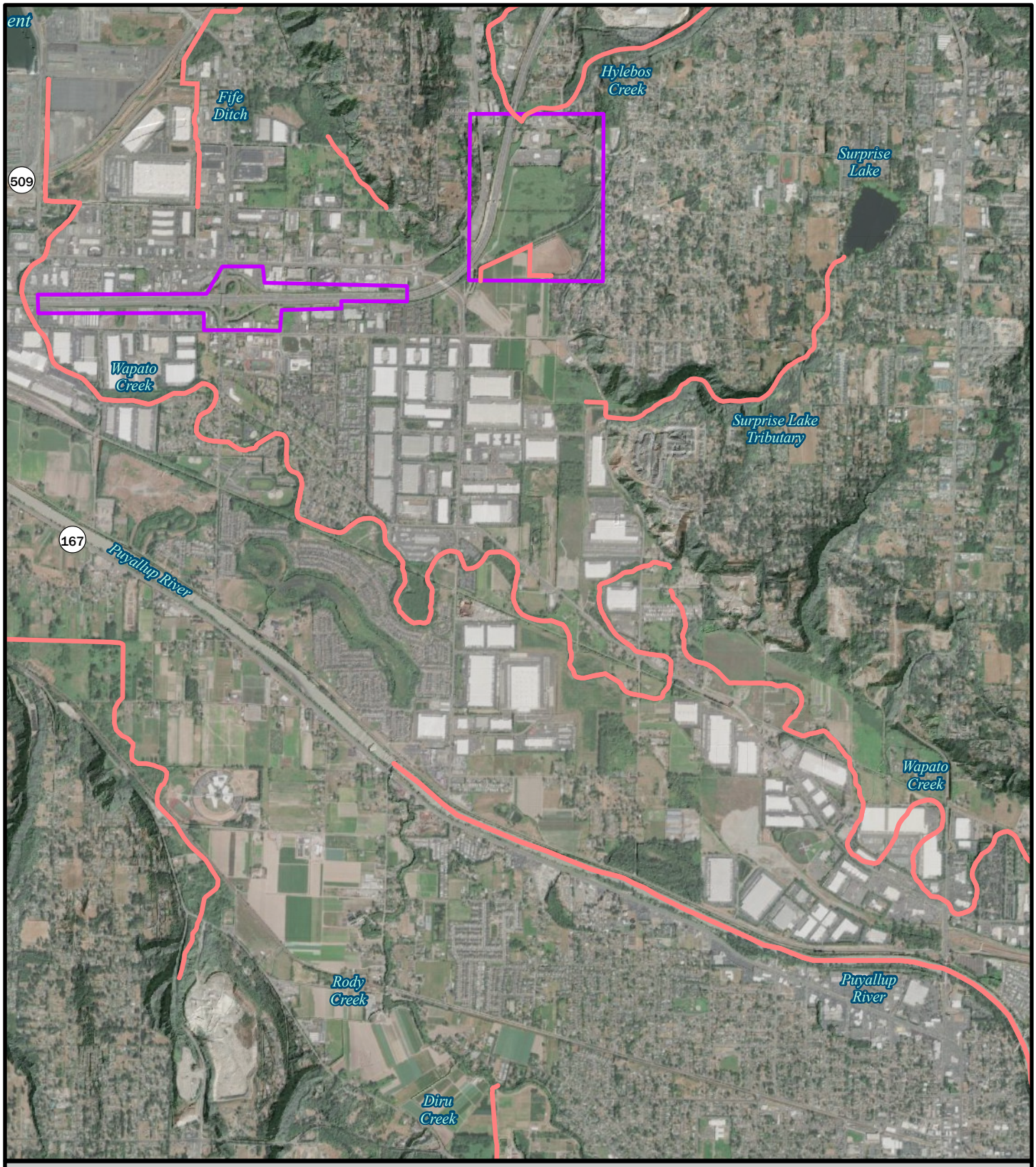

Legend

- 303(d) listed waters
- Wetland area
- Study area

Figure B-5.
303(d) Waters in the Vicinity of the Stage 2 Addendum Study Area.

N

0 1,000 2,000 4,000 Feet

HERRERA

Esri Imagery (2021)

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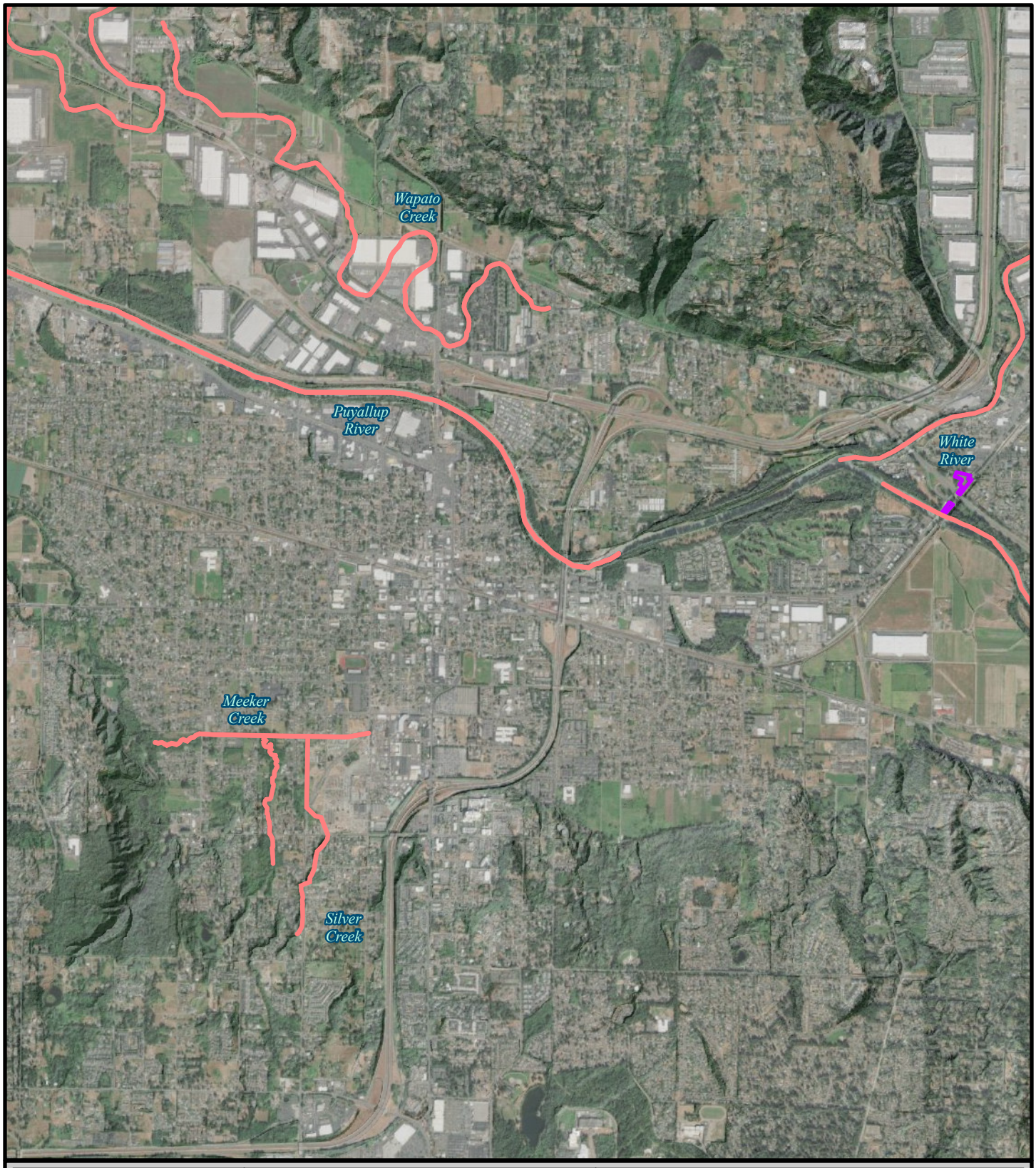

Legend

- 303(d) listed waters
- Wetland area
- Study area

Figure B-5.
303(d) Waters in the Vicinity of the Stage 2 Addendum Study Area.

N

0 1,000 2,000 4,000 Feet

HERRERA

Esri Imagery (2021)

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DEPARTMENT OF ECOLOGY
State of Washington

Water Quality Atlas Map

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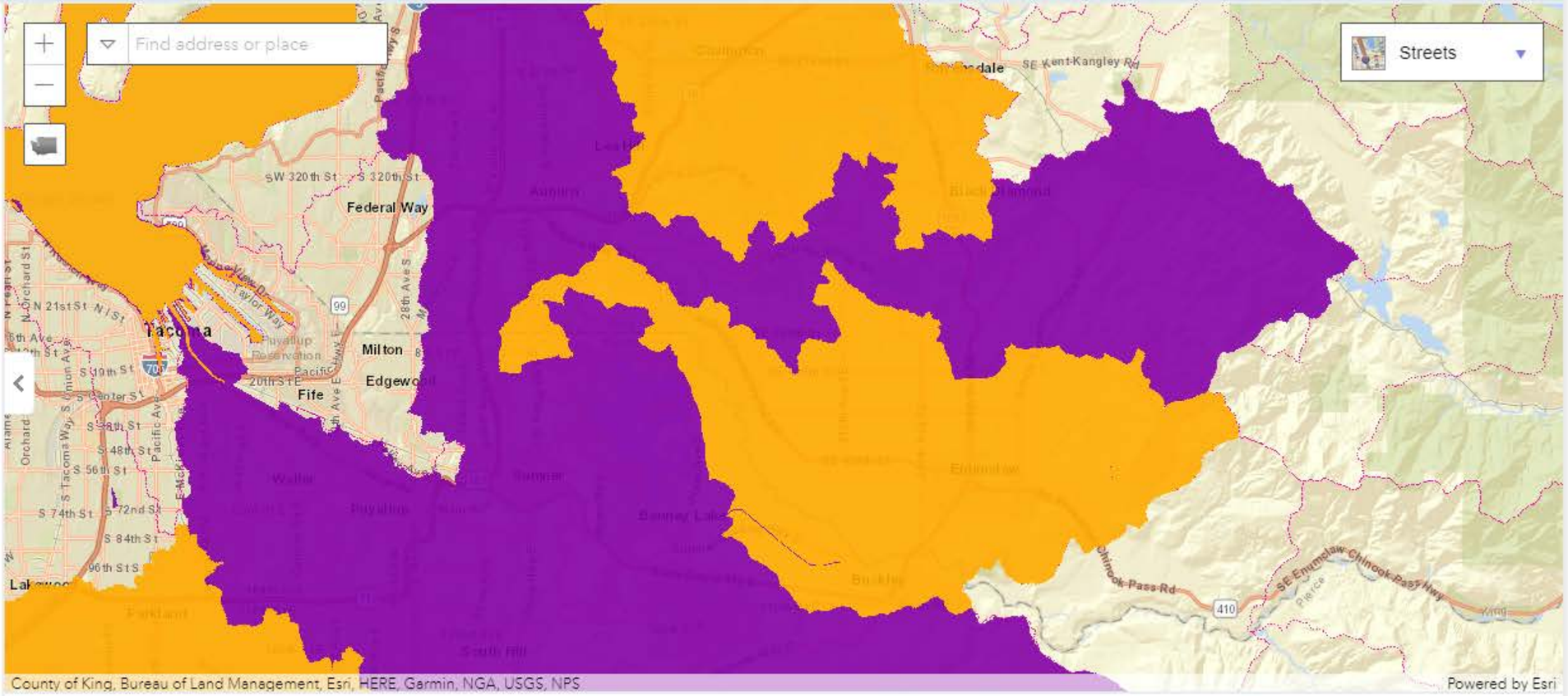
WQ Improvement Projects

Filter

- Approved
- In Development

Subbasins (12 digit HUCs)

- HUC boundary



Water Quality Improvement Projects

Zoom to selection | Table to CSV

Find	Project Name	Project Type	Project Status	Parameters	Webpage	Report
				Carbon		
	Puyallup River Bacteria TMDL	TMDL Project	Approved	Bacteria	View	View
	Puyallup River Multiparameter TMDL	TMDL Project	Approved	BOD5, Ammonia-N, Chlorine, Dissolved Oxygen	View	View

Wetland name or number: Wetland 17/65

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 17/65 Date of site visit: 8/13/2018, 4/29/2019, 6/5/2019, 3/16/2022

Rated by G. Ritchotte Trained by Ecology? ☒ Yes ☐ No Date of Training June 2014

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map Google Earth Aerial, 2018

OVERALL WETLAND CATEGORY I (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	H	
Landscape Potential	H	H	L	
Value	H	H	H	**TOTAL**
Score Based on Ratings	8	8	7	23

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	B-7
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-8
Flow directions and associated features	n/a	B-8a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-8
Map of the contributing basin	D 4.3, D 5.3	B-9
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	B-10
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B-6

Wetland name or number: Wetland 17/65

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 has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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	5
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	4
Total for D 1 Add the points in the boxes above (F9 key)	10

