WETLAND AND STREAM ASSESSMENT REPORT

SR 167 Completion Project – Stage 2

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

Pierce County, Washington

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WSDOT SR 167 Completion Project
Puget Sound Gateway Program

September 12, 2022

WSDOT

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Executive Summary

The Washington State Department of Transportation (WSDOT) plans to complete the State Route (SR) 167 highway by building approximately 4 miles of a new four-lane limited-access highway as part of the SR 167 Completion Project (hereafter referred to as the Project). The SR 167 Completion Project is one of two large projects comprising WSDOT's Puget Sound Gateway Program. The new facility will begin at the current terminus in Puyallup at SR 161, extend westward through the Puyallup River Valley, and connect to Interstate 5 (I-5) near the existing Wapato Way East crossing over I-5. The Project also includes a new highway segment approximately 2 miles long. Defined as the SR 509 Spur, this new segment will extend from SR 509 near the Port of Tacoma to a new diverging diamond interchange at I-5 and SR 167.

The wetland and stream delineations described in this report are within areas relevant to the Stage 2 roadway portion of the SR 167 Completion Project, known as the SR 167/I-5 to SR 161 – New Expressway Project (hereafter referred to as Stage 2) (Figure ES-1). Delineations for additional areas that are proposed for mitigation will be described in the Wetland and Stream Mitigation Report that will be finalized during permit review. Stage 2 is the third construction contract of the Project's Phase 1 Improvements, which encompass the entire 6-mile corridor. The Stage 2 study area is entirely within Pierce County, Washington. The study area includes areas in unincorporated Pierce County, on the Puyallup Tribe of Indians reservation, and in the cities of Tacoma, Fife, Milton, Edgewood, Puyallup, and Sumner.

Wetland biologists conducted site visits from March 2021 through March 2022 to delineate wetlands and the ordinary high water marks (OHWMs) of streams within the Stage 2 study area. Wetland delineations were conducted in accordance with the procedures specified in the Regional Supplement to the US Army Corps of Engineers (USACE) Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region (Environmental Laboratory 2010) and the USACE routine wetland determination method (Environmental Laboratory 1987).

Wetland biologists evaluated field conditions by traversing the study area and noting wetlands, streams, and associated features, such as ditches, culverts, and stormwater ponds. Biologists identified 40 wetlands covering 182.61 acres within the study area (Table ES-1). The wetlands include palustrine emergent, palustrine scrub shrub, and palustrine forested wetlands and depressional and riverine wetland types. They are rated as Category I, II, III, and IV wetlands dominated by a variety of plant species as detailed in Tables 3 through 42 in this report. Wetlands in the study area typically provide moderate to high levels of water quality functions, moderate levels of hydrologic functions, and low to moderate levels of habitat functions. The conditions of the wetland buffers in the study area are typically poor due to high-intensity land uses, including buildings, parking lots, paved roads and sidewalks, commercial agriculture, people experiencing homelessness who have taken shelter on State right-of-way, and vegetation dominated by a mix of native and invasive species including reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*).

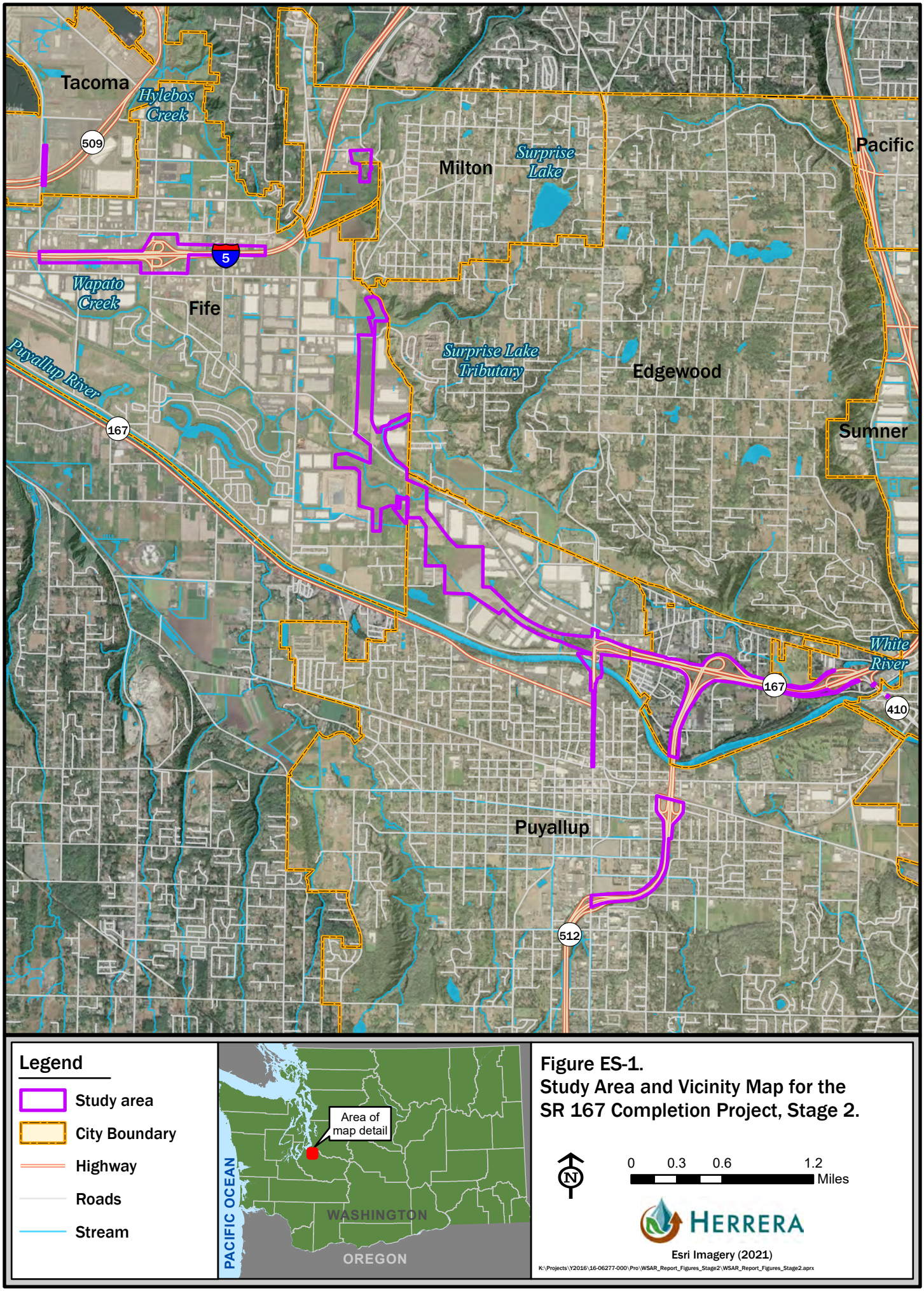

Figure ES-1.
Study Area and Vicinity Map for the SR 167 Completion Project, Stage 2.

Table ES-1. Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Wetland[a]	Wetland Classification				Wetland Size (acre)	Buffer Width (feet)
	Cowardin[b]	HGM[c]	Ecology[d]	Local Jurisdiction		
1	PEM	Depressional	III	III	2.30	60[e]
17/65	PEM, PSS, PFO	Depressional	I	I	71.13[f]	150[g]/165[h]
47	PEM, PSS, PFO	Depressional	II	II	20.46	165[e]
83	PEM, PSS, PFO	Depressional	III	III	19.62	105[e]
86	PEM	Depressional	III	III	0.11	60[e]
87	PSS, PFO	Depressional	III	III	0.12	75[i]
88/90/91	PEM, PSS	Depressional	II	II	0.49	100[i]
89	PSS	Depressional	II	II	0.10	50[i]
92	PEM	Depressional	III	III	1.56	80[i]
93	PEM	Depressional	III	III	6.81	80[i]
94	PEM, PSS, PFO	Depressional/ Riverine	II	II	42.36[f]	165[e]
95	PEM, PSS, PFO	Riverine	III	III	2.16	150[i]
98	PEM, PSS, PFO	Riverine	II	II	4.25[f]	165[e]
101	PEM	Depressional	III	III	0.74[f]	80[h]/60[j]
102	PEM	Depressional	III	III	0.01	80[h]
103	PEM	Depressional	IV	IV	0.02	50[h]
104	PEM	Depressional	III	III	0.02	80[h]
105	PEM	Depressional	III	III	0.05	80[h]
106	PEM	Depressional	IV	IV	0.002	50[h]
107	PEM, PFO	Depressional	IV	IV	0.04	50[h]
108	PEM	Depressional	III	III	0.04	80[h]
109	PEM	Depressional	III	III	0.004	80[i]
111	PEM	Depressional	III	III	0.05	80[h]
112	PEM	Depressional	III	III	0.35	80[h]
113	PEM	Depressional	IV	IV	0.03	50[h]
114	PEM	Depressional	IV	IV	0.12	50[i]
115	PEM, PSS	Depressional	III	III	0.20	80[i]
116	PEM, PSS	Depressional	III	III	0.06	80[i]
119	PEM	Depressional	IV	IV	0.14	50[i]
120	PEM	Depressional	IV	IV	0.07	50[i]
122	PEM, PSS	Depressional	II	II	1.13[f]	105[e]
123	PEM	Depressional	III	III	0.71[f]	105[e]
124	PEM, PSS	Depressional	III	III	0.26[f]	80[i]
125	PSS	Depressional	III	III	0.11[f]	80[i]

Table ES-1 (continued). Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Wetland[a]	Wetland Classification				Wetland Size (acre)	Buffer Width (feet)
	Cowardin[b]	HGM[c]	Ecology[d]	Local Jurisdiction		
127	PEM	Depressional	IV	IV	0.05	40[e]
130	PEM	Depressional	III	III	0.08	80[h]
131	PEM	Depressional	III	III	0.33	80[h]
136	PEM	Depressional	III	III	3.48	60[e]
137	PEM	Depressional	III	III	1.73	60[e]
138	PEM, PFO	Depressional	III	III	1.31	60[e]
Total					182.61	

[a] Wetland identifier.

[b] Federal Geographic Data Committee (FGDC 2013) or NWI Class based on vegetation:
PEM = palustrine emergent, PSS = palustrine scrub-shrub PFO = palustrine forested (Cowardin et al. 1979).

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

[d] Washington State Department of Ecology (Ecology) rating (Hruby 2014), which is consistent with the local jurisdiction requirements of the Cities of Fife, Puyallup, Edgewood, Milton, and Tacoma.

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

[f] Wetland extends outside of the Stage 2 study area.

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

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

[i] Wetland buffer width according to the City of Puyallup Wetlands Ordinance (Puyallup Municipal Code [PMC] 21.06.930).

[j] Wetland buffer width according to the City of Sumner Wetlands Ordinance (Sumner Municipal Code [SMC] 16.46.150).

Biologists flagged the OHWMs of streams within the study area using the definition provided in the Washington Administrative Code (WAC), Section 222-16-010, which has been adopted by Pierce County and the cities of Tacoma, Fife, Milton, Edgewood, and Puyallup. Biologists also applied methods in the publication *Determining the Ordinary High Water Mark on Streams in Washington State* (Anderson et al. 2016). Tables 45 through 55 in this report summarize the streams identified in the study area. The streams consist of the following:

- Surprise Lake Tributary (Stream 01)
- Stream 08: A tributary to Surprise Lake Tributary south of 20th Street East and west of Freeman Road East in Fife
- Wapato Creek (Stream 09)
- Stream 13: A tributary to Surprise Lake Tributary adjacent to the west side of 78th Avenue East in Fife

- Stream 14: A tributary to Stream 15 located at the southern terminus of 16th Avenue Northwest, south of Valley Avenue East in Puyallup
- Stream 15: A tributary to Oxbow Lake and, ultimately, the Puyallup River, surrounded by forest and agricultural fields south of Valley Avenue East, east of Freeman Road East, and west of 16th Avenue Northwest in Puyallup
- Puyallup River (Stream 17)
- Stream 18: A tributary to Stream 08 west of Freeman Road East in Fife
- Stream 19: A tributary to Surprise Lake Tributary west of Freeman Road East in Fife
- Stream 20: A tributary to Hylebos Creek west of Porter Way in Milton

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Acronyms and Abbreviations

BPJ	best professional judgment
DNR	Washington Department of Natural Resources
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
FPAMT	Forest practices application mapping tool
GIS	geographic information system
HGM	hydrogeomorphic wetland classification
I	interstate
LiDAR	light detection and ranging
LRR	land resource area
MLRA	major land resource area
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent
PFO	palustrine forested
PHS	priority habits and species
PSS	palustrine scrub-shrub
PTOI	Puyallup Tribe of Indians
RRP	Riparian Restoration Program
SFI	stormwater features inventory
SR	state route
UPL	upland
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
W	wetland
WAC	Washington Administrative Code
WEFW	Washington State Department of Fish and Wildlife
WRIA	water resource inventory area
WSDOT	Washington State Department of Transportation

1. Introduction

The wetland and stream delineations described in this report were performed for the Washington State Department of Transportation (WSDOT) in support of the State Route (SR) 167 Completion Project Phase 1 (hereafter referred to as the Project). WSDOT plans to complete the SR 167 highway by building approximately 4 miles of a new four-lane limited-access highway. The new facility will begin at the current terminus in Puyallup at SR 161, extend through the Puyallup River Valley, and connect to Interstate 5 (I-5) near the existing Wapato Way East crossing over I-5. The Project also includes a new highway segment approximately 2 miles long. Defined as the SR 509 Spur, this new segment will extend from SR 509 near the Port of Tacoma to a new diverging diamond interchange at I-5 and SR 167.

The Project will be constructed in three stages, through sequential design-build contracts. The Stage 2 portion of the Project, known as the SR 167/I-5 to SR 161 – New Expressway Project (hereafter referred to as Stage 2) is the third construction contract of the Project's Phase 1 Improvements, which encompasses the entire 6-mile corridor.

The wetland and stream delineations described in this report are within areas relevant to Stage 2 (hereafter referred to as the study area) (Figure 1). Stage 2 is entirely within Pierce County, Washington. The study area includes areas in unincorporated Pierce County, on the Puyallup Tribe of Indians reservation, and in the cities of Tacoma, Fife, Edgewood, Milton, Puyallup, and Sumner. The purpose of this report is to identify and describe wetlands and streams in the study area. This report facilitates WSDOT's efforts to:

1. Avoid or minimize impacts to wetlands and streams during the design process
2. Document wetland and stream boundary determinations for review by regulatory authorities
3. Provide early indications to project designers of sensitive species within the study area corridor
4. Provide supporting documentation for wetland and stream mitigation planning and permitting

This report will support applications for relevant permits to be obtained by WSDOT via a Joint Aquatic Resources Permit Application (JARPA). The required permits and approvals related to wetlands and streams and the associated regulatory issuing agency are anticipated as follows for Stage 2:

- Section 404 Individual Permit, US Army Corps of Engineers (USACE)
- Section 401 Water Quality Certification, Washington State Department of Ecology (Ecology)
- Coastal Zone Management Consistency Certification, Ecology
- Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW)
- Section 401 Water Quality Certification, Puyallup Tribe of Indians (PTOI)

- Tribal Development Permit, PTOI
- Shoreline Substantial Development Permit, City of Puyallup and Pierce County
- Land use (Critical Areas Ordinance) permits/approval as required from City of Fife, City of Milton, City of Edgewood, City of Puyallup, City of Sumner, and Pierce County

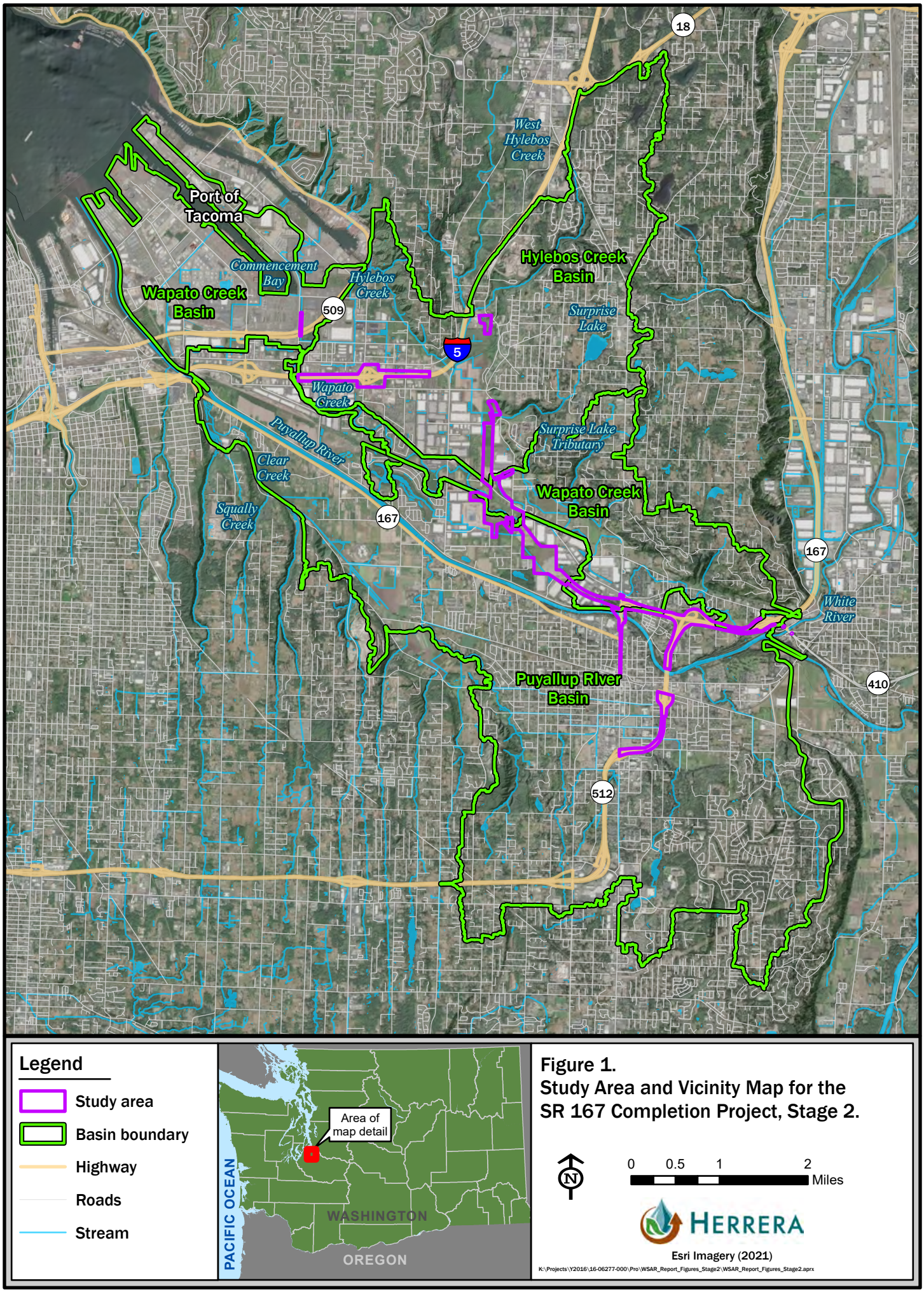


Figure 1.
Study Area and Vicinity Map for the SR 167 Completion Project, Stage 2.

2. Proposed Project

2.1. Location

Stage 2 is located entirely within Pierce County, Washington, in Township 20 North, Range 4 East (Sections 5, 6, 7, 8, 17, 20, 21, 22, 27, 28, 34, 43, 44, 45, and 46). Stage 2 is in Major Land Resource Area (MLRA) 2, Willamette and Puget Sound Valleys and in Land Resource Region (LRR) A, Northwest Forests and Coasts. The Stage 2 alignment runs through unincorporated Pierce County and the cities of Tacoma, Fife, Milton, Edgewood, Puyallup, and Sumner. It is in Water Resources Inventory Area (WRIA) 10, Puyallup-White River watershed. The Stage 2 study area is located in the Hylebos Creek (Stream 02), Wapato Creek (Stream 09), and Puyallup River (Stream 17) basins (Figure 1) and is within the regulatory jurisdictions of Pierce County, the PTOI, and the cities of Tacoma, Fife, Edgewood, Milton, Puyallup, and Sumner.

Wetlands and streams in portions of the project area were also delineated in 2018 and 2019 as part of Stage 1a and Stage 1b. For more information on previously delineated features, please see the Stage 1a (WSDOT 2019) and Stage 1b (WSDOT 2020) Wetland and Stream Assessment Reports.

2.2. Project Purpose and Description

Stage 2 is the third and final stage of the Project's Phase 1 Improvements. The Project is part of WSDOT's Puget Sound Gateway Program, which also includes the SR 509 Completion Project in King County. Together, the projects will complete two of the Puget Sound region's most critical freight corridors and will improve access to I-5, the Ports of Tacoma and Seattle, and Seattle-Tacoma International Airport. The Project will build 6 miles of a new highway to complete the unfinished segment of SR 167 in Pierce County.

The purpose of Stage 2 is to improve regional highway connections with an extension of SR 167 to serve current and future transportation needs in northern Pierce County and to enhance regional freight mobility and access to the Port of Tacoma. Stage 2 will:

- Reduce traffic congestion
- Improve safety on arterial roads and intersections in the Stage 2 vicinity
- Provide improved system continuity between the existing SR 167 corridor and I-5
- Improve bicycle and pedestrian mobility and safety in the region
- Maintain or improve air quality in the corridor to ensure compliance with the current State Implementation Plan and the Clean Air Act

Stage 2 is needed to create system linkages, accommodate travel demand and capacity needs, and improve intermodal relationships and non-motorized transportation. The SR 167 freeway currently terminates in Puyallup at North Meridian Avenue and does not connect to I-5 and the regional transportation highway system; this leaves a major gap in the system. As a result, local streets and major transportation routes are at or over capacity given current travel demand. This situation is expected to worsen as travel demand for the Port of Tacoma and major roadways increases in the Stage 2 area.

Stage 2 includes construction of a four-lane highway between SR 161 and I-5, two new interchanges, and a riparian restoration program (RRP) for Wapato Creek; and it will provide other environmental mitigation and enhancements to compensate for project impacts.

The main elements and construction activities of Stage 2 include, but are not limited to, the following:

- Land clearing and fencing
- Transportation and roadway infrastructure
- Tolling and intelligent transportation system infrastructure
- Bridges and retaining walls
- Culverts and fish-passable stream crossings
- Shared-use paths
- Utility relocations
- Stormwater facilities, including detention ponds, stormwater wetlands, swales, bioretention planters, outfall structures, drainage culverts, and ditches
- Environmental mitigation and enhancement, stream channel and floodplain modifications, and the RRP for Wapato Creek

Additional details on these project elements and construction activities are described as part of the Joint Aquatic Resources Permit Application documentation for Stage 2 permitting purposes.

2.3. Study Area

The study area builds on the study areas investigated and reported on for Stage 1a and Stage 1b of the Project (WSDOT 2019, WSDOT 2020a). The Stage 2 study area encompasses the anticipated limits of construction impacts (project limits), several parcels intended for wetland, stream, and buffer mitigation, and the areas outside of the project limits that were investigated by biologists for wetlands, streams, and associated buffers. Wetlands and streams delineated in the study area and documented in this report are shown in Figures 2-A through 2-D. Delineations for additional areas that are proposed for mitigation will be described in the Wetland and Stream Mitigation Report that will be finalized during permit review.

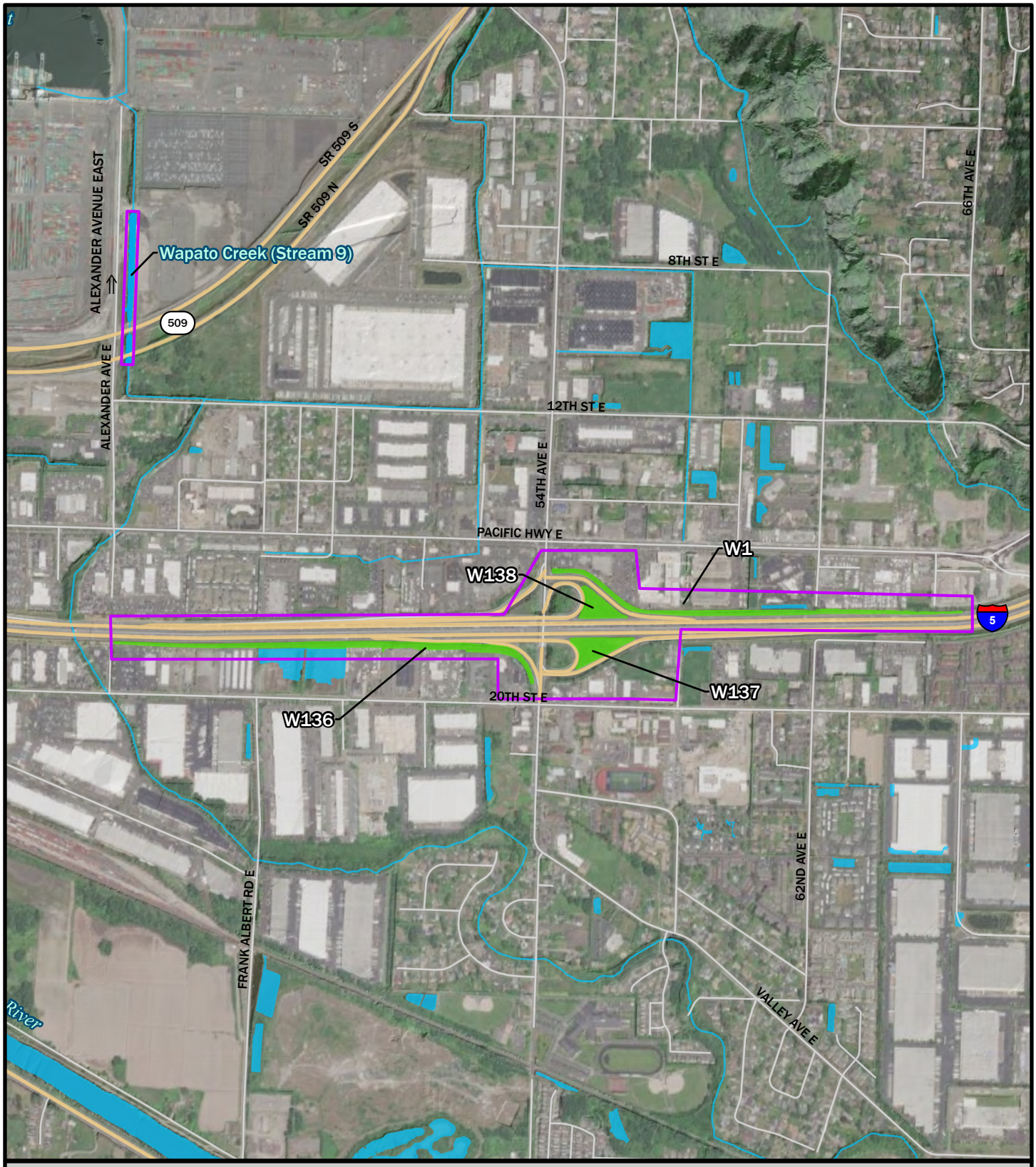
The study area encompassing the roadway project limits and immediate surroundings includes the following locations:

- The Wapato Creek (Stream 09) corridor at SR 509 and Alexander Avenue East in Tacoma (this tidally influenced portion of Wapato Creek is included due to fish-passage improvements permitted under Stage 1b with construction planned as part of Stage 2 [see Figure 2-A])
- The I-5 corridor from Alexander Avenue East in Fife to Porter Way in Milton (see Figures 2-A and 2-B)

- The corridor beginning at 26th Street East and 78th Avenue East in Fife and extending southeast through the Puyallup River Valley to the SR 167 interchange with SR 410 in Sumner (see Figures 2-B through 2-D)
- Along South Meridian Avenue from SR 167 to West Stewart Avenue, crossing the Puyallup River (Stream 17), in Puyallup (see Figure 2-D)
- Along SR 512 from East Pioneer Way south of the Puyallup River (Stream 17) to South Meridian Avenue in Puyallup (see Figure 2-D)

In addition to the areas investigated as listed above, the study area includes areas investigated for proposed wetland, stream, and buffer mitigation at the following locations:

- The Upper Hylebos North Addition site east of I-5 and west of Porter Way, at the northern end of the Hylebos RRP in unincorporated Pierce County (see Figure 2-B)
- The Middle Surprise Lake Tributary Addition site west of Freeman Road East and north of 26th Street East, along Surprise Lake Tributary (Stream 01) and on the eastern edge of the Hylebos RRP in Fife (see Figure 2-B)
- Parcels west of Freeman Road East and south of Valley Avenue East, south of Wapato Creek (Stream 09) in Fife (see Figure 2-C)



Legend

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

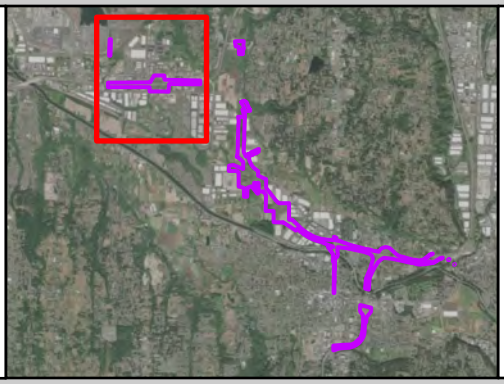


Figure 2-A.
Wetland and Stream Locations in the SR 167 Completion Project, Stage 2 Study Area.

N

0 487.5 975 1,950 Feet

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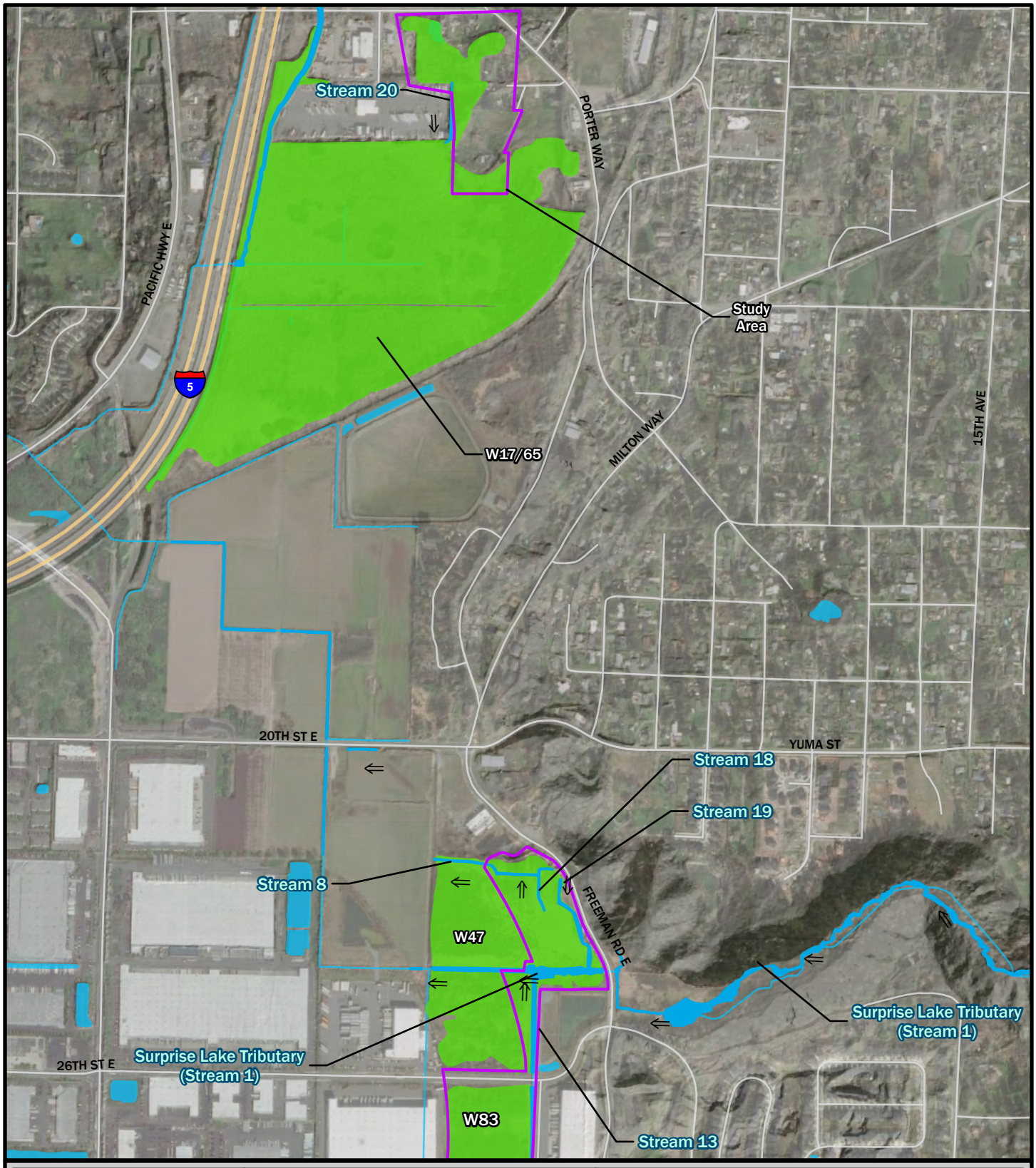

Legend

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

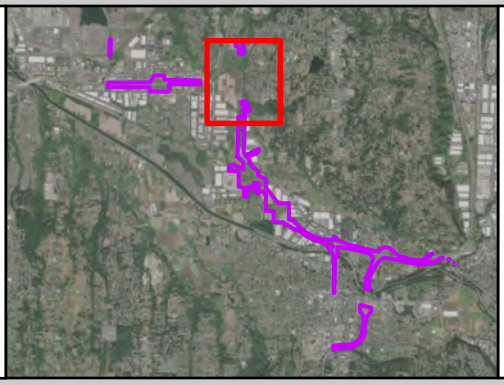

Figure 2-B.
Wetland and Stream Locations in the SR 167 Completion Project, Stage 2 Study Area.

N

0 325 650 1,300 Feet

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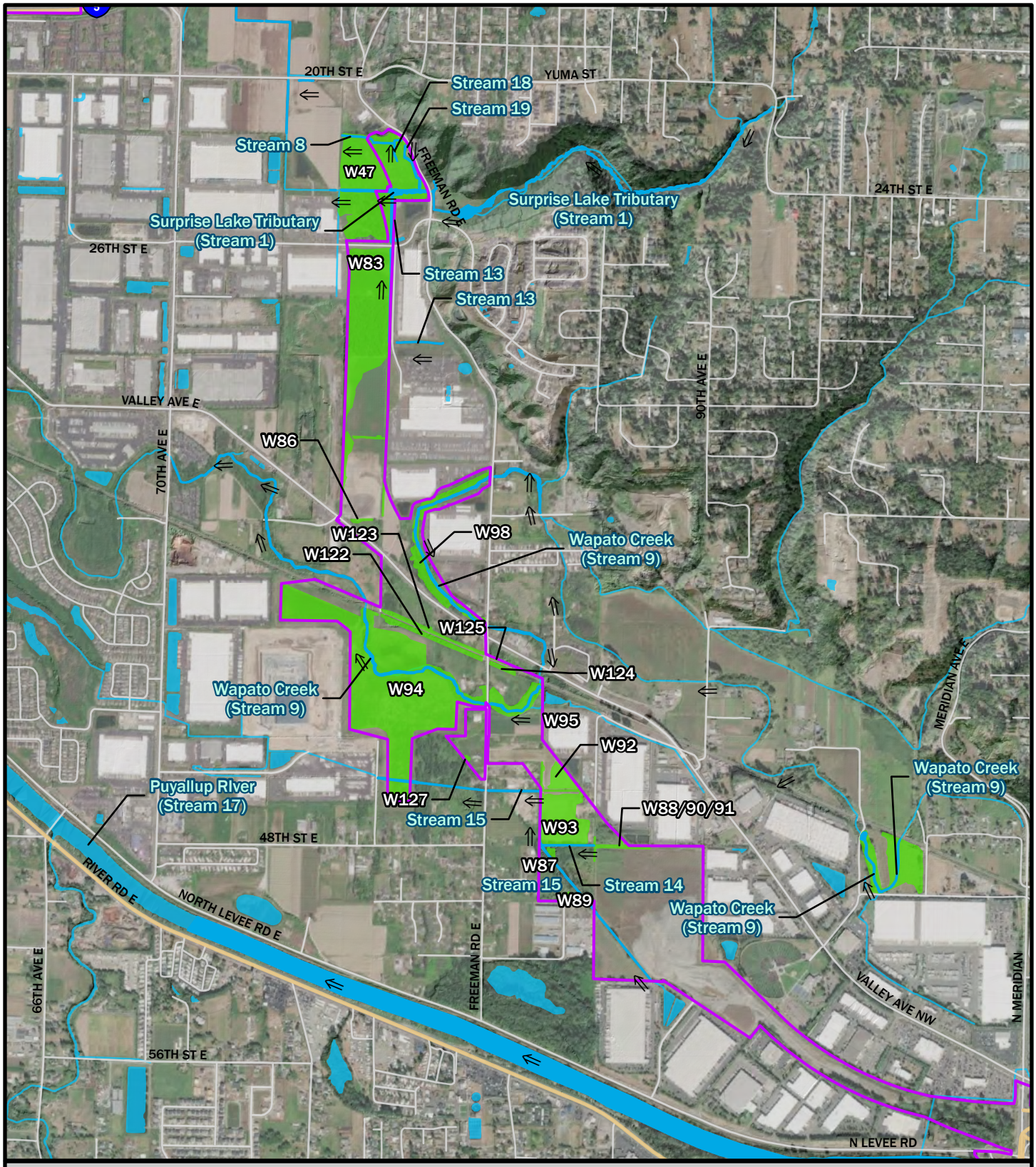

Legend

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

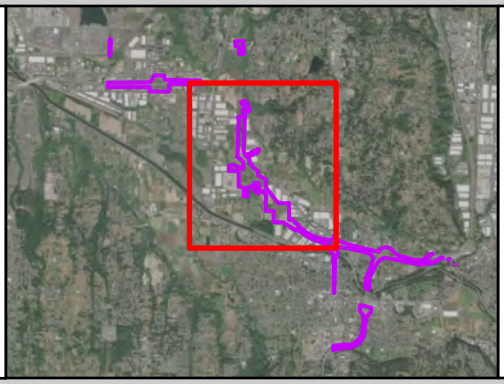

Figure 2-C.
Wetland and Stream Locations in the SR 167 Completion Project, Stage 2 Study Area.

N

0 500 1,000 2,000
Feet

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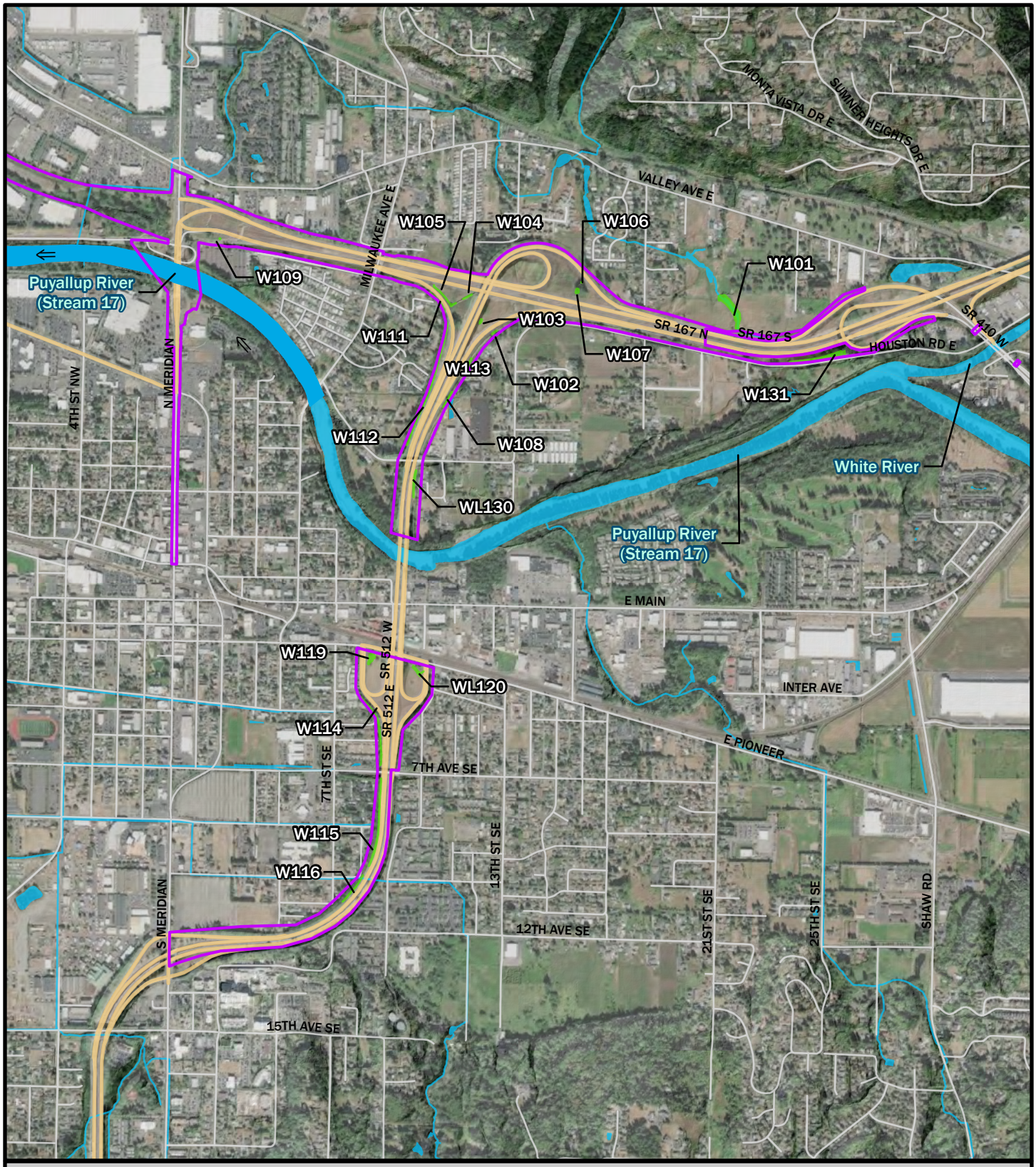

Legend

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

Figure 2-D.
Wetland and Stream Locations in the SR 167 Completion Project, Stage 2 Study Area.