Rating of Site Potential If score is: 6–11 = M *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source: Interurban Trail, landfill_____ Yes = 1	1
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 or 4 = H *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	1
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS:

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 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 are at least 0.5 ft to <2 ft from surface or bottom of outlet | points = 3	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	5
Total for D 4 Add the points in the boxes above	8

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 17/65

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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 subbasin that is immediately down-gradient of unit | points = 2 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

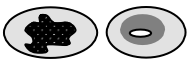
COMMENTS:

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☒ Scrub-shrub (areas where shrubs have >30% cover) ☒ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	4 structures or more | points = 4	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☒ Permanently flooded or inundated ☒ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☒ Saturated only ☒ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** ☐ **Freshwater tidal wetland**	4 or more types present | points = 3 **2 points** **2 points**	3

Wetland name or number: Wetland 17/65

H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: >19 species | points = 2	2
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.* High | points = 3 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	3
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☒ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☒ Standing snags (dbh >4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☒ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☒ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
Total for H 1 Add the points in the boxes above	17

Rating of Site Potential If score is: 15–18 = H *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.3**+** [(% moderate and low intensity land uses)0/2] 0 **= 0.3**% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 11.4**+** [(% moderate and low intensity land uses)8.7/2] 4.4 **= 15.8**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 79.6% >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 17/65

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.* WDFW Priority Habitats within 100 m: ☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Herbaceous Balds ☐ Old Growth/Mature Forests ☐ Oregon White Oak ☒ Riparian ☐ Westside Prairies ☒ Instream ☐ Nearshore ☐ Caves ☐ Cliffs ☐ Talus ☒ Snags and Logs (*Priority habitats listed by WDFW: For complete descriptions of WDFW priority habitats, and the counties in which they can be found, see: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington,* <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>, *or access the list from here:* <https://wdfw.wa.gov/species-habitats/at-risk/phs/list>.) Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (checked above) ☒ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☒ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (checked above) points = 1 Site does not meet any of the criteria above points = 0	2
Rating of Value If score is: 2 = H	*Record the rating on the first page*

Legend

- Stream
- Delineated wetland boundary
- Estimated wetland boundary
- Delineated OHWM

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure B-7.
Cowardin Classes for Wetland 17/65.

N

0 200 400 800 Feet

HERRERA

ESRI, Aerial (2021)

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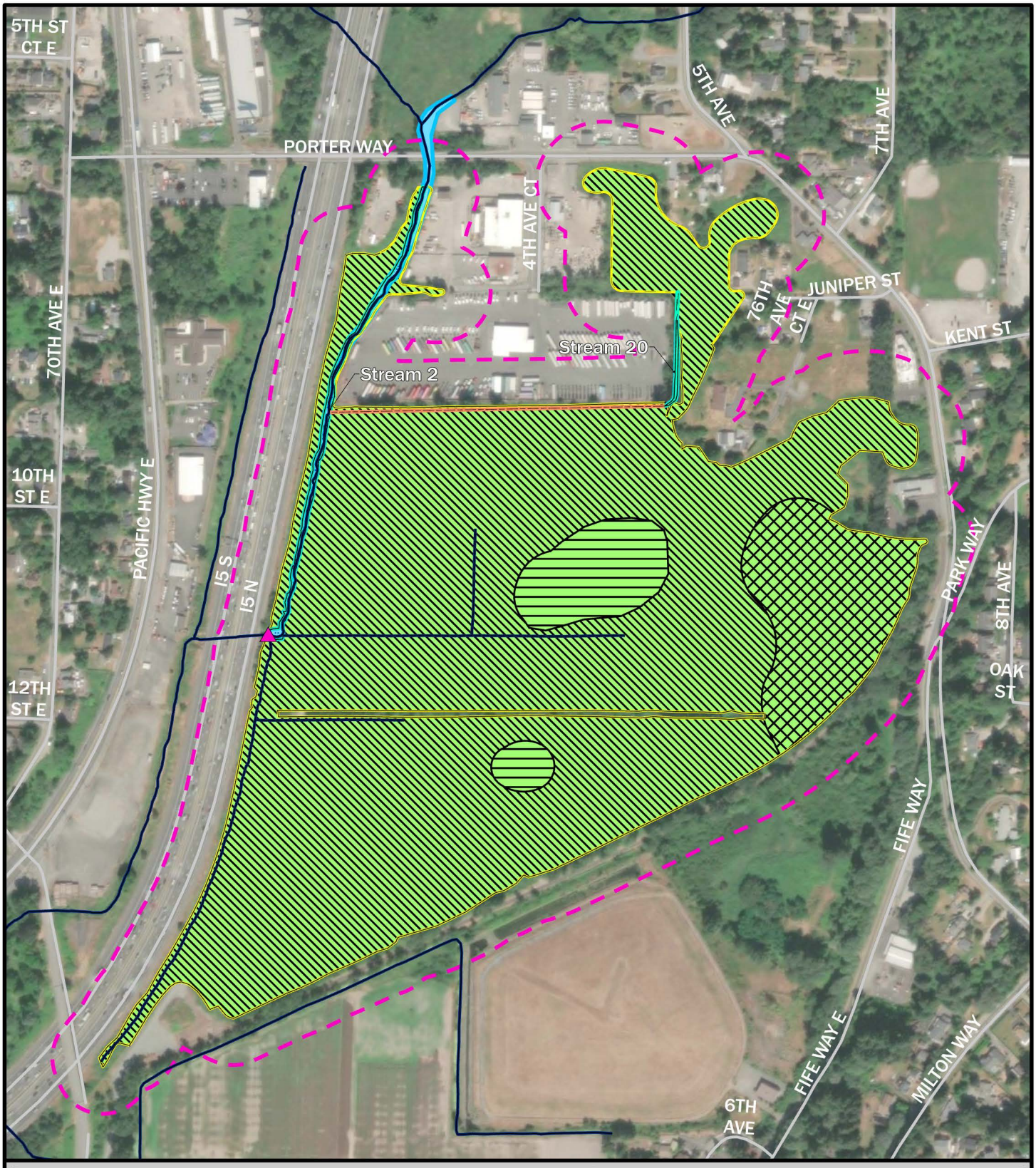

Legend

- Estimated ditch centerline
- Stream (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Permanently flowing stream
- Permanently flooded
- Saturated only
- Seasonally flooded
- Permanently flowing stream

Figure B-8.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 17/65.

N

0 220 440 880 Feet

HERRERA

Esri, Aerial (2021)

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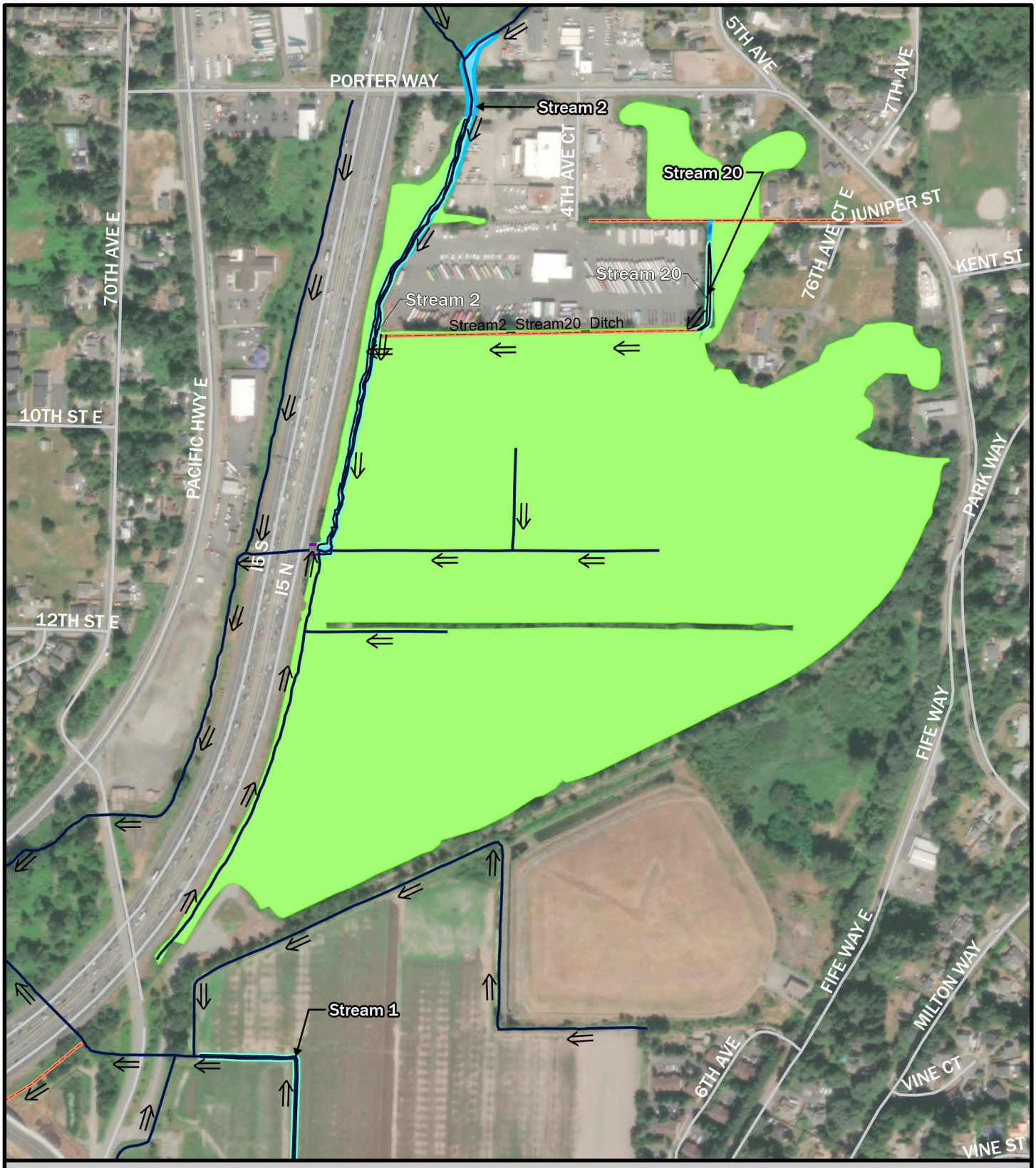

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure B-8a.
Flow Directions and Features Associated with Wetland 17/65.

N

0 230 460 920 Feet

HERRERA

Esri, Aerial (2021)

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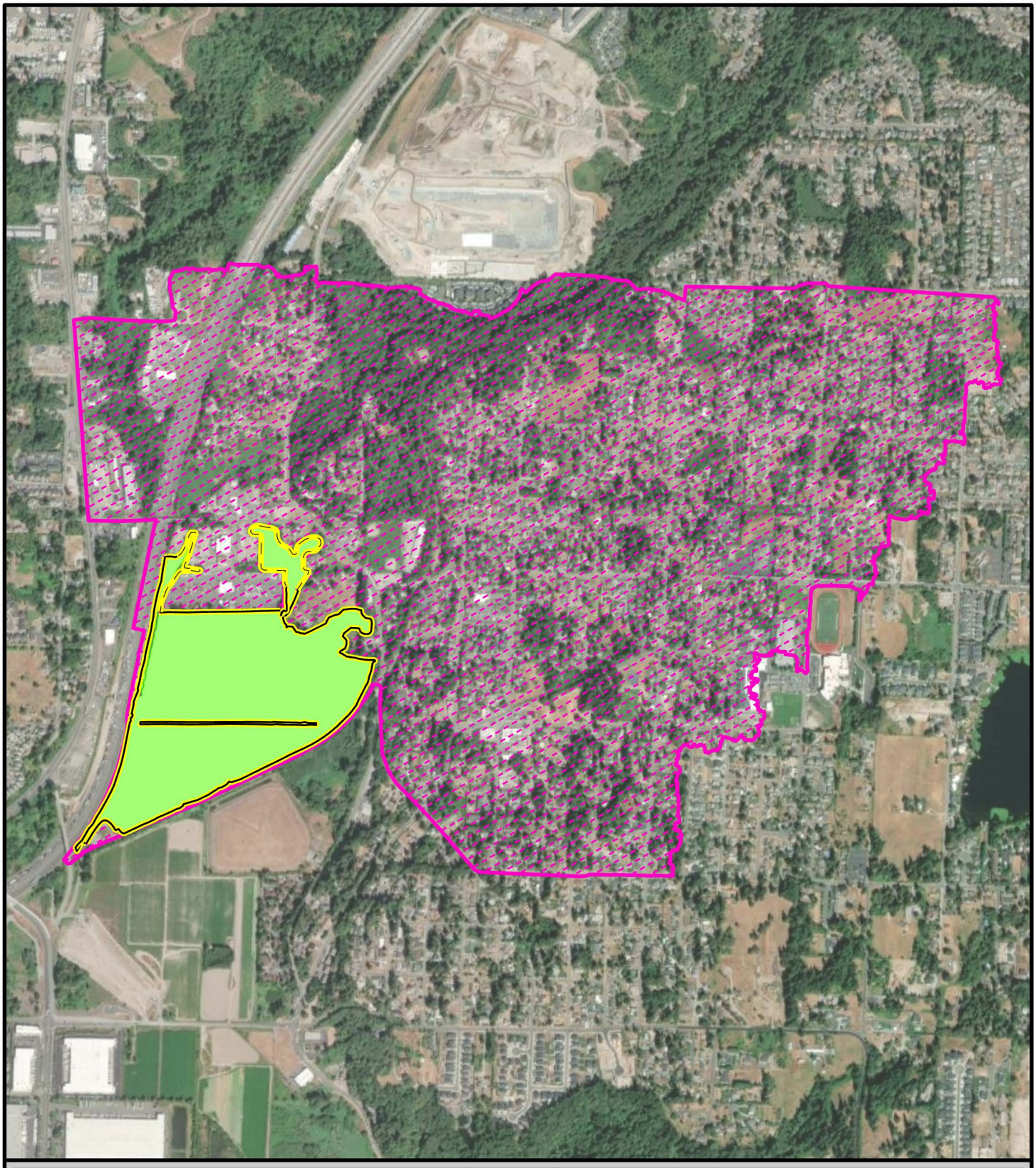

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure B-9.
Map of Contributing Basin for Wetland 17/65.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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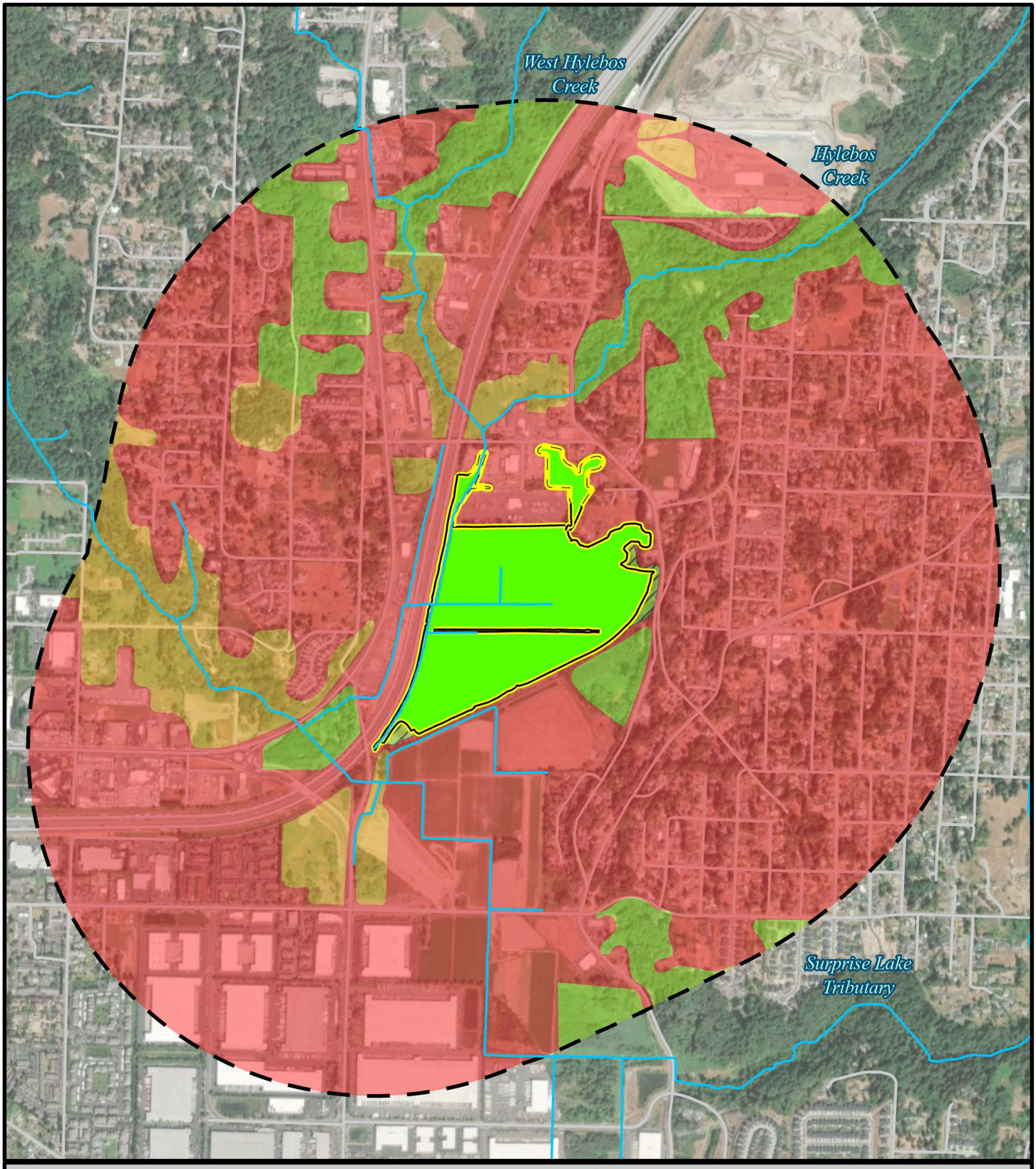

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure B-10.
Habitat Within a 1-km Boundary of Wetland 17/65.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 136

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 136 Date of site visit: 3/23/2022

Rated by J. Hearsey Trained by Ecology? X Yes ___ No Date of Training 2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Yes X No

NOTE: **Form is not complete without the figures requested** (*figures can be combined*).

Source of base aerial photo/map ESRI Aerial, 2022

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics _____)

1. Category of wetland based on FUNCTIONS

Category III – Total score = 16 – 19

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H	H	L	
Landscape Potential	M	H	L	
Value	M	L	M	**TOTAL**
Score Based on Ratings	7	7	4	18

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
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	B-11
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-12
Flow directions and associated features	n/a	B-12a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-12
Map of the contributing basin	D 4.3, D 5.3	B-13
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	B-14
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B-6

Wetland name or number: Wetland 136

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	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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	5
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	4
Total for D 1 Add the points in the boxes above (F9 key)	12

Rating of Site Potential If score is: 12–16 = H *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source:_____ No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: 1 or 2 = M *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? No = 0	0
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: The wetland is in the Hylebos Creek-Frontal Commencement Bay subwatershed (HUC 12) which does not have TMDLs in place at the site. Wapato Creek is in the HUC 12 and has a 303d listing for bacteria.

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	4
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 are at least 0.5 ft to <2 ft from surface or bottom of outlet | points = 3	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	5
Total for D 4 Add the points in the boxes above	12

Rating of Site Potential If score is: 12–16 = H *Record the rating on the first page*

Wetland name or number: Wetland 136

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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): Not applicable. **If not applicable chosen above:** There are no problems with flooding downstream of the wetland | points = 0 **Explanation for 0 points (if required above):**	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: 0 = L *Record the rating on the first page*

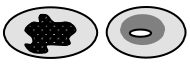
COMMENTS:

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☐ Scrub-shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1 structure | points = 0	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated ☒ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☐ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** ☐ **Freshwater tidal wetland**	1 type present | points = 0 **2 points** **2 points**	0

Wetland name or number: Wetland 136

H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: 5–19 species | points = 1	1
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.* Moderate | points = 2 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☐ Standing snags (dbh >4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	1

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

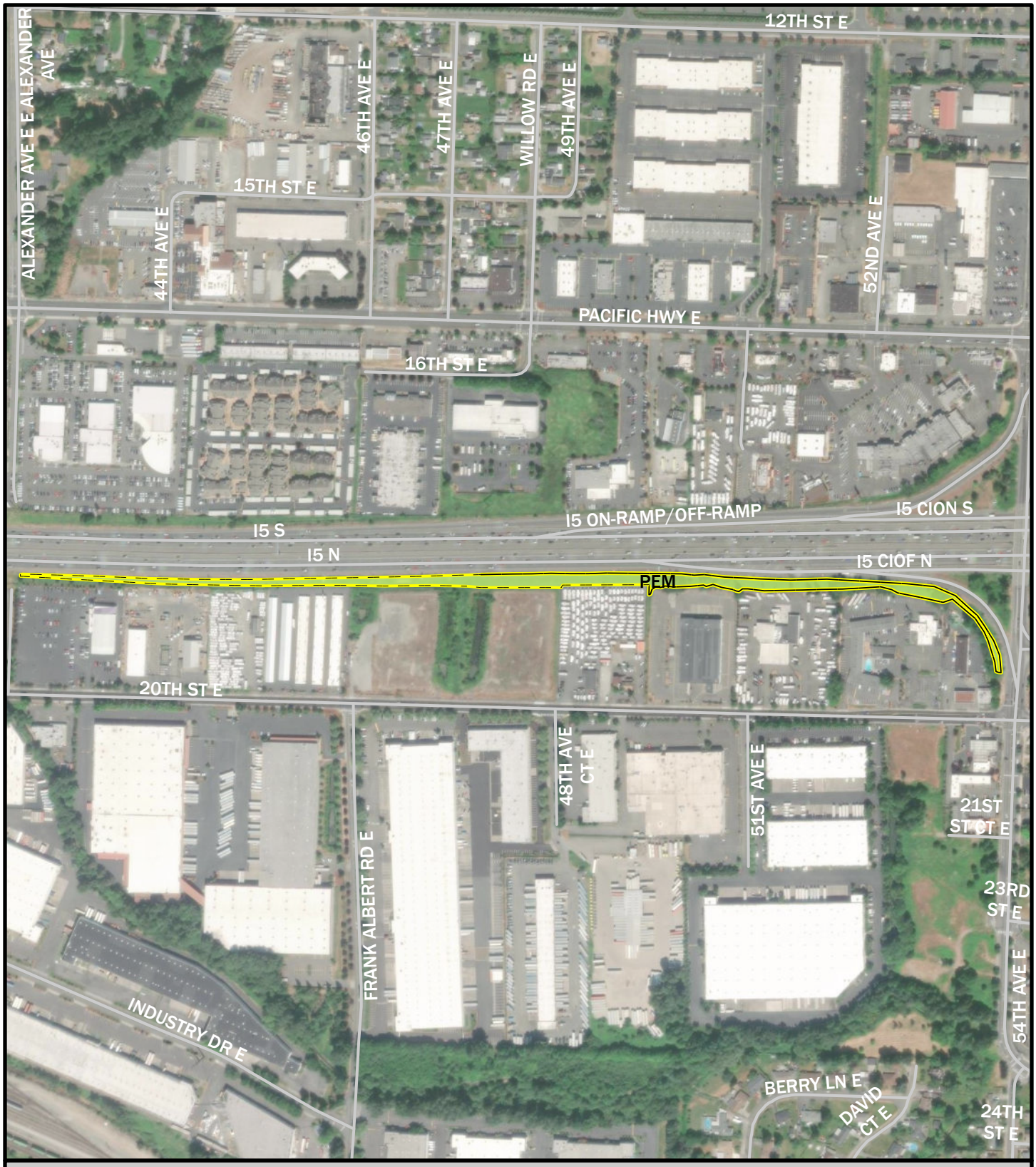
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.0**+** [(% moderate and low intensity land uses)0.0/2] 0__ **=** 0____% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 1.5**+** [(% moderate and low intensity land uses)5.4/2] 2.7____ **=** 4.2_____% Undisturbed habitat <10% of 1 km Polygon | points = 0	0
H 2.3. Land use intensity in 1 km Polygon: If >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-2

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 136

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

Rating of Value If score is: 1 = M *Record the rating on the first page*



Legend

- Delineated wetland boundary
- Estimated wetland boundary

Cowardin class

- PEM - Palustrine emergent

Figure B-11.
Cowardin Classes for Wetland 136.

N

0 265 530 1,060 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Stream (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland
- 150ft boundary

Hydroperiod

- Seasonally flooded

Figure B-12.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 136.

N

0 290 580 1,160 Feet

HERRERA

Esri, Aerial (2021)

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Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Wetland
- Stream

Figure B-12a.
Flow Directions and Features Associated with Wetland 136.