N

0 500 1,000 2,000 Feet

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3. Methods

This chapter summarizes the methods of delineating and rating wetlands, streams, and buffers used to comply with WSDOT, federal, state, and local guidance. Table 1 provides a list of methods, tools, and references that were used to prepare this report.

Table 1. Methods and Tools Used to Prepare the Report.

Parameter	Method or Tool	Website	Reference
Wetland Delineation	Washington State Wetland Delineation Manual	<https://apps.ecology.wa.gov/publications/SummaryPages/9694.html>	Ecology. 1997. Washington state wetland identification and delineation manual. Publication #96-94. Washington Department of Ecology, Olympia, Washington.
	WSDOT Delineation Guidance Documents	<https://wsdot.wa.gov/engineering-standards/environmental-guidance/wetlands-other-waters>	WSDOT. 2022. Wetland and stream assessment. Washington State Department of Transportation. Accessed May 20, 2022.
	Western Mountains, Valleys, and Coast Interim Regional Supplement	<https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046494.pdf>	Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region. Technical Report TR-08-13. US Army Corps of Engineers, Engineer Research and Development Center, Wetlands Regulatory Assistance Program, Vicksburg, Mississippi.
Wetland Classification	USFWS/ Cowardin Classification System	<https://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands/nvcs-2013?msclkid=baa0b9a8c0c411ec8a350d9d110abe4d>	FGDC. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and US Fish and Wildlife Service, Washington, DC.
	Hydro-geomorphic Classification (HGM) System	<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/wetlands/assess/?msclkid=36cf5eacc0c511ec908e677cf3584b9e>	Brinson, M. M. 1993. "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Table 1 (continued). Methods and Tools Used to Prepare the Report.

Parameter	Method or Tool	Website	Reference
Wetland Rating	Washington State Wetland Rating System	Western Washington: <https://fortress.wa.gov/ecy/publications/documents/1406029.pdf>	Hruby. 2014. Washington State wetland rating system for western Washington –Revised. Publication #04-06-025.
	Local agency	Washington State Wetland Rating System: <https://fortress.wa.gov/ecy/publications/documents/1406029.pdf>	City of Tacoma (Tacoma Municipal Code [TMC] 13.11.300, SMP 6.4). City of Fife (Fife Municipal Code [FMC] 17.17.020). City of Milton (Milton Municipal Code [MMC] 18.16.310). City of Edgewood (Edgewood Municipal Code [EMC] 14.40.020). City of Puyallup (Puyallup Municipal Code [PMC] 21.06.910, Shoreline Master Program [SMP] 5.C). City of Sumner (Sumner Municipal Code [SMC] 16.46.070). Pierce County (Pierce County Policy RM2015-2, which updates Pierce County Code [PCC] 18E.30.020.D).
Stream Delineation	OHWM	<https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll9/id/1253>	USACE. 2005. Regulatory Guidance Letter Ordinary High Water Mark Identification. December 7, 2005.
	OHWM	<https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/3691/>	USACE. 2014. A Guide to Ordinary High Water Mark Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. August 2014.
Stream Classification	Washington State Department of Natural Resources (DNR) Water Typing System	Forest Practices Water Typing: <https://www.dnr.wa.gov/forest-practices-water-typing> WAC 222-16-030: <http://apps.leg.wa.gov/WAC/default.aspx?cite=222-16-030> Water Type Mapping: <https://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-application-review-system-fpars>	DNR. 2021a. Forest Practices Water Typing. <https://www.dnr.wa.gov/forest-practices-water-typing>. Forest Practices Application Mapping Tool. <https://fpamt.dnr.wa.gov/default.aspx>. Washington State Department of Natural Resources. Accessed November 15, 2021. Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.

Table 1 (continued). Methods and Tools Used to Prepare the Report.

Parameter	Method or Tool	Website	Reference
Stream Classification (continued)	Local agency	State Typing System	City of Tacoma (TMC 13.11.400, SMP 6.4). City of Fife (FMC 17.15.060). City of Milton (MMC 18.16.620). City of Edgewood (EMC 14.50.020). City of Puyallup (PMC 21.06.1010, SMP 5.C).
Ditch Delineation	WSDOT guidance on evaluation and documentation of ditches	<https://wsdot.wa.gov/engineering-standards/environmental-guidance/wetlands-other-waters>	WSDOT. 2022. Wetland and stream assessment. Washington State Department of Transportation. Accessed May 20, 2022.
Wetland Indicator Status	Northwest (Region 9) (Reed 1988) and Northwest (Region 9) Supplement (Reed et al. 1993)	N/A	Reed, P.B. Jr. 1988. National list of plant species that occur in wetlands: Washington. Biological Report NERC-88/18.47 for National Wetlands Inventory, Washington, DC. Reed, P.B. Jr. 1993. Northwest supplement (Region 9) species with a change in indicator status or added to the Northwest 1988 list, wetland plants of the state of Washington 1988. US Department of Interior Fish and Wildlife Service WELUT – 88 (26.9), Washington, DC.
Plant Names	National Wetland Plant List	<https://cwbi-app.sec.usace.army.mil/nwpl_static/v34/home/home.html>	USACE. 2018. National Wetland Plant List. Version 3.4. Research and Development Center, Cold Regions Research and Engineering Laboratory, US Army Corps of Engineers, Hanover, NH.
Soils Data	Natural Resources Conservation Service (NRCS) Web Soil Survey	<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>	NRCS. 2021a. Web Soil Survey. Natural Resources Conservation Service. Accessed November 9, 2021.
	Official Soil Series Descriptions	<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcs142p2_053587>	NRCS. 2021b. Official Soil Series Descriptions. Natural Resources Conservation Service. Accessed November 9, 2021.
	Hydric Soils Data	<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>	NRCS. 2021c. Hydric Soils. Natural Resources Conservation Service. Accessed November 9, 2019. <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>.

Table 1 (continued). Methods and Tools Used to Prepare the Report.

Parameter	Method or Tool	Website	Reference
Threatened and Endangered Species	Washington Wetlands and Plants of High Conservation Value	<http://wadnr.maps.arcgis.com/apps/webappviewer/index.html?id=5cf9e5b22f584ad7a4e2aebc63c47bda>	DNR. 2021b. WA Wetlands of High Conservation Value Map Viewer. Washington State Department of Natural Resources. Olympia, Washington. Accessed November 15, 2021.
	Washington Priority Habitats and Species	<http://wdfw.wa.gov/hab/phspage.htm>	WDFW. 2021a. Priority Species and Habitat Database. Washington Department of Fish and Wildlife. Accessed November 15, 2021. <http://wdfw.wa.gov/mapping/phs/>.
	SalmonScape	<http://wdfw.wa.gov/mapping/salmonscape/index.html>	WDFW. 2021b. SalmonScape mapping system. Washington Department of Fish and Wildlife. Accessed November 15, 2021. <http://wdfw.wa.gov/mapping/salmonscape/index.html>.
	West Coast Salmon and Steelhead Listings	<https://archive.fisheries.noaa.gov/wcr/protected_species/salmon_steelhead/salmon_and_steelhead_listings/salmon_and_steelhead_listings.htm>	NOAA. 2021a. West Coast Region. West Coast Salmon and Steelhead Listings. National Oceanic and Atmospheric Administration Fisheries. Accessed November 15, 2021.
	Endangered Species Act Critical Habitat	<https://www.arcgis.com/apps/MapJournal/index.html?appid=75e5f6b4387f4809b5a6b1f251e38bda#>	NOAA. 2021b. West Coast Region. Endangered Species Act Critical Habitat. National Oceanic and Atmospheric Administration Fisheries. Accessed November 15, 2021.
	Information for Planning and Consultation	<https://ecos.fws.gov/ipac/>	USFWS. 2021a. Information for Planning and Consultation (IPaC) – Environmental Conservation Online System. US Fish and Wildlife Service. Accessed November 15, 2021.
	Environmental Conservation Online System	<Critical Habitat for Threatened & Endangered Species [USFWS] (arcgis.com)>	USFWS. 2021b. Critical Habitat Mapper. US Fish and Wildlife Service. Accessed November 15, 2021.
Report Preparation	Local agency requirements	<http://www.mrsc.org/codes.aspx>	City of Tacoma (TMC 13.11.230, SMP 6.4). City of Fife (FMC 17.05.085). City of Milton (MMC 18.16.140). City of Edgewood (EMC 14.10.080). City of Puyallup (PMC 21.06.530, SMP 5.C). City of Sumner (SMC 16.46.100). Pierce County (PCC 18E.30.030).

3.1. Review of Available Information

A literature review was performed to ascertain the historical and current presence of wetlands and streams within and near the study area. Sources of information included the following:

- Climate and precipitation data (NRCS 2021d; NOAA 2021c) (Appendices A-1 and A-2)
- Pierce County topographic data (Pierce County 2011) (Appendix A-3)
- National Wetlands Inventory (NWI) map of wetland areas in the study area (USFWS 2021c) (Appendix A-4)
- Soil survey maps for the study area (NRCS 2021a) (Appendix A-5)
- Soil descriptions for the study area (NRCS 2021a, 2021b)
- Aerial photographs of the study area (ESRI 2021) (Appendix A-6)
- Pierce County public geographic information system (GIS) (tax parcels and road locations) (Pierce County 2021a, 2021b)
- Hydrographic data (stream locations) for Pierce County (Pierce County 2021c)
- Washington State Priority Habitat and Species (PHS) database (WDFW 2021a)
- SalmonScape computer mapping system (WDFW 2021b)
- Washington Natural Heritage Program Data (DNR 2021c)
- Washington State Fish Passage map (WDFW 2021c)
- Washington State Department of Transportation SR 167 Completion Project Current and Historical Hydrogeologic Conditions Assessment, Groundwater Modeling, and Future Hydrogeologic Conditions Assessment (Robinson Noble 2019)
- WSDOT As-Built Plan Sets – SR 167: SR 161 to SR 512 Interchange and SR 161: SR 167 Couplet to 36th Street East Paving (WSDOT 2007)
- WSDOT Stormwater Features Inventory (SFI) mapping (WSDOT 2021b)
- Google Earth historical aerial mapping (Google Earth Pro 2021)

3.2. Site Reconnaissance and Desktop Analysis

Herrera Environmental Consultants, Inc. (Herrera) and SISU Environmental (SISU) biologists evaluated the presence and extent of wetlands and streams in the study area using a combination of site reconnaissance and desktop analysis, followed by an onsite wetland and stream investigation, as described in the following sections.

Portions of the study area applicable to this report are located on parcels with limited or restricted access due to private ownership or unsafe field conditions. To determine where wetland and/or stream conditions are likely present in these areas, wetland biologists conducted a site reconnaissance and desktop analysis using available public-domain information on the subject properties.

During site reconnaissance visits, wetland biologists evaluated existing conditions from public roads and rights-of-way safely accessible on foot. Biologists documented vegetation communities, aquatic features, land uses, and surface water conveyance features observed within the vicinity of limited access and restricted areas. Following the site visits, biologists conducted a desktop analysis to determine where wetland and/or stream conditions are likely present based on topography, high resolution light detection and ranging (LiDAR) data, NWI mapping, and a review of WSDOT Stormwater Features Inventory GIS layers.

Total wetland size and wetland boundaries of offsite and inaccessible wetlands were estimated based on the desktop analysis described above. A detailed description of the methods used and the results of the desktop analysis are provided in the Drainage Analysis Memorandum prepared by SISU for Stage 2 (in Appendix B).

3.3. Wetland Delineation, Classification, and Functions

3.3.1. Wetland Delineation

Biologists conducted the wetland delineations in the study area for Stage 2 in accordance with the *Regional Supplement to the US Army Corps of Engineers Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region* (Environmental Laboratory 2010), which is consistent with the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The methods in those manuals use a three-parameter approach for identifying and delineating wetlands and rely on the presence of field indicators for hydrophytic vegetation, hydric soils, and hydrology.

Wetland biologists evaluated field conditions by traversing the study area and noting wetlands, streams, and other aquatic features in March, April, May, June, July, August, September, October, and November of 2021, and in January, February, and March of 2022. A test plot was established for each area that appeared to have potential wetland characteristics. Biologists also analyzed the conditions in adjacent uplands. Based on vegetation, soils, and hydrology, a determination of wetland or upland was made for each area examined. Since “normal circumstances,” as defined by the USACE (Environmental Laboratory 1987), were not present at each wetland site, all three criteria may not have been present for an area to be determined a wetland. In areas where vegetation had been disturbed due to agricultural activities, presence of hydric soil and hydrology indicators dominated. These areas were investigated in the March to June time period. In areas investigated during the dry season (July through October), hydric soil and vegetation indicators dominated the determination for wetland conditions being met. Areas where wetland parameters are met, and wetland functions dominate, are identified as wetland. Where these wetland conditions and functions occur within ditches, the area is mapped in this report as a wetland with a flow line running through the wetland.

Following confirmation of wetland conditions in a given area, biologists delineated the wetland boundary by placing sequentially numbered, pink flagging along the wetland perimeter. Test plot locations were marked with pink and black striped flagging. The wetland boundary and test plot flags were subsequently located by a survey crew. For wetlands with boundaries extending beyond the study area, aerial photo and LiDAR interpretation were used to approximate the remainder of the wetland boundary.

3.3.2. Wetland Classification

Wetlands delineated in the study area were classified according to the US Fish and Wildlife Service (USFWS) classification system (FGDC 2013), which is based on an evaluation of attributes such as vegetation class, hydrologic regime, salinity, and substrate. The wetlands were also classified according to the hydrogeomorphic system (Brinson 1993), which is based on an evaluation of attributes including the wetland's source of water, direction of water flow, and the position of the wetland within the surrounding landscape.

3.3.3. Wetland Rating

Wetlands were evaluated using the Washington State Wetland Rating System for Western Washington: 2014 Update (referred to as the Ecology rating system; Hruby 2014) because it is approved by Ecology for evaluating wetlands in Washington, and because it is required by the City of Tacoma (TMC 13.11.300, SMP 6.4), the City of Fife (FMC 17.17.020), the City of Milton (MMC 18.16.310), the City of Edgewood (EMC 14.40.020), the City of Puyallup (PMC 21.06.910, SMP 5.C), the City of Sumner (SMC 16.46.070), and Pierce County (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). The Ecology rating system generates scores for each wetland function. Using the scores, a qualitative functional rating (high, moderate, or low) was derived for each of the functions (water quality, hydrology, and habitat) provided by each delineated wetland.

3.3.4. Wetland Functional Assessment

Wetlands were evaluated using the Wetland Functions Characterization Tool for Linear Projects (hereafter referred to as the best professional judgement [BPJ] Tool) (Null et al. 2000). The BPJ Tool evaluates wetlands in a consistent, yet rapid manner for routine application on linear highway projects based on best professional judgement.

3.4. Stream Delineation and Classification

Project biologists delineated the ordinary high water marks (OHWMs) of stream channels within the study area using the definition provided in the WAC, Section 222-16-010, which has been adopted by Pierce County, the City of Tacoma, the City of Fife, the City of Milton, the City of Edgewood, and the City of Puyallup. According to this definition, the OHWM of streams is "that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation." In addition, methods in the publication *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al. 2016) were applied. For those streams that did not have clear indication of water presence for longer than 2 months out of the year, desktop analysis and review of historical aerial photographs was conducted to determine if flow or historical stream presence could be verified. If historical conditions could not be determined or water was not observed in the channels during the delineation period, these features were identified as ditches (see Section 3.6, *Ditch Identification* below). Areas that contain wetlands but where stream characteristics and functions dominate below the OHWM are identified as streams.

To delineate the OHWM, the bed and adjacent banks of streams in the study area were examined for indication of regular high water events. Factors considered when assessing changes in vegetation include:

- Scour (removal of vegetation and exposure of gravel, sand, or other soil substrate)
- Drainage patterns
- Elevation of floodplain benches
- Changes in sediment texture across the floodplain
- Sediment layering
- Sediment or vegetation deposition
- Changes in vegetation communities across the floodplain

Biologists placed white flags with blue dots, or blue pin flags, on the site, indicating the horizontal and vertical location of the OHWM along the streams. These flags were subsequently documented by the project team's survey crew. Biologists noted flow direction of streams at time of delineation. If no water was present at time of delineation, slope of channel was noted and confirmed through desktop analysis.

Streams were classified in the cities of Tacoma (TMC 13.11.400, SMP 6.4), Fife (FMC 17.15.060), Milton (MMC 18.16.620), Edgewood (EMC 14.50.020), and Puyallup (PMC 21.06.1010, SMP 5.C) per the DNR water typing system based on WAC 222-16-030.

3.5. Buffers

City of Tacoma (Tacoma 2021), City of Fife (Fife 2021), City of Milton (Milton 2022), City of Edgewood (Edgewood 2021), City of Puyallup (Puyallup 2021), and City of Sumner (Sumner 2022) buffers were applied to the wetlands and streams in the project area.

Wetland buffer widths range from 40 to 165 feet depending on wetland rating, habitat scores, and intensity of land use impacts. Buffers were applied based on high intensity land use, except where noted.

The conditions of wetland buffers in the study area were qualitatively assessed using the following criteria:

- Dominant land use (e.g., agriculture, residential, commercial, industrial)
- Buffer vegetation structure (tree, shrub, herb, vine, unvegetated)
- Buffer vegetation community (dominant plant species per strata, native vs. nonnative dominants, and description of invasive species or noxious weeds)

Stream buffer widths range from 50 to 150 feet per local code, depending on stream classification and fish use.

Where wetland and stream buffers overlap, the buffers are combined; and no distinction is made between wetland and stream buffer areas.

3.6. Ditch Identification

If a ditch was excavated in uplands and does not carry a stream or tributary that is a water of the United States, the ditch bottom was surveyed in the field or estimated using desktop analysis methods described in the *Site Reconnaissance and Desktop Analysis* section above. The ditch bottom is shown on figures in this report with a jurisdictional ditch centerline. Ditches in the study area were named according to the project team (SISU or HEC) that identified the ditch and the order in which they were documented during field investigations (e.g., D-HEC-5, D-HEC-6, etc.). In Stage 2, the first Herrera-identified ditch is D-HEC-5; and the first SISU-identified ditch is D-SISU-1.

3.7. Species and Habitats of Interest

WSDOT consulted with the National Marine Fisheries Service (NMFS) and USFWS to address potential project impacts to federally listed Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*) (WSDOT 2018, 2020b, 2020c). The following data sources were reviewed for information on federally and state listed threatened, endangered, candidate, and sensitive species, and species of concern, as well as habitats of interest:

- The SR 167 Completion Project Stage 1b Update Memoranda to NMFS and USFWS (WSDOT 2020b, 2020c)
- Federally listed threatened, endangered, or candidate wildlife species (WDFW 2021a; NOAA 2021a; USFWS 2021a)
- Proposed and designated critical habitat (NOAA 2021b; USFWS 2021b)
- Washington State wetlands and plants of high conservation value (DNR 2021b, 2021c)
- WDFW PHS data (WDFW 2021a)

4. Existing Conditions

4.1. Landscape Setting

The study area is in the lower Puyallup River Valley within the Puget Sound lowlands. Commencement Bay is to the northwest in the Puget Sound. The headwaters of the Puyallup River originate from glaciers on the north and west sides of Mount Rainier. The Carbon River and the White River are the two main tributaries to the Puyallup River as it flows towards the bay. The Project is located in the lower extent of WRIA 10: Puyallup-White in the Hylebos Creek-Frontal Commencement Bay and Puyallup River watersheds (12-digit Hydrologic Unit Codes 171100190205 and 171100140502) (Ecology 2021; USDA 2018). Surface water in the study area flows through the Puyallup River basin, Wapato Creek basin, and Hylebos Creek basin before entering Commencement Bay via the river and the Hylebos and Blair Waterways in the Port of Tacoma area (Ecology 2021; Pierce County 2021d). The study area is in MLRA 2 and LRR A. The study area is in a flat valley where soils were historically formed from deposited river alluvium.

The study area contains dense industrial, commercial, and residential developments as well as agricultural land use (WSDOT 2016). The vegetation and hydrology in the study area have been impacted by the surrounding land use activities. Vegetation is largely disturbed amid a variety of upland, wetland, riparian, and stream habitats. These habitats contain a mix of native and nonnative trees, shrubs, and herbaceous vegetation. Hydrology in the study area has been altered by fill material placement and surface water rerouting through agricultural and roadside ditches. Areas within the northern and central portion of the study area have been used for agricultural crop production for decades. Land development in the project corridor is ongoing, and likely to have continued impacts on vegetation and hydrology in the study area (WSDOT 2016).

4.2. Climate, Precipitation, and Growing Season

4.2.1. Climate

Climate data were obtained from the Natural Resources Conservation Service (NRCS) WETS database (NRCS 2021d). The historical average measurements were based on data collected in Tacoma, Washington (WETS Station Tacoma No. 1) for the period of record 1981 to 2021. The station is approximately 2 miles west of the study area. The climate in the vicinity of the study area is characterized by warm, dry summers and cool, wet winters. The average annual temperature is 53.7°F, falling within an average range of 42.8°F and 66.9°F. The study area receives an average of 40.8 inches of rain per year (NRCS 2021d).

4.2.2. Precipitation

The Regional Delineation Supplement Version 2.0 (Environmental Laboratory 2010) recommends using methods described in Chapter 19 in Engineering Field Handbook (NRCS 2015) to determine if precipitation occurring in the 3 full months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. Precipitation was evaluated for a 3-month period prior to field investigations, which occurred in March, April, May, July, August, September, October, and November of 2021,

and in January, February, and March of 2022. When considering the 3 months preceding each month in which field investigations occurred, normal precipitation characteristics were present in December 2020; January, March, April, July, and October 2021; and March 2022. Wetter than normal characteristics were present in February, November, and December 2021; and January and February 2022; and drier than normal characteristics were present in May, June, August, and September 2021. Methodology and calculations for climatic conditions for the preceding months are available in Appendix A-1.

Appendix A-2 includes daily precipitation recorded in the 10 days preceding and occurring during field work between March 1, 2021 and March 31, 2022.

4.2.3. Growing Season

The growing season is the period of consecutive frost-free days, or the longest period during which the soil temperature stays above biological zero (41°F), when measured at 12 inches below the soil surface. Two indicators of biological activity can be used to determine whether the growing season has begun and is ongoing (Environmental Laboratory 2010):

- Occurrence of aboveground growth and development of at least two non-evergreen vascular plant species growing within the wetland. Examples of this growth include the emergence or elongation of leaves on woody plants and the emergence or opening of flowers.
- Soil temperature, which can be measured once during a single site visit, should be at least 41°F or higher at a depth of 12 inches.

According to WETS (NRCS 2020d), the growing season, measured at 32°F or greater, in the vicinity of the study area demonstrates a 70 percent probability of occurring between April 16 and October 24 (191 days). However, based on observations of new seedling growth within the study area, it was determined that the field work was being conducted within the growing season.

4.3. Wetlands

Forty wetlands covering 182.61 acres were identified within the study area. The wetlands include palustrine emergent (PEM), palustrine scrub shrub (PSS), and palustrine forested (PFO) vegetation classes, and depressional and riverine HGM classes. They are rated as Category I, II, III, and IV wetlands dominated by a variety of woody and herbaceous plant species (Table 2). Wetlands were identified in the cities of Fife, Milton, Puyallup, and Sumner, and in unincorporated Pierce County. No wetlands were identified within shoreline management jurisdictions. Wetlands are named based on the order in which they were delineated during field investigations (e.g., Wetland 86, Wetland 87, etc.). Wetlands and streams delineated in the study area are shown in Figures 3-A through 3-R. These figures show the location of wetland and upland soil pits, with some upland soil pits shared between adjacent wetlands.

Table 2. Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Wetland[a]	Wetland Classification				Wetland Size (acre)	Buffer Width (feet)
	Cowardin[b]	HGM[c]	Ecology[d]	Local Jurisdiction		
1	PEM	Depressional	III	III	2.30	60[e]
W17/65	PEM, PSS, PFO	Depressional	I	I	71.13[f]	150[g]/165[h]
47	PEM, PSS, PFO	Depressional	II	II	20.46	165[e]
83	PEM, PSS, PFO	Depressional	III	III	19.62	105[e]
86	PEM	Depressional	III	III	0.11	60[e]
87	PSS, PFO	Depressional	III	III	0.12	75[i]
88/90/91	PEM, PSS	Depressional	II	II	0.49	100[i]
89	PSS	Depressional	II	II	0.10	50[i]
92	PEM	Depressional	III	III	1.56	80[i]
93	PEM	Depressional	III	III	6.81	80[i]
94	PEM, PSS, PFO	Depressional/ Riverine	II	II	42.36[f]	165[e]
95	PEM, PSS, PFO	Riverine	III	III	2.16	150[i]
98	PEM, PSS, PFO	Riverine	II	II	4.25[f]	165[e]
101	PEM	Depressional	III	III	0.74[f]	80[h]/60[j]
102	PEM	Depressional	III	III	0.01	80[h]
103	PEM	Depressional	IV	IV	0.02	50[h]
104	PEM	Depressional	III	III	0.02	80[h]
105	PEM	Depressional	III	III	0.05	80[h]
106	PEM	Depressional	IV	IV	0.002	50[h]
107	PEM, PFO	Depressional	IV	IV	0.04	50[h]
108	PEM	Depressional	III	III	0.04	80[h]
109	PEM	Depressional	III	III	0.004	80[i]
111	PEM	Depressional	III	III	0.05	80[h]
112	PEM	Depressional	III	III	0.35	80[h]
113	PEM	Depressional	IV	IV	0.03	50[h]
114	PEM	Depressional	IV	IV	0.12	50[i]
115	PEM, PSS	Depressional	III	III	0.20	80[i]
116	PEM, PSS	Depressional	III	III	0.06	80[i]
119	PEM	Depressional	IV	IV	0.14	50[i]
120	PEM	Depressional	IV	IV	0.07	50[i]
122	PEM, PSS	Depressional	II	II	1.13[f]	105[e]
123	PEM	Depressional	III	III	0.71[f]	105[e]
124	PEM, PSS	Depressional	III	III	0.26[f]	80[i]
125	PSS	Depressional	III	III	0.11[f]	80[i]

Table 2 (continued). Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Wetland[a]	Wetland Classification				Wetland Size (acre)	Buffer Width (feet)
	Cowardin[b]	HGM[c]	Ecology[d]	Local Jurisdiction		
127	PEM	Depressional	IV	IV	0.05	40[e]
130	PEM	Depressional	III	III	0.08	80[h]
131	PEM	Depressional	III	III	0.33	80[h]
136	PEM	Depressional	III	III	3.48	60[e]
137	PEM	Depressional	III	III	1.73	60[e]
138	PEM, PFO	Depressional	III	III	1.31	60[e]
Total					182.61	

[a] Wetland identifier.

[b] Federal Geographic Data Committee (FGDC 2013) or NWI Class based on vegetation:
PEM = palustrine emergent, PSS = palustrine scrub-shrub PFO = palustrine forested (Cowardin et al. 1979).

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

[d] Washington State Department of Ecology (Ecology) rating (Hruby 2014), which is consistent with the local jurisdiction requirements of the Cities of Fife, Puyallup, Edgewood, Milton, and Tacoma.

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

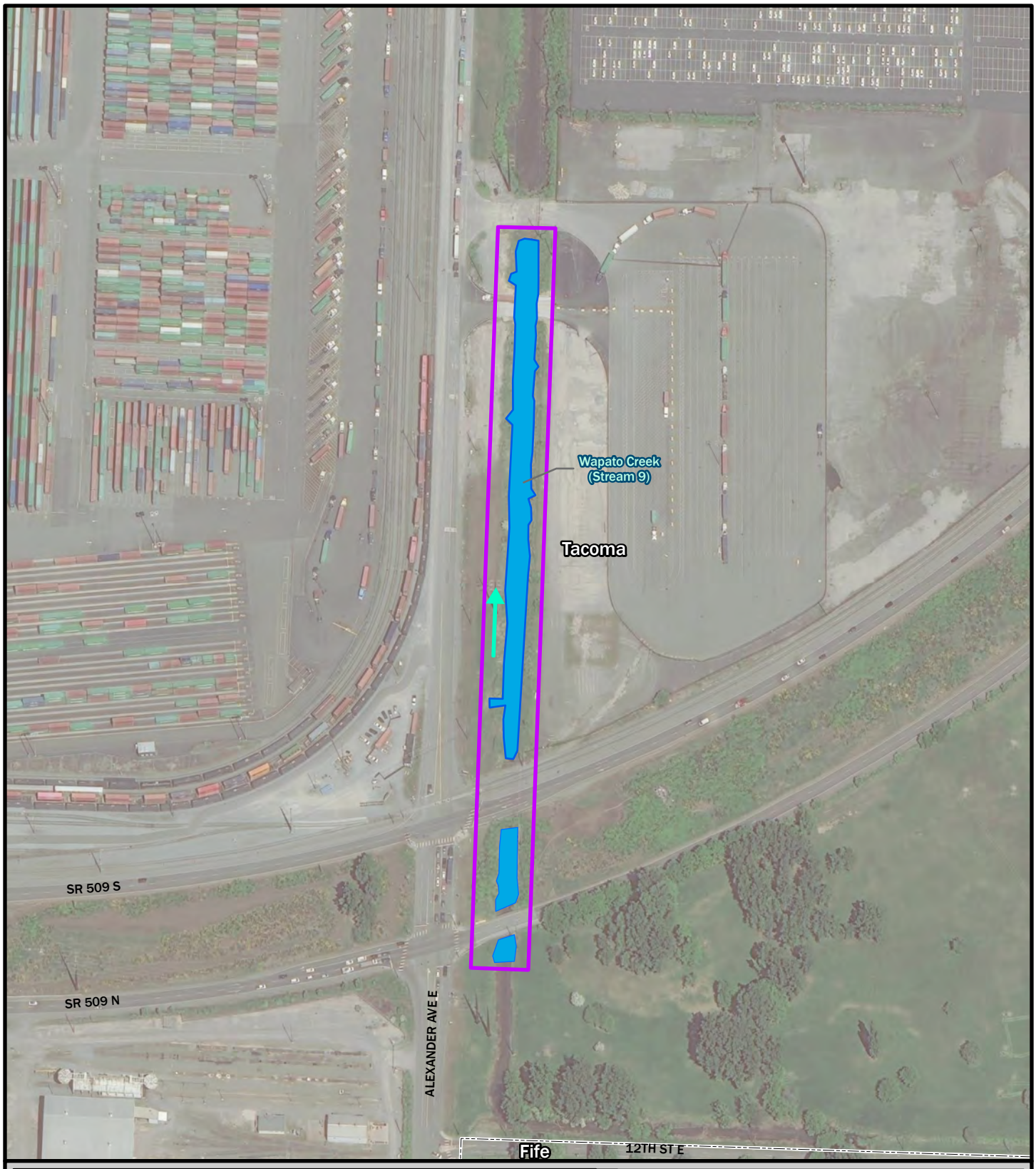
[f] Wetland extends outside of the Stage 2 study area.

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

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

[i] Wetland buffer width according to the City of Puyallup Wetlands Ordinance (Puyallup Municipal Code [PMC] 21.06.930).

[j] Wetland buffer width according to the City of Sumner Wetlands Ordinance (Sumner Municipal Code [SMC] 16.46.150).



Legend

- Study area
- Stream area
- Delineated OHWM
- City limit
- Flow Direction

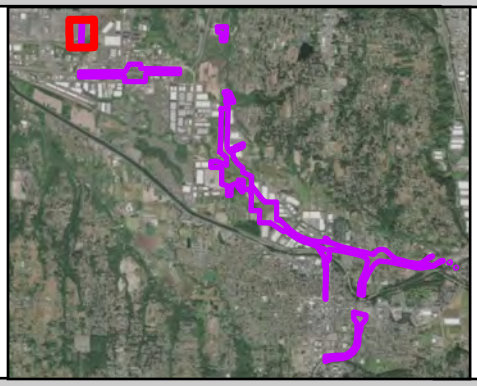


Figure 3-A.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2022)

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Legend

- Study area
- Soil pit
- Stream area
- Delineated wetland boundary
- Estimated wetland boundary
- Estimated ditch centerline
- Wetland area
- City limit
- Flow Direction

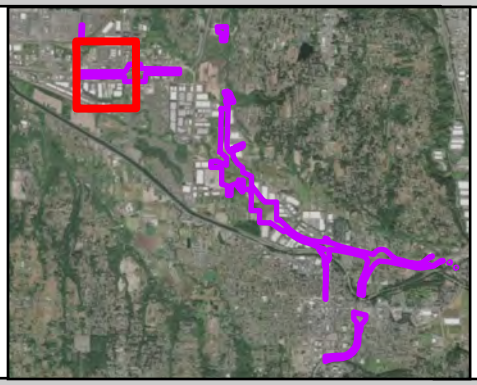

Figure 3-B.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 310 620 1,240 Feet

HERRERA

Esri, Aerial (2022)

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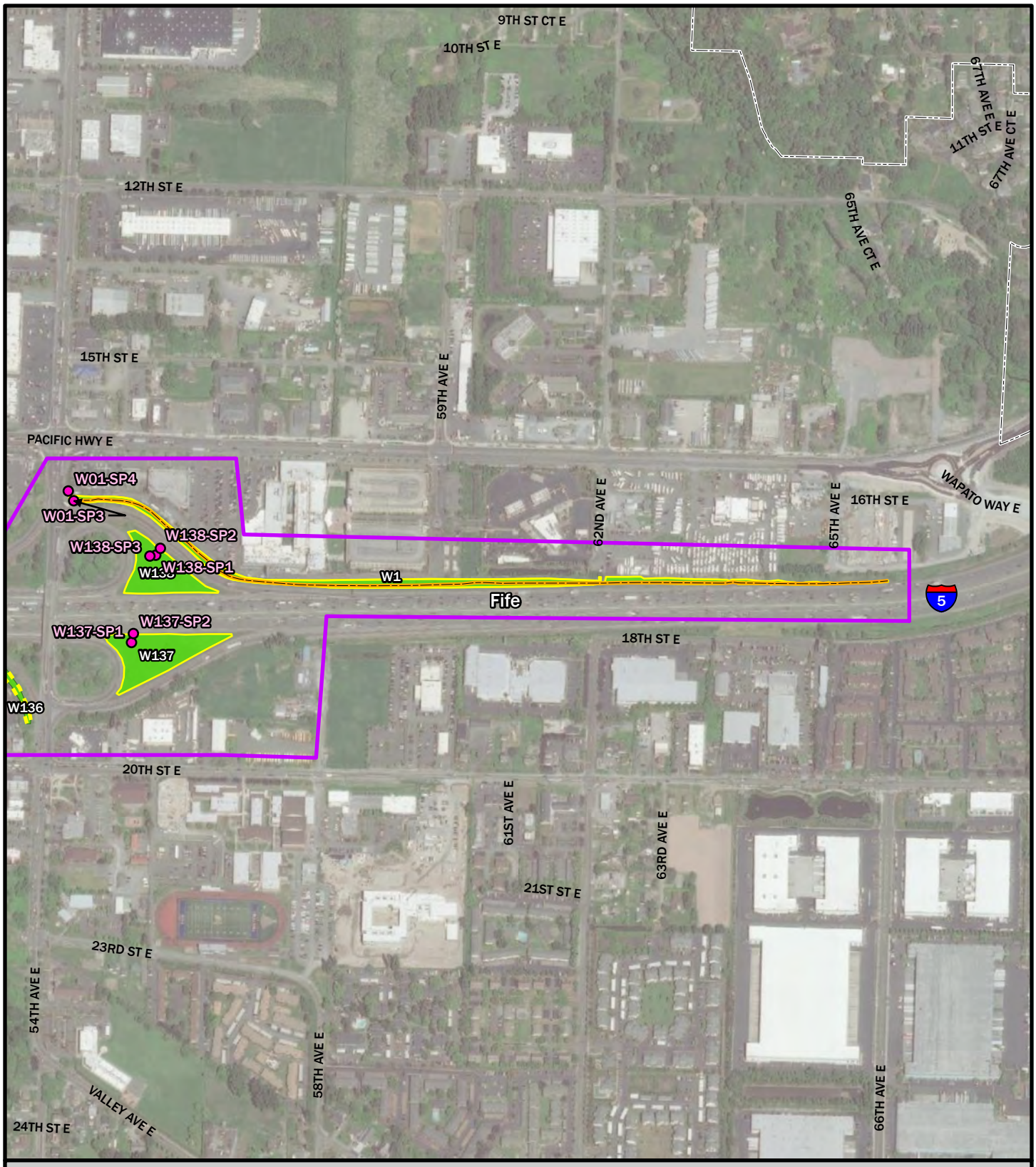

Legend

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

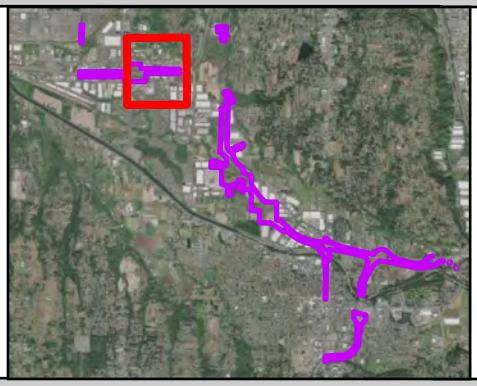

Figure 3-C.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 310 620 1,240 Feet

HERRERA

Esri, Aerial (2022)