N

0 335 670 1,340 Feet

HERRERA

Esri, Aerial (2021)

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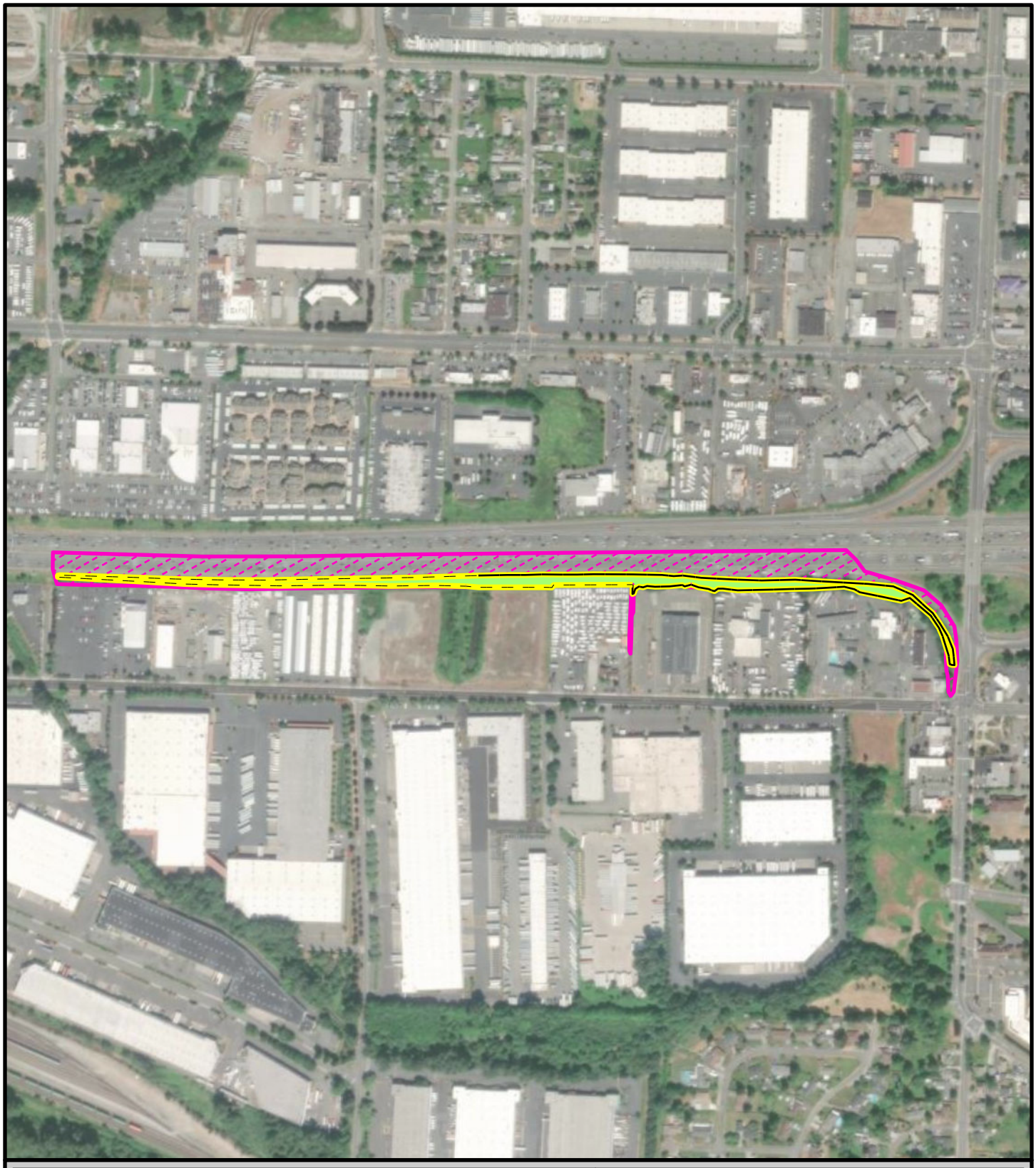

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure B-13.
Map of Contributing Basin for Wetland 136.

N

0 290 580 1,160 Feet

HERRERA

Esri, Aerial (2021)

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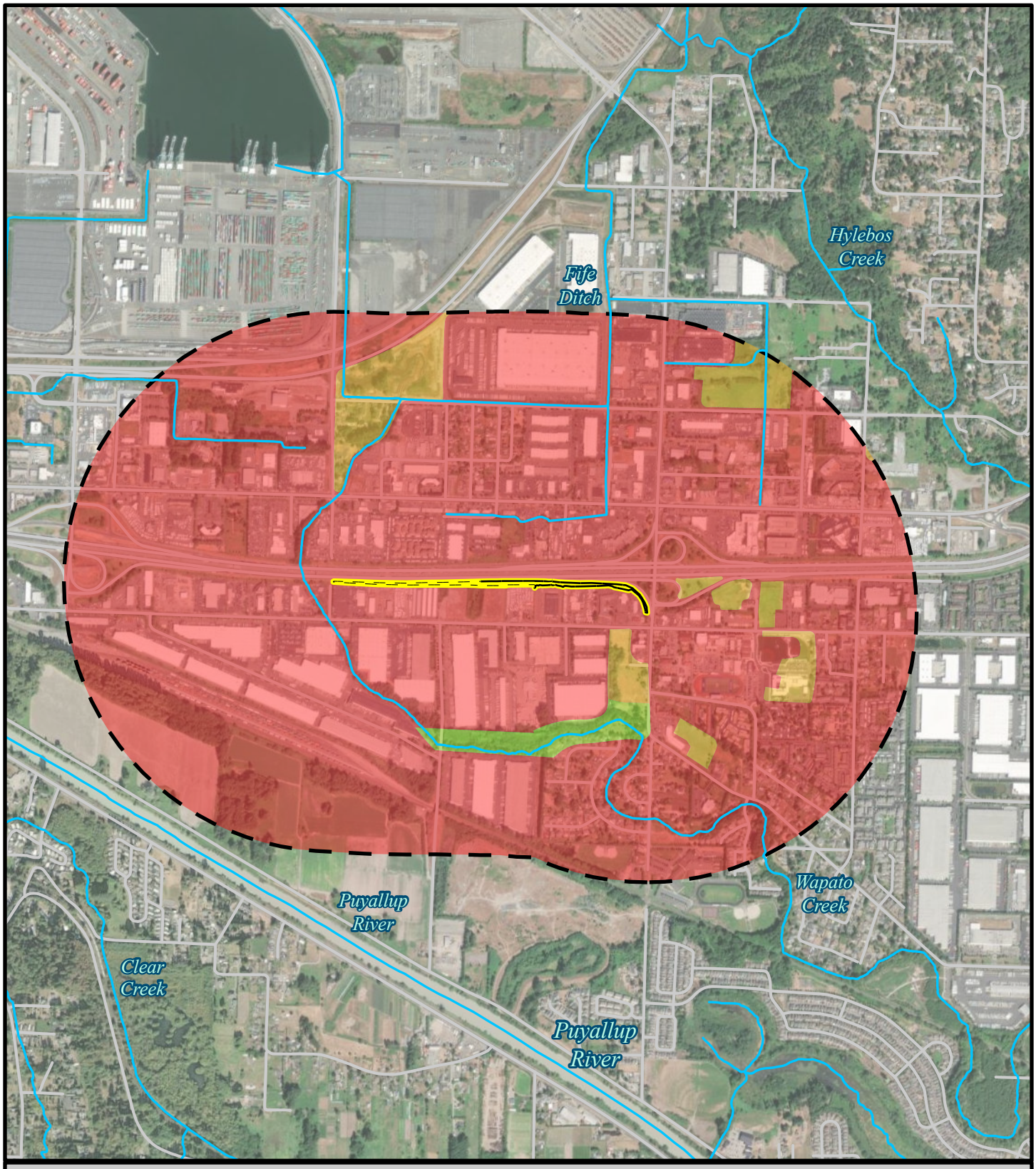

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure B-14.
Habitat Within a 1-km Boundary of Wetland 136.

N

0 500 1,000 2,000
Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 149

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 149 Date of site visit: 5/19/2023

Rated by J. LeClerc Trained by Ecology? ☒ Yes ☐ No Date of Training Oct. 2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2023

OVERALL WETLAND CATEGORY IV (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	L	
Landscape Potential	M	H	L	
Value	M	L	L	**TOTAL**
Score Based on Ratings	6	6	3	15

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	B-15
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-16
Flow directions and associated features	n/a	B-16a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-16
Map of the contributing basin	D 4.3, D 5.3	B-17
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	B-18
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B-6

Wetland name or number: Wetland 149

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 has an intermittently flowing stream or ditch | points = 2	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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	5
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 < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	7

Rating of Site Potential If score is: 6–11 = M *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source: No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: 1 or 2 = M *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? No = 0	0
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: The wetland is in the Hylebos Creek-Frontal Commencement Bay subwatershed (HUC 12) which does not have TMDLs in place at the site. Wapato Creek is in the HUC 12 and has a 303(d) listing for bacteria. The wetland outlet is an intermittently flowing culvert.

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 has an intermittently flowing stream or ditch | points = 2	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding less than 0.5 ft (6 in) | points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit | points = 5	5
Total for D 4 Add the points in the boxes above	7

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 149

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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): Not applicable. **If not applicable chosen above:** There are no problems with flooding downstream of the wetland | points = 0 **Explanation for 0 points (if required above):**	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: 0 = L *Record the rating on the first page*

COMMENTS:

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☐ Scrub-shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1 structure | points = 0	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated ☐ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☒ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland**	1 type present | points = 0 **2 points**	0

Wetland name or number: Wetland 149

☐ **Freshwater tidal wetland** **2 points**	
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: <5 species | points = 0	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 | points = 0 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☐ Standing snags (dbh >4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	0

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.0**+** [(% moderate and low intensity land uses)0.0/2] 0.0 **= 0.0**% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 2.4**+** [(% moderate and low intensity land uses)6.6/2] 3.3 **= 5.7**% Undisturbed habitat <10% of 1 km Polygon | points = 0	0
H 2.3. Land use intensity in 1 km Polygon: 91.0**%** >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-2

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 149

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.* WDFW Priority Habitats within 100 m: ☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Herbaceous Balds ☐ Old Growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Westside Prairies ☐ Instream ☐ Nearshore ☐ Caves ☐ Cliffs ☐ Talus ☐ Snags and Logs (*Priority habitats listed by WDFW: For complete descriptions of WDFW priority habitats, and the counties in which they can be found, see: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington,* <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>, *or access the list from here:* <https://wdfw.wa.gov/species-habitats/at-risk/phs/list>.) Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (checked above) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (checked above) points = 1 Site does not meet any of the criteria above points = 0	0
Rating of Value If score is: 0 = L *Record the rating on the first page*	

Legend

Delineated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure B-15.
Cowardin Classes for Wetland 149.

N

0 15 30 60 Feet

HERRERA

ESRI, Aerial (2021)

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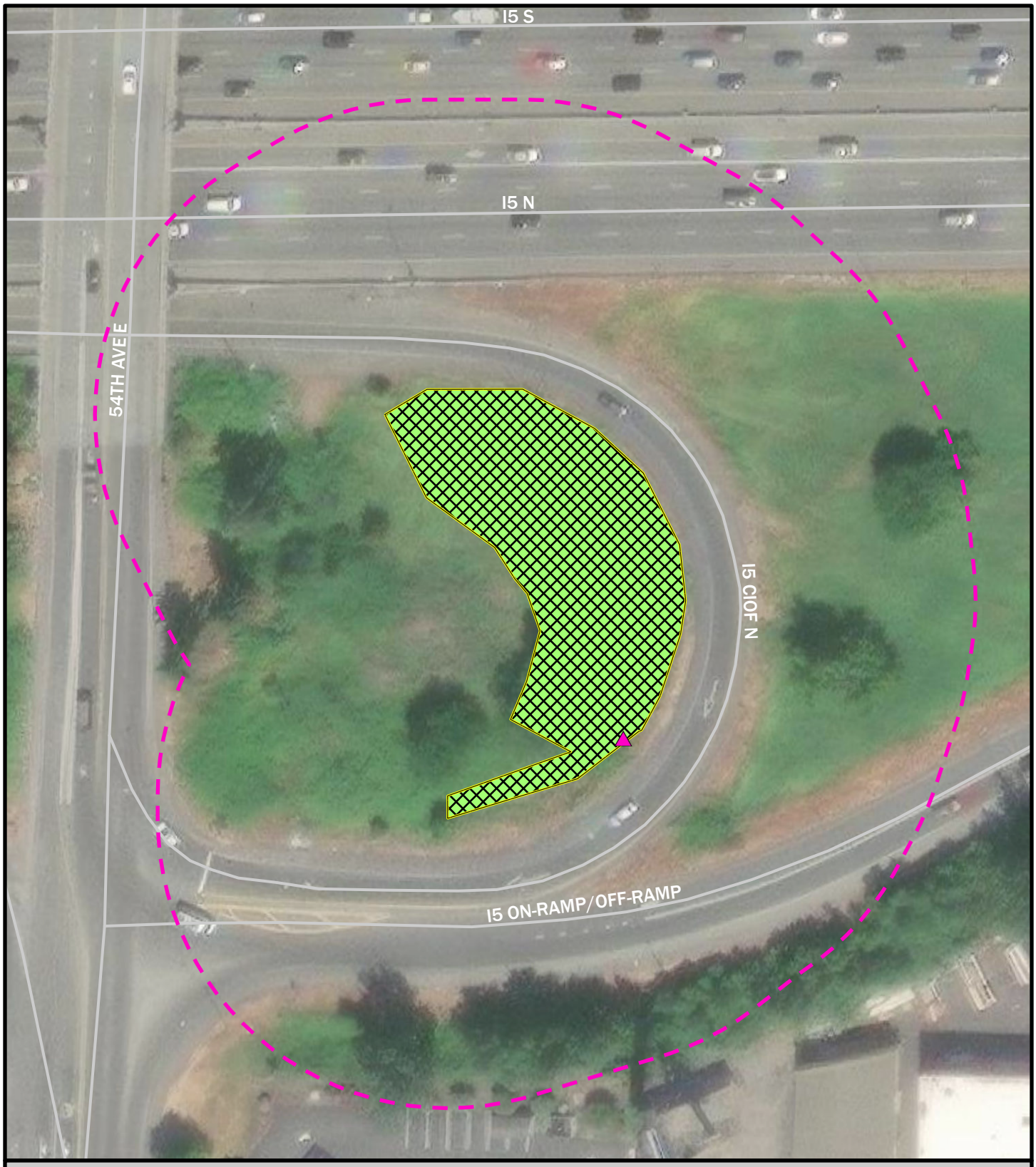

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only

Figure B-16.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 149.

N

0 35 70 140 Feet

HERRERA

Esri, Aerial (2021)

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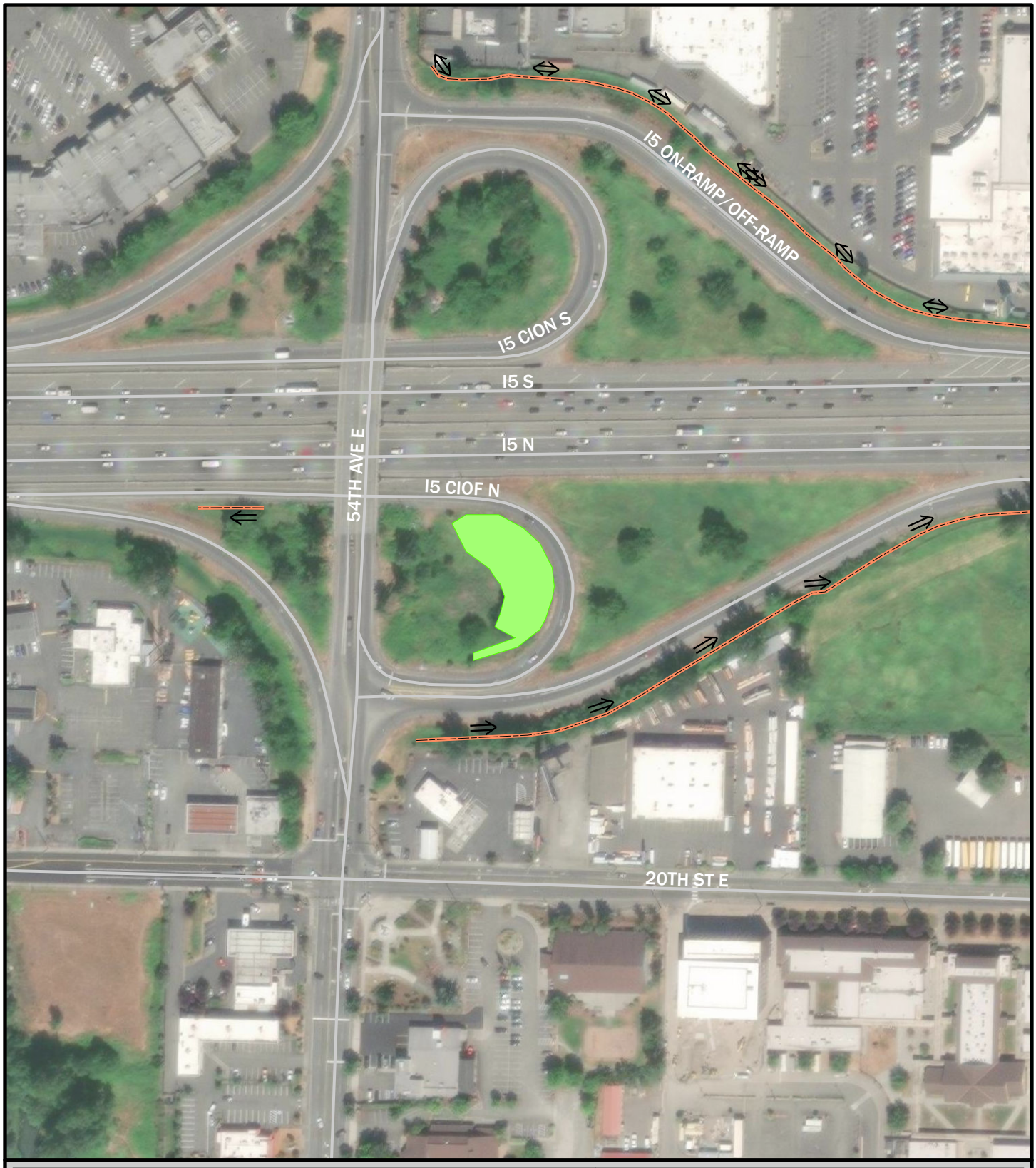

Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure B-16a.
Flow Directions and Features Associated with Wetland 149.

N

0 105 210 420 Feet

HERRERA

Esri, Aerial (2021)

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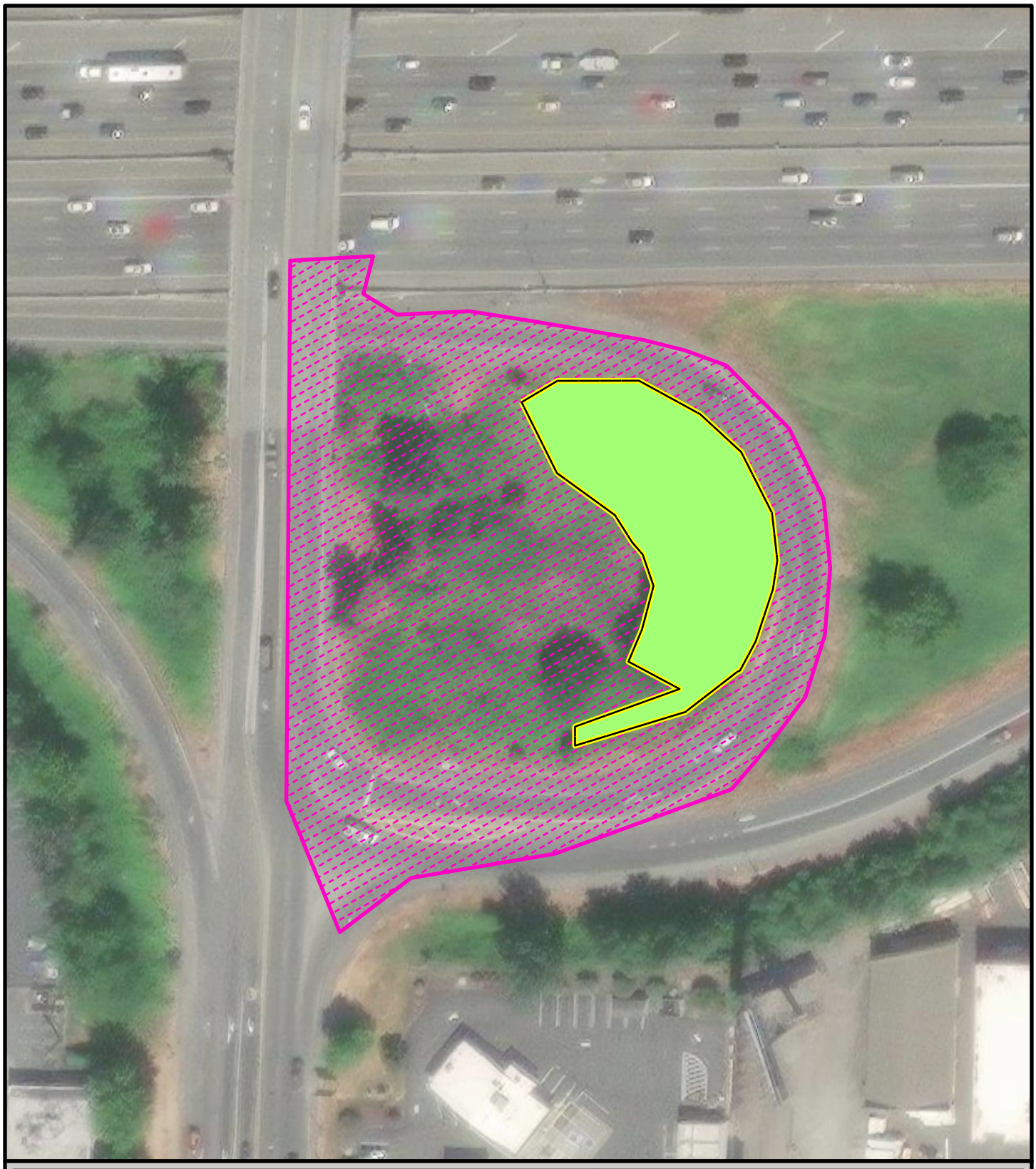

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure B-17.
Map of Contributing Basin for Wetland 149.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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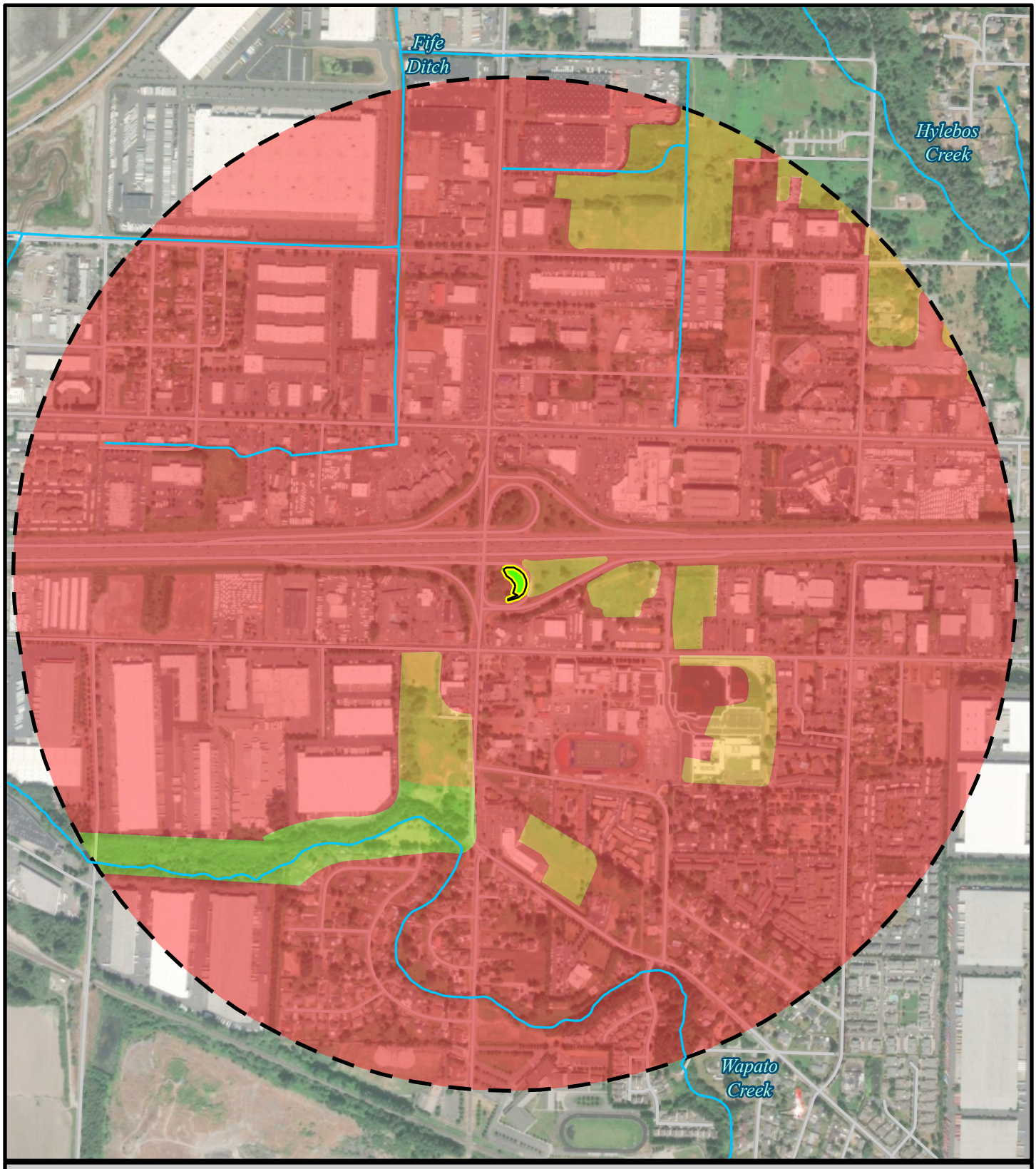

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure B-18.
Habitat Within a 1-km Boundary of Wetland 149.