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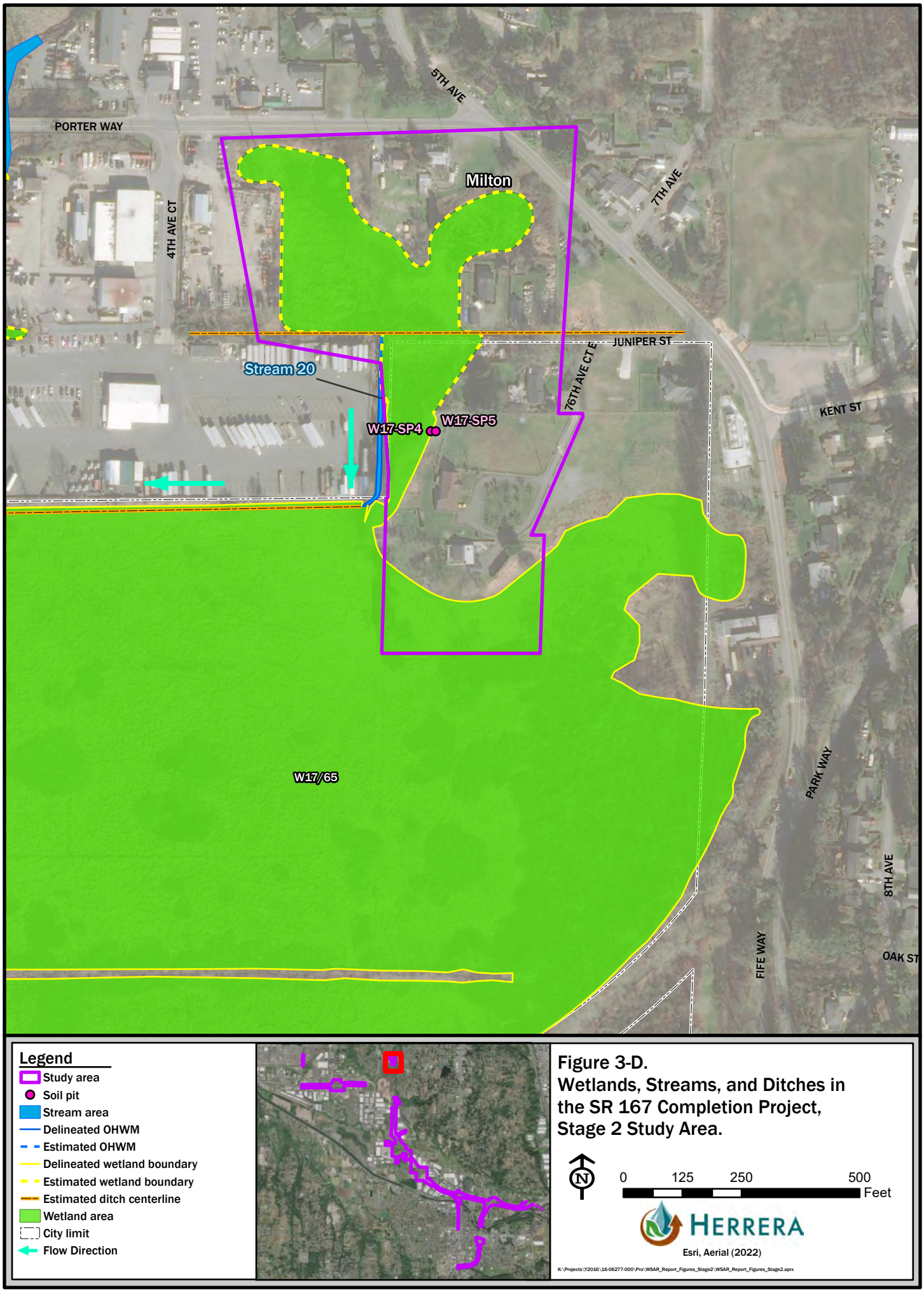
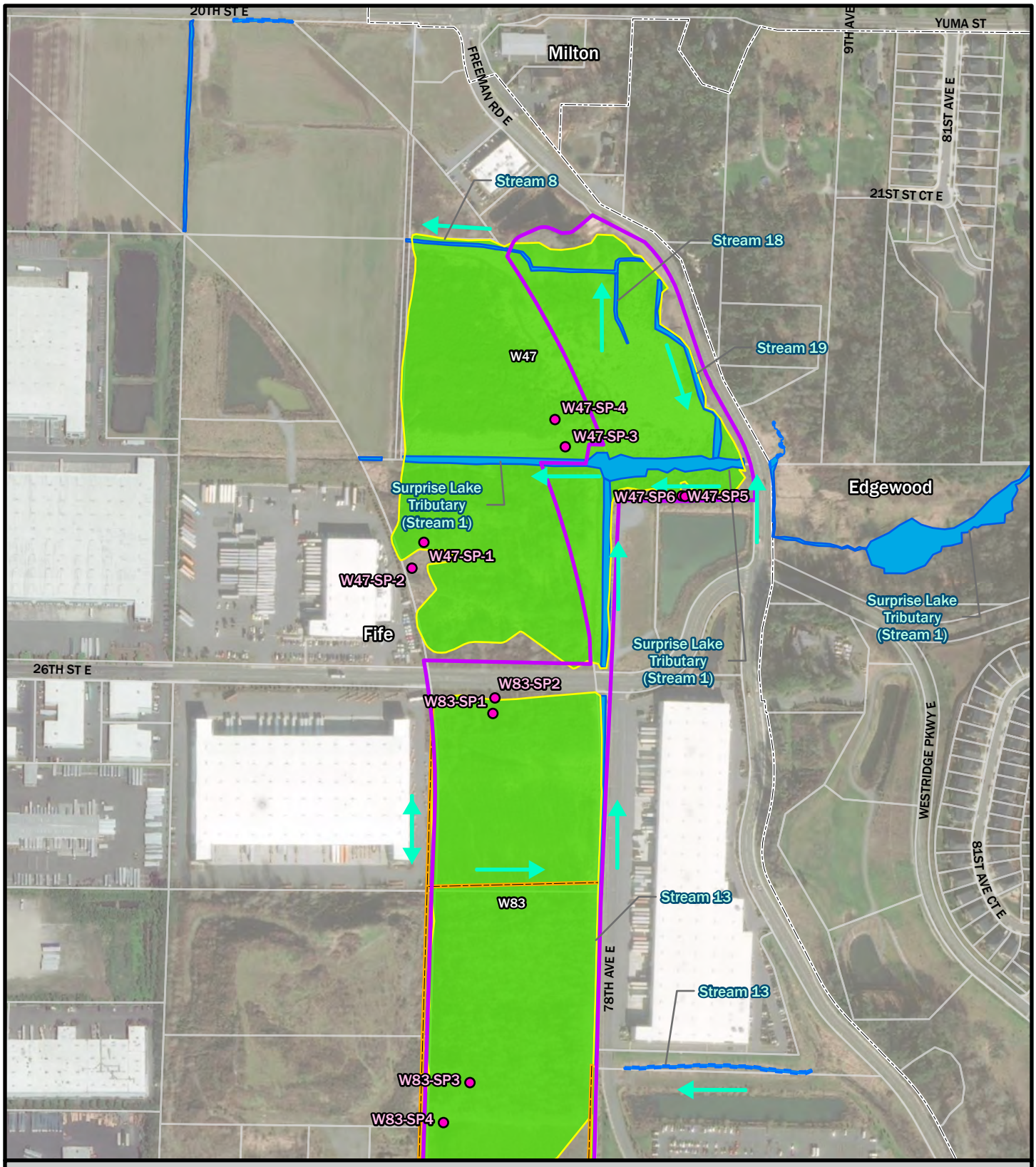


Figure 3-D.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.



Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

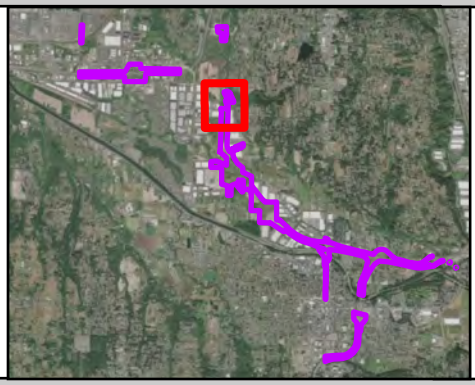


Figure 3-E.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 205 410 820 Feet

HERRERA

Esri, Aerial (2022)

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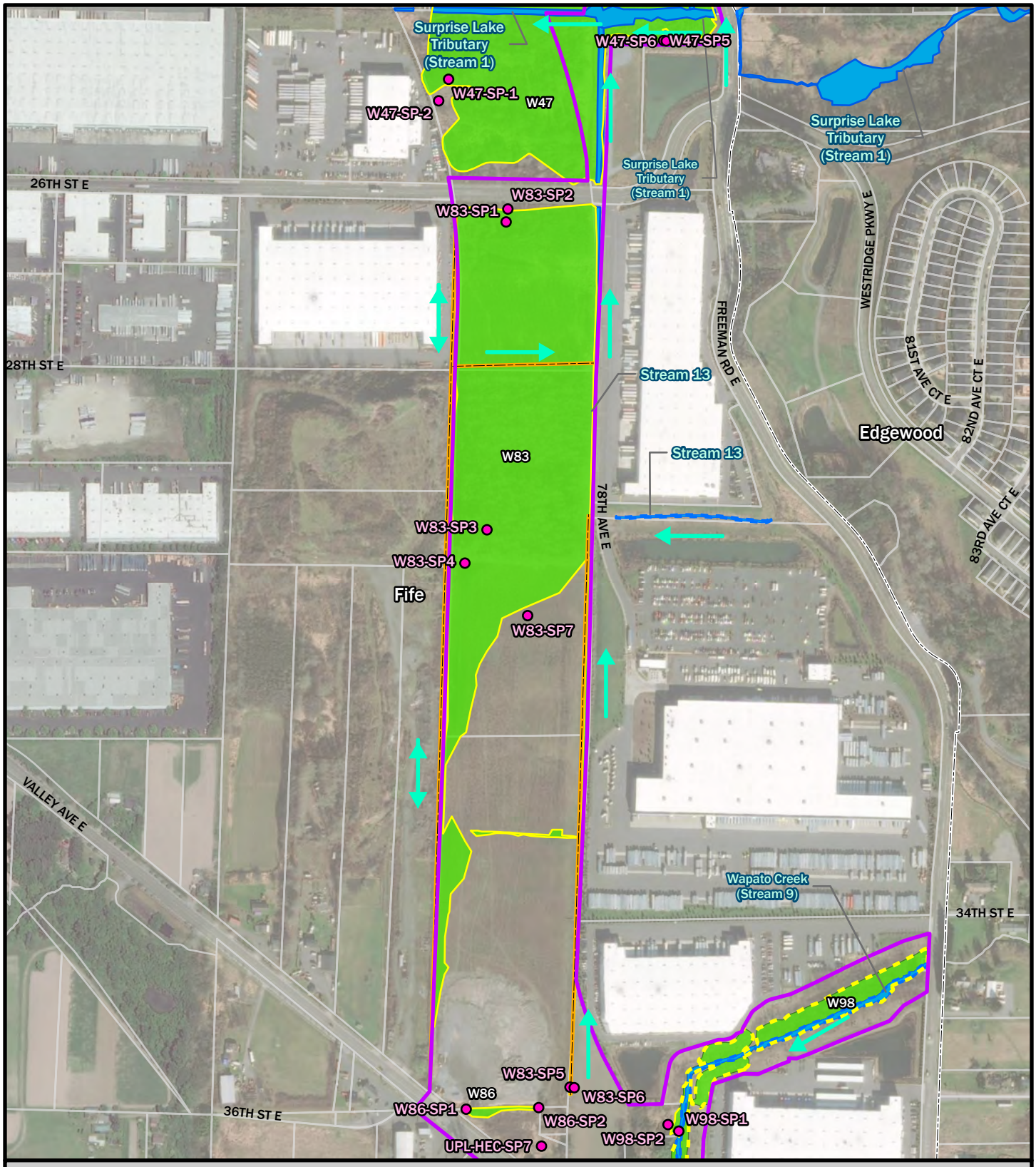

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated wetland boundary
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

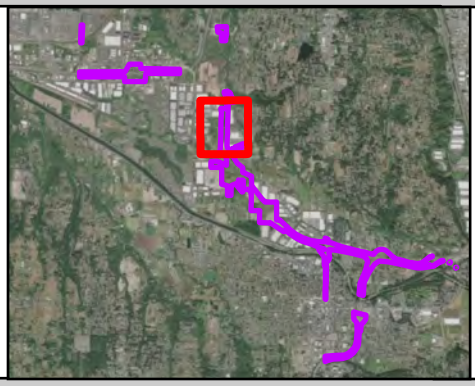

Figure 3-F.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 250 500 1,000 Feet

HERRERA

Esri, Aerial (2022)

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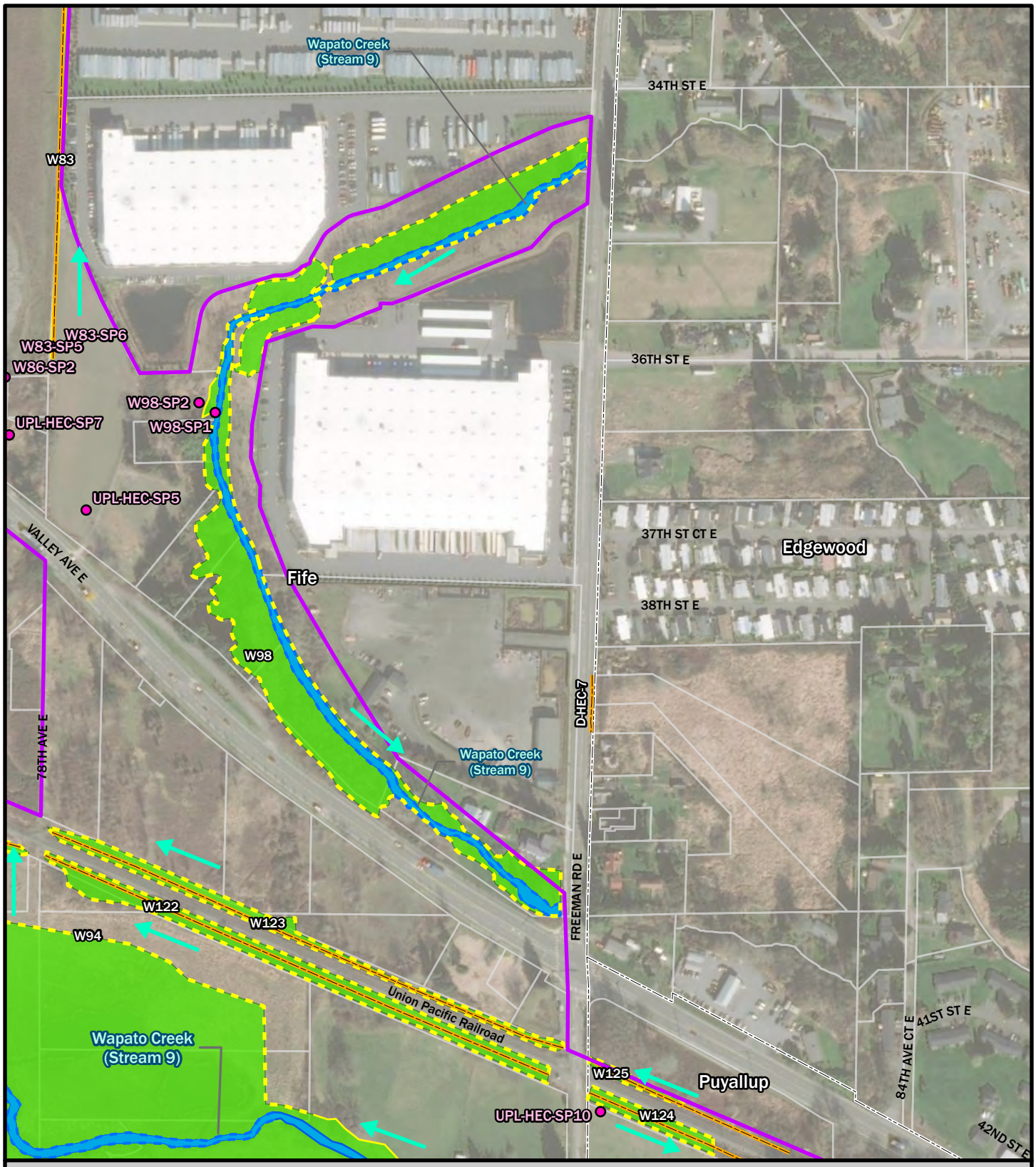

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated wetland boundary
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

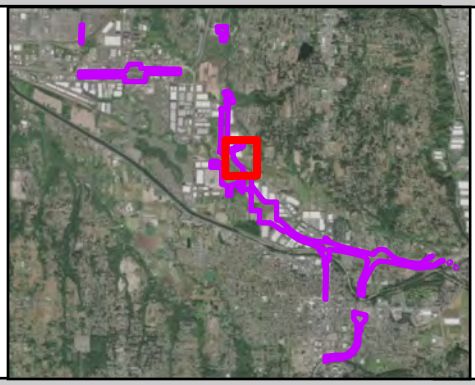

Figure 3-G.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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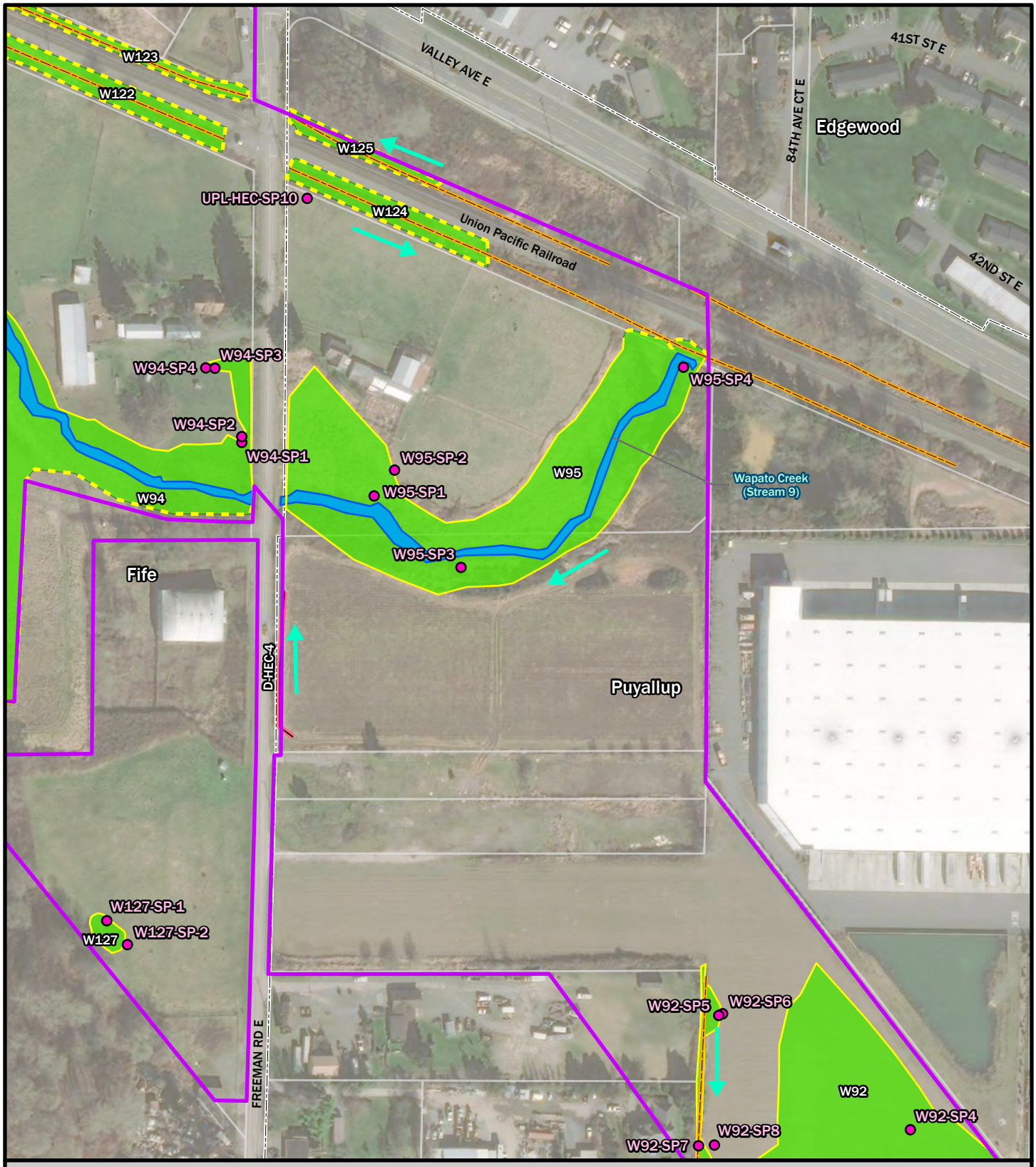

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

Figure 3-H.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 100 200 400 Feet

HERRERA

Esri, Aerial (2022)

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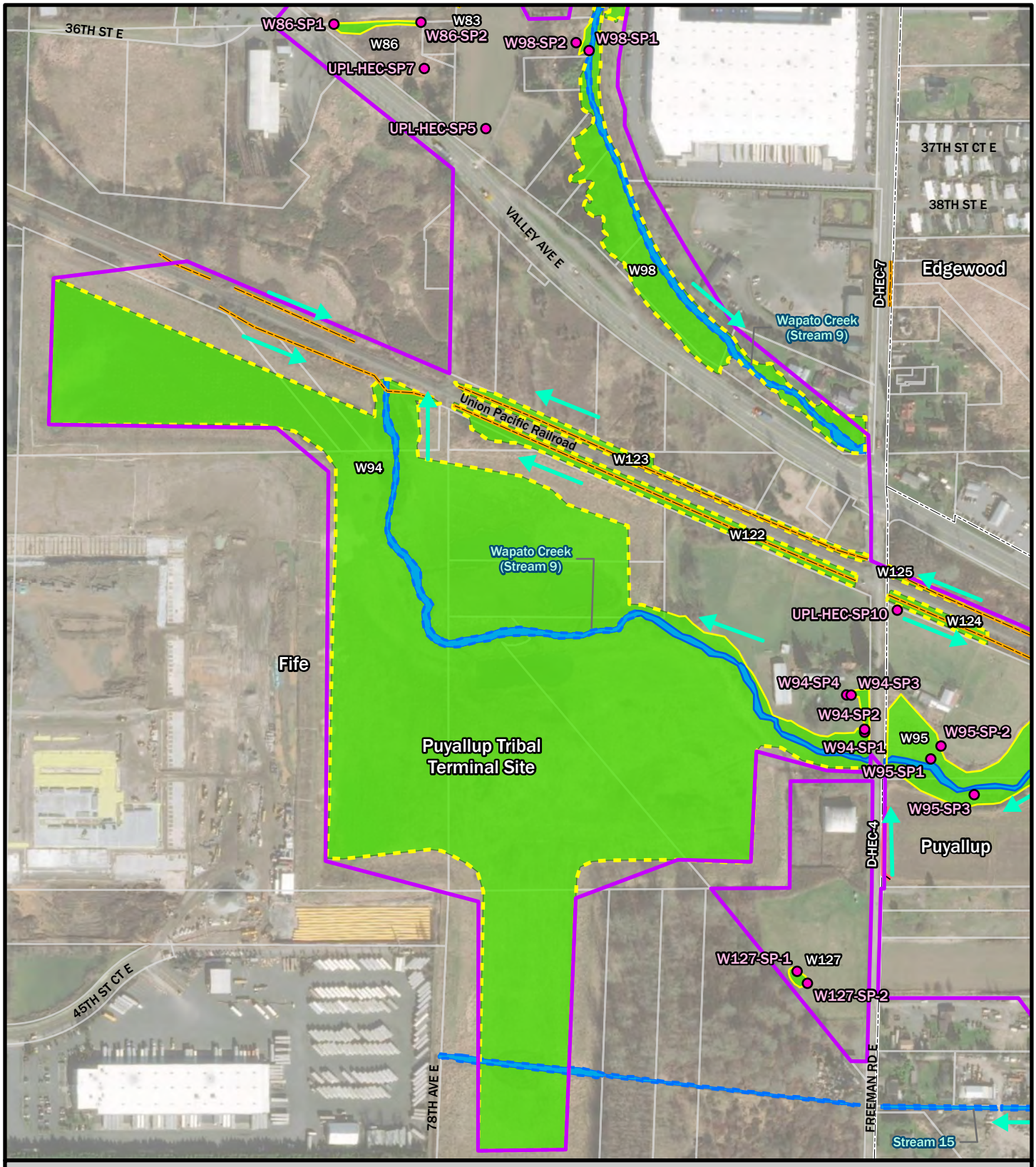

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

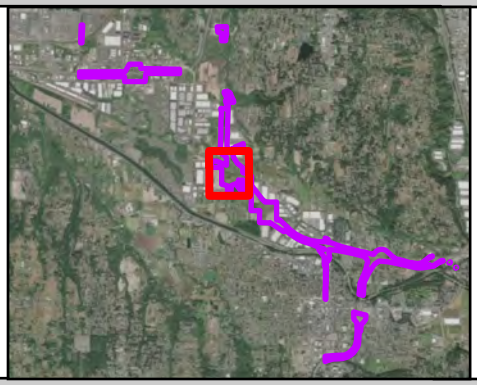

Figure 3-I.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 205 410 820 Feet

HERRERA

Esri, Aerial (2022)

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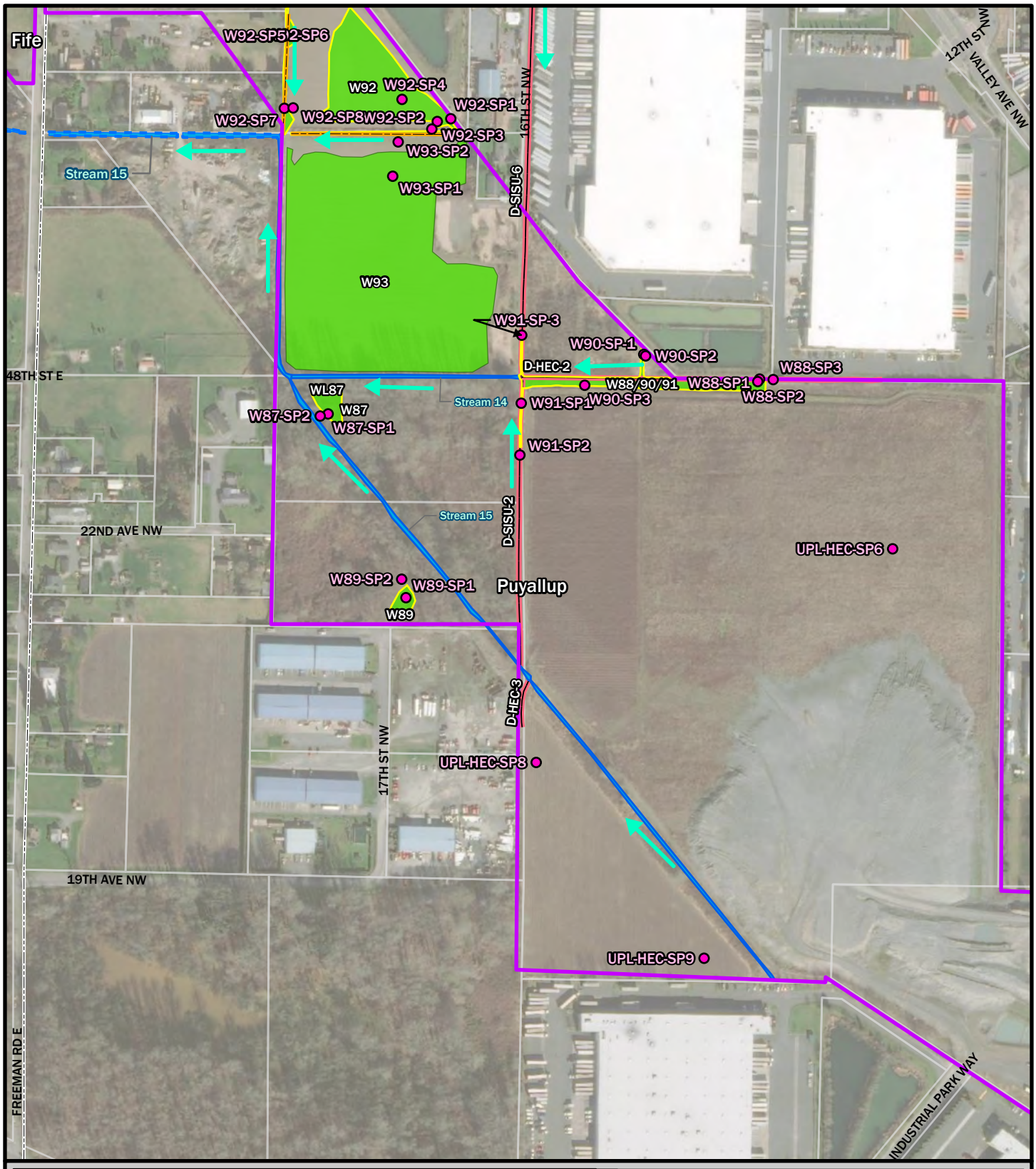

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

Figure 3-J.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 185 370 740 Feet

HERRERA

Esri, Aerial (2022)

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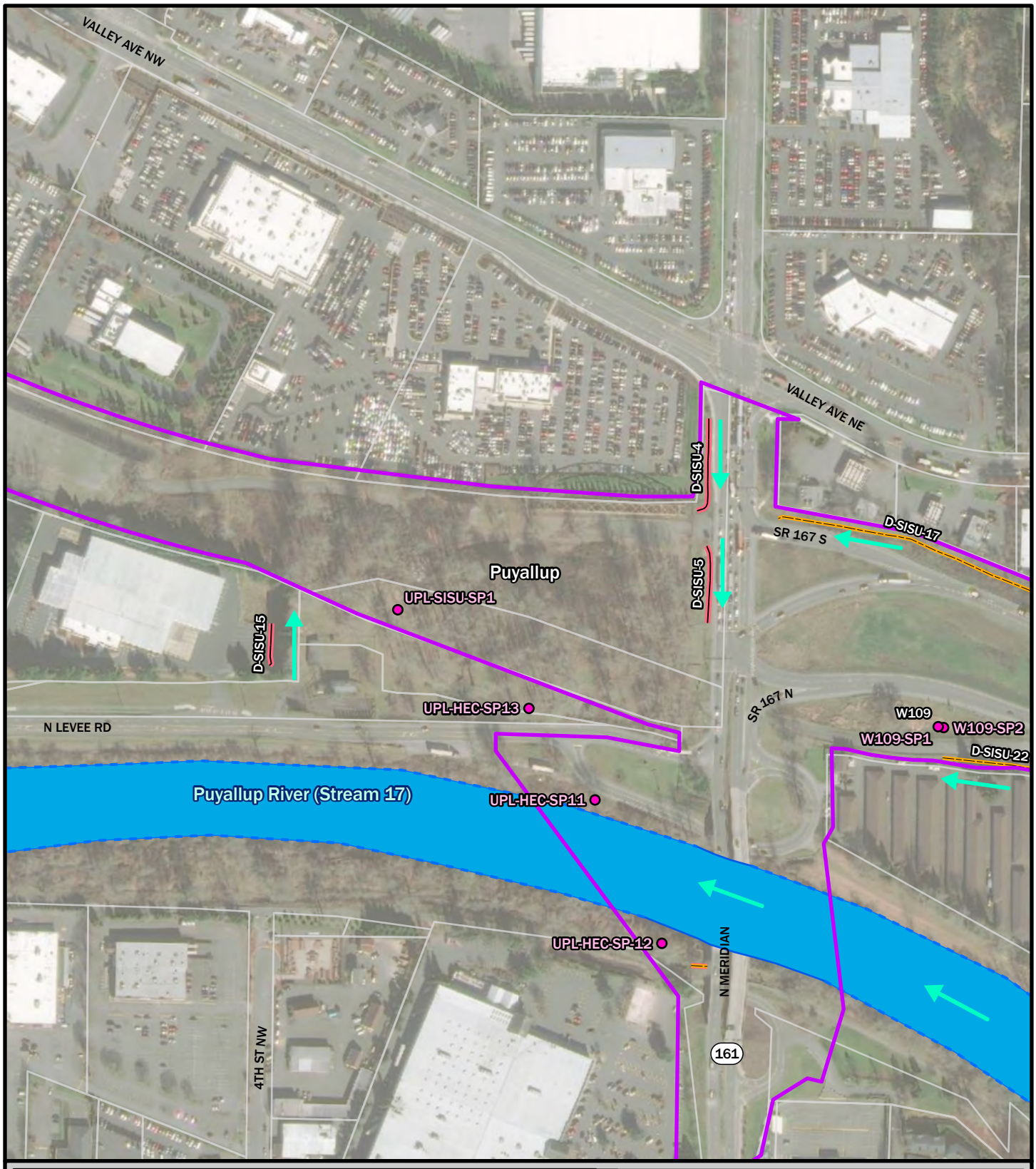

Legend

- Study area
- Soil pit
- Stream area
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

Figure 3-K.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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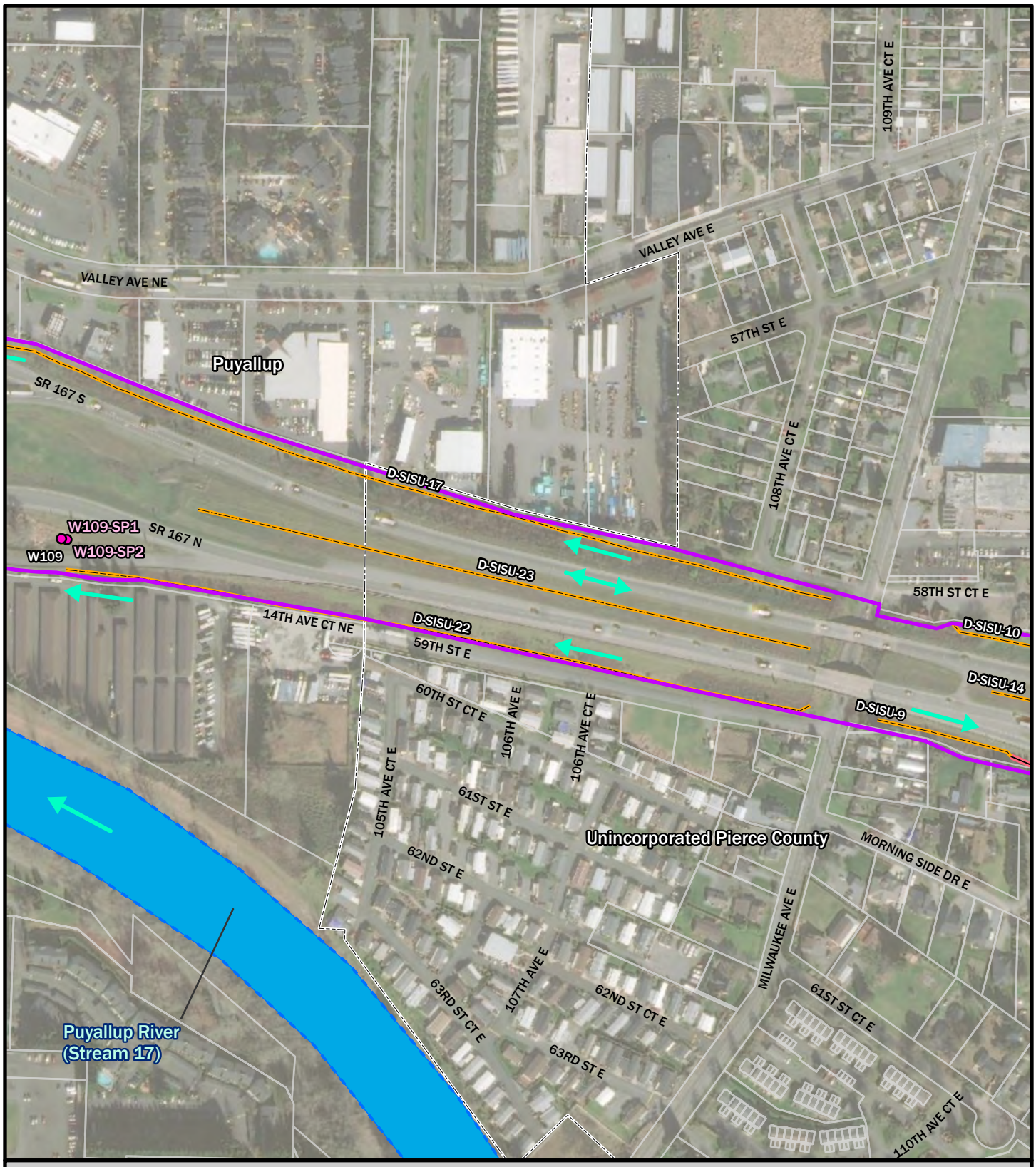

Legend

- Study area
- Soil pit
- Stream area
- Estimated OHWM
- Delineated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

Figure 3-L.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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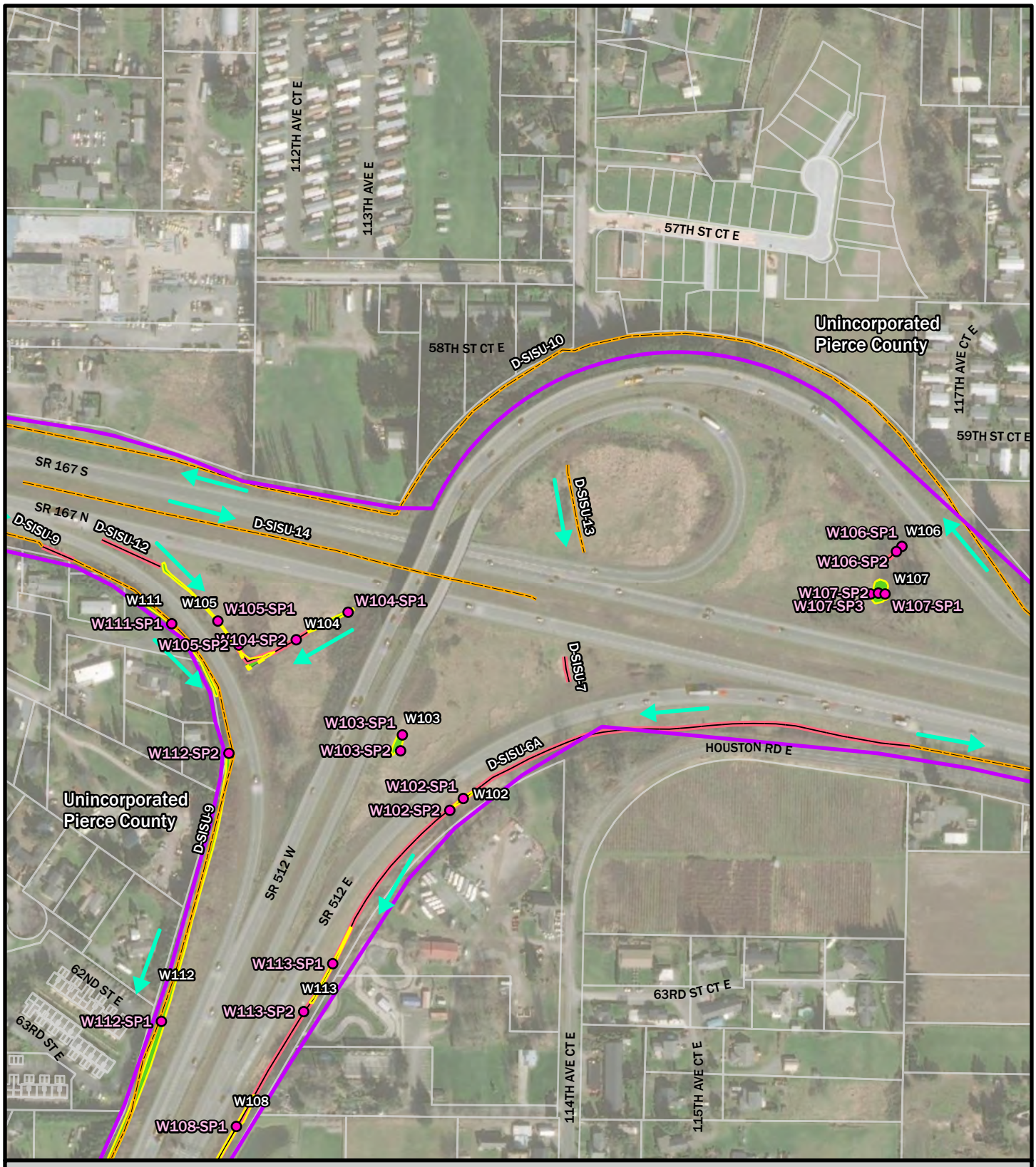

Legend

- Study area
- Soil pit
- Delineated wetland boundary
- Estimated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- Parcel
- Flow Direction