N

0 460 920 1,840 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 150

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 150 Date of site visit: 5/19/2023

Rated by J. LeClerc Trained by Ecology? ☒ Yes ☐ No Date of Training Oct. 2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2023

OVERALL WETLAND CATEGORY IV (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	L	L	
Landscape Potential	M	H	L	
Value	M	L	L	**TOTAL**
Score Based on Ratings	6	5	3	14

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	B-19
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-20
Flow directions and associated features	n/a	B-20a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-20
Map of the contributing basin	D 4.3, D 5.3	B-21
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	B-22
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B-6

Wetland name or number: Wetland 150

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 has an intermittently flowing stream or ditch | points = 2	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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	5
D 1.4. Characteristics of seasonal ponding or inundation: Per GIS, 24.3% seasonally ponded *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is < 1/4 total area of wetland | points = 0	0
Total for D 1 — Add the points in the boxes above (F9 key)	7

Rating of Site Potential If score is: 6–11 = M *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source: No = 0	0
Total for D 2 — Add the points in the boxes above	2

Rating of Landscape Potential If score is: 1 or 2 = M *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? No = 0	0
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 — Add the points in the boxes above	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: The wetland is in the Hylebos Creek-Frontal Commencement Bay subwatershed (HUC 12) which does not have TMDLs in place at the site. Wapato Creek is in the HUC 12 and has a 303(d) listing for bacteria.

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 has an intermittently flowing stream or ditch | points = 2	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding less than 0.5 ft (6 in) | points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is 10 to 100 times the area of the unit | points = 3	3
Total for D 4 — Add the points in the boxes above	5

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 150

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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): Not applicable. **If not applicable chosen above:** There are no problems with flooding downstream of the wetland | points = 0 **Explanation for 0 points (if required above):**	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: 0 = L *Record the rating on the first page*

COMMENTS:

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☐ Scrub-shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1 structure | points = 0	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated ☒ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☒ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland**	2 types present | points = 1 **2 points**	1

Wetland name or number: Wetland 150

☐ **Freshwater tidal wetland** **2 points**	
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: <5 species | points = 0	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 | points = 0 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☐ Standing snags (dbh >4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	1

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.0**+** [(% moderate and low intensity land uses)0.0/2] 0.0 **= 0.0**% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 2.6**+** [(% moderate and low intensity land uses)5.9/2] 3.0 **= 5.6**% Undisturbed habitat <10% of 1 km Polygon | points = 0	0
H 2.3. Land use intensity in 1 km Polygon: 91.6**%** >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-2

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 150

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.* WDFW Priority Habitats within 100 m: ☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Herbaceous Balds ☐ Old Growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Westside Prairies ☐ Instream ☐ Nearshore ☐ Caves ☐ Cliffs ☐ Talus ☐ Snags and Logs (*Priority habitats listed by WDFW: For complete descriptions of WDFW priority habitats, and the counties in which they can be found, see: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington,* <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>, *or access the list from here:* <https://wdfw.wa.gov/species-habitats/at-risk/phs/list>.) Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (checked above) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (checked above) points = 1 Site does not meet any of the criteria above points = 0	0
Rating of Value If score is: 0 = L *Record the rating on the first page*	

Legend

Delineated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure B-19.
Cowardin Classes for Wetland 150.

N

0 15 30 60 Feet

HERRERA

ESRI, Aerial (2021)

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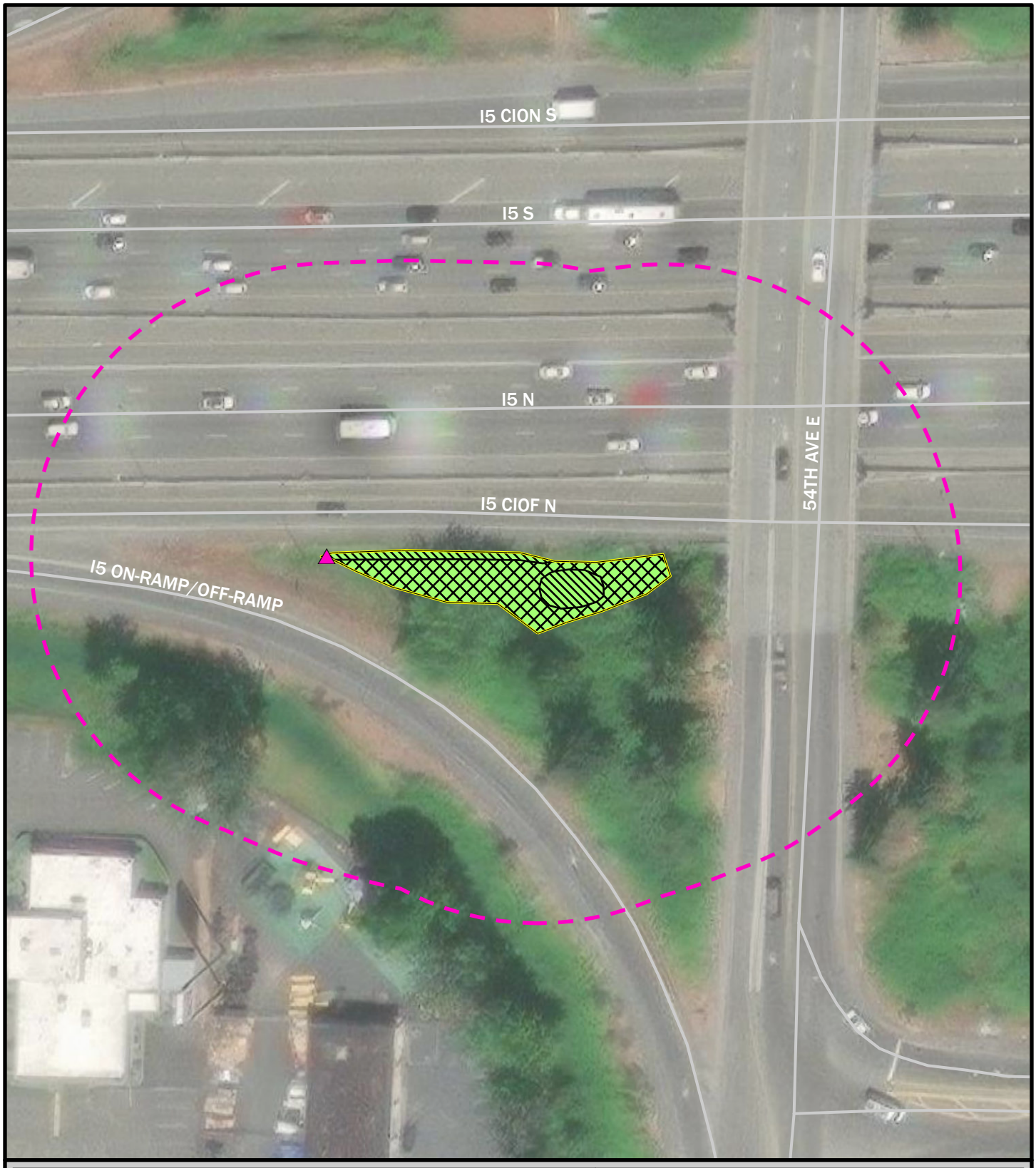

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure B-20.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 150.

N

0 35 70 140 Feet

HERRERA

Esri, Aerial (2021)

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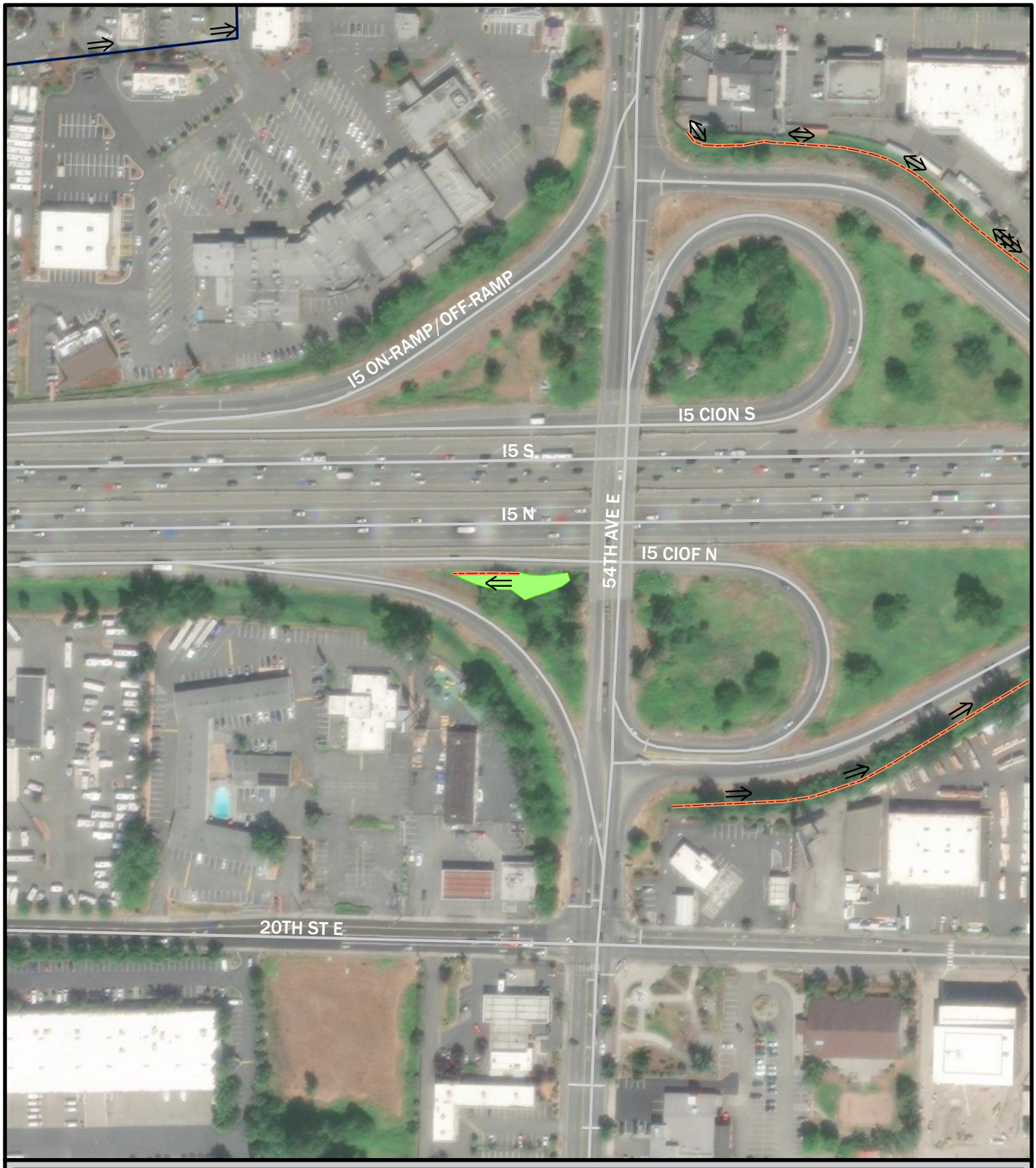

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Wetland

Figure B-20a.
Flow Directions and Features Associated with Wetland 150.

N

0 105 210 420 Feet

HERRERA

Esri, Aerial (2021)