Figure 3-M.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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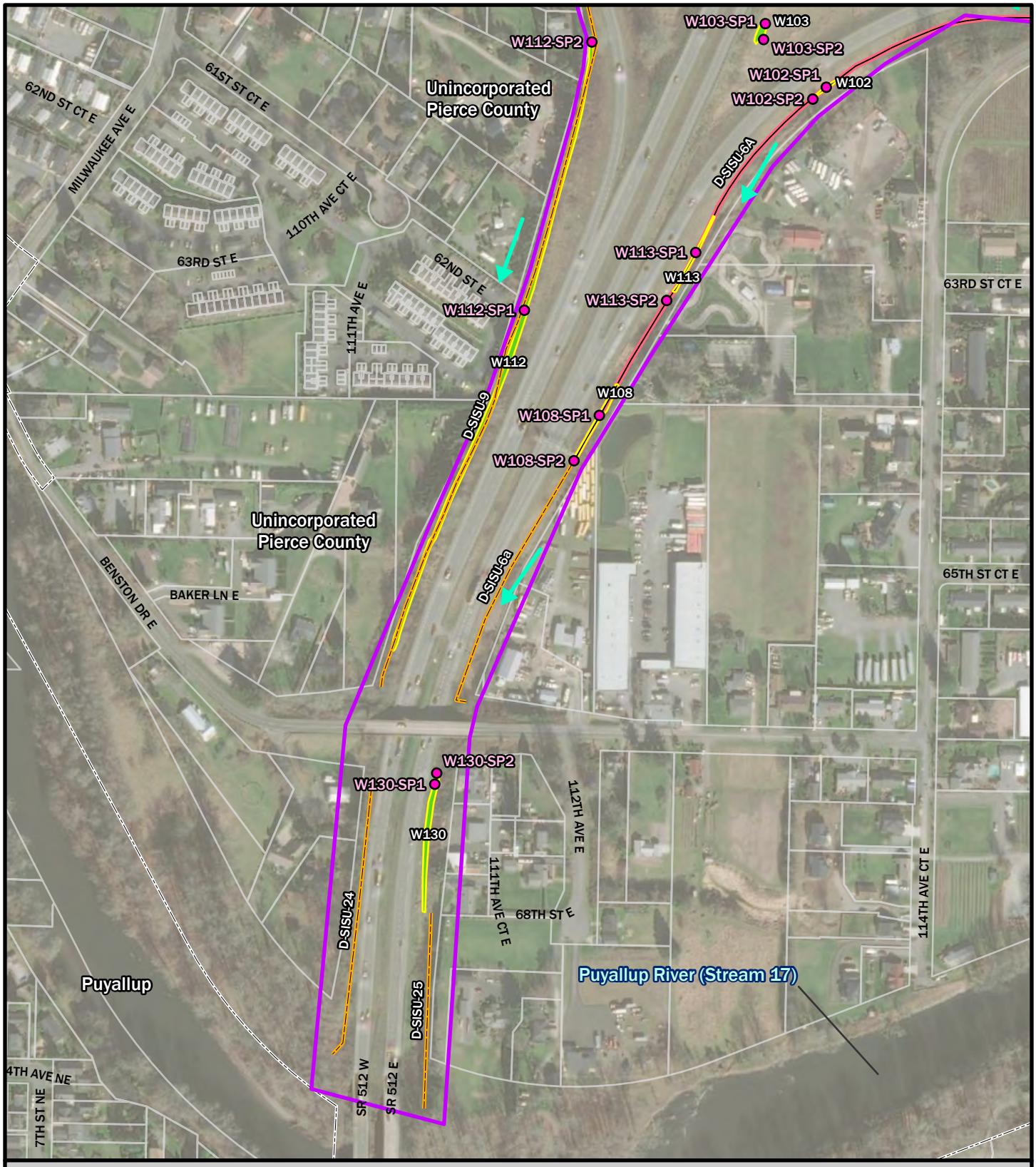

Legend

- Study area
- Soil pit
- Delineated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

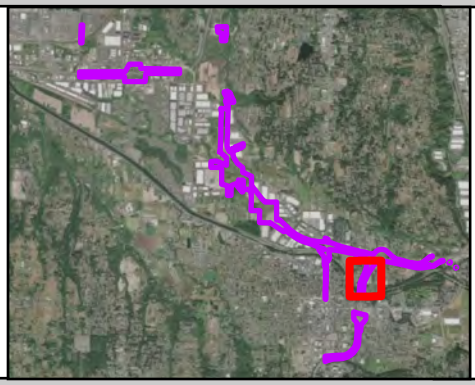

Figure 3-N.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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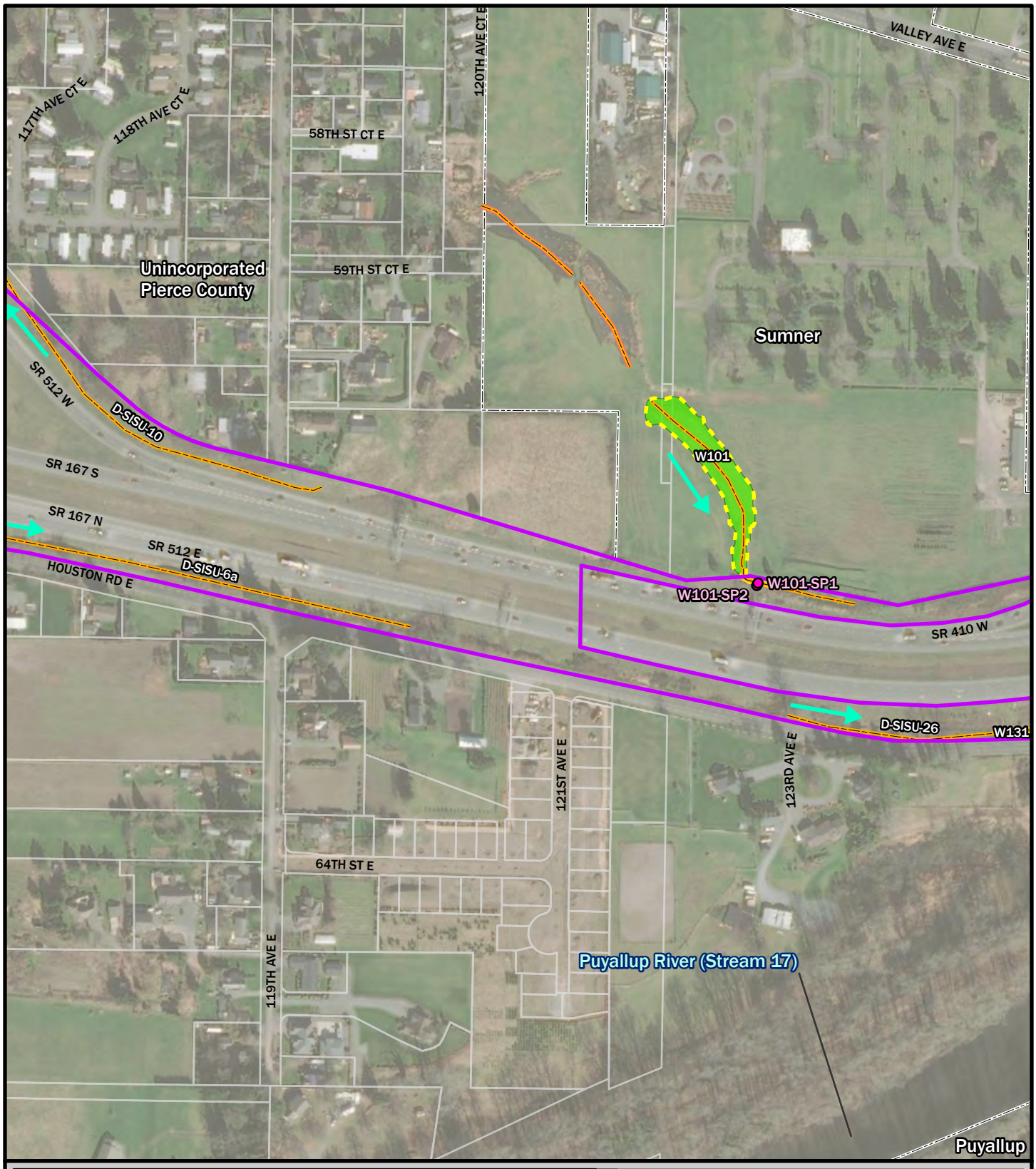

Legend

- Study area
- Soil pit
- Delineated wetland boundary
- Estimated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

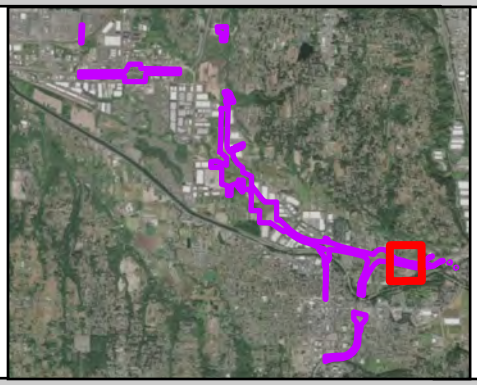

Figure 3-0.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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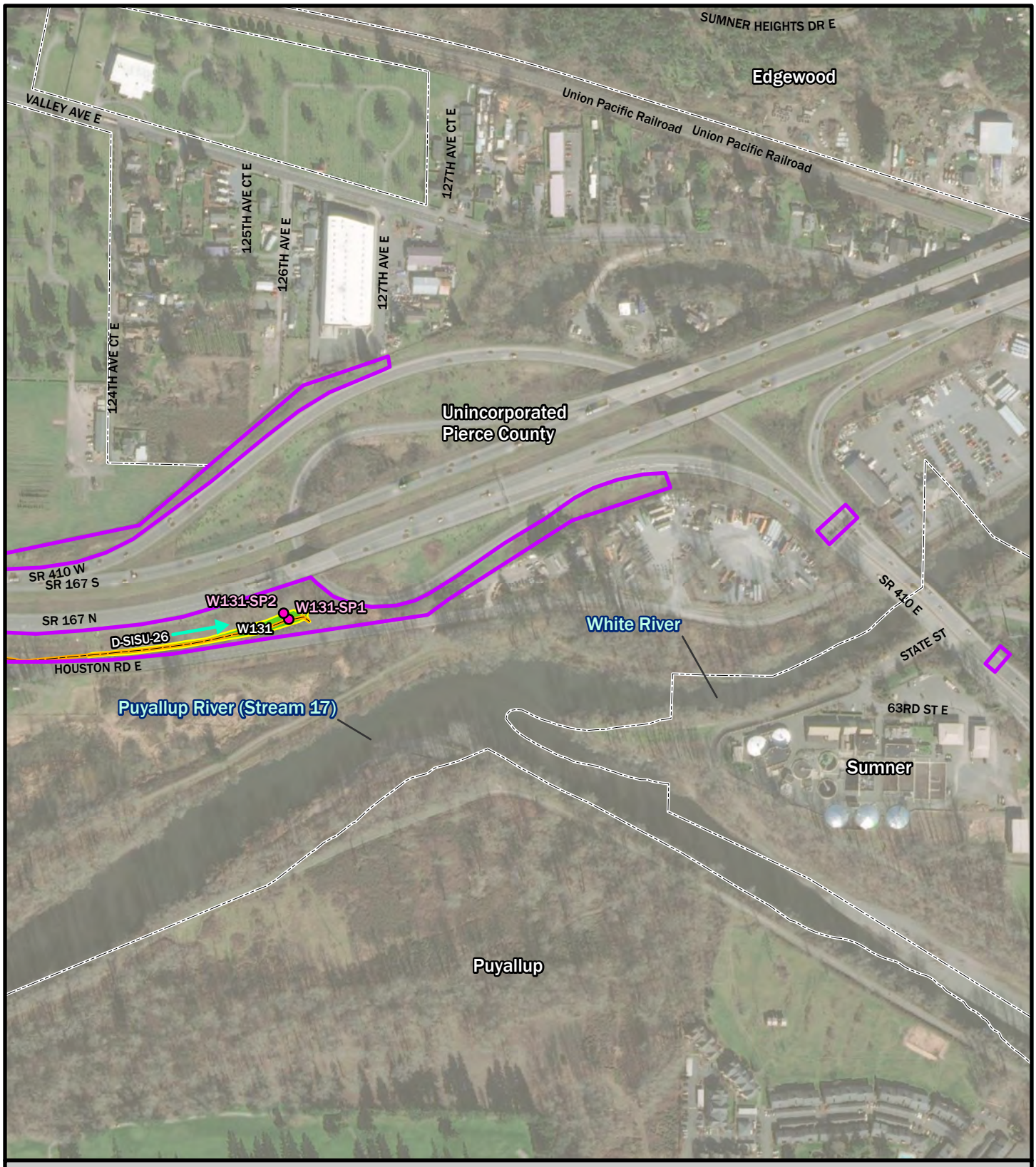

Legend

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

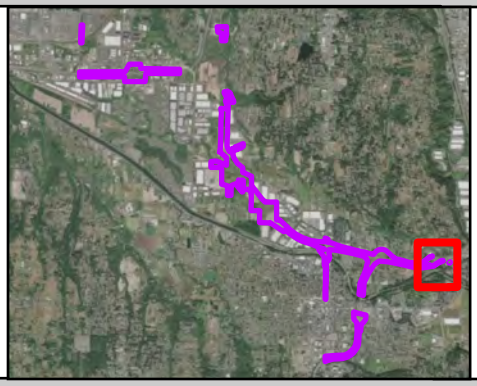

Figure 3-P.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 205 410 820 Feet

HERRERA

Esri, Aerial (2022)

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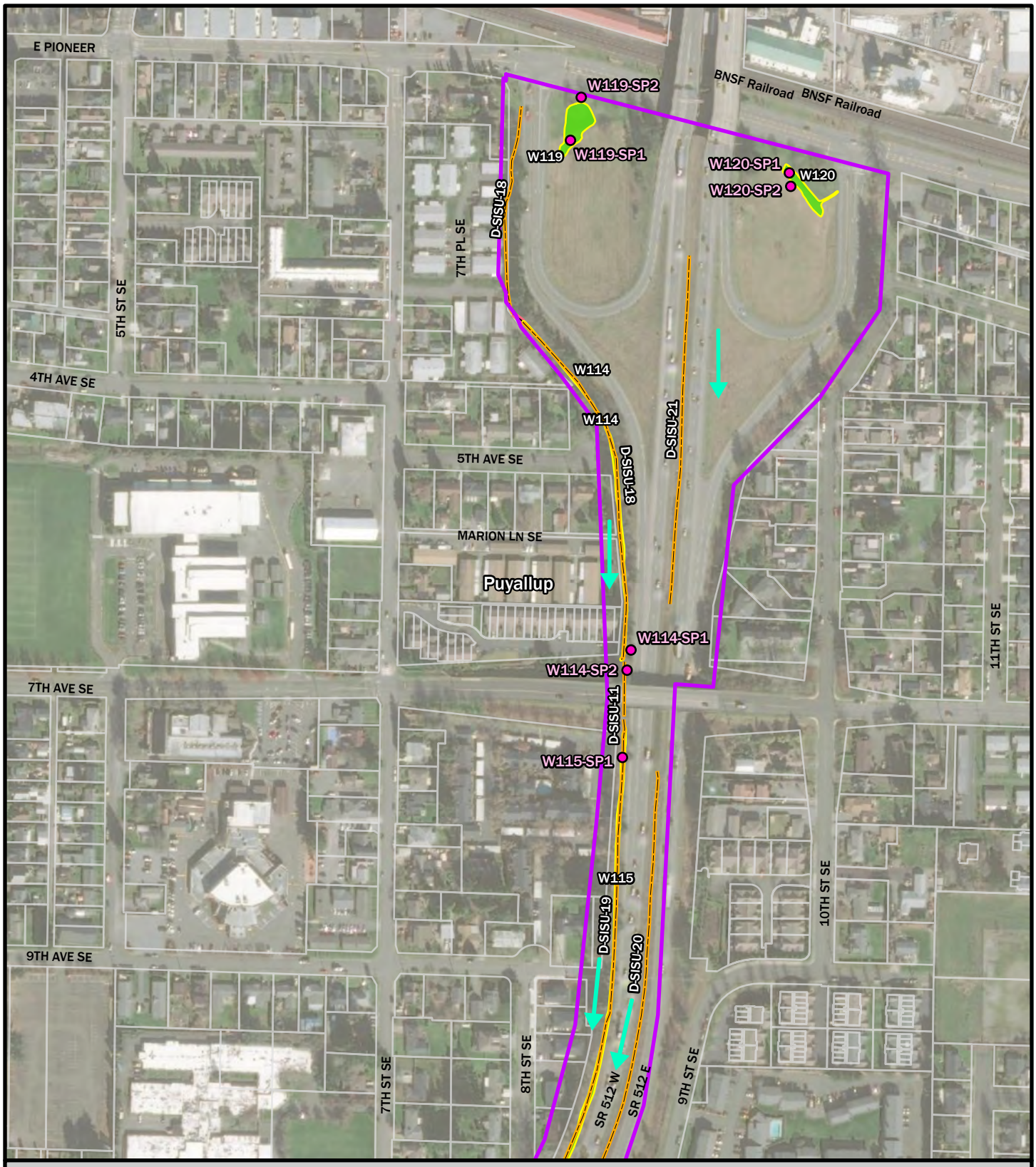

Legend

- Study area
- Soil pit
- Delineated wetland boundary
- Surveyed ditches
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

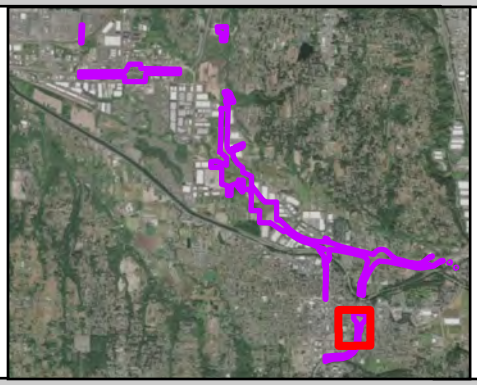

Figure 3-Q.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 165 330 660 Feet

HERRERA

Esri, Aerial (2022)

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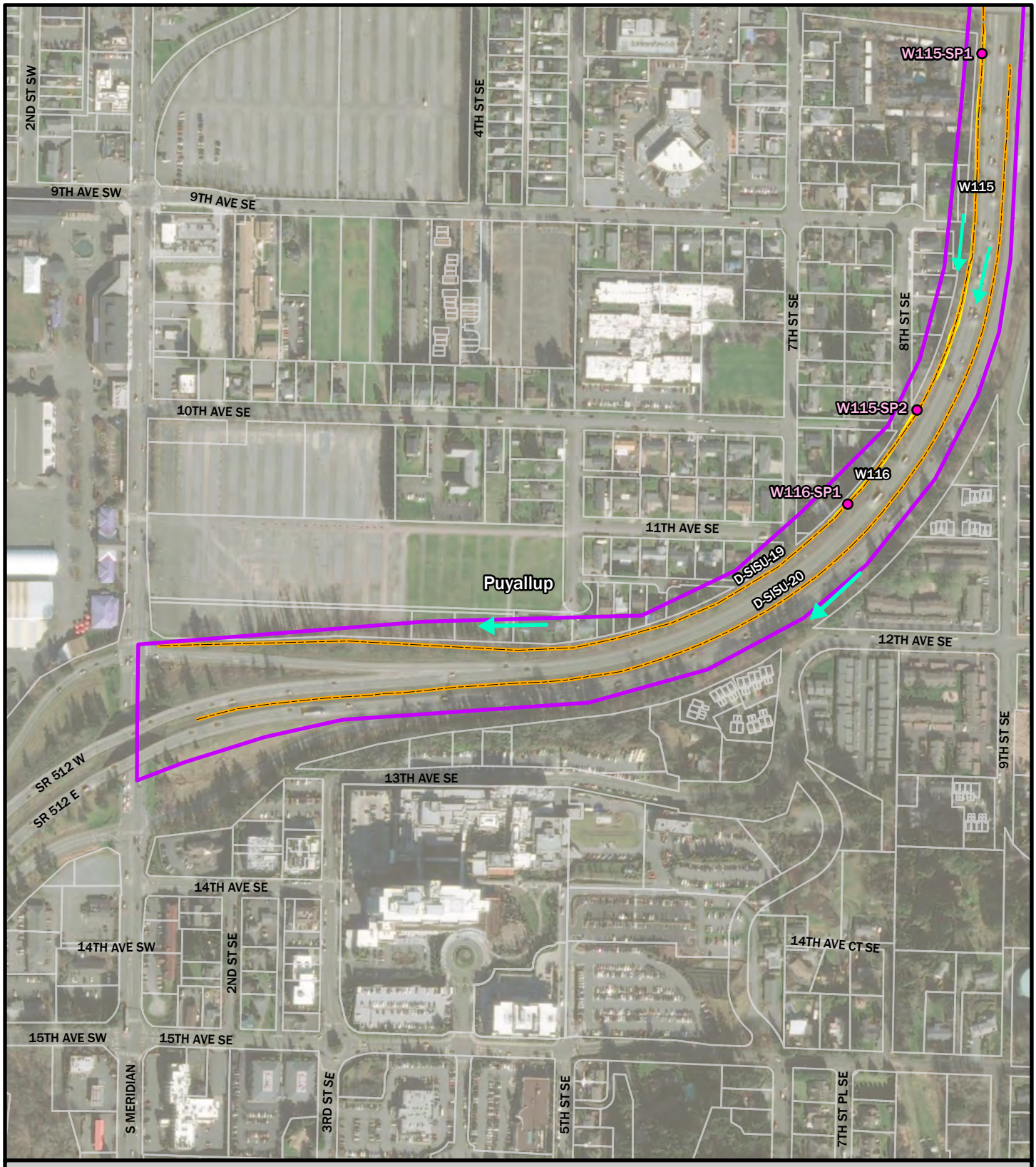

Legend

- Study area
- Soil pit
- Delineated wetland boundary
- Estimated ditch centerline
- Wetland area
- City limit
- Parcel
- Flow Direction

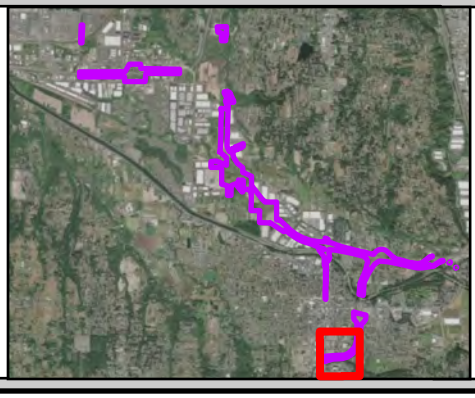

Figure 3-R.
Wetlands, Streams, and Ditches in the SR 167 Completion Project, Stage 2 Study Area.

N

0 205 410 820 Feet

HERRERA

Esri, Aerial (2022)

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In some cases, wetlands delineated individually were later determined to be contiguous with adjacent wetlands, and in these cases the wetland names were combined (e.g., Wetland 88/90/91). Wetlands W122 through W125 were identified entirely by desktop analysis. Portions of the boundaries of wetlands W17/65, W94, W98, W101, and W136 were identified by desktop analysis. Detailed descriptions of each wetland are included in Tables 3 through 42.

Appendix A includes a wetland inventory map (USFWS 2021a), topographic map (Pierce County 2011), and soil survey map (NRCS 2021a). Appendix C includes wetland delineation data sheets, including upland (UPL) pits that are not associated with or close to any delineated wetland. See the Wetland Functions section of this report for additional information on wetland functions and Appendices D and E for wetland rating forms and detailed functional assessment summaries, respectively.

4.3.1. Vegetation

Wetland vegetation in the study area consists of a mix of native and nonnative trees, shrubs, and herbaceous vegetation. Palustrine emergent wetlands are characterized by blue grasses (*Poa* spp.), reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), common rush (*Juncus effusus*), and velvet grass (*Holcus lanatus*). Palustrine forested and scrub shrub wetlands are dominated by deciduous vegetation including small to large alder (*Alnus rubra*), willow (*Salix* spp.), and cottonwood (*Populus* spp.) trees and woody shrubs including Himalayan blackberry (*Rubus armeniacus*), hardhack (*Spirea douglasii*), and red osier dogwood (*Cornus sericea*). Portions of the study area adjacent to roadways are generally limited to mowed grasses, Himalayan blackberry, reed canarygrass, and patches of forested and shrub species including cottonwood and willows. Areas within the northern and central portions of the study area have been used for agricultural crop production for decades. Vegetation in these areas is sparse and consists of relic agricultural crops and reed canarygrass.

4.3.2. Soils

Five types of soil are mapped within the study area: Sultan silt loam, Briscot loam, Puyallup fine sandy loam, Xerorthents fill, and Pilchuck fine sand (NRCS 2021a) (Appendix A-5). Sultan silt loam is the dominant soil within the study area, followed by Briscot loam and Puyallup fine sandy loam. Xerorthents fill and Pilchuck fine sand account for less than 10 percent of mapped soils in the study area. Sultan silt loam is a very deep, moderately well-drained, and hydric soil formed in recent alluvium on floodplains at or near seal level (NRCS 2021b). Briscot loam is a very deep, poorly drained, and hydric soil formed in recent alluvium on floodplains. Puyallup fine sandy loam consists of very deep, well drained hydric soils formed in recent alluvium on floodplains and low terraces. Pilchuck fine sand is a very deep, excessively drained, and somewhat excessively drained hydric soil formed in gravelly and sandy alluvium on floodplains. Xerorthents consists of urban fill material, which is not considered hydric (NRCS 2021a).

4.3.3. Hydrology

The Wapato, Puyallup, and Hylebos watersheds are rain-dominated systems that produce increased stream flows between October and March in response to rainstorms in the wet season of the year (EarthCorps 2016). The combination of increased impervious surfaces and other forms of land development has increased surface runoff, which accounts for a significant source of hydrology to most wetlands in the study area and shorter flow durations in roadside ditches and some tributary streams. Other primary sources of hydrology include a seasonal high water table and precipitation. Eight wetlands receive occasional overbank flooding from adjacent streams:

- Hylebos Creek (Stream 02) and Stream 20: W17/65 (Figures 2-B and 3-D)
- Wapato Creek (Stream 09): W94 (Figure 3-I), W95 (Figure 3-H), and W98 (Figure 3-G)
- Surprise Lake Tributary (Stream 01): W47 (Figure 3-E)
- Stream 13: W83 (Figure 3-F)
- Streams 14 and 15: W87 and W93 (Figure 3-J)

Table 3. 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		
		**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	2.30 acres
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W1-SP1, W1-SP3
		Upland Data Sheet(s)	Appendix C; W1-SP2, W1-SP4
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass, creeping buttercup, velvet grass, 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 and on habitat score (FMC 17.17.230). Wetland 1 rates as a Category III.		
Functions	The wetland has moderate hydrologic functions, high water quality functions, and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
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.		

Table 4. 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		
		**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	71.13 acres
		Cowardin Classification	PEM, PSS, PFO
		HGM Classification	Depressional
Wetland Data Sheet(s)	Appendix C: W17-SP1, W17-SP3, W17-SP4, W65-SP1, W65-SP3		
Upland Data Sheet(s)	Appendix C: W17-SP2, W17-SP5, 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.		
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. Function summaries are provided in Table 43 and Appendix E.		
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.		

Table 5. Wetland 47 Summary.

Wetland 47 Information Summary			
Location	Adjacent to Freeman Road East, north of 26th Street East, south of 20th Street East		
Date(s) Evaluated	4/30/2019, 3/16/2022		
		**Local Jurisdiction**	Fife, WA
		Ecology Rating (Hruby 2014)	Category II
		City of Fife Rating	Category II
		City of Fife Buffer Width	165 feet with mitigation measures
		Wetland Size	20.46 acres
		Cowardin Classification	PEM, PSS, PFO
		HGM Classification	Depressional
		Wetland Data Sheet(s)	Appendix C: W47-SP1, W47-SP3, W47-SP4, W47-SP5
		Upland Data Sheet(s)	Appendix C: W47-SP2, W47-SP6
Wetland Delineation			
Dominant Vegetation	Wetland 47 (W47) contains PEM, PSS, and PFO vegetation communities. The PEM vegetation is dominated by reed canarygrass. The PSS vegetation is dominated by red-osier dogwood, and Sitka willow (*Salix sitchensis*). The PFO community is dominated by black cottonwood.		
Soils	PEM, PSS, and PFO. Soils in the wetland meet the hydric soil indicators depleted matrix (F3), thick dark surface (A12), and redox dark surface (F6). Soils in W47 are mapped by the NRCS (2019b) as Sultan silt loam, Shalcar muck, and Semiahmoo muck, all are hydric.		
Hydrology	Precipitation, groundwater, and overbank flooding are the primary sources of hydrology for this wetland. Soils at W47-SP1 were not saturated during the April 2019 site visit. Secondary indicators water-stained leaves (B9), geomorphic position (D2), and FAC neutral test (D5) were present at the time. Soils were saturated at the surface at W47-SP3 and saturated at 4 inches at W47-SP4. Algal mats (B4) were also observed at W47-SP4. Surprise Lake Tributary (Stream 01) and Stream 08 flow through this wetland and are outlets. Stream 13 and Stream 19 flow through the wetland and are tributaries to the Surprise Lake Tributary. Stream 18 flows through the wetland and is a tributary to Stream 08.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The City of Fife uses the 2014 Ecology rating system (Hruby 2014) to classify wetlands, per FMC 17.17.020.		
Functions	Water quality functions are moderate, and hydrologic functions are of high quality. The wetland provides moderate habitat functions. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The condition of the buffer surrounding W47 is poor. Commercial development and conventional agriculture are to the north. Freeman Road East and W45 are to the east. The buffer to the south and west consists of a stormwater retention pond, commercial development, and conventional agriculture.		

Table 6. Wetland 83 Summary.

Wetland 83 Information Summary		
Location	West of 78th Avenue East, south of 26th Street East	
Date(s) Evaluated	3/30/2021, 3/31/2021, 4/1/2021, 5/10/2022	
	**Local Jurisdiction**	City of Fife
	Ecology Rating (2014)	Category III
	Local Rating	Category III
	City of Fife Buffer Width	105 feet with mitigation measures
	Wetland Size	19.62 acres
	Cowardin Class	PEM, PSS, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	Appendix C: W83-SP1, W83-SP3, W83-SP4, W83-SP5
	Upland Data Sheet(s)	Appendix C: W83-SP2, W83-SP6, W83-SP7
Wetland Delineation		
Dominant Vegetation	Trees: black cottonwood (*Populus balsamifera* ssp*. trichocarpa*) Shrubs: hardhack, Himalayan blackberry, red osier dogwood Herbaceous: small-fruited bulrush (*Scirpus microcarpus*), slough sedge (*Carex obnupta*), creeping buttercup, reed canarygrass. The PFO portion of the wetland is not more than 32 years old, per 1990 aerial imagery (Google Earth Pro 2021). Maximum tree heights were estimated to be 100 to 110 feet during a May 2022 field visit.	
Soils	All soil pits dug in Wetland 83 contained hydric soils. Indicators included Depleted Matrix (F3), hydrogen sulfide (A4), and redox dark surface (F6).	
Hydrology	Groundwater and overbank flooding from Stream 13 are the primary sources of hydrology for this wetland. In addition, the wetland receives stormwater discharges from a warehouse facility to the east. Stream 13 enters the study area from the east and runs along the eastern edge of the wetland. A ditch flowing west to east in the wetland contributes flow to Stream 13, which flows north. Below the OHWM Stream 13 is vegetated and soils meet wetland conditions; however, below OHWM this area is mapped as a stream due to dominance of stream functions. A ditch also borders the wetland to the west and conveys flows north. 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 17.17.230). Wetland 83 rates as a Category III.	
Functions	The wetland has moderate water quality, hydrologic, and habitat functions. Functions summaries are provided in Table 43 and Appendix E.	
Wetland Buffers		
Buffer Condition	The buffer to the north is a narrow, mowed strip and 26th Street East. Stream 13, mowed vegetation, and paved surfaces are to the east. Fallow agricultural fields are to the south. Disturbed vegetated areas are to the west. The buffer is generally in poor condition.	

Table 7. Wetland 86 Summary.

Wetland 86 Information Summary			
Location	North of Valley Avenue East, west of Wapato Creek and Freeman Road East		
Date(s) Evaluated	4/6/2021		
		**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	0.11 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: W86-SP1
		Upland Data Sheet(s)	Appendix C: W86-SP2
Wetland Delineation			
Dominant Vegetation	Trees: black cottonwood Shrubs: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 4/1 with redoximorphic concentrations were observed within the upper 14 inches of the soil surface. Hydric soil indicator Depleted Matrix (F3) was met.		
Hydrology	Precipitation and runoff from the road are likely the primary sources of hydrology at this wetland. Secondary indicators water-stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5) were met.		
Rationale for Delineation	All three wetland indicators 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 17.17.230). Wetland 86 rates as a Category III.		
Functions	Water quality and hydrologic functions are of moderate to high quality. The wetland provides low habitat functions Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	A soil stockpile area is located to the north, a fallow agricultural area and disturbed upland buffer is located to the east and south, and Valley Avenue East is located to the south and west. The buffer is generally in poor condition.		

Table 8. Wetland 87 Summary.

Wetland 87 Information Summary			
Location	North and east of Stream 15, south of Stream 14 and Wetland 93		
Date(s) Evaluated	4/7/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	75 feet, based on low intensity land use
		Wetland Size	0.12 acre
		Cowardin Class	PSS, PFO
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: W87-SP1
		Upland Data Sheet(s)	Appendix C: W87-SP2
Wetland Delineation			
Dominant Vegetation	Trees: red alder, black cottonwood Shrubs: red osier dogwood Herbaceous: N/A		
Soils	Soil matrices of 10YR 4/2, 5/1, and 7.5YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil surface. Indicator Depleted Matrix (F3) met. Oxidized rhizospheres were observed.		
Hydrology	Precipitation, groundwater, and overbank flooding from Stream 14 and Stream 15 are the primary hydrology sources for this wetland. Primary indicators sparsely vegetated concave surface (B8), water-stained leaves (B9), and oxidized rhizospheres along living roots (C3) were met. Secondary indicators water-stained leaves (B9) and geomorphic position (D2) were also met.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 87 rates as a Category III.		
Functions	In general water quality, hydrologic, and habitat functions are of moderate quality. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer is composed of relatively undisturbed forest in all directions, with some agricultural areas adjacent to the forested patches.		

Table 9. Wetland 88/90/91 Summary.

Wetland 88/90/91 Information Summary			
Location	North of agricultural and stockpile area, east of Freeman Road East, west of Valley Avenue East		
Date(s) Evaluated	4/8/2021, 4/13/2021, 4/14/2021, 4/15/2021, 11/3/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category II
		Local Rating	Category II
		City of Puyallup Buffer Width	100 feet
		Wetland Size	0.49 acre
		Cowardin Class	PEM, PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: W88-SP1, W90-SP1, W90-SP3, W91-SP1
		Upland Data Sheet(s)	Appendix C: W88-SP2, W88-SP3, W90-SP2, W91-SP2, W91-SP3
Wetland Delineation			
Dominant Vegetation	Shrubs: red osier dogwood Herbaceous: white clover (*Trifolium repens*), velvet grass, reed canarygrass, spike rush (*Eleocharis palustris*)		
Soils	Soil matrices of 10YR 3/2 and 4/1 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Hydric soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6) were met.		
Hydrology	Surface flows are the primary source of hydrology for this wetland. This wetland is adjacent to Stream 14. Hydrology indicators for Surface Water (A1), high water table (A2), saturation (A3), sparsely vegetated concave surface (B8), water-stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5) were met.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 88/90/91 rates as a Category II.		
Functions	The wetland provides high quality water quality functions, moderate hydrologic functions, and low habitat functions. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to disturbed upland vegetation on all sides, with a gravel path located to the south. These areas provide low buffer functions.		

Table 10. Wetland 89 Summary.

Wetland 89 Information Summary			
Location	North of the Puyallup River, east of Freeman Road East, south and west of Stream 15		
Date(s) Evaluated	4/8/2021, 4/13/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category II
		Local Rating	Category II
		City of Puyallup Buffer Width	50 feet, based on low intensity land use
		Wetland Size	0.10 acre
		Cowardin Class	PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W89-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W89-SP2
Wetland Delineation			
Dominant Vegetation	Trees: Oregon ash (*Fraxinus latifolia*) Shrubs: red osier dogwood, Himalayan blackberry Herbaceous: N/A		
Soils	Soil matrices of 10YR 4/2 and 5/1 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Hydric soil indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Saturation (A3) and geomorphic position (D2) hydrology indicators were present.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 89 rates as a Category II.		
Functions	The wetland provides high quality water quality and hydrologic functions. The habitat functions are of moderate quality. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to forested upland to the north, east, and west. This area provides moderate ecological functions. The wetland is adjacent to commercial development to the south, which is low in ecological functions.		

Table 11. Wetland 92 Summary.

Wetland 92 Information Summary	
Location	North of Wetland 93, east of Stream 15 and Freeman Road East, south and west of Valley Avenue East
Date(s) Evaluated	4/15/2021, 4/29/2021

Local Jurisdiction	City of Puyallup
Ecology Rating (2014)	Category III
Local Rating	Category III
City of Puyallup Buffer Width	80 feet
Wetland Size	1.56 acres
Cowardin Class	PEM
HGM Class	Depressional
Wetland Data Sheet(s)	Appendix C: Sampling Points W92-SP1, W92-SP3, W92-SP4, W92-SP5, W92-SP7
Upland Data Sheet(s)	Appendix C: Sampling Point W92-SP2, W92-SP6, W92-SP8

Wetland Delineation	
Dominant Vegetation	Herbaceous: common rush, common horsetail (*Equisetum arvense*).
Soils	Soil matrices of Gley 1 3/10 and 4/10 and 10YR 4/2 with redoximorphic concentrations were observed within the upper 18 inches of the soil profile. Indicators Loamy Gleyed Matrix (F2), Depleted Matrix (F3), Redox Depressions (F8), and Hydrogen Sulfide (A4) were present.
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Surface ponding was present in low points within the wetland during field work in late April. Hydrology indicators Saturation (A3), Water Marks (B1), Sediment Deposits (B2), Sparsely Vegetated Concave Surface (B8), Surface Soil Cracks (B6), Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) were met.
Rationale for Delineation	All three parameters were present within the wetland. Patches where hydrophytic vegetation indicators were not met were attributed to the disturbed conditions of the site resulting from agricultural activities. Wetland hydrology and hydric soil indicators were present throughout the wetland.
Wetland Rating and Functions	
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 92 rates as a Category III.
Functions	The wetland provides high quality water quality and hydrologic functions. Habitat functions provided by the wetland are low. Functions summaries are provided in Table 43 and Appendix E.
Wetland Buffers	
Buffer Condition	The wetland is adjacent to agricultural areas in all directions. These areas provide low quality buffer functions.

Table 12. Wetland 93 Summary.

Wetland 93 Information Summary			
Location	North of 22nd Avenue Northwest, east of Freeman Road East, south of 44th Street East, and west of 16th Street Northwest		
Date(s) Evaluated	4/20/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	6.81 acres
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W93-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W93-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: mousetail (*Myosurus minimus*) and fringed willowherb (*Epilobium ciliatum*)		
Soils	Soil matrices of 7.5YR 5/2 and 4/2 with redoximorphic concentrations in the matrix were observed throughout the upper 20 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows from precipitation and overbank flooding are the primary sources of hydrology for this wetland. The southwest corner of the wetland receives occasional overbank flooding from Streams 14 and 15. Sediment deposits (B2), surface soil cracks (B6), sparsely vegetated concave surfaces (B8), and oxidized rhizospheres along living roots (C3) were present within the wetland.		
Rationale for Delineation	Fallow agricultural area with depression and wetland characteristics. The area supports hydric soils and vegetation and includes multiple indicators of wetland hydrology. Transitions between hydrophytic and upland vegetation were helpful in determining wetland boundary.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 93 rates as a Category III.		
Functions	In general water quality and hydrologic functions are high functioning. The wetland provides low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The agricultural area to the north and commercial activities to the east and west of the wetland provide low to moderate functions. The disturbed forested area to the south provides moderate functions.		

Table 13. Wetland 94 Summary.

Wetland 94 Information Summary		
Location	North of 45th Court East, east of 70th Avenue East, west of Freeman Road East, and south of Union Pacific Railroad and Valley Avenue East	
Date(s) Evaluated	4/28/2021	
	**Local Jurisdiction**	City of Fife
	Ecology Rating (2014)	Category II
	Local Rating	Category II
	City of Fife Buffer Width	165 feet with mitigation measures
	Wetland Size[a]	42.36 acres
	Cowardin Class	PEM, PSS, PFO
	HGM Class	Depressional/Riverine
	Wetland Data Sheet(s)	Appendix C: Sampling Points W94-SP1, W94-SP3
	Upland Data Sheet(s)	Appendix C: Sampling Points W94-SP2, W94-SP4
Wetland Delineation		
Dominant Vegetation	Trees: willows, black cottonwood, Oregon ash Shrubs: osoberry (*Oemleria cerasiformis*) Herbaceous: reed canarygrass, creeping buttercup, tall fescue (*Festuca arundinacea*)	
Soils	A soil matrix of 10YR 2/1 with redoximorphic concentrations was observed within the top 16 inches of the soil profile. Indicator Redox Dark Surface (F6) was met.	
Hydrology	Overbank and hyporheic flows from Wapato Creek (Stream 09) and Stream 15 are the primary hydrology sources for this wetland. Oxidized rhizospheres on living roots (C3) and saturation starting at 11 inches below the surface (A3) were present.	
Rationale for Delineation	Depressional/riverine wetland with hydric soils, hydrophytic vegetation, and hydrology indictors. A transition from hydrophytic vegetation to upland vegetation, in addition to topographic changes, were helpful in determining the wetland boundary. Sheep grazed within the upland but did not graze the wetland vegetation.	
Wetland Rating and Functions		
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System (FMC 17.17.230). Wetland 94 rates as a Category II.	
Functions	Water quality functions in Wetland 94 are generally high. Hydrologic and habitat functions are moderate. Function summaries are provided in Table 43 and Appendix E.	
Wetland Buffers		
Buffer Condition	The buffer is disturbed by grazing sheep and provides low functions.	

[a] Wetland size is estimated due to access restrictions on Puyallup Tribe of Indians property.

Table 14. Wetland 95 Summary.

Wetland 95 Information Summary			
Location	North of 44th Street East, east of Freeman Road East, south of Valley Avenue East and Union Pacific Railroad, and west of 16th Street Northwest		
Date(s) Evaluated	4/29/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	150 feet
		Wetland Size	2.16 acres
		Cowardin Class	PEM, PSS, PFO
		HGM Class	Riverine
		Wetland Data Sheet(s)	Appendix C: Sampling Point W95-SP1, W95-SP3, W95-SP4
		Upland Data Sheet(s)	Appendix C: Sampling Point W95-SP2
Wetland Delineation			
Dominant Vegetation	Trees: Oregon ash, Scouler's willow (*Salix scouleriana*), red alder, black cottonwood Shrubs: hardhack, Sitka willow (*Salix sitchensis*), Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 2/1 with organic inclusions were observed within the upper 16 inches of the soil profile. Indicators Black Histic (A3) and Hydrogen Sulfide (A4) were met.		
Hydrology	Overbank and hyporheic flows from the adjacent stream, in addition to precipitation and surface flows, are the primary sources of hydrology for this wetland. High water table (A2) and saturation to the surface (A3) were present within the wetland.		
Rationale for Delineation	Riverine wetland with hydric soils, hydrophytic vegetation, and wetland hydrology.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 95 rates as a Category III.		
Functions	The water quality, hydrologic and habitat functions provided by Wetland 95 are moderate. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer of Wetland 95 is of moderate quality and includes a railroad to the north, and disturbed upland vegetation to the east and west. A rhubarb field was located south of the wetland.		

Table 15. Wetland 98 Summary.

Wetland 98 Information Summary			
Location	North of Valley Avenue East, east of Wetlands 83 and 86, west of Freeman Road East, and south of the FedEx shipping center, along Wapato Creek (Stream 09)		
Date(s) Evaluated	7/8/2021		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category II
		Local Rating	Category II
		City of Fife Buffer Width	165 feet with mitigation measures
		Wetland Size[a]	4.25 acres
		Cowardin Class	PEM, PSS, PFO
		HGM Class	Riverine
		Wetland Data Sheet(s)	Appendix C: Sampling Point W98-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W98-SP2
Wetland Delineation			
Dominant Vegetation	Trees: red alder Shrubs: bamboo Herbaceous: reed canarygrass		
Soils	Soil matrices of 7.5YR 3/3, 4/1, and 3/1 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) were met.		
Hydrology	Overbank and hyporheic flows from Wapato Creek (Stream 09) are the primary source of hydrology for the wetland. Surface ponding was observed within the wetland in addition to hydrology indicators saturation (A3) and oxidized rhizospheres along living roots (C3).		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System (FMC 17.17.230). Wetland 98 rates as a Category II.		
Functions	Water quality and hydrology functions are high quality. The wetland provides moderate habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to Wapato Creek (Stream 09), commercial development, and impervious roadways to the north, east, and south. Disturbed upland vegetation is located west of the wetland. Most of the buffer provides low functions. The area to the west provides moderate buffer functions.		

[a] Wetland size is estimated due to restricted property access.

Table 16. Wetland 101 Summary.

Wetland 101– Information Summary			
Location	North of SR 167, south of Valley Avenue East, and east of 119th Avenue East		
Date(s) Evaluated	7/15/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA; Sumner, WA
		Ecology Rating (2014)	Category III
		Pierce County and City of Sumner Rating	Category III
		Pierce County and City of Sumner Buffer Widths	80 feet/60 feet
		Wetland Size	0.74 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W101-SP1
		Upland Data Sheet(s)	Appendix C; W101-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Wetland 101 contained hydric soils. Soil matrices of 10YR 3/2 and 5Y 4/1 were observed within 17 inches of the soil surface. A depleted matrix and redoximorphic concentrations that met soil indicators Depleted Matrix (F3) and Depleted Below Dark Surface (A11) were observed at depths of 6 to 17 inches below the soil surface.		
Hydrology	Groundwater and surface flows are the primary sources of hydrology for this wetland. Secondary indicators Water-Stained Leaves (B9), Geomorphic Position (D2), and FAC-neutral Test (D5) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PCC and the SMC classify wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D; SMC 16.46.070). Wetland 101 rates as a Category III.		
Functions	The wetland has moderate water quality functions and low hydrologic and habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition and consists of SR 167 to the south, mowed fields and roadside ditches dominated by reed canarygrass and Himalayan blackberry to the east and west, and a cemetery to the north.		

Table 17. Wetland 102 Summary.

Wetland 102 Information Summary			
Location	Southeast of the intersection of SR 512 and SR 167, west of Houston Road East		
Date(s) Evaluated	7/22/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.01 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W102-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W102-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: colonial bentgrass (*Agrostis capillaris*), Dewey's sedge (*Carex deweyana*)		
Soils	Soil matrices of 10YR 4/2 and 5/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary source of hydrology for this wetland. The wetland is within Ditch D-SISU-6a, which conveys surface flows from north to south through the wetland. This wetland was sampled during peak summer conditions during an unusually dry year, and only the secondary indicator geomorphic position (D2) was met. Saturation conditions are presumed during the growing season based on the presence of hydrophytic vegetation, hydric soils, and geomorphic position.		
Rationale for Delineation	Depressional area with hydric soils, hydrophytic vegetation, and a ditch that conveys water through the wetland. Unusually dry conditions, but saturation is presumed during the growing season.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 102 rates as a Category III.		
Functions	Water quality and habitat functions are of moderate quality. Habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces, commercial development, and narrow strips of mowed upland vegetation. Buffer functions are low.		

Table 18. Wetland 103 Summary.

Wetland 103 Information Summary			
Location	Southeast of the intersection of SR 512 and SR 167, west of Houston Road East and Wetland 102		
Date(s) Evaluated	7/22/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		Unincorporated Pierce County Buffer Width	50 feet
		Wetland Size	0.02 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W103-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W103-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary source of hydrology for this wetland. This wetland was sampled during peak summer conditions during an unusually dry year, and only the secondary indicator Geomorphic Position (D2) was met. Saturation conditions are presumed during the growing season based on the presence of hydrophytic vegetation, hydric soils, and geomorphic position.		
Rationale for Delineation	Depressional area with hydric soils and hydrophytic vegetation. Unusually dry conditions during field work, but saturation is presumed during the growing season.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 103 rates as a Category IV.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces, commercial development, and narrow strips of mowed upland vegetation. Buffer functions are low.		

Table 19. Wetland 104 Summary.

Wetland 104 Information Summary			
Location	Southwest of the intersection of SR 512 and SR 167, east of Wetland 111 and Wetland 105		
Date(s) Evaluated	7/22/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.02 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W104-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W104-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: colonial bentgrass		
Soils	Soil matrix of 10YR 4/2 with redoximorphic concentrations was observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was present.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. The wetland was sampled during unusually dry conditions. Ditch D-SISU-8 flows from a culvert into the wetland at its eastern boundary and west out of the wetland before flowing into Wetland 105 down gradient. Saturation during the growing season is presumed based on the presence of hydric soils and hydrophytic vegetation, and secondary indicator geomorphic position (D2).		
Rationale for Delineation	Depressional area with hydric soils and hydrophytic vegetation. Unusually dry conditions were present during field work, but saturation is presumed during the growing season.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 104 rates as a Category III.		
Functions	Water quality and hydrologic functions are of moderate quality, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces, commercial development, and narrow strips of mowed upland vegetation. Buffer functions are low.		

Table 20. Wetland 105 Summary.

Wetland 105 Information Summary			
Location	Southwest of the intersection of SR 512 and SR 167, east of Wetland 111 and west of Wetland 104		
Date(s) Evaluated	8/18/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.05 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W105-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W105-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: common rush		
Soils	Soil matrices of 10YR 4/2 and 5/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. The wetland was sampled during unusually dry conditions. Ditch D-SISU-8 flows into the wetland at its eastern boundary. A second culvert carries flows into the wetland at its western boundary. Saturation during the growing season is presumed based on the presence of hydric soils and hydrophytic vegetation, and indicators presence of reduced iron (C4), drainage patterns (B10), and geomorphic position (D2).		
Rationale for Delineation	Depressional area with hydric soils and hydrophytic vegetation. Unusually dry conditions were present during field work, but saturation is presumed during the growing season.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 105 rates as a Category III.		
Functions	Water quality functions are of high quality. Hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces, commercial development, and narrow strips of mowed upland vegetation. Buffer functions are low.		

Table 21. Wetland 106 Summary.

Wetland 106 Information Summary			
Location	South of the ramp that connects SR 512 to SR 167 headed east. North of SR 167 and Wetland 107		
Date(s) Evaluated	8/30/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		Unincorporated Pierce County Buffer Width	50 feet
		Wetland Size	0.002 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W106-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W106-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 2/1 and 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Ditch D-SISU-15 flows southwest out of Wetland 106. Hydrology indicators saturation (A3) and sediment deposits (B2) were present.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 106 rates as a Category IV.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 22. Wetland 107 Summary.

Wetland 107 Information Summary			
Location	South of the ramp that connects SR 512 to SR 167 headed east and Wetland 106. North of SR 167.		
Date(s) Evaluated	8/30/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		Unincorporated Pierce County Buffer Width	50 feet
		Wetland Size	0.04 acre
		Cowardin Class	PEM, PFO
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W107-SP1, W107-SP2
		Upland Data Sheet(s)	Appendix C: Sampling Point W107-SP3
Wetland Delineation			
Dominant Vegetation	Trees: black cottonwood Shrubs: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 4/2, 4/3, and 5/2 with redoximorphic concentrations in the matrix were observed within the upper 16 inches of the soil profile. Hydric soil indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Hydrology indicators sediment deposits (B2) and sparsely vegetated concave surface (B8) were present.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 107 rates as a Category IV.		
Functions	Water quality functions are moderate, hydrologic and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 23. Wetland 108 Summary.

Wetland 108 Information Summary			
Location	North of Benston Drive East, east of SR 512, south of Wetland 113		
Date(s) Evaluated	8/30/2021, 9/8/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.04 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W108-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W108-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	A soil matrix of 10YR 4/2 with redoximorphic concentrations was observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Ditch D-SISU-6A flows through the wetland at its northern boundary. Hydrology indicators sediment deposits (B2), drainage patterns (B10), and geomorphic position (D2) are present.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 108 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 24. Wetland 109 Summary.

Wetland 109 Information Summary			
Location	North of the Puyallup River, east of North Meridian Avenue, south of SR 167		
Date(s) Evaluated	8/30/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	0.004 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W109-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W109-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry Herbaceous: colonial bentgrass		
Soils	Soil matrices of 10YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil surface. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface runoff from surrounding impervious surfaces and precipitation are the primary sources of hydrology for this wetland. A culvert that connects Wetland 109 to Ditch D-SISU-22 to the south is the outlet for this wetland. Hydrology indicators sediment deposits (B2), drainage patterns (B10), and geomorphic position (D2) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 109 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 25. Wetland 111 Summary.

Wetland 111 Information Summary			
Location	North of Wetland 112, west of Wetland 105, adjacent to the on-ramp for SR 512 South		
Date(s) Evaluated	9/8/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.05 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W111-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W111-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Ditch D-SISU-9 flows into the wetland at its northern end and out of the wetland at its southern end. Ditch D-SISU-8 also flows into the wetland through a culvert adjacent to the southern end of the wetland. Hydrology indicators water-stained leaves (B9) and geomorphic position (D2) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 111 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 26. Wetland 112 Summary.

Wetland 112 Information Summary			
Location	Adjacent to the western boundary of the on-ramp to SR 512 South. West of Wetlands 108 and 113. South of Wetland 111.		
Date(s) Evaluated	9/8/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Unincorporated Pierce County Buffer Width	80 feet
		Wetland Size	0.35 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W112-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W112-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: annual bluegrass (*Poa annua*)		
Soils	Soil matrices of 10YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Ditch D-SISU-9 flows into the wetland at its northern end and out of its southern end. Hydrology indicators water marks (B1), drainage patterns (B10), and geomorphic position (D2) were met.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 112 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 27. Wetland 113 Summary.

Wetland 113 Information Summary			
Location	East of the on-ramp for SR 167 East, north of Wetland 108, south of Wetland 102		
Date(s) Evaluated	9/8/2021		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		Unincorporated Pierce County Buffer Width	50 feet
		Wetland Size	0.03 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W113-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W113-SP2
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry Herbaceous: colonial bentgrass		
Soils	Soil matrices of 10YR 4/2 with redoximorphic concentrations were observed within the upper 16 inches of the soil profile. Hydric soil indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary sources of hydrology for this wetland. Ditch D-SISU-6a flows into the wetland at its northern end and out of the wetland at its southern end. Hydrology indicators drainage patterns (B10) and geomorphic position (D2) were met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	PCC classifies wetlands based on the Washington State Wetland Rating System and land use (Pierce County Policy RM2015-2, which updates PCC 18E.30.020.D). Wetland 113 rates as a Category IV.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 28. Wetland 114 Summary.

Wetland 114 Information Summary			
Location	North of Seventh Avenue Southeast, east of SR 512 West, west of Fifth Avenue Southeast and Marion Lane Southeast		
Date(s) Evaluated	10/13/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	50 feet
		Wetland Size	0.12 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W114-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W114-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 3/1, 10YR 5/2, and 10YR 4/2 with redoximorphic concentrations in the matrix were observed within the upper 16 inches of the soil profile. Hydric soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6) were met.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Ditch D-SISU-18 flows into the wetland at its northern end. Ditch D-SISU-11 flows out of the wetland at its southern end. Hydrology indicators saturation (A3), oxidized rhizospheres along living roots (C3), water-stained leaves (B9), and geomorphic position (D2) were met.		
Rationale for Delineation	All wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 114 rates as a Category IV.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 29. Wetland 115 Summary.

Wetland 115 Information Summary			
Location	West of SR 512 West, south of Seventh Avenue Southeast, east of Eighth Street Southeast		
Date(s) Evaluated	10/14/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	0.20 acre
		Cowardin Class	PEM, PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W115-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W116-SP2
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 2/2 and 10YR 4/2 with redoximorphic concentrations were observed within the upper 12 inches of the soil profile. Indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Ditch D-SISU-19 flows into the wetland at its northern end and out of the wetland at its southern end. Hydrology indicators water-stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5) were met.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 115 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 30. Wetland 116 Summary.

Wetland 116 Information Summary			
Location	South of Wetland 115, west of SR 512 West, east of 11th Avenue Southeast		
Date(s) Evaluated	10/13/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	0.06 acre
		Cowardin Class	PEM, PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W116-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W116-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 3/2 and 10YR 4/2 with redoximorphic concentrations in the matrix and along pore linings were observed within the upper 14 inches of the soil profile. Hydric soil indicator Depleted Matrix (F3) was met.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Ditch D-SISU-19 flows into the wetland at its northern end and out of the wetland at its southern end. Hydrology indicators oxidized rhizospheres along living roots (C3) and geomorphic position (D2) were met.		
Rationale for Delineation	All three wetland parameters are met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 116 rates as a Category III.		
Functions	Water quality functions are high, hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The wetland is adjacent to impervious surfaces and mowed, weedy upland vegetation. Buffer functions are low.		

Table 31. Wetland 119 Summary.

Wetland 119 Information Summary			
Location	West of SR 512, south of East Pioneer Street		
Date(s) Evaluated	10/15/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	50 feet
		Wetland Size	0.14 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W119-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W119-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass, mixed field grasses (presumed FAC)		
Soils	Soil matrices of 10YR 3/2 in upper 8 inches of soil. Soil matrices of 10YR 4/2 with redoximorphic concentrations and depletions were observed from 8 to 16 inches of the soil. Indicator Depleted Matrix (F3) met.		
Hydrology	Hillside seeps and stormwater runoff are the primary hydrology source for this wetland. Wetland is in intermittently flowing ditch. There is a drainage outlet present at the site; water likely discharges within the Puyallup city limits via a mapped outfall approximately 0.3 mile north. Secondary indicators drainage patterns (B10), geomorphic position (D2) and FAC-neutral test (D5) present.		
Rationale for Delineation	Depressional and emergent wetland with hydric soils, supports hydrophytic vegetation, is intermittently flowing and regularly receives stormwater runoff.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 119 rates as a Category IV.		
Functions	Water quality and hydrologic functions are moderate, and habitat functions are low. Function summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	Buffer is mostly mowed areas that provide little to no function. Wetland is adjacent to roads along its northern and western boundaries.		

Table 32. Wetland 120 Summary.

Wetland 120 Information Summary			
Location	East of SR 512, south of East Pioneer Street		
Date(s) Evaluated	10/15/2021		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Puyallup Buffer Width	50 feet
		Wetland Size	0.07 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C: Sampling Point W120-SP1
		Upland Data Sheet(s)	Appendix C: Sampling Point W120-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Soil matrices of 10YR 3/2 in upper 9 inches of soil. Soils with matrices of 10YR 4/1 with redoximorphic concentrations were observed at 9 to 16 inches. Indicator Depleted Matrix (F3) met.		
Hydrology	Hillside seeps and stormwater runoff are the primary hydrology source for this wetland. Wetland is in intermittently flowing ditch. There is a drainage outlet present at the site; this water likely discharges within the Puyallup city limits via a mapped outfall approximately 0.3 mile north. Secondary indicators drainage patterns (B10), geomorphic position (D2) and FAC-neutral test (D5) present.		
Rationale for Delineation	Depressional and emergent wetland with hydric soils, supports hydrophytic vegetation, is intermittently flowing and regularly receives stormwater runoff. Soils have a chroma of 1.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 120 rates as a Category IV.		
Functions	The wetland provides moderate water quality and hydrologic functions. In general habitat functions are lacking or of low quality. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	Buffer is mostly mowed areas that provide little to no function. Wetland is surrounded to the north and east side by road.		

Table 33. Wetland 122 Summary.

Wetland 122 Information Summary			
Location	Adjacent to the southern boundary of the Union Pacific Railroad, south of Valley Avenue East, and west of Freeman Road East		
Date(s) Evaluated	N/A. Wetland estimated by desktop exercise.		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category II
		Local Rating	Category II
		City of Fife Buffer Width	105 feet with mitigation measures
		Wetland Size[a]	1.13 acres
		Cowardin Class	PEM, PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)	N/A
		Upland Data Sheet(s)	N/A
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry and willows Herbaceous: reed canarygrass		
Soils	NRCS web soil survey maps Sultan Silt Loam in this area (NRCS 2021a). Inclusions of Briscot and Puget soils are also present. Sultan Silt Loam is not hydric, Briscot and Puget are hydric soils.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Surface water was observed within this area during site investigations. A ditch flows the length of this wetland from east to west, and it has no outlet.		
Rationale for Delineation	Hydrophytic vegetation and hydrology indicators were observed in this area from off site. NRCS web soil survey maps hydric soils in this area.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System and on land use intensity (FMC 17.17.230). Wetland 122 rates as a Category II.		
Functions	Water quality functions are high, hydrologic functions are high, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The Union Pacific Railroad borders the wetland to the north, impervious roadways are to the east, and agricultural areas are to the south. These buffer conditions provide low functions.		

[a] Biologists did not have access to this wetland due to its location within the right-of-way of the Union Pacific Railroad. Wetland boundaries were estimated using LiDAR, aerial imagery, and field observations made from adjacent areas.

Table 34. Wetland 123 Summary.

Wetland 123 Information Summary			
Location	Adjacent to the northern boundary of the Union Pacific Railroad, south of Valley Avenue East, and west of Freeman Road East		
Date(s) Evaluated	N/A. Wetland estimated by desktop exercise.		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Fife Buffer Width	105 feet with mitigation measures
		Wetland Size[a]	0.71 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	N/A
		Upland Data Sheet(s)	N/A
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry and willows Herbaceous: reed canarygrass		
Soils	NRCS web soil survey maps Sultan Silt Loam in this area (NRCS 2021a). Inclusions of Briscot and Puget soils are also present. Sultan Silt Loam is not hydric, Briscot and Puget are hydric soils.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Surface water was observed within this area during site investigations. A ditch flows the length of this wetland from east to west, and it has no outlet.		
Rationale for Delineation	Hydrophytic vegetation and hydrology indicators were observed in this area from off site. NRCS web soil survey maps hydric soils in this area.		
Wetland Rating and Functions			
Rationale for Local Rating	The FMC classifies wetlands based on the Washington State Wetland Rating System and on land use intensity (FMC 17.17.230). Wetland 123 rates as a Category III.		
Functions	Water quality functions are high, hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The Union Pacific Railroad borders the wetland to the south, impervious roadways are to the east, and disturbed shrub areas are to the north. These buffer conditions provide low functions.		

[a] Biologists did not have access to this wetland due to its location within the right-of-way of the Union Pacific Railroad. Wetland boundaries were estimated using LiDAR, aerial imagery, and field observations made from adjacent areas.

Table 35. Wetland 124 Summary.

Wetland 124 Information Summary			
Location	Adjacent to the southern boundary of the Union Pacific Railroad, south of Valley Avenue East, and east of Freeman Road East		
Date(s) Evaluated	N/A. Wetland estimated by desktop exercise.		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	0.26 acre
		Cowardin Class	PEM, PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)[a]	N/A
		Upland Data Sheet(s)	N/A
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry and willows Herbaceous: reed canarygrass		
Soils	NRCS web soil survey maps Puyallup fine sandy loam in this area (NRCS 2021a). Inclusions of Briscot soils are also present. Puyallup fine sandy loam is not hydric, Briscot is a hydric soil.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Surface water was observed within this area during site investigations. A ditch flows the length of the wetland from west to east, exiting the wetland at its eastern end before flowing into Wapato Creek to the east.		
Rationale for Delineation	Hydrophytic vegetation and hydrology indicators were observed in this area from off site. NRCS web soil survey maps hydric soil in this area.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 124 rates as a Category III.		
Functions	Water quality and hydrologic functions are moderate. Habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The Union Pacific Railroad borders the wetland to the north, impervious roadways are to the west, and agricultural areas are to the south. These buffer conditions provide low functions.		

[a] Biologists did not have access to this wetland due to its location within the right-of-way of the Union Pacific Railroad. Wetland boundaries were estimated using LiDAR, aerial imagery, and field observations made from adjacent areas.

Table 36. Wetland 125 Summary.

Wetland 125 Information Summary			
Location	Adjacent to the northern boundary of the Union Pacific Railroad, south of Valley Avenue East, and east of Freeman Road East		
Date(s) Evaluated	N/A. Wetland estimated by desktop exercise.		
		**Local Jurisdiction**	City of Puyallup
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		City of Puyallup Buffer Width	80 feet
		Wetland Size	0.11 acre
		Cowardin Class	PSS
		HGM Class	Depressional
		Wetland Data Sheet(s)[a]	N/A
		Upland Data Sheet(s)	N/A
Wetland Delineation			
Dominant Vegetation	Shrub: Himalayan blackberry and willows Herbaceous: reed canarygrass		
Soils	NRCS web soil survey maps Puyallup fine sandy loam in this area (NRCS 2021a). Inclusions of Briscot soils are also present. Puyallup fine sandy loam is not hydric, Briscot is a hydric soil.		
Hydrology	Surface flows and precipitation are the primary hydrology sources for this wetland. Surface water was observed within this area during site investigations. A ditch flows into the wetland at its eastern end, running the length of the wetland. The wetland has no outlet.		
Rationale for Delineation	Hydrophytic vegetation and hydrology indicators were observed in this area from off site. NRCS web soil survey maps hydric soil in this area.		
Wetland Rating and Functions			
Rationale for Local Rating	The PMC classifies wetlands based on the Washington State Wetland Rating System and land use (PMC 21.06.910). Wetland 125 rates as a Category III.		
Functions	Water quality functions are high, hydrologic functions are moderate, and habitat functions are low. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The Union Pacific Railroad borders the wetland to the south, impervious roadways are to the west, and disturbed forested and shrub areas are to the north. These buffer conditions provide low to moderate functions.		

[a] Biologists did not have access to this wetland due to its location within the right-of-way of the Union Pacific Railroad. Wetland boundaries were estimated using LiDAR, aerial imagery, and field observations made from adjacent areas.

Table 37. Wetland 127 Summary.

Wetland 127 Information Summary			
Location	West of Freeman Road East, south of Wetland 94 and Wapato Creek		
Date(s) Evaluated	01/21/2022		
		**Local Jurisdiction**	City of Fife
		Ecology Rating (2014)	Category IV
		Local Rating	Category IV
		City of Fife Buffer Width	40 feet with mitigation measures
		Wetland Size	0.05 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W127-SP1
		Upland Data Sheet(s)	Appendix C; W127-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: creeping buttercup (*Ranunculus repens*), reed canary grass (*Phalaris arundinacea*), creeping bentgrass (*Agrostis stolonifera*)		
Soils	Wetland 127 contained hydric soils. Indicators included redox dark surface (F6).		
Hydrology	Surface flows and groundwater contribute the primary hydrology 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 17.17.230). Wetland 127 rates as a Category IV.		
Functions	The wetland has moderate water quality functions and low hydrologic and habitat functions.		
Wetland Buffers			
Buffer Condition	The wetland is within a fallow agricultural field.		

Table 38. Wetland 130 Summary.

Wetland 130– Information Summary			
Location	Adjacent to SR 512 and south of Benston Drive East		
Date(s) Evaluated	3/5/2022		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Pierce County Buffer Width	80 feet
		Wetland Size	0.08 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W130-SP1
		Upland Data Sheet(s)	Appendix C; W130-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry Herbaceous: reed canarygrass and mixed field grasses, which were unidentifiable due to lack of inflorescence		
Soils	Wetland 130 contained hydric soils. Soil matrices of 10YR 3/2 and 10YR 4/1 were observed within 15 inches of the soil surface. Redoximorphic concentrations that met soil indicator Depleted Matrix (F3) were observed at depths of 9 to 15 inches below the soil surface.		
Hydrology	Groundwater and surface flows are the primary sources of hydrology for this wetland. Primary indicators surface water (A1), 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 PCC classifies wetlands based on the Washington State Wetland Rating System and land use (PCC 18E.30.020). Wetland 130 rates as a Category III.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition and consists of SR 512 to the west, a roadside ditch dominated by reed canarygrass and Himalayan blackberry to the north and south, and invasive Himalayan blackberry and single-family homes to the east.		

Table 39. Wetland 131 Summary.

Wetland 131– Information Summary			
Location	Adjacent to SR 167 and Houston Road East		
Date(s) Evaluated	3/5/2022		
		**Local Jurisdiction**	Unincorporated Pierce County, WA
		Ecology Rating (2014)	Category III
		Local Rating	Category III
		Pierce County Buffer Width	80 feet
		Wetland Size	0.33 acre
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W131-SP1
		Upland Data Sheet(s)	Appendix C; W131-SP2
Wetland Delineation			
Dominant Vegetation	Shrubs: Himalayan blackberry, osoberry (*Oemleria cerasiformis*), red osier dogwood Herbaceous: creeping buttercup, common rush		
Soils	Wetland 131 contained hydric soils. Soil matrices of 10YR 3/2 and 2.5YR 4/1 were observed within 14 inches of the soil surface. Redoximorphic concentrations were observed at depths of 10 to 14 inches below the soil surface. Primary hydric soil indicator Hydrogen Sulfide (A4) was also observed.		
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. Secondary indicator FAC-neutral test (D5) was also met.		
Rationale for Delineation	All three wetland parameters were met.		
Wetland Rating and Functions			
Rationale for Local Rating	The PCC classifies wetlands based on the Washington State Wetland Rating System and land use (PCC 18E.30.020). Wetland 131 rates as a Category III.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer is in poor condition and consists of SR 167 to the north, Houston Road East to the south, and a disturbed roadside swale to the east and west.		

Table 40. Wetland 136 Summary.

Wetland 136– Information Summary			
Location	Adjacent to northbound I-5, west of 54th Avenue East		
Date(s) Evaluated	3/23/2022		
		**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	3.48 acres
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W136-SP1
		Upland Data Sheet(s)	Appendix C; W136-SP2
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. Secondary indicator FAC-neutral test (D5) was also 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 land use (FMC 17.17.230). Wetland 136 rates as a Category III.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
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.		

Table 41. Wetland 137 Summary.

Wetland 137– Information Summary			
Location	In triangle between northbound I-5, an I-5 on-ramp, and 54th Avenue East		
Date(s) Evaluated	3/23/2022		
		**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	1.73 acres
		Cowardin Class	PEM
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W137-SP1
		Upland Data Sheet(s)	Appendix C; W137-SP2
Wetland Delineation			
Dominant Vegetation	Herbaceous: reed canarygrass		
Soils	Wetland 137 contained hydric soils. A soil matrix of 10YR 4/1 was observed within the upper 16 inches of the soil profile and included a layer of redoximorphic concentrations that met soil indicator Depleted Matrix (F3).		
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. Secondary indicators drainage patterns (9B10) and FAC-neutral test (D5) were also 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 land use (FMC 17.17.230). Wetland 137 rates as a Category III.		
Functions	The wetland has moderate hydrologic and water quality functions, and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer condition is poor with I-5 to the north and east, an I-5 on-ramp to the south, and a highway off-ramp and road median to the east.		

Table 42. Wetland 138 Summary.

Wetland 138– Information Summary			
Location	In triangle between southbound I-5, an I-5 off-ramp, and 54th Avenue East		
Date(s) Evaluated	3/23/2022		
		**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	1.31 acres
		Cowardin Class	PEM, PFO
		HGM Class	Depressional
		Wetland Data Sheet(s)	Appendix C; W138-SP1, W138-SP3
		Upland Data Sheet(s)	Appendix C; W138-SP2
Wetland Delineation			
Dominant Vegetation	Trees: red alder Herbaceous: reed canarygrass		
Soils	Wetland 138 contained hydric soils. A soil matrix of 10YR 3/1 and 10YR 4/1 were observed within the upper 16 inches of the soil profile and included a layer of redoximorphic concentrations that met soil indicator Depleted Matrix (F3).		
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. Secondary indicator FAC-neutral test (D5) was also 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 land use (FMC 17.17.230). Wetland 138 rates as a Category III.		
Functions	The wetland has moderate water quality and hydrologic functions and low habitat functions. Functions summaries are provided in Table 43 and Appendix E.		
Wetland Buffers			
Buffer Condition	The buffer is in poor conditions and consists of an I-5 off-ramp to the north, 54th Avenue East and a vegetated road median to the west, and I-5 to the south and east.		

4.3.4. Wetland Functions

Wetland functions were evaluated using the BPJ Tool (Null et al. 2000) and the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby 2014). In general, most of the wetlands in the study area provide moderate to high levels of water quality functions, moderate levels of hydrologic functions, and low to moderate levels of habitat functions (Table 43; Appendices D and E). Wetlands improve water quality by trapping surface water in depressions, where pollutants are filtered out by vegetation and physical settling. Wetlands trap surface water in depressions during flood events, reducing the flashiness of storm events and the potential for flooding and erosion downstream. Dense, persistent wetland vegetation slows surface water down as it moves through the system, reducing hydrological stress on downstream systems. The majority of the wetlands in the study area have a low capacity to provide habitat due to a lack of both structural diversity and connectivity to other functional habitats.

If wetlands and associated vegetation are removed in the study area, the capacity of these areas to provide water quality, hydrologic, and habitat functions will be eliminated or reduced. Filling wetlands reduces the opportunities for water quality improvement in the project area and increases hydrological stress in the area and downstream during storm events. Although most wetlands in the study area provide little wildlife habitat, removal of wetlands and vegetation would further decrease available habitat in the study area amid highly developed surroundings.

Functions provided by the wetlands in the study area are summarized in Table 43 and further described for each wetland in the sections below. Wetlands have been grouped according to similar functional traits.

Table 43. Functions and Values of Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Function/Value[a]	Wetland																		
	W1	W17/65	W47	W83	W86	W87	W88/90/91	W89	W92	W93	W94	W95	W98	W101	W102	W103	W104	W105	W106	W107
Water Quality Functions																				
Sediment Removal	+	+	x	x	+	x	+	–	+	+	+	+	+	+	–	–	–	+	+	–
Nutrient and Toxicant Removal	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hydrologic Functions																				
Flood Flow Alteration	x	+	x	+	x	+	–	+	+	+	+	+	+	x	+	+	+	+	–	–
Erosion Control and Shoreline Stabilization	–	+	–	x	–	x	–	–	–	–	–	–	+	–	–	–	–	–	–	–
Habitat Functions																				
Production and Export of Organic Matter	–	+	x	x	–	x	x	x	x	x	x	x	x	x	–	–	–	–	–	–
General Habitat Suitability	x	+	x	x	–	x	–	+	+	+	x	x	x	–	–	–	–	–	–	+
Habitat for Aquatic Invertebrates	x	x	x	x	x	x	+	–	+	x	+	+	+	+	–	–	–	–	–	–
Habitat for Amphibians	x	x	x	+	x	x	+	–	+	+	+	+	x	+	–	–	–	–	–	–
Habitat for Wetland Associated Mammals	x	x	x	x	–	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Habitat for Wetland–Associated Birds	x	x	x	x	x	x	–	–	+	+	x	x	+	x	–	–	–	–	–	x
General Fish Habitat	–	x	x	x	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–
Native Plant Richness	–	x	x	x	–	x	–	x	–	–	–	–	–	–	–	–	–	–	–	x
Special Characteristics																				
Educational or Scientific Value	–	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Uniqueness and Heritage	–	x	x	–	–	–	–	–	–	–	x	x	–	–	–	–	–	–	–	–

[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.

Table 43 (continued). Functions and Values of Wetlands in the SR 167 Completion Project, Stage 2 Study Area.

Function/Value[a]	Wetland																			
	W108	W109	W111	W112	W113	W114	W115	W116	W119	W120	W122	W123	W124	W125	W127	W130	W131	W136	W137	W138
Water Quality Functions																				
Sediment Removal	x	–	x	x	x	+	x	+	–	–	x	x	x	x	–	x	+	–	–	–
Nutrient and Toxicant Removal	+	+	+	+	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	+
Hydrologic Functions																				
Flood Flow Alteration	+	–	+	+	+	+	+	+	+	+	+	+	+	+	+	x	+	x	x	–
Erosion Control and Shoreline Stabilization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Habitat Functions																				
Production and Export of Organic Matter	x	–	x	x	x	+	+	+	–	–	–	–	x	–	–	x	–	–	–	x
General Habitat Suitability	x	–	x	x	x	–	–	–	–	–	–	–	–	–	–	x	–	–	–	–
Habitat for Aquatic Invertebrates	x	–	x	x	x	x	–	–	–	–	x	x	x	x	–	x	–	x	x	x
Habitat for Amphibians	x	–	x	x	x	x	–	–	–	–	x	x	x	x	–	x	–	x	–	–
Habitat for Wetland Associated Mammals	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Habitat for Wetland–Associated Birds	–	–	x	x	–	–	–	–	–	–	x	x	x	x	–	x	–	–	–	–
General Fish Habitat	–	–	–	–	–	–	–	–	–	–	–	–	x	–	–	–	–	–	–	–
Native Plant Richness	x	–	x	x	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Special Characteristics																				
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.

Wetlands 1, 102, 104, 105, 108, 111, 112, 113, 114, 115, 116, 130, 131, and 136

W1, W102, W104, W105, W108, W111, W112, W113, W114, W115, W116, W130, W131, and W136 are depressional wetlands in roadside ditches. They have a moderate to high potential to improve water quality due to their intermittent or slightly constricted outflow, which increases retention time for stormwater and other pollutants that discharge to the wetlands. The wetlands are in drainage basins with degraded water quality issues, which increases their value to society.

These wetlands provide moderate to high hydrologic functions stemming from their intermittent or slightly constricted outlets, relatively large size compared to the size of their contributing drainage basins, and surrounding intensive land uses that increase stormwater runoff during storm events. Most of these wetlands are upgradient of areas with flooding problems, which make them more valuable to society.

The wetlands and surrounding landscape have low potential to provide habitat functions due to a lack of habitat complexity and the intensity of nearby development. The lack of priority habitats or habitat for protected species makes these wetlands less valuable to society.

Wetland 17/65

W17/65 has a high potential to improve water quality at the site due to its depressional HGM class, dense vegetation, and seasonal ponding. The wetland's depressional system, dense vegetation, and area of seasonal ponding increase the retention time of surface water in the wetland, allowing for the absorption and filtration of pollutants from surface water. Hylebos Creek (Stream 02) and Stream 20 flow through the wetland, contributing water from overbank flooding. The roads and residential and industrial development in the surrounding landscape contribute pollutants to surface water, increasing the wetland's potential to improve water quality in the area. The site discharges directly to a body of water on the State's Clean Water Act Section 303(d) list of degraded waterbodies, which makes the wetland's water quality functionality valuable to human society.

W17/65 has a high potential to reduce flooding and stream degradation. The wetland has the capacity to store surface water during flood events, receives direct stormwater inputs from surrounding land surfaces, and is densely vegetated. Due to the vegetation community, the water stored in the wetland during storm events does not flow through quickly, and downstream flooding is reduced. The areas surrounding the wetland generate excess surface water runoff, increasing its potential to reduce flooding and stream degradation by providing water storage. The hydrological functionality is highly valuable to society because of flooding problems down-gradient of the wetland.

W17/65 has a moderate potential to provide habitat for wildlife because it has high interspersion of Cowardin classes and four hydroperiods that create a variety of habitats within the wetland. W17/65 is surrounded by areas of industrial and residential development, which decrease its potential to provide habitat due to the lack of connectivity to other functional habitats.

Wetland 47

W47 is a depressional wetland with moderate potential to improve water quality. The wetland has a prevalence of persistent, ungrazed vegetation and receives stormwater discharges and associated pollutants from the surrounding landscape. W47 has highly constricted, permanently flowing outlets that convey Surprise Lake Tributary (Stream 01) and Stream 08, increasing the retention time of surface water in the wetland and allowing for the absorption and filtration of pollutants from surface water. Stream 13 and Stream 19 flow through the wetland and are tributaries to Surprise Lake Tributary. Stream 18 flows through the wetland and is a tributary to Stream 08. The wetland is in a subbasin with a body of water on the Section 303(d) list, and the wetland discharges directly to this water, making its water quality functions valuable to society.

W47 has high potential to reduce flooding and stream degradation. The wetland has a high capacity to store surface water during flood events and is densely vegetated. Due to the vegetation community, the water stored in the wetland during storm events does not flow through quickly, and downstream flooding is reduced. The surrounding areas draining to the wetland generate excess surface water runoff, increasing its potential to reduce flooding and stream degradation by providing water storage. These hydrological functions are highly valuable to society because of flooding problems down-gradient of the wetland.

W47 has moderate potential to provide habitat for wildlife because it has high interspersion of Cowardin classes and special habitat features that create a variety of habitats within the wetland. It is surrounded by areas of industrial and residential development, which decrease its potential to provide habitat due to the lack of connectivity to other functional habitats.

Wetland 83

W83 is in a fallow agricultural field and adjacent forested area. Agricultural land uses ended at the site in October 2019. The wetland has a moderate potential to improve water quality due to its depressional HGM class, highly constricted outlet, seasonal ponding, and dense vegetation. These characteristics increase the retention time of surface water in the wetland, allowing for the absorption and filtration of pollutants from surface water. Agricultural runoff, a nearby construction stockpile, and surrounding development contribute pollutants to surface water, increasing the potential of the wetland to improve water quality in the area. The wetland is in a basin with an aquatic resource on the Section 303(d) list, which makes the water quality functionality moderately valuable to society.