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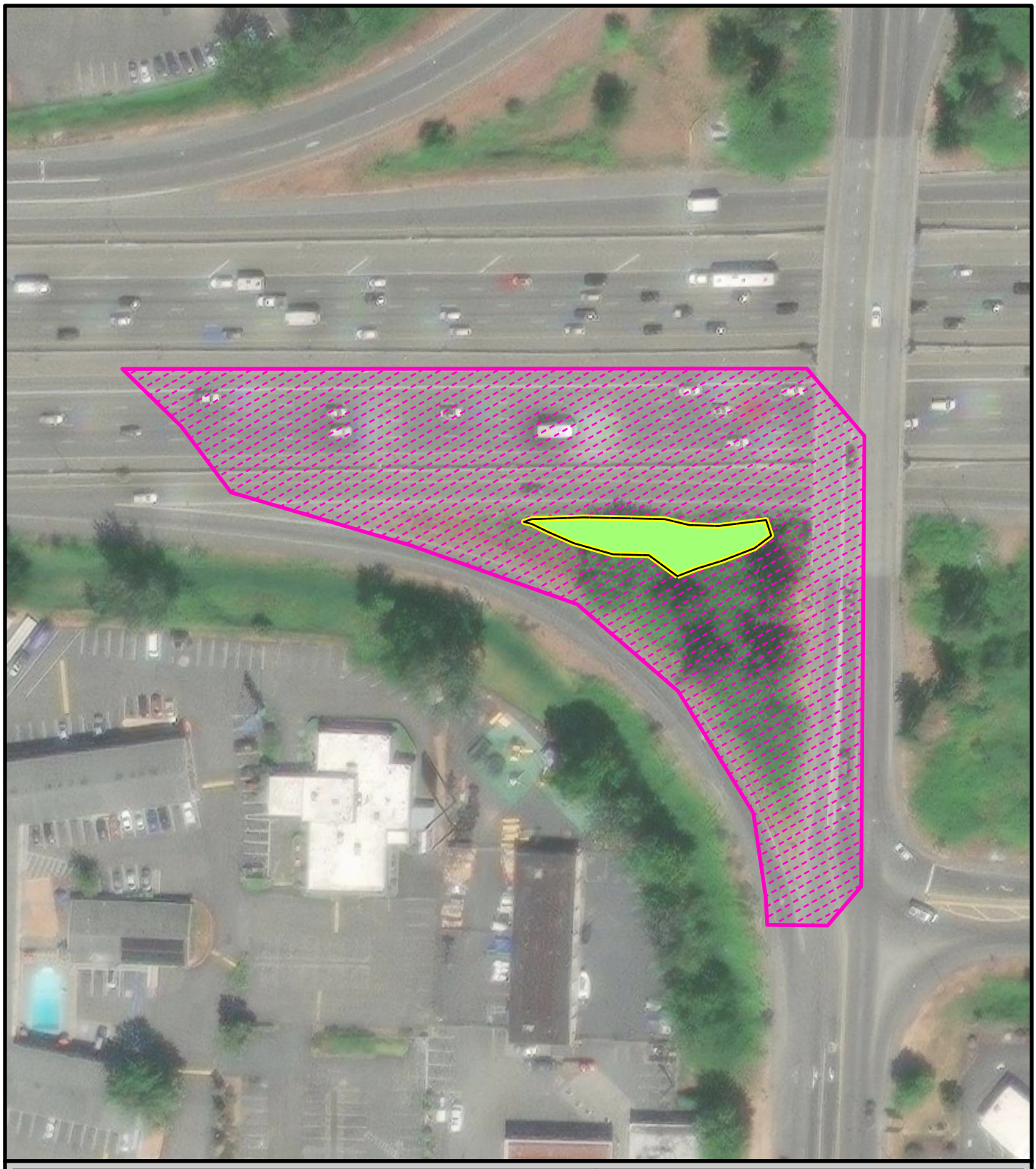

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure B-21.
Map of Contributing Basin for Wetland 150.

N

0 50 100 200 Feet

HERRERA

Esri, Aerial (2021)

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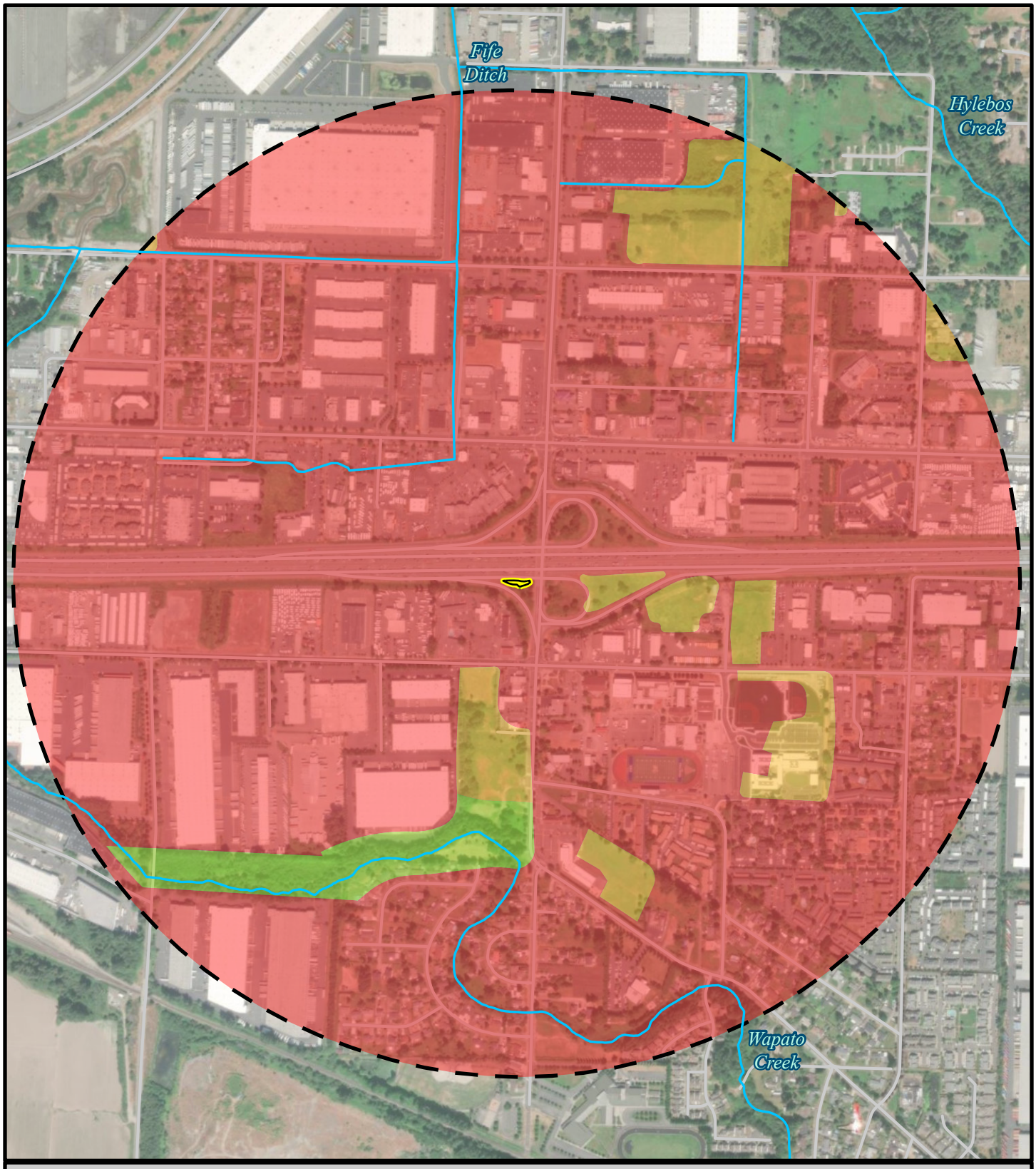

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure B-22.
Habitat Within a 1-km Boundary of Wetland 150.

N

0 460 920 1,840 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 151

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 151 Date of site visit: 5/19/2023

Rated by J. LeClerc Trained by Ecology? ☒ Yes ☐ No Date of Training Oct. 2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2023

OVERALL WETLAND CATEGORY IV (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	L	
Landscape Potential	M	H	L	
Value	M	L	L	**TOTAL**
Score Based on Ratings	6	6	3	15

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	B-23
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	B-24
Flow directions and associated features	n/a	B-24a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	B-24
Map of the contributing basin	D 4.3, D 5.3	B-25
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	B-26
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	D-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	D-6

Wetland name or number: Wetland 151

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 has an intermittently flowing stream or ditch | points = 2	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* 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	5
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 < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	7

Rating of Site Potential If score is: 6–11 = M *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	1
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	1
D 2.3. Are there septic systems within 250 ft of the wetland? 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? Source: No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: 1 or 2 = M *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? No = 0	0
D 3.2. Is the wetland in a basin or subbasin where an aquatic resource is on the 303(d) list? Yes = 1	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*)? No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: The wetland is in the Hylebos Creek-Frontal Commencement Bay subwatershed (HUC 12) which does not have TMDLs in place at the site. Wapato Creek is in the HUC 12 and has a 303(d) listing for bacteria.

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 has an intermittently flowing stream or ditch | points = 2	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding less than 0.5 ft (6 in) | points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit | points = 5	5
Total for D 4 Add the points in the boxes above	7

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 151

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H *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): Not applicable. **If not applicable chosen above:** There are no problems with flooding downstream of the wetland | points = 0 **Explanation for 0 points (if required above):**	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: 0 = L *Record the rating on the first page*

COMMENTS:

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 1/4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed ☒ Emergent ☐ Scrub-shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1 structure | points = 0	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated ☐ Seasonally flooded or inundated ☒ Occasionally flooded or inundated ☒ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland**	2 types present | points = 1 **2 points**	1

☐ **Freshwater tidal wetland** **2 points**	
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: <5 species | points = 0	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 | points = 0 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ Large, downed, woody debris within the wetland (>4 in diameter and 6 ft long). ☐ Standing snags (dbh >4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	1

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.0**+** [(% moderate and low intensity land uses)0.3/2] 0.2 **= 0.2**% If total accessible habitat is: <10% of 1 km Polygon | points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 2.1**+** [(% moderate and low intensity land uses)10.2/2] 5.1 **= 7.2**% Undisturbed habitat <10% of 1 km Polygon | points = 0	0
H 2.3. Land use intensity in 1 km Polygon: 87.7**%** >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	-2

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 151

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.* WDFW Priority Habitats within 100 m: ☐ Aspen Stands ☐ Biodiversity Areas and Corridors ☐ Herbaceous Balds ☐ Old Growth/Mature Forests ☐ Oregon White Oak ☐ Riparian ☐ Westside Prairies ☐ Instream ☐ Nearshore ☐ Caves ☐ Cliffs ☐ Talus ☐ Snags and Logs (*Priority habitats listed by WDFW: For complete descriptions of WDFW priority habitats, and the counties in which they can be found, see: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington,* <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>, *or access the list from here:* <https://wdfw.wa.gov/species-habitats/at-risk/phs/list>.) Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (checked above) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (checked above) points = 1 Site does not meet any of the criteria above points = 0	0
Rating of Value If score is: 0 = L *Record the rating on the first page*	

Legend

- Delineated wetland boundary
- Estimated wetland boundary

Cowardin class

- PEM - Palustrine emergent

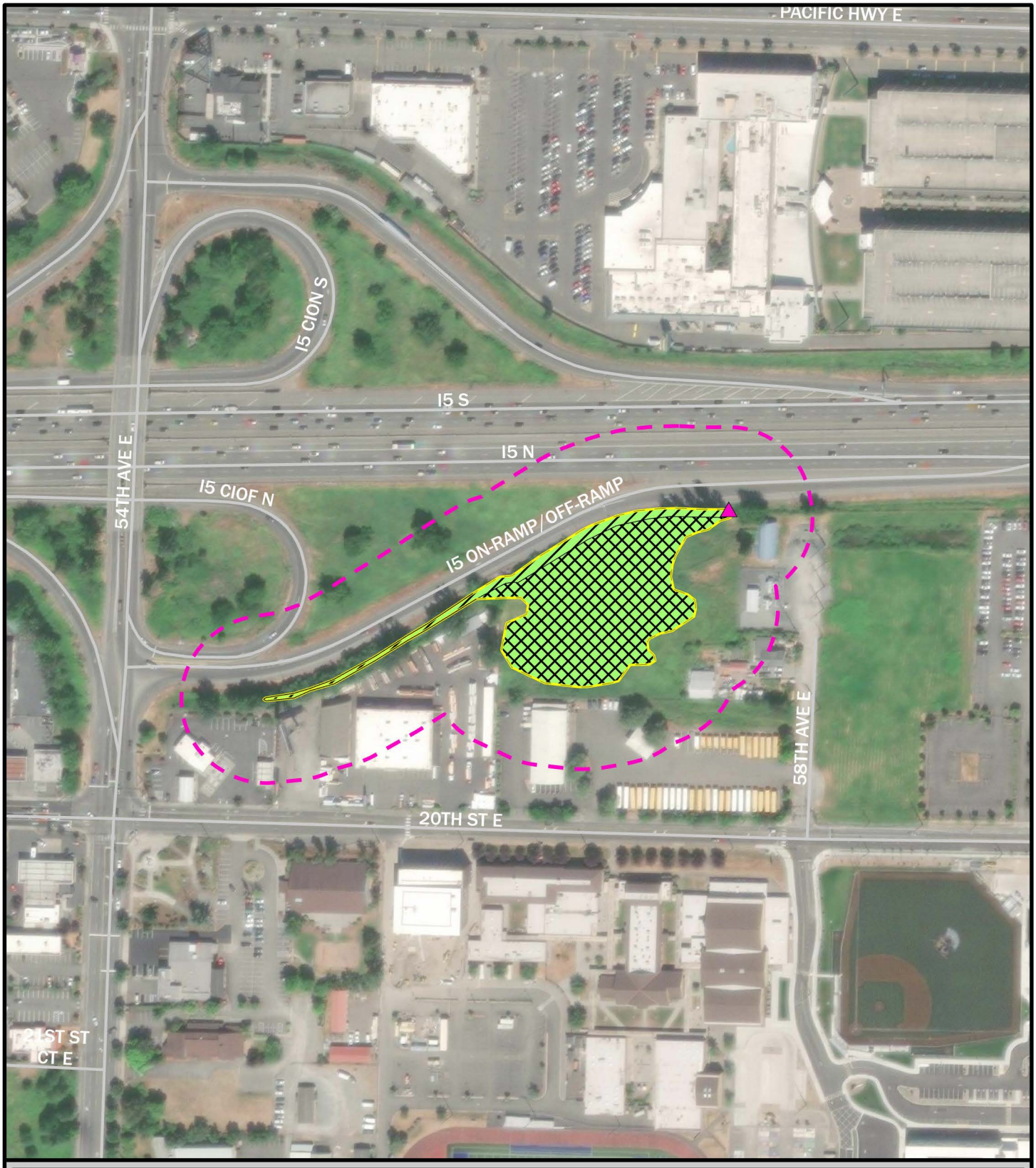
Figure B-23.
Cowardin Classes for Wetland 151.