Although W83 has a constricted outlet and some ability to store water during wet periods, it has a low potential to reduce flooding and erosion because the area of the contributing drainage basin is large compared to the size of the wetland. It has a high potential to support hydrologic functions due to surrounding runoff and adjacent land use. The wetland is in a landscape that has flooding problems, making its hydrologic functions valuable to society.

W83 has a moderate potential to provide habitat due to the presence of several Cowardin classes and vegetation strata, high plant species diversity, and the presence of a fish-bearing stream adjacent to the wetland; but low landscape potential due to lack of accessible habitat and high land use intensity. The presence of instream habitat makes the site moderately valuable to society.

Wetlands 86, 101, 103, 106, 107, 109, 119, 120, and 127

W86, W101, W103, W106, W107, W109, W119, W120, and W127 have moderate to high water quality function due to their depressional HGM class with no or intermittent outlets, persistent vegetation cover, and stormwater or other pollutants that discharge to the wetlands. All but W86 are in the Puyallup River basin, which is on the Section 303(d) list, and several of them discharge directly to the Puyallup River. Several TMDLs have also been identified for the Puyallup River, making the water quality functions of these wetlands more valuable to human society.

The wetlands have low (W101 and W127) to moderate hydrologic function due to a lack of an outlet or the presence of an intermittent outlet. Wetlands 86, 119, and 120 are larger compared to the size of the contributing drainage basin and these wetlands, as well as Wetland 109, are in landscapes with flooding problems, which adds value to their hydrologic function.

These wetlands provide very little habitat due to the lack of vegetation structure and hydroperiods, low vegetation diversity and lack of connectivity to other habitats. However, W86, W101, W107, W119, and W120 provide some invertebrate, amphibian, and/or bird habitat because they have seasonal ponding, vegetation cover, and proximity to other wetlands or waterbodies.

Wetlands 87 and 89

W87 and W89 are both depressional wetlands with no outlets and persistent plant cover. These characteristics, in addition to the presence of adjacent agricultural fields, construction stockpiles, and nearby homeless encampments, give the wetlands a moderate to high potential to improve water quality. Because the wetlands are in the Puyallup River basin, which is on the Section 303(d) list and has TMDLs, the water quality improvement the wetlands provide has high value to society.

W87 and W89 also provide moderate to high hydrologic functions due to their depressional HGM class, the relatively large size of the wetlands compared to the contributing basin, and surrounding development. Downstream surface flooding problems add to the wetlands' value.

W87 has higher habitat function due to the presence of multiple Cowardin classes, hydroperiods, special habitat features, and proximity to other wetlands and streams, and Pacific tree frogs were observed in the wetland during site visits. Neither wetland has a high potential to support habitat because of high levels of surrounding development and a lack of accessible habitat.

Wetland 88/90/91

W88/90/91 has a moderate potential to improve water quality due to its depressional HGM class, intermittently flowing stream, and presence of dense vegetation. Surrounding development and encampments of people experiencing homelessness contribute stormwater discharges and other pollutants that increase the potential of the wetlands to support water quality functions. The wetland is within a basin where an aquatic resource is on the Section 303(d) list, and the site has been identified in a watershed plan as being important for maintaining water quality.

The wetland has moderate potential to reduce flooding and erosion due to the presence of an intermittently flowing outlet and moderate depth of water storage. Stormwater discharges and the presence of intensive surrounding land uses contribute to high potential to support those hydrologic functions. Downstream surface flooding makes the wetland's hydrologic function moderately valuable to society.

W88/90/91 has a low potential to provide habitat due to low habitat complexity, and the presence of high-intensity land uses and lack of habitat connectivity surrounding the site contribute to a low potential of the landscape to support the habitat functions of the site. However, the presence of priority habitats near the site make the habitat provided by the site more valuable to society.

Wetlands 92 and 93

W92 and W93 are in actively farmed fields adjacent to Stream 15. These wetlands provide moderate to high water quality functions due to their depressional HGM class, the presence of agricultural runoff, and location in a basin with a TMDL. Seasonal ponding contributes to sediment and nutrient/toxicant removal. The wetlands are in the Puyallup River basin, which is on the Section 303(d) list and has several completed TMDLs, so the water quality improvement the wetlands provide has high value to society.

Moderate hydrologic functions are provided by the presence of an intermittently flowing outlet (W92) or lack of outlet (W93). Both wetlands are relatively large compared to the size of their contributing basin, which increases their potential to reduce downstream flooding. Depth of ponding in W92 also increases water storage.

These wetlands have low to moderate wildlife functions. Plant structure and diversity are low, and most surrounding land is developed. However, the wetlands are connected to other instream, riparian, and wetland habitats, and amphibians and wetland-associated birds were observed at both sites.

Wetlands 94, 95, and 98

W94, W95, and W98 are wetlands that are partially or completely riverine in character and are adjacent to Wapato Creek (Stream 09). These wetlands have a moderate to high potential to support water quality functions as a result of surface depressions and plant cover that traps and filters sediments during flood events as well as surrounding land use that generates pollutants. Wapato Creek (Stream 09) is on the Section 303(d) list, making water quality improvements provided by these wetlands valuable to society.

These wetlands have moderate hydrologic functions. Wapato Creek (Stream 09) is connected to the floodplain within these wetlands, and the presence of woody vegetation slows water velocities during flooding. Flooding has been identified as a problem downgradient of the wetlands, making the flood reduction functions more valuable to society.

These wetlands have a moderate potential to provide habitat based on the presence of multiple interspersed Cowardin classes and hydroperiods. However, this potential is limited by surrounding development and the lack of adjacent undisturbed habitat. The occurrence of priority habitats in or near the wetlands, and threatened salmon species in Wapato Creek (Stream 09), add to the value these wetlands provide to society.

Wetlands 122, 123, 124, and 125

W122, W123, W124, and W125 are depressional wetlands located in ditches along the Union Pacific Railroad where it crosses the study area near the intersection of Valley Avenue East and Freeman Road East. They have a moderate to high potential to improve water quality due to their depressional HGM class, dense vegetation, and seasonal ponding. W122, W123, and W125 have no outlets, and W124 outlets to an intermittently flowing ditch. These features increase the retention time of surface water in the wetlands, allowing for the absorption and filtration of pollutants from surface water. Adjacent roads, the railroad, pastures, and encampments of people experiencing homelessness contribute pollutants to surface water, increasing the wetlands' potential to improve water quality in the area. The wetlands are in a subbasin with a body of water on the Section 303(d) list, which makes the wetlands' water quality functions valuable to society.

W122, W123, W124, and W125 have a moderate to high potential to reduce flooding and stream degradation. The wetlands lack outlets (or have an intermittently flowing outlet in the case of W124) and have a moderate capacity to store surface water during flood events. Due to the wetlands' dense vegetation, water stored during storm events does not flow through quickly, and downstream flooding is reduced. The wetlands have contributing drainage basins that are small relative to their size, and therefore they are expected to provide a greater reduction in peak flows during storm events. The areas surrounding the wetlands generate excess surface water runoff discharged to the wetlands, increasing their potential to reduce flooding and stream degradation by providing water storage. The hydrological functions are valuable to society because of flooding problems down-gradient of each of these wetlands.

W122, W123, W124, and W125 have a low potential to provide habitat functions for wildlife because they have low habitat interspersion, limited hydroperiods, and few special habitat features. The wetlands are surrounded by areas of agricultural and industrial development that decrease their potential to provide habitat due to the lack of connectivity to other functional habitats.

Wetlands 137 and 138

W137 and W138 are depressional wetlands within a partial cloverleaf interchange on I-5. They have a moderate potential to improve water quality due to their persistent vegetation, seasonal ponding, and stormwater and other pollutants that discharge to the wetlands. The wetlands are in a drainage basin with degraded water quality issues, which increases their value to society.

These wetlands provide moderate hydrologic functions due to their water storage capacity, relatively large size compared to the size of their contributing drainage basins, and surrounding intensive land uses that increase runoff during storm events. The wetlands have a reduced value to society, however, as they are not upgradient of areas with flooding problems.

The wetlands and surrounding landscape have low potential to provide habitat functions due to a lack of habitat complexity and intensity of nearby development. The lack of priority habitats or habitat for protected species make these wetlands less valuable to society.

4.3.5. Wetland Buffers

Buffers in the study area are typically in poor condition. Wetland buffers consist of commercial agricultural land; paved roads, sidewalks, and trails; and commercial and residential development. In vegetated wetland buffers, the vegetation community is typically a mix of native and nonnative weed species. Typical noxious weed species in the buffer include Himalayan blackberry and reed canarygrass. Native buffer species include Douglas fir (*Pseudotsuga menziesii*), black cottonwood, red alder, and bigleaf maple (*Acer macrophyllum*). Portions of some wetland buffers also include ornamental trees, such as apple (*Malus* spp.). Required wetland buffer widths are identified in the wetland tables in this report. For those buffers within the jurisdiction of the City of Puyallup, the buffer widths documented in this report assume a proposed land use intensity of high as defined in PMC 21.06.930. All buffer widths shown also assume the existence of a functional buffer community of native vegetation. If the buffer is inadequately vegetated or vegetated with nonfunctional invasive species, the buffer would be widened if not planted to create the appropriate native plant community. Photos of typical wetland buffers are provided in Figures 4-A through 4-C.

Figure 4-A. Photograph of Typical Buffer in the Study Area: Roadside Areas.

Figure 4-B. Photograph of Typical Buffer in the Study Area: Commercial Development Areas.

Figure 4-C. Photograph of Typical Buffer in the Study Area: Agricultural Areas.

4.4. Streams

Ten streams were identified within the Stage 2 study area: Stream 01 (Surprise Lake Tributary), Stream 08, Stream 09 (Wapato Creek), Stream 13, Stream 14, Stream 15, Stream 17 (Puyallup River), Stream 18, Stream 19, and Stream 20 (Figures 3-A through 3-P; Table 44). These stream numbers adhere to a numbering system used for Project Stages 1a and 1b. A summary of each stream is provided in Tables 45 through 55 at the end of this section.

Table 44. Streams Within the Study Area.

Stream Name	DNR Water Type[a]	City Buffer Width (feet)
Surprise Lake Tributary (Stream 01)	F, N[b]	60[c], case-by-case[d]
Stream 08	N/A	case-by-case[d]
Upper Wapato Creek (Stream 09)	F	100[e], case-by-case[d]
Lower Wapato Creek (Stream 09)	F	150[f]
Stream 13	N[b]	case-by-case[d]
Stream 14	N/A	50[e]
Stream 15	N/A[g]	50[e]
Puyallup River (Stream 17)	S	150[e]
Stream 18	N/A	case-by-case[d]
Stream 19	N/A	case-by-case[d]
Stream 20	N/A	150[h], case-by-case[d]

[a] DNR Water Type F = fish bearing or with physical criteria to support potential fish use; Type N = non-fish bearing (DNR 2021a).

[b] DNR mapping (DNR 2021a) does not provide flow information (Type Np = non-fish bearing perennial; Type Ns = non-fish bearing seasonal) for the upper reach of Stream 01 or Stream 13.

[c] City of Edgewood buffers applied (Edgewood 2021).

[d] City of Fife buffers applied (Fife 2021).

[e] City of Puyallup buffers applied (Puyallup 2021).

[f] City of Tacoma buffers applied (Tacoma 2021).

[g] During field visits on 04/01/2022 and 04/07/2022, WDFW and PTOI representatives indicated that this stream should be considered an Ns water type.

[h] City of Milton buffers applied (Milton 2022).

4.4.1. Surprise Lake Tributary – Stream 01

Surprise Lake Tributary (Stream 01) was originally identified in 2018 as part of Project Stage 1a (WSDOT 2019) and Stage 1b (WSDOT 2020a). Delineation of the stream was resumed for segments that cross the Stage 2 study area. Within the Stage 2 study area, Surprise Lake Tributary (Stream 01) is in the Hylebos Creek-Frontal Commencement Bay watershed. The stream flows from Surprise Lake and into the study area after crossing under Freeman Road East through a culvert (Figure 3-E). Surprise Lake Tributary (Stream 01) continues to flow west and converges with Stream 13 approximately 420 feet west of Freeman Road East before it exits the study area (Figure 3-E). Surprise Lake Tributary (Stream 01) is a perennially flowing stream where it crosses the Stage 2 study area. Three-spine stickleback have been observed

throughout Surprise Lake Tributary. WDFW (2021b) data show the presence of fish in Surprise Lake Tributary (Stream 01). However, three partial fish passage barriers are mapped west of Freeman Road East (WDFW # 935153, # 105 S012016a, and # 935157), and two partial barriers (WDFW # 921656 and # 935670) and two total barriers (WDFW # 921657 and # 921658) are documented east of Freeman Road East (WDFW 2021c). Additional WDFW (2021a) mapping does not show documented fish use in Surprise Lake Tributary (Stream 01). DNR (2021a) maps the segment west of Freeman Road East as fish bearing and the segment east of Freeman Road East as non-fish bearing. Project biologists observed dead juvenile *O. mykiss* in the upper reach of Surprise Lake Tributary (Stream 01) during a site visit in February 2018. These were likely rainbow trout that had washed down from Surprise Lake, which is stocked by WDFW. PTOI biologists have observed coho salmon reaching the headwaters of the stream at Surprise Lake.

4.4.2. Wapato Creek – Stream 09

Wapato Creek (Stream 09) was originally identified in 2019 as part of Stage 1b (WSDOT 2020). Delineation of the stream was resumed for segments that cross the Stage 2 study area. Two reaches of Wapato Creek (Stream 09), upper and lower, were delineated in the Stage 2 study area. Both reaches are mapped in the Hylebos Creek-Frontal Commencement Bay watershed and flow to the Blair Waterway at Commencement Bay on Puget Sound.

The historical headwaters of Wapato Creek (Stream 09) are in Sumner and flow west, north of SR 167, toward North Meridian Avenue in Puyallup. East of North Meridian Avenue, the stream enters a diversion system constructed in 1977 that routes all flow from upstream of this location through a piped conveyance system to a discharge point (WDFW ID 105 R121519a) in the Puyallup River (Stream 17). This diversion system is further explained in Appendix B and is contained entirely underground through a portion of the Stage 2 study area.

The upper reach of Wapato Creek (Stream 09) described in this report is a freshwater portion of the stream that originates in Edgewood down-gradient of the diversion system. The stream enters the study area in Fife, west of Freeman Road East, and flows south through the study area for approximately 700 feet (Figure 3-G). The stream exits the study area and continues in a southerly direction under the bridge crossing of Valley Avenue East (Figure 3-H). The stream then re-enters the study area, passes in a culvert under the UPRR, and flows west for approximately 800 feet, crosses under Freeman Road East through two culverts, and flows west for approximately 900 feet (Figure 3-I). The stream exits the study area and flows northwest through the Puyallup Tribal Terminal Site. The upper reach of Wapato Creek (Stream 09) is a perennially flowing stream with documented occurrence and migration of coho (*O. kisutch*), fall chum (*O. keta*), and steelhead trout, and contains habitat that is accessible to Chinook and pink salmon (*O. gorbuscha*) (WDFW 2021a, 2021b).

The lower reach is a tidally influenced portion of Wapato Creek (Stream 09) within the Tacoma city limits. Wapato Creek (Stream 09) enters Tacoma from the south and flows west along 12th Street East. The stream turns north along Alexander Avenue East where it enters the study area and passes under SR 509. It continues in this direction for approximately 1,400 feet before exiting the study area and flowing approximately 1,100 feet north where it outlets to Blair Waterway at Commencement Bay. This reach of Wapato Creek (Stream 09) has perennial flows; documented occurrence and migration of coho, fall chum, and winter steelhead trout (WDFW 2021a, 2021b); and contains designated critical habitat for threatened Puget Sound steelhead trout.

4.4.3. Streams 08, 13, 14,15, 18, 19, and 20 – Unnamed Tributaries

Stream 08 is an excavated channel that flows west from Freeman Road East on the northern edge of Wetland 47 and the Middle Surprise Lake Tributary RRP site (Figure 3-E). At the northwest boundary of the wetland, the stream is directed north through a culvert under 76th Avenue East, which continues north for approximately 340 feet. Stream 08 daylights as it exits the culvert and turns west, flowing through an open channel, passing through agricultural fields and culverts for a length of approximately 640 feet before discharging to Surprise Lake Tributary (Stream 01). Stream 08 is perennially flowing and potentially accessible to fish due to its connection with Surprise Lake Tributary (Stream 01). However, three partial fish passage barriers are mapped in Surprise Lake Tributary in the vicinity of its connection with Stream 08. Additional WDFW (2021a) mapping does not show documented fish use in Stream 08, and DNR (2021a) does not include the stream in its stream database.

Stream 13 is an unnamed tributary to Surprise Lake Tributary (Stream 01) located on the west side of 78th Avenue East and south of 26th Street East in the Hylebos Creek-Frontal Commencement Bay watershed. Stream 13 enters the Stage 2 study area within Wetland 83 where it emerges from a 1.64-meter-diameter culvert under 78th Avenue East and flows north along 78th Avenue East before passing through a culvert at 26th Street East. The stream continues to flow north for approximately 600 feet and then discharges to Surprise Lake Tributary (Stream 01) (Figure 3-E). Stream 13 is perennially flowing and is potentially accessible to Chinook, chum, coho, and pink salmon, and steelhead trout (WDFW 2021b); however, several culverts along its length may be barriers to fish passage. Additional WDFW (2021a) mapping does not show documented fish use in Stream 13. DNR (2021c) data shows Stream 13 as non-fish bearing.

Stream 14 is an unnamed tributary to Stream 15 that is located south of Valley Avenue East at the southern terminus of 16th Street Northwest in the Puyallup River watershed (Figure 3-J). Stream 14 originates at the dead end of 16th Street Northwest and flows west out of Wetland 88/90/91 for a length of approximately 630 feet to its confluence with Stream 15 at the corner of a large agricultural field. Stream 14 had observed flow from March 2021 through May 2021 and again in October 2021. The stream was identified in a City of Puyallup correspondence as part of the former Drainage District 21, which ceased operations in 2020. Stream 14 does not have documented fish use (WDFW 2021a, 2021b) and is not mapped by the DNR Forest Practices Application Mapping Tool (FPAMT) (DNR 2021a). WDFW fish passage data (WDFW 2021c) indicate the potential presence of resident trout associated with a partial barrier approximately 650 feet downstream of the study area near the crossing of Stream 15 at Freeman Road East.

Stream 15 is an unnamed tributary to Oxbow Lake and, ultimately, the Puyallup River (Stream 17) that originates in a stormwater pond north of North Levee Road East and east of Freeman Road East and enters the study area north of an industrial complex near the intersection of Industrial Park Way and North Levee Road within the Puyallup city limits (Figure 3-J). The stream flows approximately 200 feet in a culvert under an access road and empties into an open channel that flows northwest through the Stage 2 study area. Stream 15 flows through a series of channels and culverts before entering an undeveloped forested parcel that contains W87 and W89. Within these upper reaches of Stream 15, flow was periodically observed during the delineation period, but not continuously for more than a 1-week period. Historical aerial photographs show that this was a channelized system through agricultural

fields, and it appears to have carried flows in 1990 prior to changes in its drainage basin due to industrial development and associated stormwater management facilities (Google Earth Pro 2021). This reach was identified as part of the former Drainage District 21. The stream exits the forested parcel and meets Stream 14 to flow north for a length of approximately 660 feet before turning west adjacent to WDFW culvert 935151 and Wetland 92 and exiting the study area. Flows in this reach of the stream were observed from March 2021 through May 2021 and again in October 2021. Stream 15 does not have documented fish use (WDFW 2021a, 2021b) and is not mapped by the DNR FPAMT (DNR 2021a). WDFW fish passage data (WDFW 2021c) indicates no fish use associated with a culvert (WDFW ID # 935282) approximately 650 feet downstream of the study area near the crossing at Freeman Road East.

Stream 18 is an unnamed tributary to Stream 08 located in the north-central portion of W47 in the Hylebos Creek-Frontal Commencement Bay watershed. The stream is an excavated channel that conveys flows for approximately 200 feet through a field of dense reed canarygrass before joining Stream 08 (Figure 3-E). Stream 18 had observed surface water present in March 2022 but lacks habitat features such as riffles, pools, meanders, and large woody material. The stream is potentially accessible to fish due to its connection with Surprise Lake Tributary via Stream 08. However, three partial fish passage barriers are mapped in Surprise Lake Tributary in the vicinity of its connection with Stream 08. Additional WDFW (2021a) mapping does not show documented fish use in Stream 18, and DNR (2021a) does not include the stream in its stream database.

Stream 19 is an unnamed tributary to Surprise Lake Tributary (Stream 01) that flows south along the east edge of Wetland 47 (Figure 3-E). The stream appears to be an excavated channel that conveys surface water from Wetland 47 to Surprise Lake Tributary. Stream 19 had observed surface water present in March 2022 and is assumed to be seasonally flowing. The stream is bordered by reed canarygrass, Himalayan blackberry, cattail and common rush. Stream 19 is potentially accessible to fish due to its connection with Surprise Lake Tributary (Stream 01). However, several partial fish passage barriers are mapped in Surprise Lake Tributary in the vicinity of its connection with Stream 19. Additional WDFW (2021a) mapping does not show documented fish use in Stream 19, and DNR (2021a) does not include the stream in its stream database.

Stream 20 appears to be an excavated channel at the base of an industrial parcel at the north end of Wetland 17/65 and adjacent to the Upper Hylebos RRP site (Figure 3-D). A narrow, steep, constructed berm borders Stream 20 on its east side and separates the channel from Wetland 17/65 as it flows south outside of the Stage 2 study area. The excavated channel flows into an excavated ditch that flows west into Hylebos Creek at the north end of the industrial parcel. Stream 20 is 4 to 6 feet deep and exhibited very slow flow at the time of the site investigation in March 2022. Douglas firs and big leaf maple trees dominate the steep banks with Himalayan blackberry and sword fern in the understory. WDFW fish passage data indicate no barrier from Stream 20 to Hylebos Creek; therefore, it is assumed to contain species similar to those that are in Hylebos Creek (Stream 02).

4.4.4. Puyallup River – Stream 17

The Puyallup River (Stream 17) originates from glaciers on Mount Rainier and is joined by the Carbon and White Rivers as it flows for a distance of approximately 45 miles to the northwest and discharges in Commencement Bay on Puget Sound. It enters the Stage 2 study area approximately 275 feet east of the North Meridian Avenue bridge crossing and exits the study area approximately 400 feet west of this crossing (Figure 3-K). All flows from the historical headwaters of Wapato Creek (Stream 09) are routed into the Puyallup River (Stream 17) through a piped diversion system that begins east of North Meridian Avenue. Consequently, the Wapato Creek (Stream 09) basin upstream of the diversion point is treated as part of the Puyallup River (Stream 17) basin. Within the study area, the Puyallup River (Stream 17) outside the PTOI reservation is designated critical habitat for Chinook salmon and steelhead and bull trout. The river also provides habitat for pink, coho, sockeye, and chum salmon, and cutthroat trout. Within the study area, the river's buffer condition is poor to moderate, with a narrow strip of riparian vegetation bordered by intensive development and shaded by the North Meridian Avenue bridge.

Although the streams identified in the Stage 2 study area pass through multiple jurisdictions, the jurisdictions listed in Tables 45 through 55 are only those within the Stage 2 study area. Local jurisdiction information is based on the following:

- City of Tacoma Municipal Code (TMC 13.11.400, SMP 6.4)
- City of Fife Municipal Code (FMC 17.15)
- City of Edgewood Municipal Code (EMC 14.50)
- City of Milton Municipal Code (MMC 18.16.640)
- City of Puyallup Municipal Code (PMC 21.06.1010, SMP 5.C).

Table 45. Surprise Lake Tributary (Stream 01) Summary.

Surprise Lake Tributary (Stream 01) Information Summary		
	**Stream Name**	Stream 01 – Surprise Lake Tributary
	Long./Lat. ID Number	Start: 47.236288/-122.315317 End: 47.235534/-122.319984
	WRIA Name/ Stream No.	10: Puyallup-White 17110019000741
	WDFW Site ID	935153, 105 S012016a, 935157, 105 S012017a, 935670, 921656, 921657, 921658
	Local Jurisdiction	Edgewood, Fife
	DNR Water Type	Type F, Type N
	Local Stream Rating	Fife: non-jurisdictional Edgewood: Type Np
	Buffer Width	Fife: Case-by-case Edgewood: 60 feet
	Documented Fish Use[a]	Potential presence: Chinook, chum, coho, and pink salmon Observed: coho salmon, *O. mykiss*
Location of Stream Relative to Project Corridor	Surprise Lake Tributary begins within the Edgewood city limits and flows southwest into the Stage 2 study area at the forested parcel on the east side of Freeman Road East.	
Connectivity	Surprise Lake Tributary (Stream 01) flows southwest from Surprise Lake (off site) and into the study area after crossing under Freeman Road East through a culvert. Stream 01 continues to flow west and meets Stream 13 approximately 400 feet west of Freeman Road East. It then flows west out of the study area and north through agricultural fields before it crosses under I-5 in a culvert and then in an open channel before entering Hylebos Creek immediately south of SR 99. Several small streams converge with Stream 01 throughout the study area including Streams 08, 11, 12, 03 (Stage 1a and Stage 1b), and Streams 13 and 19 (Stage 2). Stream 01 flows through or adjacent to multiple wetlands delineated during Stage 1a and Stage 1b, including Wetlands 45, 47, 53, 4/48/50, 18, 11, and 15.	
Fish Habitat	Three-spine stickleback have been observed throughout Surprise Lake Tributary (Stream 01). WDFW (2021b) data shows the presence of fish in the stream. However, three partial fish passage barriers are mapped west of Freeman Road East (WDFW # 935153, # 105 S012016a, and # 935157) and three partial barriers (WDFW # 105 S012017a, # 921656, and # 935670) and two total barriers (WDFW # 921657 and # 921658) are documented east of Freeman Road East (WDFW 2021c). Additional WDFW (2021a) mapping does not show documented fish use in Surprise Lake Tributary (Stream 01). DNR (2021) maps the segment west of Freeman Road East as fish bearing and the segment east of Freeman Road East as non-fish bearing. Project biologists observed dead juvenile *O. mykiss* in the upper reach of Surprise Lake Tributary (Stream 01) during a site visit in February 2018. These were likely rainbow trout that had washed down from Surprise Lake, which is stocked by WDFW. PTOI biologists have observed coho salmon reaching the headwaters of the stream at Surprise Lake.	
Riparian/Buffer Condition	The segment west of Freeman Road East is disturbed and in generally poor condition. The buffer consists of herbaceous vegetation dominated by reed canarygrass and Himalayan blackberry. The segment of stream east of Freeman Road East consists of Wetland 45 and a relatively undisturbed forested riparian zone dominated by red alder and willows. The forested buffer to the east is in generally good condition with minimal disturbance from past land use.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021b).

Table 46. Stream 08 Summary.

Stream 08 Information Summary		
	**Stream Name**	Stream 08
	Long./Lat. ID Number	Start: 47.236649/-122.325235 End: 47.237127/-122.327221
	WRIA Name/ Stream No.	10: Puyallup-White N/A
	WDFW Site ID	N/A
	Local Jurisdiction	Fife
	DNR Water Type	N/A
	Local Stream Rating	Non-jurisdictional
	Buffer Width	Case-by-case
	Documented Fish Use[a]	None
Location of Stream Relative to Project Corridor	Stream 08 is an unnamed tributary that flows through the Middle Surprise Lake Tributary RRP site and into Surprise Lake Tributary near the southern boundary of Stage 1b, south of 20th Street East.	
Connectivity	Stream 08 flows west from Freeman Road East on the northern edge of Wetland 47 until it enters a culvert and turns north at 76th Avenue East. The stream daylights approximately 340 feet north and turns west where it is ditched through agricultural fields for a length of approximately 320 feet before it enters another culvert that connects to Surprise Lake Tributary. Stream flow is perennial based on observations during Stage 1b and Stage 2 field work.	
Fish Habitat	Stream 08 has no documented fish use (WDFW 2021a, 2021b). However, there are presumed fish present due to connectivity with Surprise Lake Tributary. Instream conditions in Stream 08 are poor with a lack of channel complexity and substrate dominated by mud and silt.	
Riparian/Buffer Condition	Stream 08 is bordered by reed canarygrass and Himalayan blackberry along its western reach. The eastern portion of the stream is bordered by wetland vegetation consisting of Sitka willow, red-osier dogwood, and reed canarygrass. Freeman Road East is located approximately 100 feet east of the stream's eastern terminus.	

Table 47. Upper Wapato Creek (Stream 09) Summary.

Upper Wapato Creek (Stream 09) Information Summary		
	**Stream Name**	Stream 09 – Wapato Creek
	Long./Lat. ID Number	Start: 47.212332/-122.301130 End: 47.223269/-122.331146
	WRIA Name/ Stream No.	10: Puyallup-White 17110019020834
	WDFW Site ID	Outside Study Area: 105 R120920a, 935102, 105 R120921a, 935101, 935141, 105 R120918a, 935100 Inside Study Area: 105 R120919a
	Local Jurisdiction	Fife, Puyallup
	DNR Water Type	Type F
	Local Stream Rating	Fife: N/A Puyallup: Type II
	Buffer Width	Fife: Case-by-case Puyallup: 100 feet
	Documented Fish Use[a]	Documented: chum, coho, steelhead Potential presence: Chinook, pink
Location of Stream Relative to Project Corridor	Wapato Creek (Stream 09) converges with and approaches the study area in several places near the junction of the cities of Edgewood, Puyallup, and Fife. East of North Meridian Avenue Wapato Creek (Stream 09) enters a piped diversion system that routes all of its flows to the Puyallup River (Stream 17) underground through the study area. Down-gradient of the diversion and west of Fourth Street Northwest and south of the UPRR tracks, Wapato Creek (Stream 09) enters the Stage 2 study area and flows through the Upper Wapato mitigation site. It then exits the study area and continues in a northwesterly direction for approximately 1 mile. There it is joined by Simons Creek before re-entering the Stage 2 study area after crossing under 36th Street East and flowing through the Wapato-Simons Confluence mitigation site, where it is joined by Stream 16. Wapato Creek (Stream 09) then exits the study area and flows west for a length of approximately 500 feet before passing through a culvert under Freeman Road East and re-entering the study area. West of Freeman Road East, Wapato Creek (Stream 09) flows southeast through the study area for a length of approximately 700 feet. The stream exits the study area, passes through a culvert under Freeman Road East, and flows along the southern edge of the Northeast Wapato RRP mitigation site exiting the study area before it continues in a southerly direction under Valley Avenue East through a culvert. The stream then re-enters the study area, passes in a culvert under the UPRR, and flows west for a length of approximately 800 feet through the East Wapato RRP site, crosses under Freeman Road East through two culverts and flows west along the edge of the West Wapato RRP mitigation site for a length of approximately 900 feet. The stream exits the study area and flows northwest through the PTOI Freeman Road East Mitigation Site and through a culvert under the UPRR before re-entering the study area within the Wapato RRP Expansion mitigation site and flowing for a length of approximately 1,400 feet west and out of the study area.		

Table 47 (continued). Upper Wapato Creek (Stream 09) Summary.

Connectivity	Wapato Creek (Stream 09) flows generally northwest from its headwaters in Sumner. East of North Meridian Avenue a piped diversion routes all of its flow to the Puyallup River (Stream 17), disconnecting the historical headwaters of Wapato Creek (Stream 09) from the remainder of its basin area downstream (west) of North Meridian Avenue. The lower reach of the stream converges with Simons Creek within the Edgewood city limits, east of Freeman Road East. The stream turns south at Freeman Road East near the border of the cities of Fife and Edgewood. Wapato Creek (Stream 09) continues south then turns west and is presumably met with overland flow from a ditch (no surface water channel was observed connecting the ditch to the stream channel) draining an agricultural field along Freeman Road East. The stream passes through many culverts in this area including several under Freeman Road East, Valley Avenue East, and the UPRR. In this area, Wapato Creek (Stream 09) passes through several wetlands including Wetlands 98, 95, and 94. Wapato Creek (Stream 09) continues northwest through the cities of Fife and Tacoma for a distance of approximately 4 miles until its outlet to Blair Waterway at Commencement Bay. The stream is freshwater until it approaches the crossing under SR 509 where it becomes tidally influenced.
Fish Habitat	Wapato Creek (Stream 09) is documented for the occurrence and migration of coho, fall chum, and steelhead trout, and contains habitat that is accessible to Chinook and pink salmon (WDFW 2021a, 2021b). The Stage 2 study area contains documented coho breeding and rearing habitat. Wapato Creek contains designated critical habitat for threatened Puget Sound steelhead trout (81 FR 9252). PTOI staff have observed Chinook salmon spawning in the reach near Freeman Road East south of the UPRR. In the study area Wapato Creek is perennial with mud and embedded silt as substrate. Little channel complexity was observed; the reach is a glide in most delineated areas. Some instream habitat is provided by downed wood, and thermal refugia are provided by riparian cottonwoods.
Riparian/Buffer Condition	Reed canarygrass is a dominant species in buffer areas. Other commonly observed species included Himalayan blackberry, red osier dogwood, red alder, willows, yellow flag iris, and soft rush. Adjacent land uses consist of industrial facilities, active agricultural fields, grazing pasture, the PTOI Freeman Road East Mitigation site, the UPRR, Freeman Road East, and Valley Avenue East. The buffer condition is low to moderate and varies concurrently with the adjacent land use.

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 48. Lower Wapato Creek (Stream 09) Summary.

Lower Wapato Creek (Stream 09) Information Summary		
	**Stream Name**	Stream 09 – Wapato Creek
	Long./Lat. ID Number	Start: 47.247265/-122.372493 End: 47.251023/-122.37245
	WRIA Name/ Stream No.	10: Puyallup-White 17110019020836
	WDFW Site ID	985079, 105 R121419a
	Local Jurisdiction	Tacoma
	DNR Water Type	Type F
	Local Stream Rating	Tacoma: Type S/Stream of local significance
	Buffer Width	Tacoma: 150 feet
	Documented Fish Use[a]	Documented: coho, steelhead, chum Potential presence: Chinook, pink
Location of Stream Relative to Project Corridor	The lower reach of Wapato Creek (Stream 09) enters the Stage 2 study area flowing to the north under SR 509 and Tacoma Railroad. It continues north for a length of approximately 1,400 feet and exits the study area in the Port of Tacoma.	
Connectivity	See Table 47 for Wapato Creek (Stream 09) connectivity description outside Tacoma city limits. This reach of Wapato Creek (Stream 09) enters Tacoma from the south and flows west along 12th Street East. The stream turns north along Alexander Avenue East and passes under SR 509 and Tacoma Railroad in a culvert. It continues in this direction for approximately 1,400 feet where it connects with Blair Waterway at Commencement Bay. Wapato Creek (Stream 09) flows are perennial and become tidally influenced where the stream crosses under SR 509. Several stormwater outfall pipes were observed along the stream's banks downstream of the SR 509 crossing, presumably providing drainage for the surrounding Port of Tacoma facilities.	
Fish Habitat	Wapato Creek (Stream 09) is documented for the occurrence and migration of coho, fall chum, and winter steelhead trout (WDFW 2021a, 2021b). The creek contains designated critical habitat for threatened Puget Sound steelhead trout (81 FR 9252). PTOI staff have observed Chinook salmon spawning in the reach near Freeman Road East south of the UPRR. Juvenile salmonids and saltwater dependent species such as sculpin and flounder were observed during site visits. Wapato Creek (Stream 09) is a perennial stream. Substrate conditions in this reach were dominated by silt/mud bottom with some small cobbles. No instream refugia were observed in the form of pools or wood. Some overhanging vegetation was observed the southern portion of the reach. Salt-tolerant wetland vegetation was present below the OHWM.	
Riparian/ Buffer Condition	This reach of Wapato Creek (Stream 09) is surrounded by industrial port facilities, Alexander Avenue East (which is primarily used by heavy trucks in this area), a railyard, overhead electrical lines, and SR 509. Buffer vegetation is characterized by disturbed invasive vegetation with some native species. Dominant species included Himalayan blackberry, native willows, black cottonwood saplings, tansy ragwort, common horsetail, reed canarygrass, scotch broom (*Cytisus scoparius*), native willows, and black cottonwood saplings.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b, 2021c).

Table 49. Stream 13 Summary.

Stream 13 Information Summary		
	**Stream Name**	Stream 13
	Long./Lat. ID Number	Start: 47.2303078/-122.325774 End: 47.233422/-122.325771
	WRIA Name/ Stream No.	10: Puyallup-White/ 17110019020833
	WDFW Site ID(s)	935183, 935185, 935184
	Local Jurisdiction	Fife
	DNR Water Type	Type N
	Local Stream Rating	N/A
	Buffer Width	Case-by-case
	Documented Fish Use[a]	Potential presence: Chinook, chum, coho, pink salmon and steelhead trout
Location of Stream Relative to Project Corridor	Stream 13 enters Wetland 83 and flows north from a culvert under 79th Avenue East. The stream flows through a culvert under 26th Avenue East. The stream continues north and joins Stream 01 approximately 600 feet north of 26th Avenue East where it joins Surprise Lake Tributary (Stream 01).	
Connectivity	Stream 13 appears to originate west of Freeman Road East. Within the study area a ditch connects to Stream 13 draining Wetland 83 from the west. This ditch has stormwater outfalls connected to it and is mapped as part of Wetland 83 prior to it reaching Stream 13. Within the study area Stream 13 is bordered by Wetlands 83 and 47. Stream 13 flows north and into Surprise Lake Tributary (Stream 01) approximately 600 feet north of 26th Avenue East.	
Fish Habitat	Stream 13 is potentially accessible to Chinook, chum, coho, pink salmon, and steelhead trout (WDFW 2021b). There are several unassessed culverts located within the study area that may be barriers to fish passage. Stream 13 is perennially flowing and provides poor fish habitat as it primarily has a mud/silt bottom, contains no instream wood, and has little channel complexity. Some shade and overhanging vegetation is provided by trees and shrubs in Wetland 83. Many predatory bullfrog tadpoles were observed in an area of standing water at the 26th Street East culvert.	
Riparian/Buffer Condition	Stream 13 flows along the east edge of a forested and scrub-shrub wetland (Wetland 83). Riparian vegetation consists of black cottonwood, Oregon ash, willows, Himalayan blackberry, and red osier dogwood. Reed canarygrass dominates the banks of the stream. The buffer to the west contains moderate to high quality forested species, but also has been used recently for encampments by people experiencing homelessness that likely have increased pollutants in stormwater runoff. Mowed roadside vegetation and an industrial complex sidewalk and driveway lie immediately to the east of Stream 13.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021b).

Table 50. Stream 14 Summary.

Stream 14 Information Summary		
	**Stream Name**	Stream 14
	Long./Lat. ID Number	Start: 47.2136814/-122.3151487 End: 47.2136468/-122.3176753
	WRIA Name/ Stream No.	10: Puyallup-White/ N/A
	WDFW Site ID	N/A
	Local Jurisdiction	Puyallup
	DNR Water Type	N/A
	Local Stream Rating	Type III
	Buffer Width	50 feet
	Documented Fish Use[a]	None
Location of Stream Relative to Project Corridor	Stream 14 flows west from Wetland 88/90/91, bisecting the project corridor south of Wetland 93 and flowing into Stream 15.	
Connectivity	The stream is located within the regulated floodplain of the Puyallup River. Three ditches that are the outlets from Wetland 88/90/91 flow into Stream 14 at the eastern end of the surveyed stream length. These ditches convey water adjacent to an industrial warehouse (north and east), and a large fallow agricultural field (east and south). Stream 14 shares a direct surface water connection with Wetland 88/90/91 to the east and is bordered by Wetland 93 to the north and Wetland 87 to the south. Stream 14 flows west into Stream 15 at the western edge of the study area.	
Fish Habitat	WDFW fish passage data indicate the potential presence of resident trout with a partial barrier at the crossing of Stream 15 at Freeman Road East (WDFW 2021c). Stream 14 has no documented fish use (WDFW 2021a, 2021b). Instream conditions in Stream 14 are poor with a lack of channel complexity and substrate dominated by mud and silt. The forested southern bank of the stream is providing thermal refugia and is a source of wood to the stream.	
Riparian/Buffer Condition	Stream 14 is located south of a large agricultural field with rotating crops within the Stage 2 project limits. Reed canarygrass dominates the vegetation close to the stream channel on the north side. Along the southern border of Stream 14 moderate to high quality forested vegetation dominates the buffer, including black cottonwood, Oregon ash, Himalayan blackberry, and red osier dogwood, and reed canarygrass dominates the riparian border of the stream. During follow-up site visits in 2021 several trees were observed to be cut down within the buffer. WSDOT has not been able to determine who cut these trees. The forested area south of Stream 14 has been used recently for encampments by people experiencing homelessness that likely have increased pollutants in stormwater runoff.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 51. Stream 15 Summary.