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2021)

K:\Projects\Y2016\16-06277.000\Pro\WSAR_Rating_Figures_Stage2\WSAR_Rating_Figures_Stage2.aprx\FigX_CowardinClass_WLX



Legend

- Delineated wetland boundary
- Estimated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded
- Saturated only

Figure B-24.
Hydroperiod, 150-foot Boundary, and Location of Outlets for Wetland 151.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure B-24a.
Flow Directions and Features Associated with Wetland 151.

N

0 75 150 300 Feet

HERRERA

Esri, Aerial (2021)

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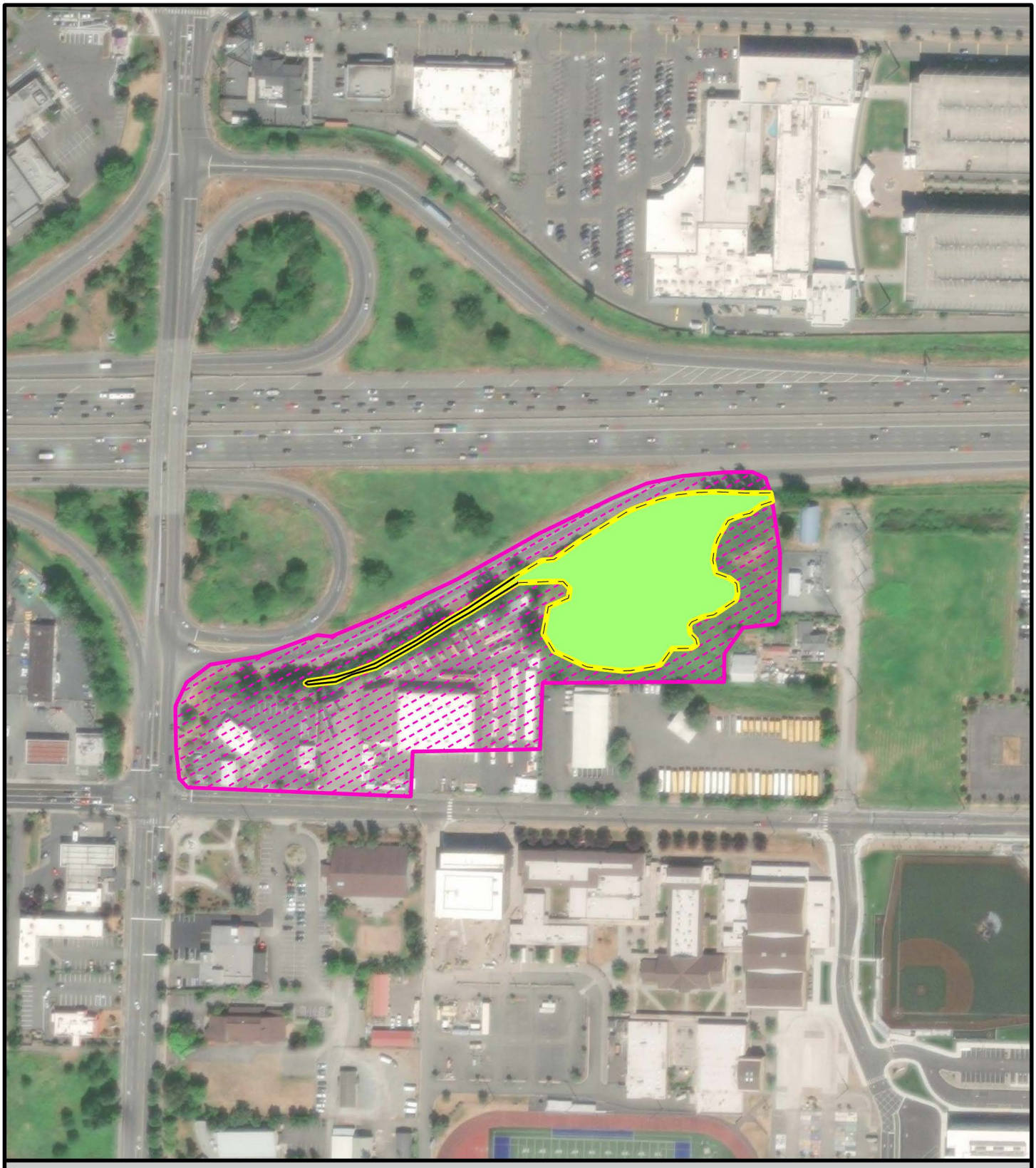

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure B-25.
Map of Contributing Basin for Wetland 151.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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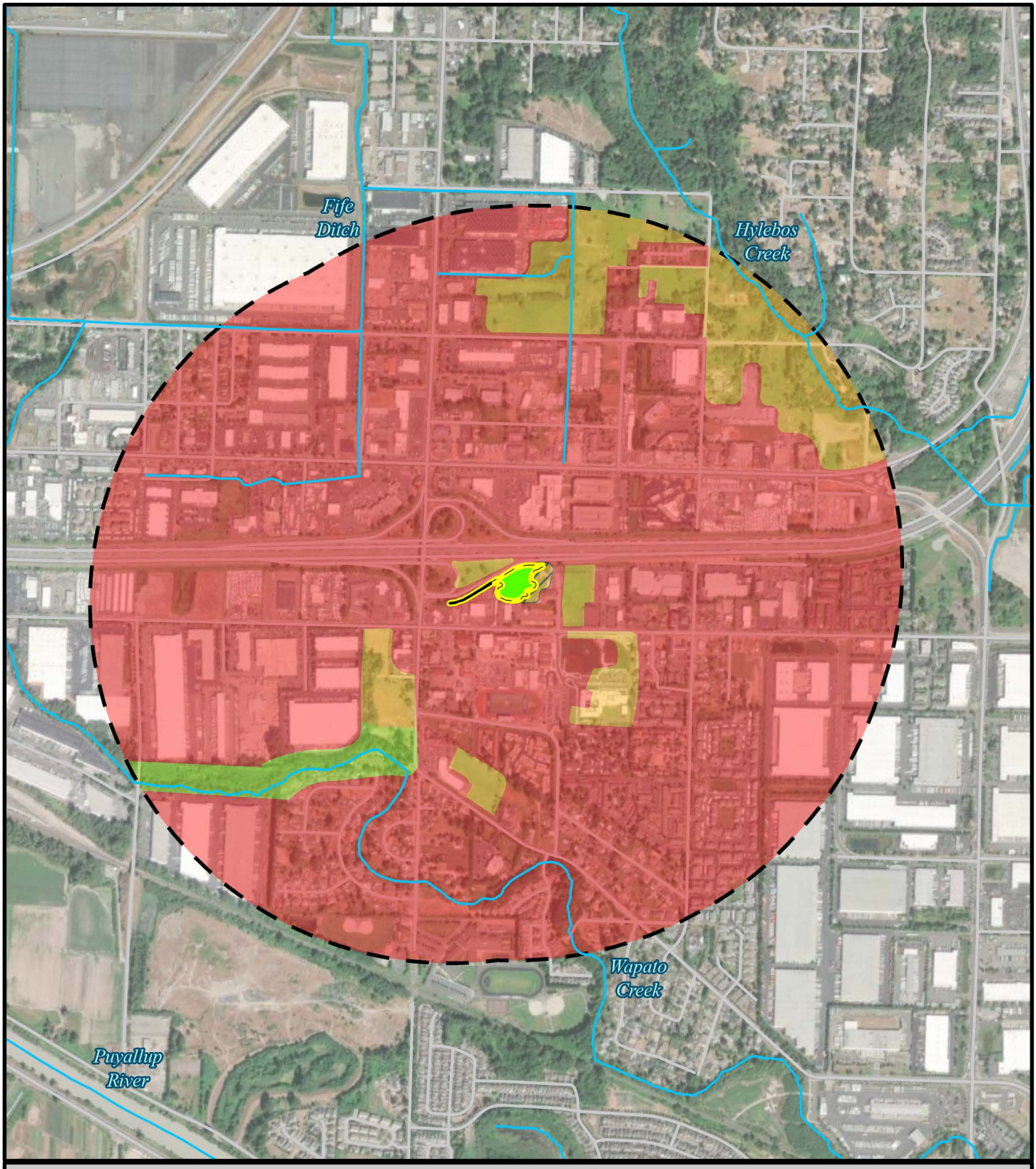

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed

Figure B-26.
Habitat Within a 1-km Boundary of Wetland 151.

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Appendix C. Wetland Functional Assessment Summaries

Wetland ID: Wetland 149 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 7/28/2023 **Cowardin Class:** PEM **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 6	X	Wetland receives surface flows from the freeway and can retain higher volumes of water during storm events.
Sediment removal		X	3		Dense herbaceous vegetation covers wetland, but excess sediment not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils and dense herbaceous vegetation are present in wetland.
Erosion control & shoreline stabilization		X	2		Not associated with any waterbody.
Production of organic matter and its export	X		1, 6		Dense herbaceous vegetation present; outlet is intermittently flowing
General habitat suitability		X	1		Wetland occurs within highly urban area adjacent to I-5 and lacks plant species diversity and interspersion of habitats.
Habitat for aquatic invertebrates		X	6		Within 2 km of other wetlands.
Habitat for amphibians		X	6		Within 2 km of other wetlands.
Habitat for wetland-associated mammals		X			Permanent water not present within the wetland. Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Emergent vegetation present, but the wetland is located adjacent to I-5 and does not provide suitable habitat for wetland associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Low plant species diversity. Reed canarygrass dominates.
Educational or scientific use		X	2		Publicly owned ROW stormwater wetland but not suitable or accessible for these purposes.
Uniqueness & heritage		X			Not a unique or heritage wetland feature.

Source: Null, W.S., G. Skinner, and W. Leonard. 2000. Wetland functions characterization tool for linear projects. Washington State Department of Transportation, Environmental Affairs Office. Olympia.

Wetland ID: Wetland 150 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 7/28/2023 **Cowardin Class:** PEM **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 6	X	Wetland receives surface flows from the freeway and can retain higher volumes of water during storm events.
Sediment removal		X	3		Dense herbaceous vegetation covers wetland, but excess sediment not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils and dense herbaceous vegetation are present in wetland.
Erosion control & shoreline stabilization		X	2		Not associated with any waterbody.
Production of organic matter and its export	X		1, 6		Dense herbaceous vegetation present; outlet is intermittently flowing
General habitat suitability		X	1		Wetland occurs within highly urban area adjacent to I-5 and lacks plant species diversity and interspersion of habitats.
Habitat for aquatic invertebrates		X	6		Within 2 km of other wetlands.
Habitat for amphibians		X	6		Within 2 km of other wetlands.
Habitat for wetland-associated mammals		X			Permanent water not present within the wetland. Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Permanent water not present within the wetland. Not suitable habitat for wetland-associated mammals.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Low plant species diversity. Reed canarygrass dominates.
Educational or scientific use		X	2		Publicly owned ROW stormwater wetland but not suitable or accessible for these purposes.
Uniqueness & heritage		X			Not a unique or heritage wetland feature.

Source: Null, W.S.; G. Skinner, and W. Leonard. 2000. Wetland functions characterization tool for linear projects. Washington State Department of Transportation, Environmental Affairs Office. Olympia.

Wetland ID: Wetland 151 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 7/28/2023 **Cowardin Class:** PEM **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 6	X	Wetland receives surface flows from the freeway and can retain higher volumes of water during storm events.
Sediment removal		X	3		Dense herbaceous vegetation covers wetland, but excess sediment not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils and dense herbaceous vegetation are present in wetland.
Erosion control & shoreline stabilization		X	2		Not associated with any waterbody.
Production of organic matter and its export	X		1, 6		Dense herbaceous vegetation present; outlet is intermittently flowing
General habitat suitability		X	1		Wetland occurs within highly urban area adjacent to I-5 and lacks plant species diversity and interspersion of habitats.
Habitat for aquatic invertebrates		X	6		Within 2 km of other wetlands.
Habitat for amphibians		X	6		Within 2 km of other wetlands.
Habitat for wetland-associated mammals		X			Permanent water not present within the wetland. Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Permanent water not present within the wetland. Not suitable habitat for wetland-associated mammals.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Low plant species diversity. Reed canarygrass dominates.
Educational or scientific use		X	2		Publicly owned ROW stormwater wetland but not suitable or accessible for these purposes.
Uniqueness & heritage		X			Not a unique or heritage wetland feature.

Source: Null, W.S.; G. Skinner, and W. Leonard. 2000. Wetland functions characterization tool for linear projects. Washington State Department of Transportation, Environmental Affairs Office. Olympia.