Stream 15 Information Summary		
	**Stream Name**	Stream 15
	Long./Lat. ID Number	Start: 47.209208/-122.312218 End: 47.211496/-122.315068 Start: 47.211821/-122.315464 End: 47.215397/-122.317830
	WRIA Name/Stream No.	10: Puyallup-White/NA
	WDFW Site ID	935151, 935282
	Local Jurisdiction	Puyallup
	DNR Water Type	N/A
	Local Stream Rating	Puyallup: Type III
	Buffer Width	Puyallup: 50 feet
	Documented Fish Use[a]	Potential presence: resident trout as reported by WDFW downstream of study area. April 1 field visit determined this is unlikely for the project reach.
Location of Stream Relative to Project Corridor	Stream 15 enters the Stage 2 study area from the south and flows northwest through the study area for a distance of approximately 2,200 feet. It then turns north, flowing along the western edge of the study area for approximately 660 feet. The stream then turns west adjacent to WDFW culvert 935151 and Wetland 92 and exits the study area before flowing under Freeman Road East for a length of approximately 650 feet downstream.	
Connectivity	The stream is located within the regulated floodplain of the Puyallup River (Stream 17). Stream 15 originates in a stormwater pond north of North Levee Road East and east of Freeman Road East. It flows approximately 200 feet in a culvert under a distribution center access road and empties into an open channel where it enters the Stage 2 study area. The stream flows northwest for a length of approximately 1,020 feet in a channel adjacent to agricultural fields and WSDOT stockpile site. At this location ditches flowing from the north and south connect to the stream. It then flows through culverts under an agricultural field access road and a berm. The stream flows off site for a length of approximately 150 feet before flowing under a chain link fence and re-entering the study area. It then continues in a bermed channel for a length of approximately 870 feet through a forested area adjacent to Wetlands 87 and 89. It is then joined by Stream 14, at which point it turns north and flows for a length of approximately 660 feet in a channel along the western edge of Wetland 93, where it connects to Wetland 92 and turns west to exit the Stage 2 study area. Outside the study area, the stream flows west for a distance of approximately 1.5 miles to Oxbow Lake and ultimately discharges into the Puyallup River (Stream 17). Stream flow appears to be seasonal downstream of the intersection with Stream 14. Upstream of the intersection with Stream 14, flow appears to be intermittent only, with standing water and flow observed in the channel after rain events.	

Table 51 (continued). Stream 15 Summary.

Fish Habitat	WDFW fish passage data indicate no fish use associated with a culvert (WDFW site ID # 935282) approximately 650 feet downstream of the study area at the crossing of Freeman Road East (WDFW 2021c). Stream 15 has no documented fish use (WDFW 2021a, 2021b). Within the project limits Stream 15 primarily has mud/silt substrate with some areas where reed canarygrass and blackberry have grown across the channel. Instream conditions are generally poor with a lack of channel complexity and refugia. The forested area of the reach is providing thermal refugia and contributing some wood to the benefit of instream habitat. The forested area surrounding Stream 15 has been used recently for encampments by people experiencing homelessness, which has likely increased pollutants in stormwater runoff. Trash and human waste were observed throughout the reach when the streambed was dry.
Riparian/Buffer Condition	The buffer condition is poor where the stream is bordered by agricultural fields and a construction stockpile site. Vegetation along the stream in these locations is dominated by reed canarygrass and Himalayan blackberry. Buffer condition is fair where the stream passes through a forested area dominated by black cottonwood and snowberry. During follow-up site visits in 2021, several trees were observed to be cut down within the buffer bordering the agricultural field and north of the forested parcel. WSDOT has not been able to determine who cut these trees. The forested area surrounding Stream 15 has been used recently for encampments by people experiencing homelessness, which likely has increased pollutants in stormwater runoff.

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 52. Puyallup River (Stream 17) Summary.

Puyallup River (Stream 17) Information Summary		
	**Stream Name**	Stream 17 – Puyallup River
	Long./Lat. ID Number	Start: 47.202428/-122.292828 End: 47.20307/-122.29551
	WRIA Name/Stream No.	10: Puyallup-White/NA
	WDFW Site ID	105 R121519a
	Local Jurisdiction	Puyallup
	DNR Water Type	Type S
	Local Stream Rating	Puyallup: Type I
	Buffer Width	Puyallup: 150 feet
	Documented Fish Use[a]	Documented presence: Chinook, pink, coho, sockeye, and chum salmon, and cutthroat, steelhead, and bull trout
Location of Stream Relative to Project Corridor	The Puyallup River (Stream 17) enters the Stage 2 study area approximately 275 feet east of the North Meridian Avenue bridge crossing and exits the study area approximately 400 feet west of the bridge.	
Connectivity	The Puyallup River (Stream 17) originates from glaciers on Mount Rainier and is joined by the Carbon and White Rivers as it flows for a distance of approximately 45 miles to the northwest and discharges in Commencement Bay on Puget Sound. All flows from the historical headwaters of Wapato Creek (Stream 09) are routed into the Puyallup River (Stream 17) through a piped diversion system that begins east of North Meridian Avenue. Consequently, the Wapato Creek (Stream 09) basin upstream of the diversion point is treated as part of the Puyallup River (Stream 17) basin.	
Fish Habitat	Within the study area, the Puyallup River (Stream 17) outside the PTOI reservation is designated critical habitat for Chinook salmon and steelhead and bull trout. The river also provides habitat for pink, coho, sockeye, and chum salmon and cutthroat trout.	
Riparian/ Buffer Condition	Within the study area, buffer condition is poor to moderate, with a narrow strip of riparian vegetation bordered by intensive development.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 53. Stream 18 Summary.

Stream 18 Information Summary		
	**Stream Name**	Stream 18
	Long./Lat. ID Number	Start: 47.236387/-122.325620 End: 47.236940/-122.325754
	WRIA Name/Stream No.	10: Puyallup-White/NA
	WDFW Site ID	N/A
	Local Jurisdiction	Fife
	DNR Water Type	N/A
	Local Stream Rating	Fife: non-jurisdictional
	Buffer Width	Fife: case-by-case
	Documented Fish Use[a]	None
Location of Stream Relative to Project Corridor	Stream 18 originates in the north-central portion of W47 and flows north for approximately 200 feet to join Stream 08.	
Connectivity	Stream 18 is an excavated channel that originates in W47 and conveys surface water from the wetland to Stream 08. Stream 08 flows west along the northern edge of Wetland 47 then flows north and west through agricultural fields before discharging to Surprise Lake Tributary (Stream 01).	
Fish Habitat	Stream 18 has no documented fish use (WDFW 2021a, 2021b). However, there are presumed fish present in Surprise Lake Tributary downstream of Stream 18 and Stream 08. Instream conditions in Stream 18 are poor with a lack of channel complexity and substrate dominated by mud and silt. The stream has minimal riparian cover consisting of intermittent willow saplings.	
Riparian/ Buffer Condition	The buffer condition is generally poor and consists of a disturbed field dominated by reed canarygrass and intermittent willow saplings.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 54. Stream 19 Summary.

Stream 19 Information Summary		
	**Stream Name**	Stream 19
	Long./Lat. ID Number	Start: 47.236604/-122.325238
	WRIA Name/Stream No.	10: Puyallup-White/NA
	WDFW Site ID	N/A
	Local Jurisdiction	Fife
	DNR Water Type	N/A
	Local Stream Rating	Non-jurisdictional
	Buffer Width	Case-by-case
	Documented Fish Use[a]	None
Location of Stream Relative to Project Corridor	Stream 19 is an unnamed tributary to Surprise Lake Tributary that flows south along the east edge of Wetland 47.	
Connectivity	Stream 19 is an excavated channel that originates in W47 and conveys surface water from the wetland to Surprise Lake Tributary (Stream 01). Surprise Lake Tributary (Stream 01) flows west through the center of W47 and meets Stream 13 approximately 600 feet north of the study area. It then flows west and north through agricultural fields and crossing I-5 before entering Hylebos Creek immediately south of SR 99.	
Fish Habitat	Stream 19 has no documented fish use (WDFW 2021a, 2021b). However, there are presumed fish present in Surprise Lake Tributary. Instream conditions in Stream 19 are poor with a lack of channel complexity, large woody material, and substrate dominated by mud and silt. The stream has minimal riparian cover consisting of Himalayan blackberry and intermittent willow saplings.	
Riparian/ Buffer Condition	The buffer condition is poor to moderate. The northern segment of the stream flows through a seasonally ponded portion of W47 consisting of cattail and common rush. The southern portion of the stream is bordered by reed canarygrass and Himalayan blackberry. Freeman Road East is located approximately 40 feet to the east.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

Table 55. Stream 20 Summary.

Stream 20 Information Summary		
	**Stream Name**	Stream 20
	Long./Lat. ID Number	Start: -122.32845371/47.24913076 End: -122.32825478/ 47.24972837
	WRIA Name/Stream No.	10: Puyallup-White/NA
	WDFW Site ID	N/A
	Local Jurisdiction	Milton, Fife
	DNR Water Type	N/A
	Local Stream Rating	Milton: Type F Fife: non-jurisdictional
	Buffer Width	Milton: 150 feet Fife: case-by-case
	Documented Fish Use[a]	Potential presence due to possible connection to Hylebos Creek.
Location of Stream Relative to Project Corridor	Stream 20 is at the base of an industrial parcel (located at 407 Porter Way) to the west of the Stage 2 study area at the north end of Wetland 17/65. The entire length of this stream is outside of the Stage 2 study area.	
Connectivity	Stream 20 flows south from Juniper Street Ditch through Wetland 17/65 for approximately 340 feet before joining an excavated ditch that flows to the west connecting with Hylebos Creek. Hylebos Creek flows along the west boundary of Wetland 17/65 before passing under I-5 at the west edge of Wetland 17/65.	
Fish Habitat	WDFW fish passage data indicate no barrier from Stream 20 to Hylebos Creek, therefore it is assumed to contain similar species. Fish documented in the Hylebos system include: Chinook, coho, chum, and steelhead have all been and odd-year pink salmon are presumed to occur in the stream (WDFW 2019a). Bull trout (*Salvelinus confluentus*) may use the mouth of Hylebos Creek but are not likely to occur within the project vicinity. Herrera observed salmonids (likely coho) in Hylebos Creek in 2017 and 2018 during habitat surveys for the project. Other fish species documented throughout the Hylebos Creek watershed include sculpin (*Cottus* spp.), three-spine stickleback (*Gasterosteus aculeatus*), Western brook lamprey (*Lampetra richardsonii*), and yellow perch (*Perca flavescens*) (HDR 2014).	
Riparian/ Buffer Condition	The buffer condition is fair where dense trees and shrubs are rooted along steep banks of the industrial parcel and a narrow, steep berm that separates Stream 20 from Wetland 17/65. Vegetation along the stream is dominated by Douglas fir trees and Himalayan blackberry.	

[a] Documented fish species known to occur in the stream from available data sources (WDFW 2021a, 2021b).

4.5. Species and Habitats of Interest

According to USFWS iPaC data (USFWS 2021a) and NMFS protected species listings (NOAA 2021a), nine federal or state listed species may occur within 0.5 mile of the study area (Table 55). WDFW PHS data document multiple priority habitats within 1 mile of the study area, including waterfowl concentrations, wetlands, freshwater ponds, and biodiversity areas and corridors, and roosting concentrations of big brown bat (WDFW 2021a).

Six species on the USFWS iPaC list are not expected to occur within 0.5 mile of the study area due to the absence of suitable habitat: marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), Taylor's checkerspot (*Euphydryas editha taylori*), monarch butterfly (*Danaus plexippus*), and golden paintbrush (*Castilleja levisecta*). Although critical habitat has been designated for these species, no critical habitat is mapped within the study area (NOAA 2021b; USFWS 2021b; WDFW 2021a).

WDFW PHS data document one occurrence of western pond turtle (*Actinemys marmorata*), a State Endangered species, in the project vicinity (WDFW 2021a).

Table 56. Federal and State Listed Species Within One-Half Mile of the Study Area.

Common Name	Scientific Name	Federal Status[a]	State Status[b]
Chinook salmon (Puget Sound ESU)	*Oncorhynchus tshawytscha*	Threatened	Not listed
Steelhead (Puget Sound ESU)	*Oncorhynchus mykiss*	Threatened	Candidate
Bull trout	*Salvelinus confluentus*	Threatened	Candidate
Marbled murrelet	*Brachyramphus marmoratus*	Threatened	Endangered
Streaked horned lark	*Eremophila alpestris strigata*	Threatened	Endangered
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	Endangered
Western pond turtle	*Actinemys marmorata*	Petitioned for Federal Listing	Endangered
Taylor's checkerspot	*Euphydryas editha taylori*	Endangered	Endangered
Monarch butterfly	*Danaus plexippus*	Candidate	Not listed
Golden paintbrush	*Castilleja levisecta*	Threatened	Not listed

[a] USFWS 2021a, NOAA 2021a.

[b] WDFW 2021d.

5. Limitations

This wetland and stream assessment report documents the investigation, best professional judgment, and conclusions of WSDOT based on the site conditions encountered at the time of this study. The wetland and stream delineation was performed in compliance with accepted standards for professional wetland biologists and applicable federal, state, and local laws and ordinances, and WSDOT policies and guidance. The information contained in this report is correct and complete to the best of our knowledge. This report should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities. The final determination of the wetland boundary, classification, and required setback and buffer will be made by local, state, and federal jurisdictions.

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Appendix A. Background Information

Appendix A includes the following sub-appendices:

A-1 Comparison of Observed and Normal Precipitation for Tacoma, Washington

A-2 Daily Precipitation for 10 Days Preceding Fieldwork, Tacoma, Washington

A-3 Topography in the Vicinity of the SR 167 Completion Project, Stage 2 Study Area

A-4 Previously Mapped Wetlands and Streams in the Vicinity of the SR 167 Completion Project, Stage 2 Study Area

A-5 Mapped Soils in the Vicinity of the SR 167 Completion Project, Stage 2 Study Area

A-6 Aerial Photographs of the SR 167 Completion Project, Stage 2 Study Area, Washington 0.5m, 2021, 4 band, Worldwide Imagery

Appendix A-1. Comparison of Observed and Normal Precipitation for Tacoma, Washington

The Regional Delineation Supplement Version 2.0 (Environmental Laboratory 2010) recommends using methods described in Chapter 19 in Engineering Field Handbook (NRCS 2015) to determine if precipitation occurring in the 3 full months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. The following table shows this information.

Monthly Precipitation Data for Tacoma, Washington.

Month	Long-Term Rainfall Records[a]		Rainfall[a]	Condition Dry, Wet, Normal[b]	Results of Precedent Precipitation Analysis: Drier than Normal, Normal, Wetter than Normal
	3 Yrs. in 10 Less Than	3 Yrs. in 10 More Than			
March 2022	3.18	4.78	3.25	Normal	Normal
February 2022	2.29	4.40	3.11	Normal	Wetter than Normal
January 2022	4.22	7.22	9.39	Wet	Wetter than Normal
December 2021	4.20	6.50	5.76	Normal	Wetter than Normal
November 2021	4.59	7.79	10.78	Wet	Wetter than Normal
October 2021	2.22	4.33	5.03	Wet	Normal
September 2021	0.59	1.47	3.20	Wet	Drier than Normal
August 2021	0.31	0.95	0.05	Dry	Drier than Normal
July 2021	0.28	0.81	0.00	Dry	Normal
June 2021	1.00	1.89	1.85	Normal	Drier than Normal
May 2021	1.15	2.50	1.29	Normal	Drier than Normal
April 2021	1.98	3.54	0.85	Dry	Normal
March 2021	3.18	4.78	2.06	Dry	Normal
February 2021	2.29	4.40	3.91	Normal	Wetter than Normal
January 2021	4.22	7.22	8.79	Wet	Normal
December 2020	4.20	6.50	5.64	Normal	Normal

[a] NRCS 2021c.

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

Conclusions: Normal precipitation characteristics were prevalent in December 2020, January, March, April, July, and October 2021, and March 2022; wetter than normal conditions were prevalent in February, November, and December 2021, and January and February 2022; and drier than normal conditions were prevalent in May, June, August, and September 2021.

Appendix A-2. Daily Precipitation for 10 Days Preceding Fieldwork, Tacoma, Washington

Fieldwork began on March 25, 2021, and ended on March 30, 2022. Due to the extended timeframe over which fieldwork was conducted, to determine if light, moderate, or heavy precipitation occurred in the 10 days prior to field work, each month from March 2021 to March 2022 was evaluated for average precipitation for the entire month. The following tables include daily precipitation data from March 2021 to March 2022 (NOAA 2021c: <https://www.weather.gov/wrh/Climate?wfo=sew>).

Monthly Precipitation Data During March to November 2021, Tacoma No. 1 Station, Washington.

Table A-2-1. Climatological Data for TACOMA NO. 1, WA – March 2021.

Date	Temperature				HDD	CDD	Precip.	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2021-03-01	59	38	48.5	3.3	16	0	0.00		
2021-03-02	51	43	47.0	1.7	18	0	0.00		
2021-03-03	53	33	43.0	-2.5	22	0	0.00		
2021-03-04	54	33	43.5	-2.1	21	0	0.21		
2021-03-05	54	44	49.0	3.2	16	0	0.04		
2021-03-06	52	42	47.0	1.1	18	0	0.01		
2021-03-07	49	40	44.5	-1.6	20	0	0.12		
2021-03-08	51	**30**	40.5	-5.7	24	0	T		
2021-03-09	54	35	44.5	-1.9	20	0	0.00		
2021-03-10	52	34	43.0	-3.6	22	0	0.00		
2021-03-11	54	34	44.0	-2.7	21	0	0.00		
2021-03-12	56	33	44.5	-2.4	20	0	0.00		
2021-03-13	**60**	34	47.0	0.0	18	0	0.00		
2021-03-14	53	41	47.0	-0.2	18	0	0.23		
2021-03-15	47	37	42.0	-5.3	23	0	0.09		
2021-03-16	51	31	41.0	-6.5	24	0	0.00		
2021-03-17	57	33	45.0	-2.6	20	0	0.00		
2021-03-18	58	38	48.0	0.2	17	0	0.13		
2021-03-19	56	40	48.0	0.1	17	0	0.01		
2021-03-20	54	43	48.5	0.5	16	0	0.18		
2021-03-21	46	41	43.5	-4.7	21	0	0.04		
2021-03-22	52	42	47.0	-1.3	18	0	0.07		
2021-03-23	54	35	44.5	-3.9	20	0	T		
2021-03-24	53	43	48.0	-0.6	17	0	0.07		
2021-03-25	53	44	48.5	-0.2	16	0	**0.52**		
2021-03-26	54	42	48.0	-0.8	17	0	T		
2021-03-27	56	43	49.5	0.6	15	0	0.00		
2021-03-28	51	40	45.5	-3.6	19	0	0.34		
2021-03-29	51	35	43.0	-6.2	22	0	0.00		
2021-03-30	54	34	44.0	-5.3	21	0	0.00		
2021-03-31	**60**	35	47.5	-1.9	17	0	0.00		
Sum	**1,659**	**1,170**	**–**	**–**	**594**	**0**	**2.06**		**–**
Average	**53.5**	**37.7**	**45.6**	**–1.8**	**–**	**–**	**–**	**–**	
Normal	**54.7**	**40.1**	**47.4**	**–**	**546**	**0**	**4.38**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:
red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-2. Climatological Data for TACOMA NO. 1, WA – April 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-04-01	60	40	50.0	0.4	15	0	0.00		
2021-04-02	58	42	50.0	0.3	15	0	0.00		
2021-04-03	64	41	52.5	2.7	12	0	0.00		
2021-04-04	56	46	51.0	1.1	14	0	0.00		
2021-04-05	57	**35**	46.0	-4.1	19	0	0.00		
2021-04-06	59	37	48.0	-2.2	17	0	0.00		
2021-04-07	55	43	49.0	-1.3	16	0	0.05		
2021-04-08	57	40	48.5	-2.0	16	0	0.10		
2021-04-09	51	37	44.0	-6.6	21	0	0.02		
2021-04-10	53	40	46.5	-4.2	18	0	0.11		
2021-04-11	52	**35**	43.5	-7.4	21	0	0.00		
2021-04-12	56	37	46.5	-4.5	18	0	0.00		
2021-04-13	61	46	53.5	2.3	11	0	0.00		
2021-04-14	65	41	53.0	1.7	12	0	0.00		
2021-04-15	72	42	57.0	5.5	8	0	0.00		
2021-04-16	75	44	59.5	7.8	5	0	0.00		
2021-04-17	76	46	61.0	9.2	4	0	0.00		
2021-04-18	**81**	46	63.5	11.5	1	0	0.00		
2021-04-19	70	46	58.0	5.8	7	0	0.00		
2021-04-20	70	49	59.5	7.1	5	0	0.00		
2021-04-21	70	45	57.5	4.9	7	0	0.00		
2021-04-22	64	50	57.0	4.2	8	0	0.00		
2021-04-23	62	46	54.0	1.0	11	0	0.00		
2021-04-24	53	47	50.0	-3.2	15	0	**0.25**		
2021-04-25	61	47	54.0	0.6	11	0	0.20		
2021-04-26	67	50	58.5	4.9	6	0	0.00		
2021-04-27	62	46	54.0	0.2	11	0	0.00		
2021-04-28	64	47	55.5	1.5	9	0	0.00		
2021-04-29	76	47	61.5	7.2	3	0	0.00		
2021-04-30	66	52	59.0	4.5	6	0	0.12		
Sum	**1,893**	**1,310**	**–**	**–**	**342**	**0**	**0.85**		
Average	**63.1**	**43.7**	**53.4**	**1.6**	**–**	**–**	**–**		
Normal	**59.8**	**43.7**	**51.8**	**–**	**398**	**0**	**3.39**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-3. Climatological Data for TACOMA NO. 1, WA – May 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-05-01	61	48	54.5	-0.2	10	0	0.00		
2021-05-02	63	47	55.0	0.1	10	0	0.00		
2021-05-03	60	46	53.0	-2.2	12	0	0.10		
2021-05-04	62	49	55.5	0.1	9	0	0.03		
2021-05-05	68	47	57.5	1.9	7	0	0.00		
2021-05-06	67	53	60.0	4.1	5	0	0.05		
2021-05-07	58	45	51.5	-4.6	13	0	0.19		
2021-05-08	57	**44**	50.5	-5.8	14	0	0.00		
2021-05-09	62	48	55.0	-1.5	10	0	0.03		
2021-05-10	64	**44**	54.0	-2.8	11	0	0.00		
2021-05-11	69	46	57.5	0.5	7	0	0.00		
2021-05-12	68	53	60.5	3.3	4	0	0.00		
2021-05-13	70	51	60.5	3.1	4	0	0.00		
2021-05-14	74	49	61.5	3.9	3	0	0.00		
2021-05-15	73	49	61.0	3.2	4	0	0.00		
2021-05-16	76	49	62.5	4.5	2	0	0.00		
2021-05-17	74	53	63.5	5.3	1	0	0.02		
2021-05-18	61	46	53.5	-4.9	11	0	0.03		
2021-05-19	58	47	52.5	-6.0	12	0	0.00		
2021-05-20	63	45	54.0	-4.7	11	0	0.00		
2021-05-21	64	45	54.5	-4.4	10	0	0.00		
2021-05-22	65	48	56.5	-2.5	8	0	0.00		
2021-05-23	62	53	57.5	-1.7	7	0	0.00		
2021-05-24	64	51	57.5	-1.8	7	0	0.05		
2021-05-25	64	52	58.0	-1.5	7	0	0.00		
2021-05-26	65	53	59.0	-0.6	6	0	0.00		
2021-05-27	62	51	56.5	-3.3	8	0	**0.75**		
2021-05-28	64	50	57.0	-2.9	8	0	0.04		
2021-05-29	71	48	59.5	-0.5	5	0	0.00		
2021-05-30	72	49	60.5	0.4	4	0	0.00		
2021-05-31	**77**	52	64.5	4.2	0	0	0.00		
Sum	**2,038**	**1,511**	**–**	**–**	**230**	**0**	**1.29**		
Average	**65.7**	**48.7**	**57.2**	**–0.6**	**–**	**–**	**–**		
Normal	**66.5**	**49.1**	**57.8**	**–**	**229**	**6**	**2.00**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-4. Climatological Data for TACOMA NO. 1, WA – June 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-06-01	82	58	70.0	9.6	0	5	0.00		
2021-06-02	86	59	72.5	12.0	0	8	0.00		
2021-06-03	80	58	69.0	8.4	0	4	0.00		
2021-06-04	71	52	61.5	0.8	3	0	0.00		
2021-06-05	65	53	59.0	-1.8	6	0	0.02		
2021-06-06	58	49	53.5	-7.5	11	0	0.10		
2021-06-07	64	**46**	55.0	-6.1	10	0	0.42		
2021-06-08	67	48	57.5	-3.7	7	0	T		
2021-06-09	68	47	57.5	-3.8	7	0	0.00		
2021-06-10	66	49	57.5	-3.9	7	0	0.00		
2021-06-11	61	49	55.0	-6.5	10	0	0.21		
2021-06-12	71	53	62.0	0.3	3	0	0.06		
2021-06-13	68	58	63.0	1.2	2	0	**0.97**		
2021-06-14	67	58	62.5	0.6	2	0	0.07		
2021-06-15	68	54	61.0	-1.1	4	0	T		
2021-06-16	70	53	61.5	-0.7	3	0	0.00		
2021-06-17	77	52	64.5	2.2	0	0	0.00		
2021-06-18	73	55	64.0	1.5	1	0	0.00		
2021-06-19	77	55	66.0	3.4	0	1	0.00		
2021-06-20	78	60	69.0	6.2	0	4	0.00		
2021-06-21	84	60	72.0	9.1	0	7	0.00		
2021-06-22	80	60	70.0	6.9	0	5	0.00		
2021-06-23	77	57	67.0	3.7	0	2	0.00		
2021-06-24	85	57	71.0	7.6	0	6	0.00		
2021-06-25	85	62	73.5	9.9	0	9	0.00		
2021-06-26	99	66	82.5	18.7	0	18	0.00		
2021-06-27	**105**	72	88.5	24.5	0	24	0.00		
2021-06-28	99	67	83.0	18.9	0	18	0.00		
2021-06-29	97	64	80.5	16.2	0	16	0.00		
2021-06-30	79	63	71.0	6.5	0	6	0.00		
Sum	**2,307**	**1,694**	**–**	**–**	**76**	**133**	**1.85**		
Average	**76.9**	**56.5**	**66.7**	**4.5**	**–**	**–**	**–**		
Normal	**71.1**	**53.4**	**62.2**	**–**	**106**	**24**	**1.42**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-5. Climatological Data for TACOMA NO. 1, WA – July 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-07-01	74	64	69.0	4.3	0	4	0.00		
2021-07-02	77	60	68.5	3.6	0	4	0.00		
2021-07-03	83	58	70.5	5.4	0	6	0.00		
2021-07-04	82	58	70.0	4.7	0	5	0.00		
2021-07-05	77	58	67.5	2.0	0	3	0.00		
2021-07-06	80	56	68.0	2.3	0	3	0.00		
2021-07-07	79	58	68.5	2.7	0	4	0.00		
2021-07-08	73	56	64.5	-1.5	0	0	0.00		
2021-07-09	80	56	68.0	1.8	0	3	0.00		
2021-07-10	79	58	68.5	2.1	0	4	0.00		
2021-07-11	78	56	67.0	0.5	0	2	0.00		
2021-07-12	81	57	69.0	2.3	0	4	0.00		
2021-07-13	81	56	68.5	1.6	0	4	0.00		
2021-07-14	75	56	65.5	-1.5	0	1	0.00		
2021-07-15	72	56	64.0	-3.2	1	0	0.00		
2021-07-16	71	57	64.0	-3.3	1	0	0.00		
2021-07-17	75	58	66.5	-0.9	0	2	0.00		
2021-07-18	78	58	68.0	0.4	0	3	0.00		
2021-07-19	83	56	69.5	1.8	0	5	0.00		
2021-07-20	73	60	66.5	-1.3	0	2	0.00		
2021-07-21	72	56	64.0	-3.9	1	0	0.00		
2021-07-22	75	**54**	64.5	-3.4	0	0	0.00		
2021-07-23	77	56	66.5	-1.5	0	2	0.00		
2021-07-24	80	60	70.0	1.9	0	5	0.00		
2021-07-25	82	61	71.5	3.4	0	7	0.00		
2021-07-26	80	60	70.0	1.8	0	5	0.00		
2021-07-27	81	61	71.0	2.8	0	6	0.00		
2021-07-28	84	60	72.0	3.8	0	7	0.00		
2021-07-29	85	58	71.5	3.2	0	7	0.00		
2021-07-30	**86**	62	74.0	5.7	0	9	0.00		
2021-07-31	84	66	75.0	6.7	0	10	0.00		
Sum	**2,437**	**1,806**	**–**	**–**	**3**	**117**	**0.00**		
Average	**78.6**	**58.3**	**68.4**	**1.4**	**–**	**–**	**–**		
Normal	**76.8**	**57.2**	**67.0**	**–**	**22**	**84**	**0.55**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-6. Climatological Data for TACOMA NO. 1, WA – August 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-08-01	81	63	72.0	3.8	0	7	0.00		
2021-08-02	81	59	70.0	1.8	0	5	0.00		
2021-08-03	83	61	72.0	3.8	0	7	0.00		
2021-08-04	83	60	71.5	3.4	0	7	0.00		
2021-08-05	83	62	72.5	4.4	0	8	0.00		
2021-08-06	79	67	73.0	5.0	0	8	0.00		
2021-08-07	76	64	70.0	2.0	0	5	0.00		
2021-08-08	74	55	64.5	-3.4	0	0	0.00		
2021-08-09	76	57	66.5	-1.3	0	2	0.00		
2021-08-10	81	61	71.0	3.3	0	6	0.00		
2021-08-11	87	63	75.0	7.4	0	10	0.00		
2021-08-12	**89**	65	77.0	9.4	0	12	0.00		
2021-08-13	87	66	76.5	9.1	0	12	0.00		
2021-08-14	81	63	72.0	4.7	0	7	0.00		
2021-08-15	82	62	72.0	4.8	0	7	0.00		
2021-08-16	82	62	72.0	4.9	0	7	0.00		
2021-08-17	69	55	62.0	-5.0	3	0	0.00		
2021-08-18	78	56	67.0	0.1	0	2	0.00		
2021-08-19	77	56	66.5	-0.3	0	2	0.00		
2021-08-20	77	59	68.0	1.4	0	3	0.00		
2021-08-21	69	57	63.0	-3.5	2	0	0.00		
2021-08-22	70	59	64.5	-1.9	0	0	0.00		
2021-08-23	70	54	62.0	-4.2	3	0	0.00		
2021-08-24	76	**51**	63.5	-2.6	1	0	0.00		
2021-08-25	76	53	64.5	-1.4	0	0	0.00		
2021-08-26	71	60	65.5	-0.3	0	1	**0.05**		
2021-08-27	69	58	63.5	-2.1	1	0	T		
2021-08-28	74	52	63.0	-2.5	2	0	0.00		
2021-08-29	76	53	64.5	-0.8	0	0	0.00		
2021-08-30	71	53	62.0	-3.2	3	0	0.00		
2021-08-31	68	**51**	59.5	-5.5	5	0	0.00		
Sum	**2,396**	**1,817**	**–**	**–**	**20**	**118**	**0.05**		
Average	**77.3**	**58.6**	**68.0**	**1.1**	**–**	**–**	**–**		
Normal	**76.9**	**57.0**	**66.9**	**–**	**20**	**81**	**0.83**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-7. Climatological Data for TACOMA NO. 1, WA – September 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-09-01	69	**47**	58.0	-6.9	7	0	0.00		
2021-09-02	75	49	62.0	-2.7	3	0	0.00		
2021-09-03	75	50	62.5	-2.0	2	0	0.00		
2021-09-04	79	52	65.5	1.2	0	1	0.00		
2021-09-05	80	65	72.5	8.3	0	8	0.00		
2021-09-06	73	62	67.5	3.5	0	3	0.00		
2021-09-07	76	54	65.0	1.2	0	0	0.00		
2021-09-08	79	62	70.5	6.9	0	6	0.00		
2021-09-09	**81**	58	69.5	6.1	0	5	0.00		
2021-09-10	68	61	64.5	1.3	0	0	0.00		
2021-09-11	72	58	65.0	2.0	0	0	0.00		
2021-09-12	67	57	62.0	-0.8	3	0	0.05		
2021-09-13	68	57	62.5	-0.1	2	0	0.00		
2021-09-14	73	51	62.0	-0.4	3	0	0.00		
2021-09-15	66	55	60.5	-1.6	4	0	0.10		
2021-09-16	66	**47**	56.5	-5.4	8	0	0.00		
2021-09-17	71	55	63.0	1.3	2	0	**1.24**		
2021-09-18	64	53	58.5	-2.9	6	0	0.15		
2021-09-19	68	57	62.5	1.3	2	0	0.05		
2021-09-20	70	50	60.0	-0.9	5	0	0.00		
2021-09-21	74	50	62.0	1.3	3	0	0.00		
2021-09-22	65	54	59.5	-0.9	5	0	0.00		
2021-09-23	67	56	61.5	1.3	3	0	0.00		
2021-09-24	71	54	62.5	2.6	2	0	0.00		
2021-09-25	80	52	66.0	6.4	0	1	0.00		
2021-09-26	65	54	59.5	0.1	5	0	0.25		
2021-09-27	63	54	58.5	-0.6	6	0	0.64		
2021-09-28	62	53	57.5	-1.3	7	0	0.08		
2021-09-29	60	51	55.5	-3.0	9	0	0.01		
2021-09-30	66	54	60.0	1.8	5	0	0.63		
Sum	**2,113**	**1,632**	**–**	**–**	**92**	**24**	**3.20**		
Average	**70.4**	**54.4**	**62.4**	**0.5**	**–**	**–**	**–**		
Normal	**70.7**	**53.0**	**61.9**	**–**	**111**	**16**	**1.57**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-8. Climatological Data for TACOMA NO. 1, WA – October 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-10-01	61	52	56.5	-1.4	8	0	T		
2021-10-02	**69**	46	57.5	-0.1	7	0	0.00		
2021-10-03	62	53	57.5	0.2	7	0	0.00		
2021-10-04	60	53	56.5	-0.5	8	0	0.00		
2021-10-05	56	50	53.0	-3.7	12	0	0.17		
2021-10-06	58	48	53.0	-3.4	12	0	0.15		
2021-10-07	57	42	49.5	-6.6	15	0	T		
2021-10-08	58	41	49.5	-6.3	15	0	0.00		
2021-10-09	59	43	51.0	-4.6	14	0	0.03		
2021-10-10	59	46	52.5	-2.8	12	0	0.04		
2021-10-11	54	43	48.5	-6.5	16	0	0.18		
2021-10-12	52	35	43.5	-11.2	21	0	0.07		
2021-10-13	54	44	49.0	-5.4	16	0	0.03		
2021-10-14	60	44	52.0	-2.1	13	0	0.17		
2021-10-15	64	52	58.0	4.2	7	0	T		
2021-10-16	**69**	56	62.5	9.0	2	0	0.00		
2021-10-17	60	51	55.5	2.2	9	0	0.00		
2021-10-18	55	50	52.5	-0.5	12	0	0.00		
2021-10-19	58	44	51.0	-1.7	14	0	0.00		
2021-10-20	62	50	56.0	3.5	9	0	0.15		
2021-10-21	67	49	58.0	5.8	7	0	0.09		
2021-10-22	57	50	53.5	1.6	11	0	0.46		
2021-10-23	58	48	53.0	1.3	12	0	0.10		
2021-10-24	59	49	54.0	2.6	11	0	0.51		
2021-10-25	59	51	55.0	3.8	10	0	0.12		
2021-10-26	58	49	53.5	2.6	11	0	0.17		
2021-10-27	57	48	52.5	1.8	12	0	0.42		
2021-10-28	64	48	56.0	5.6	9	0	1.02		
2021-10-29	55	48	51.5	1.3	13	0	**1.15**		
2021-10-30	53	39	46.0	-4.0	19	0	T		
2021-10-31	59	**34**	46.5	-3.2	18	0	0.00		
Sum	**1,833**	**1,456**	**–**	**–**	**362**	**0**	**5.03**		
Average	**59.1**	**47.0**	**53.0**	**–0.7**	**–**	**–**	**–**		
Normal	**60.7**	**46.6**	**53.7**	**–**	**352**	**0**	**4.09**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-9. Climatological Data for TACOMA NO. 1, WA – November 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-11-01	49	37	43.0	-6.5	22	0	0.16		
2021-11-02	51	43	47.0	-2.3	18	0	0.29		
2021-11-03	57	45	51.0	1.9	14	0	0.20		
2021-11-04	59	48	53.5	4.6	11	0	0.97		
2021-11-05	53	47	50.0	1.4	15	0	0.15		
2021-11-06	50	43	46.5	-1.9	18	0	0.46		
2021-11-07	48	41	44.5	-3.7	20	0	0.43		
2021-11-08	54	37	45.5	-2.5	19	0	T		
2021-11-09	54	44	49.0	1.2	16	0	0.65		
2021-11-10	55	42	48.5	0.9	16	0	0.07		
2021-11-11	57	46	51.5	4.2	13	0	**1.44**		
2021-11-12	60	52	56.0	8.9	9	0	1.28		
2021-11-13	53	44	48.5	1.6	16	0	0.40		
2021-11-14	**65**	48	56.5	9.8	8	0	0.78		
2021-11-15	63	44	53.5	7.0	11	0	0.20		
2021-11-16	49	40	44.5	-1.8	20	0	T		
2021-11-17	47	**30**	38.5	-7.6	26	0	0.00		
2021-11-18	48	39	43.5	-2.4	21	0	0.42		
2021-11-19	47	43	45.0	-0.7	20	0	0.52		
2021-11-20	48	40	44.0	-1.5	21	0	0.00		
2021-11-21	46	34	40.0	-5.3	25	0	0.00		
2021-11-22	46	32	39.0	-6.1	26	0	0.06		
2021-11-23	51	43	47.0	2.1	18	0	0.25		
2021-11-24	48	38	43.0	-1.7	22	0	0.01		
2021-11-25	48	43	45.5	1.0	19	0	0.67		
2021-11-26	56	45	50.5	6.2	14	0	0.50		
2021-11-27	58	48	53.0	8.9	12	0	0.66		
2021-11-28	62	55	58.5	14.6	6	0	0.11		
2021-11-29	60	53	56.5	12.7	8	0	0.00		
2021-11-30	56	52	54.0	10.4	11	0	0.10		
Sum	**1,598**	**1,296**	**–**	**–**	**495**	**0**	**10.78**		
Average	**53.3**	**43.2**	**48.2**	**1.7**	**–**	**–**	**–**		
Normal	**52.4**	**40.5**	**46.5**	**–**	**556**	**0**	**6.50**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:
red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-10. Climatological Data for TACOMA NO. 1, WA – December 2021.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2021-12-01	59	55	57.0	13.6	8	0	T		
2021-12-02	55	46	50.5	7.2	14	0	T		
2021-12-03	46	39	42.5	-0.6	22	0	0.00		
2021-12-04	44	39	41.5	-1.5	23	0	0.05		
2021-12-05	44	36	40.0	-2.8	25	0	T		
2021-12-06	45	38	41.5	-1.2	23	0	0.21		
2021-12-07	50	44	47.0	4.4	18	0	0.38		
2021-12-08	50	39	44.5	2.1	20	0	0.06		
2021-12-09	44	37	40.5	-1.8	24	0	0.02		
2021-12-10	46	38	42.0	-0.2	23	0	0.03		
2021-12-11	49	39	44.0	1.9	21	0	1.21		
2021-12-12	43	38	40.5	-1.5	24	0	0.13		
2021-12-13	44	37	40.5	-1.5	24	0	0.16		
2021-12-14	42	35	38.5	-3.4	26	0	0.12		
2021-12-15	43	37	40.0	-1.8	25	0	0.20		
2021-12-16	45	37	41.0	-0.8	24	0	0.05		
2021-12-17	46	36	41.0	-0.7	24	0	0.12		
2021-12-18	53	38	45.5	3.8	19	0	0.75		
2021-12-19	45	37	41.0	-0.7	24	0	0.01		
2021-12-20	41	36	38.5	-3.1	26	0	0.28		
2021-12-21	39	36	37.5	-4.1	27	0	0.01		
2021-12-22	50	38	44.0	2.4	21	0	0.62		
2021-12-23	47	39	43.0	1.4	22	0	0.31		
2021-12-24	42	36	39.0	-2.7	26	0	0.30		
2021-12-25	40	33	36.5	-5.2	28	0	0.35		
2021-12-26	34	24	29.0	-12.7	36	0	0.28		
2021-12-27	26	19	22.5	-19.2	42	0	T		
2021-12-28	31	23	27.0	-14.8	38	0	T		
2021-12-29	33	25	29.0	-12.8	36	0	0.05		
2021-12-30	37	28	32.5	-9.4	32	0	0.06		
2021-12-31	35	24	29.5	-12.4	35	0	T		
Sum	**1,348**	**1,106**	**–**	**–**	**780**	**0**	**5.76**		
Average	**43.5**	**35.7**	**39.6**	**-2.5**	**–**	**–**	**–**		
Normal	**47.3**	**36.9**	**42.1**	**–**	**710**	**0**	**6.02**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-11. Climatological Data for TACOMA NO. 1, WA – January 2022.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2022-01-01	36	21	28.5	-13.5	36	0	T		
2022-01-02	46	30	38.0	-4.0	27	0	0.25		
2022-01-03	42	35	38.5	-3.6	26	0	1.32		
2022-01-04	42	34	38.0	-4.2	27	0	0.24		
2022-01-05	40	36	38.0	-4.2	27	0	0.29		
2022-01-06	53	37	45.0	2.7	20	0	2.12		
2022-01-07	51	39	45.0	2.7	20	0	0.47		
2022-01-08	51	37	44.0	1.6	21	0	0.04		
2022-01-09	49	31	40.0	-2.5	25	0	0.03		
2022-01-10	46	33	39.5	-3.0	25	0	0.21		
2022-01-11	53	44	48.5	5.9	16	0	1.00		
2022-01-12	55	48	51.5	8.9	13	0	0.70		
2022-01-13	53	44	48.5	5.8	16	0	0.50		
2022-01-14	50	41	45.5	2.7	19	0	T		
2022-01-15	44	40	42.0	-0.8	23	0	T		
2022-01-16	44	40	42.0	-0.9	23	0	T		
2022-01-17	50	40	45.0	2.1	20	0	0.00		
2022-01-18	50	45	47.5	4.6	17	0	0.01		
2022-01-19	49	41	45.0	2.0	20	0	T		
2022-01-20	53	46	49.5	6.5	15	0	0.50		
2022-01-21	48	39	43.5	0.5	21	0	0.01		
2022-01-22	42	34	38.0	-5.1	27	0	T		
2022-01-23	40	35	37.5	-5.6	27	0	0.00		
2022-01-24	42	34	38.0	-5.1	27	0	0.00		
2022-01-25	41	34	37.5	-5.6	27	0	0.00		
2022-01-26	40	34	37.0	-6.1	28	0	0.00		
2022-01-27	44	33	38.5	-4.7	26	0	0.00		
2022-01-28	52	28	40.0	-3.2	25	0	0.00		
2022-01-29	49	28	38.5	-4.7	26	0	0.00		
2022-01-30	56	28	42.0	-1.2	23	0	1.70		
2022-01-31	48	39	43.5	0.3	21	0	0.00		
Sum	**1,459**	**1,128**	**–**	**–**	**714**	**0**	**9.39**		
Average	**47.1**	**36.4**	**41.7**	**-1.1**	**–**	**–**	**–**	**–**	
Normal	**48.1**	**37.4**	**42.8**	**–**	**690**	**0**	**6.03**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-12. Climatological Data for TACOMA NO. 1, WA – February 2022.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2022-02-01	45	36	40.5	-2.7	24	0	0.00		
2022-02-02	44	32	38.0	-5.2	27	0	0.00		
2022-02-03	50	42	46.0	2.7	19	0	T		
2022-02-04	50	40	45.0	1.7	20	0	0.03		
2022-02-05	48	43	45.5	2.2	19	0	0.02		
2022-02-06	47	35	41.0	-2.3	24	0	0.00		
2022-02-07	54	36	45.0	1.7	20	0	T		
2022-02-08	48	41	44.5	1.1	20	0	0.00		
2022-02-09	53	40	46.5	3.1	18	0	0.00		
2022-02-10	49	41	45.0	1.6	20	0	0.02		
2022-02-11	50	45	47.5	4.0	17	0	T		
2022-02-12	54	33	43.5	0.0	21	0	T		
2022-02-13	54	31	42.5	-1.1	22	0	0.00		
2022-02-14	51	43	47.0	3.4	18	0	0.12		
2022-02-15	51	41	46.0	2.3	19	0	0.00		
2022-02-16	52	43	47.5	3.7	17	0	0.00		
2022-02-17	49	37	43.0	-0.9	22	0	T		
2022-02-18	50	44	47.0	3.1	18	0	0.00		
2022-02-19	48	41	44.5	0.5	20	0	T		
2022-02-20	51	40	45.5	1.4	19	0	0.10		
2022-02-21	42	37	39.5	-4.7	25	0	0.06		
2022-02-22	39	32	35.5	-8.8	29	0	0.00		
2022-02-23	38	**25**	31.5	-12.9	33	0	0.00		
2022-02-24	42	29	35.5	-9.0	29	0	0.03		
2022-02-25	48	26	37.0	-7.7	28	0	0.01		
2022-02-26	45	26	35.5	-9.3	29	0	0.03		
2022-02-27	51	26	38.5	-6.4	26	0	0.05		
2022-02-28	**56**	26	41.0	-4.1	24	0	**2.64**		
Sum	**1,359**	**1,011**	**–**	**–**	**627**	**0**	**3.11**		
Average	**48.5**	**36.1**	**42.3**	**-1.6**	**–**	**–**	**–**		
Normal	**50.3**	**37.4**	**43.9**	**–**	**592**	**0**	**4.03**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-13. Climatological Data for TACOMA NO. 1, WA – March 2022.

Date	Temperature				HDD	CDD	Precip.		
	Maximum	Minimum	Average	Departure					
2022-03-01	60	50	55.0	9.8	10	0	0.52		
2022-03-02	53	47	50.0	4.7	15	0	0.30		
2022-03-03	51	43	47.0	1.5	18	0	0.01		
2022-03-04	49	42	45.5	-0.1	19	0	T		
2022-03-05	51	40	45.5	-0.3	19	0	0.00		
2022-03-06	52	33	42.5	-3.4	22	0	0.00		
2022-03-07	49	34	41.5	-4.6	23	0	0.00		
2022-03-08	48	43	45.5	-0.7	19	0	T		
2022-03-09	47	36	41.5	-4.9	23	0	T		
2022-03-10	47	**29**	38.0	-8.6	27	0	T		
2022-03-11	54	41	47.5	0.8	17	0	0.00		
2022-03-12	55	38	46.5	-0.4	18	0	0.01		
2022-03-13	54	41	47.5	0.5	17	0	0.04		
2022-03-14	49	44	46.5	-0.7	18	0	**0.71**		
2022-03-15	54	44	49.0	1.7	16	0	0.52		
2022-03-16	55	42	48.5	1.0	16	0	0.01		
2022-03-17	54	41	47.5	-0.1	17	0	0.00		
2022-03-18	58	46	52.0	4.2	13	0	0.01		
2022-03-19	52	45	48.5	0.6	16	0	0.38		
2022-03-20	49	38	43.5	-4.5	21	0	0.18		
2022-03-21	50	42	46.0	-2.2	19	0	0.44		
2022-03-22	**64**	42	53.0	4.7	12	0	0.03		
2022-03-23	57	42	49.5	1.1	15	0	0.08		
2022-03-24	56	40	48.0	-0.6	17	0	0.00		
2022-03-25	60	40	50.0	1.3	15	0	0.00		
2022-03-26	57	40	48.5	-0.3	16	0	0.01		
2022-03-27	63	40	51.5	2.6	13	0	0.00		
2022-03-28	57	40	48.5	-0.6	16	0	0.00		
2022-03-29	58	46	52.0	2.8	13	0	0.00		
2022-03-30	55	46	50.5	1.2	14	0	0.00		
2022-03-31	56	41	48.5	-0.9	16	0	0.00		
Sum	**1,674**	**1,276**	**–**	**–**	**530**	**0**	**3.25**		
Average	**54.0**	**41.2**	**47.6**	**0.2**	**–**	**–**	**–**		
Normal	**54.7**	**40.1**	**47.4**	**–**	**546**	**0**	**4.38**		

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).	CDD = Cooling degree days (degrees that a day's average temperature is above 65°Fahrenheit)
Maximum Temperature: 4 p.m.	HDD = Heating degree days (degrees that a day's average temperature is below 65°Fahrenheit)
Minimum Temperature: 4 p.m.	Precip. = Precipitation
Precipitation: 4 p.m.	M = Missing Data T = Trace

For the month:

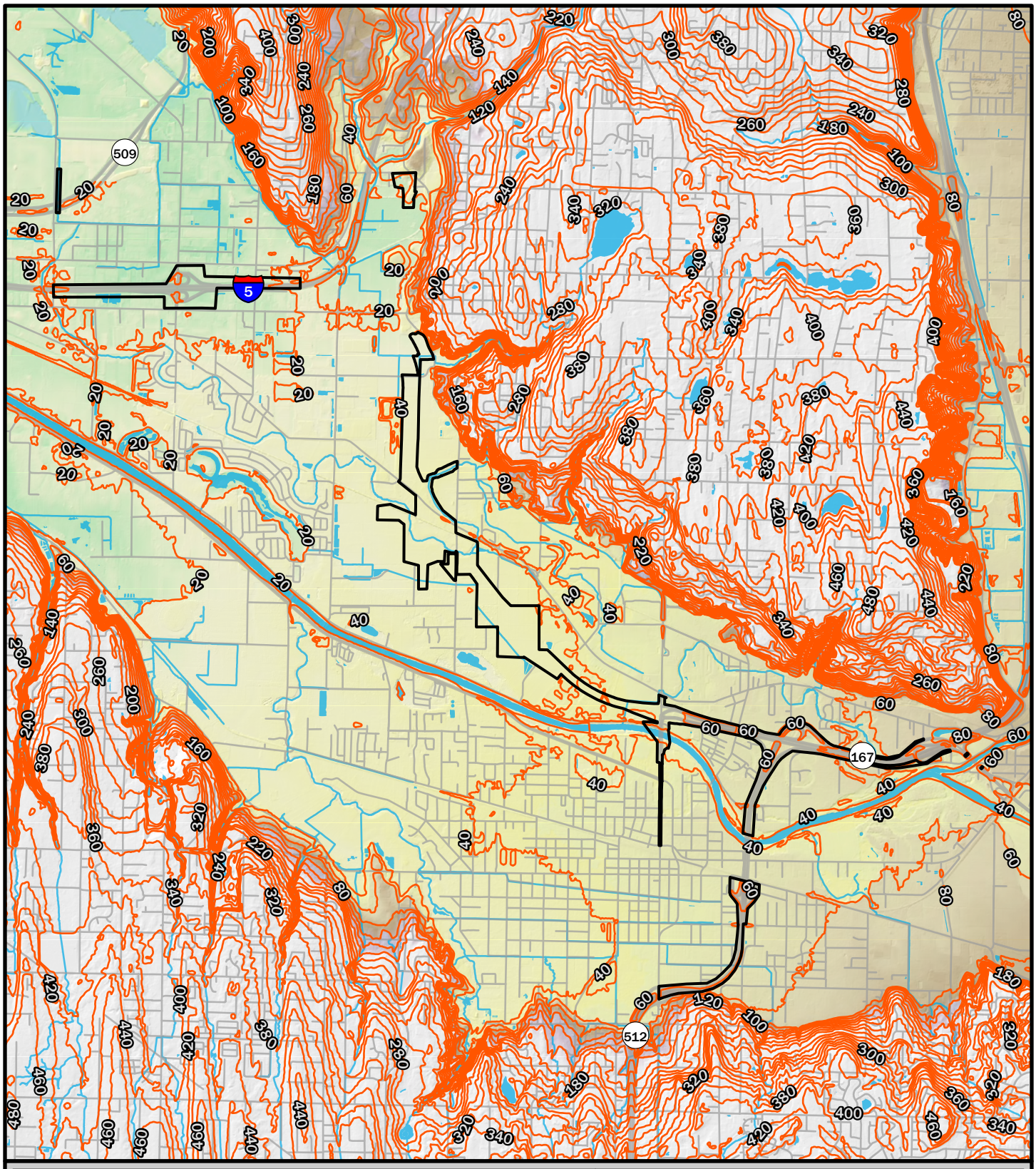
red = highest temperature **blue = lowest temperature** **green = most precipitation in 1 day**

Table A-2-14. Monthly Total Precipitation for TACOMA NO. 1, WA.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	4.04	5.93	M	1.56	2.56	1.33	0.72	M	0.87	M	3.65	M	M
2001	2.77	2.36	3.24	3.70	1.93	3.53	0.20	2.25	0.46	3.32	10.13	6.82	40.71
2002	M	3.56	4.16	3.64	1.14	1.36	0.42	0.06	0.36	0.41	2.96	6.58	M
2003	8.50	1.71	5.08	3.30	0.55	0.36	0.13	0.29	0.69	8.88	6.15	4.65	40.29
2004	6.79	2.55	2.18	0.91	2.51	0.64	T	2.75	3.26	3.61	2.81	4.03	32.04
2005	4.71	M	3.14	4.74	3.34	0.54	1.16	0.04	0.92	M	6.25	6.28	M
2006	11.93	2.59	M	2.46	1.56	2.25	0.11	0.00	M	1.28	M	8.05	M
2007	6.92	4.09	6.09	1.34	M	1.44	1.30	M	2.22	3.64	2.65	8.36	M
2008	M	2.84	4.16	M	1.01	1.26	0.14	2.32	0.39	2.36	7.61	4.03	M
2009	7.15	1.61	M	3.25	3.04	0.34	0.01	M	M	4.19	7.89	M	M
2010	7.78	3.99	5.06	M	4.10	3.07	0.80	0.25	M	4.64	5.96	6.96	M
2011	5.14	3.57	6.55	5.15	3.78	1.40	0.74	0.27	M	3.44	9.02	6.39	M
2012	7.05	3.14	7.65	3.75	2.34	2.49	0.87	0.00	0.02	5.97	7.12	8.33	48.73
2013	3.32	1.58	2.50	4.52	2.86	1.85	0.01	1.05	8.29	1.57	3.58	1.73	32.86
2014	4.29	7.48	8.81	4.22	3.23	0.94	0.33	1.72	M	6.20	6.53	4.88	M
2015	3.98	4.61	4.08	1.56	0.74	0.22	0.47	2.21	1.12	6.12	8.22	12.24	45.57
2016	7.18	5.55	5.80	1.37	0.58	1.26	0.70	0.10	1.13	10.57	7.66	3.75	45.65
2017	2.93	9.24	8.27	4.67	2.02	1.54	T	0.00	1.11	5.60	10.40	5.74	51.52
2018	7.90	2.75	2.15	5.81	0.09	0.69	0.02	0.12	1.55	3.96	4.09	6.76	35.89
2019	3.72	5.10	1.90	2.65	0.40	0.69	0.77	1.19	2.69	3.67	1.86	7.36	32.00
2020	9.98	4.04	3.47	1.69	2.98	1.90	0.20	0.42	2.30	3.06	5.68	5.64	41.36
2021	8.79	3.91	2.06	0.85	1.29	1.85	0.00	0.05	3.20	5.03	10.78	M	M
Mean	6.24	3.91	4.54	3.06	2.00	1.41	0.41	0.79	1.80	4.38	6.24	6.24	40.60
Max.	11.932006	9.242017	8.812014	5.812018	4.102010	3.532001	1.302007	2.752004	8.292013	10.572016	10.782021	12.242015	51.522017
Min.	2.772001	1.582013	1.902019	0.852021	0.092018	0.222015	0.002021	0.002017	0.022012	0.412002	1.862019	1.732013	32.002019

Max. = Maximum

Min. = Minimum



Legend

- Study area
- Contour (ft) (USGS)
- Highway
- Roads
- Stream

Elevation (ft) (LiDAR)

High : 150

Low : 0

Figure A-3.
Topography Within the Vicinity of the SR 167 Completion Project, Stage 2 Study Area.

N

0 0.25 0.5 1 Mile

HERRERA

Puget Sound Lidar Consortium, LiDAR

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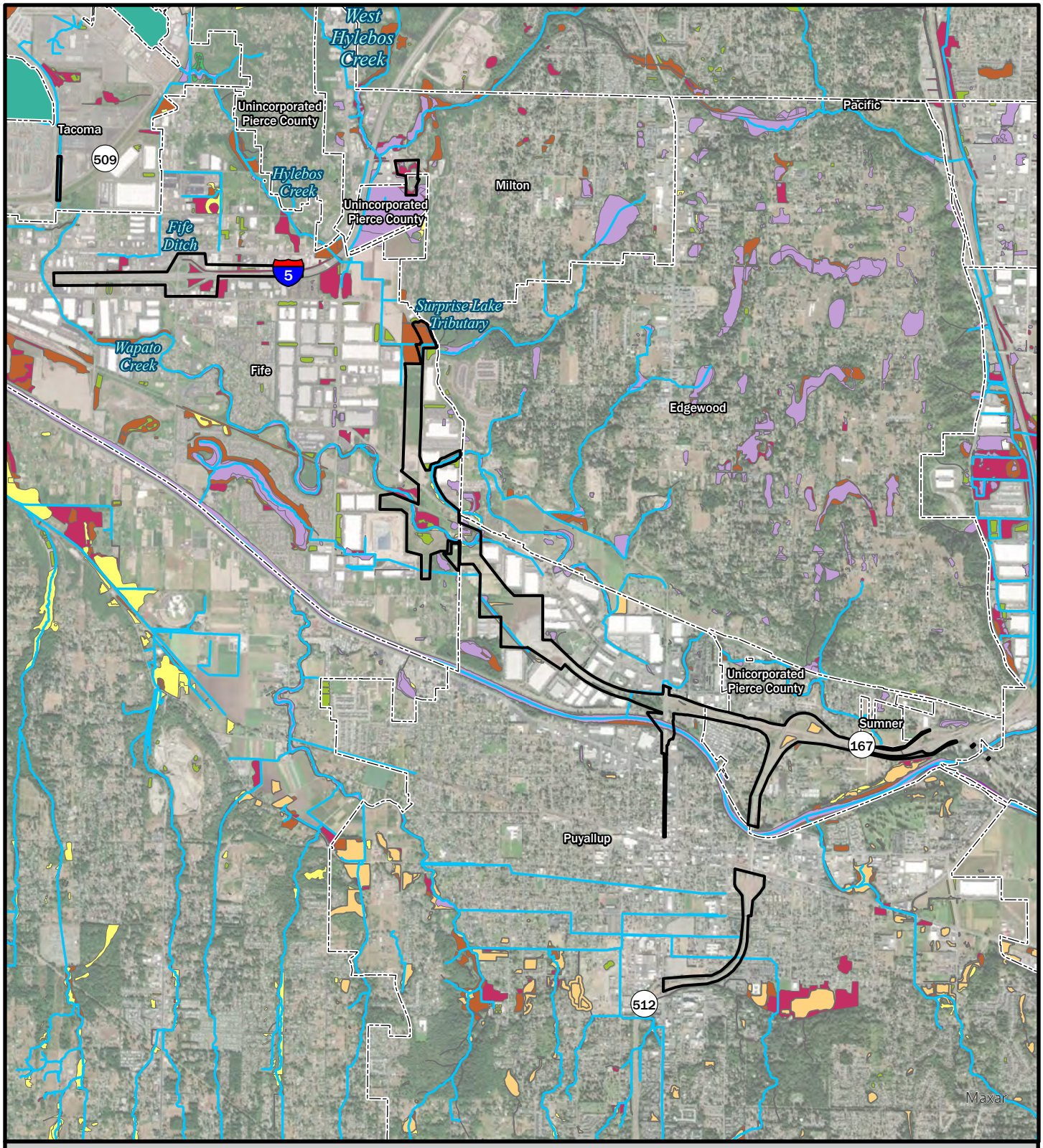

Legend

- Study area
- City limit
- Stream (Pierce County)
- City of Edgewood Wetlands
- City of Puyallup Wetlands
- Pierce County Wetlands

NWI Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Figure A-4.
Previously Mapped Wetlands and Streams Within the Vicinity of SR 167 Completion Project, Stage 2 Study Area.

N

0 0.25 0.5 1 Mile

HERRERA

Esri Imagery (2021), Pierce County, City of Edgewood, City of Puyallup

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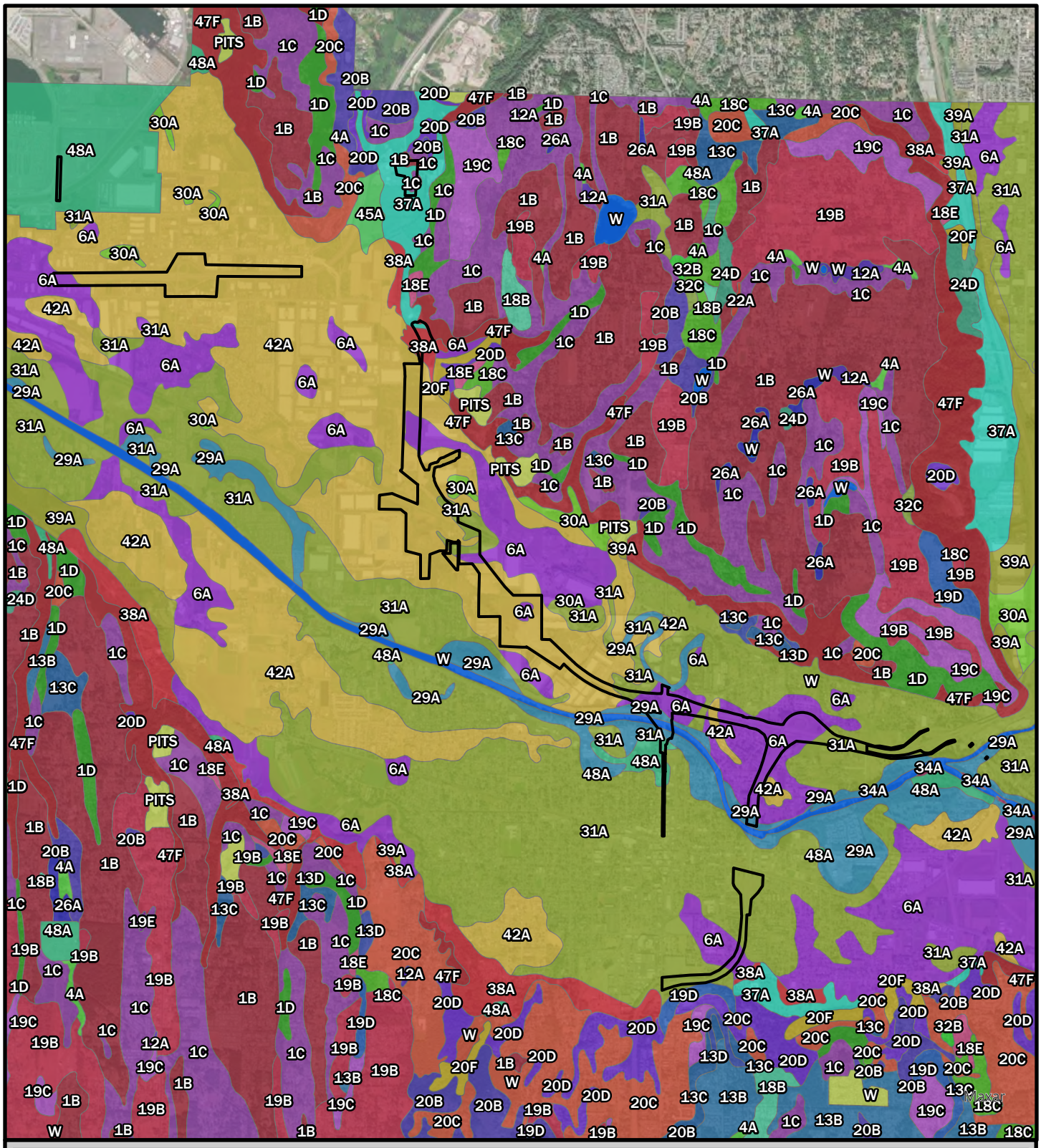

Legend

Study area

Soil type

- 12A - Dupont muck
- 13B - Everett very gravelly sandy loam, 0 to 8 percent slopes
- 13C - Everett very gravelly sandy loam, 8 to 15 percent slopes
- 13D - Everett very gravelly sandy loam, 15 to 30 percent slopes
- 18B - Indianola loamy sand, 0 to 5 percent slopes
- 18C - Indianola loamy sand, 5 to 15 percent slopes
- 18E - Indianola loamy sand, 15 to 30 percent slopes
- 19B - Kapowsin gravelly ashy loam, 0 to 6 percent slopes
- 19C - Kapowsin gravelly ashy loam, 6 to 15 percent slopes
- 19D - Kapowsin gravelly ashy loam, 15 to 30 percent slopes
- 19E - Kapowsin gravelly ashy loam, 30 to 65 percent slopes
- 1B - Alderwood gravelly sandy loam, 0 to 8 percent slopes
- 1C - Alderwood gravelly sandy loam, 8 to 15 percent slopes
- 1D - Alderwood gravelly sandy loam, 15 to 30 percent slopes
- 20B - Kitsap silt loam, 2 to 8 percent slopes
- 20C - Kitsap silt loam, 8 to 15 percent slopes
- 20D - Kitsap silt loam, 15 to 30 percent slopes
- 20F - Kitsap silt loam, 30 to 65 percent slopes
- 22A - McKenna gravelly loam
- 24D - Neilton gravelly loamy sand, 8 to 25 percent slopes
- 26A - Norma fine sandy loam
- 29A - Pilchuck fine sand
- 30A - Puget silty clay loam
- 31A - Puyallup fine sandy loam
- 32B - Ragnar sandy loam, 0 to 6 percent slopes
- 32C - Ragnar sandy loam, 6 to 15 percent slopes
- 34A - Riverwash
- 37A - Semiahmoo muck
- 38A - Shalcar muck
- 39A - Snohomish silty clay loam
- 42A - Sultan silt loam
- 45A - Tisch silt
- 47F - Xerochrepts, 45 to 70 percent slopes
- 48A - Xerorthents, fill areas
- 4A - Bellingham silty clay loam
- 6A - Briscot loam
- PITS - Pits
- W - Water

Figure A-5.
Mapped Soils Within the Vicinity of the SR 167 Completion Project, Stage 2 Study Area.

N

0 0.25 0.5 1 Mile

HERRERA

Esri Imagery (2021)

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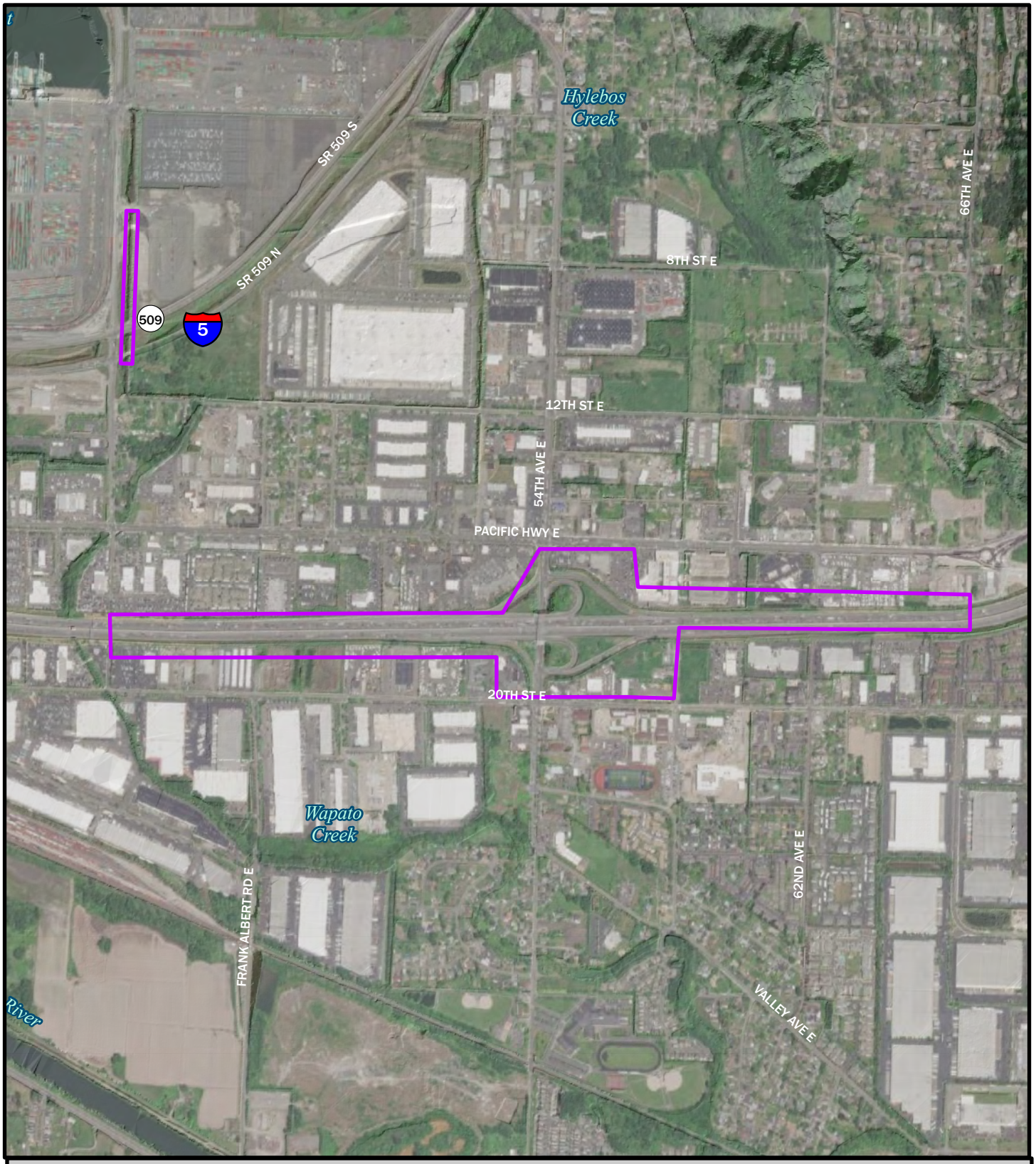

Legend

Study area

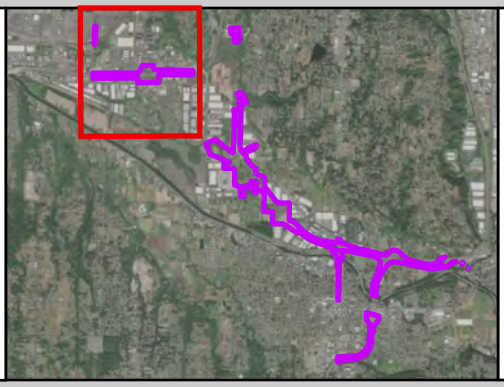

Figure A-6-A.
Aerial Photo of the Study Area for the SR 167 Completion Project, Stage 2.

N

0 487.5 975 1,950 Feet

HERRERA

Esri Imagery (2021)

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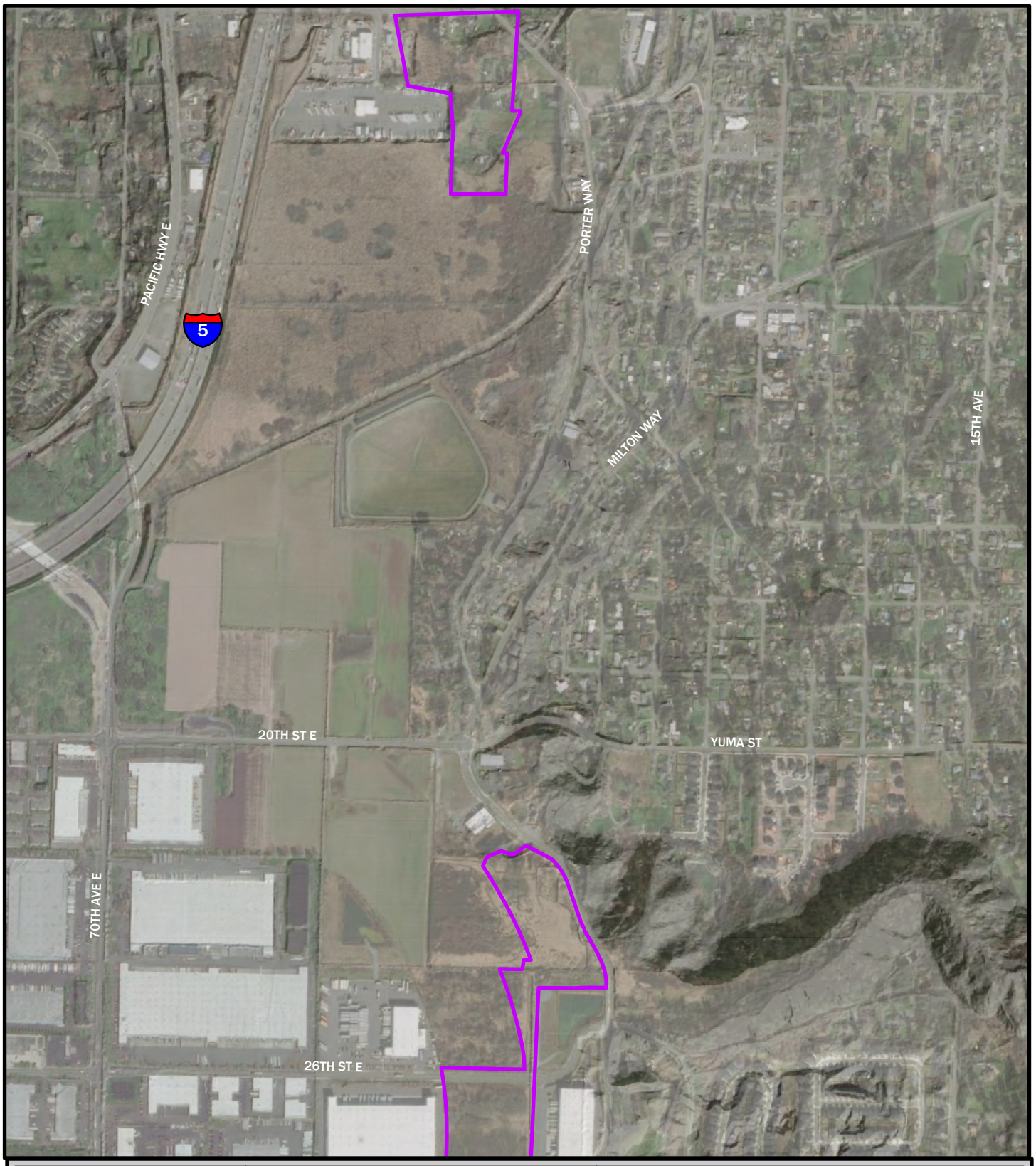

Legend

Study area

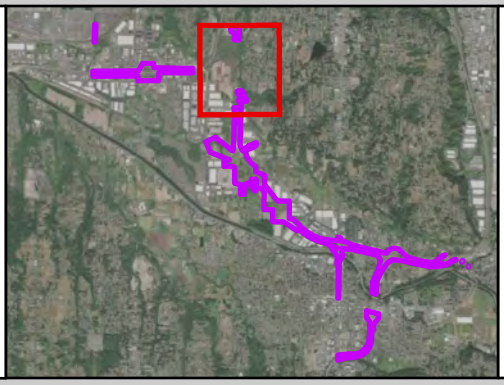

Figure A-6-B.
Aerial Photo of the Study Area for the SR 167 Completion Project, Stage 2.

N

0 325 650 1,300 Feet

HERRERA

Esri Imagery (2021)

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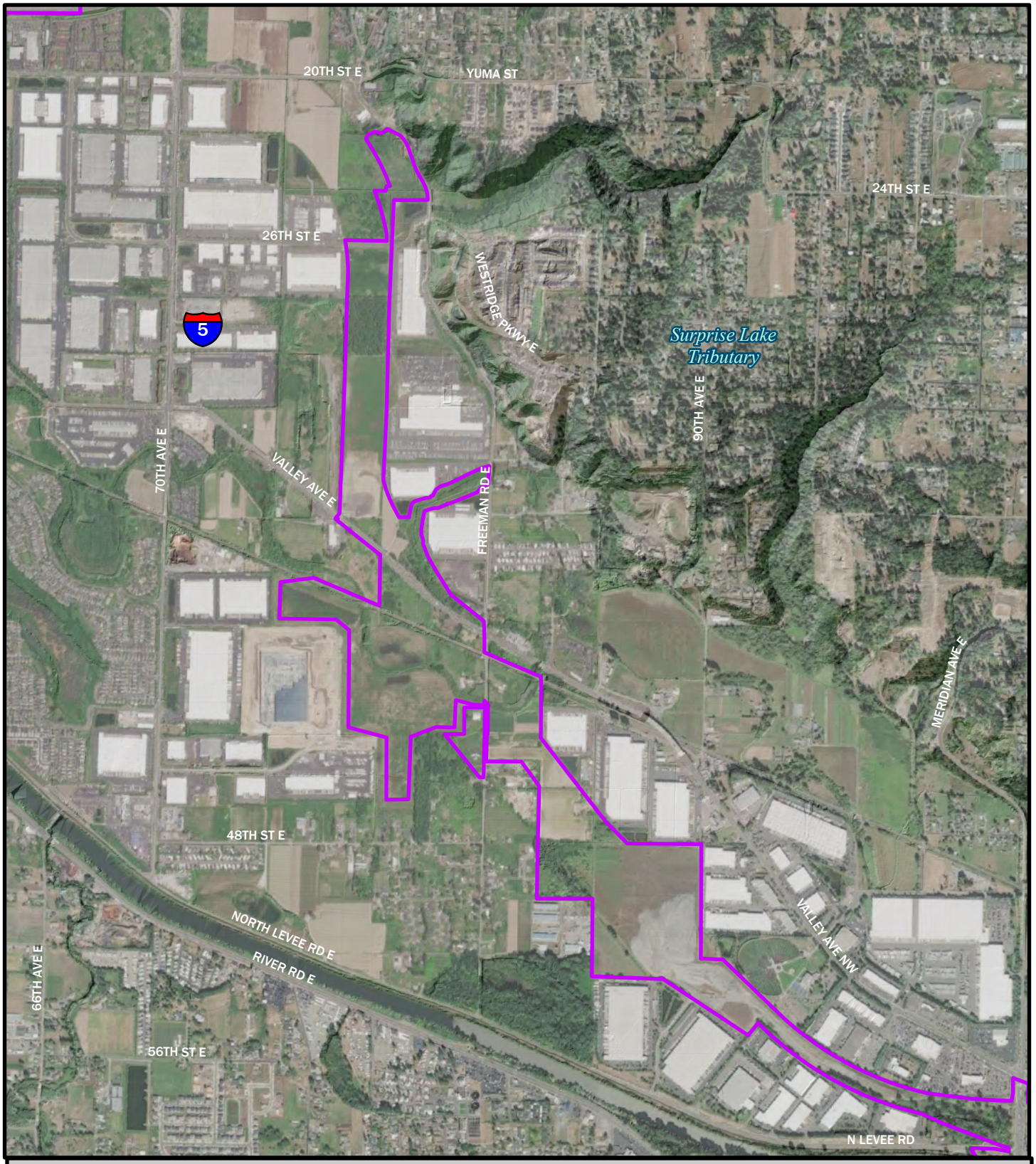

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Study area

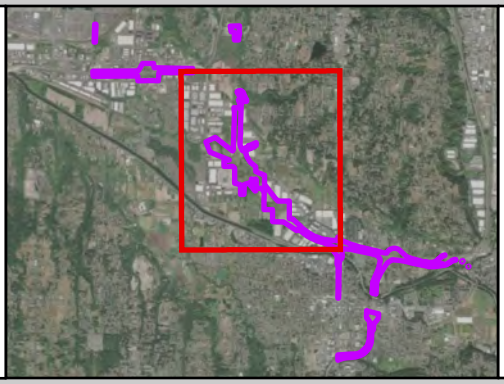

Figure A-6-C.
Aerial Photo of the Study Area for the SR 167 Completion Project, Stage 2.

N

0 500 1,000 2,000
Feet

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Esri Imagery (2021)

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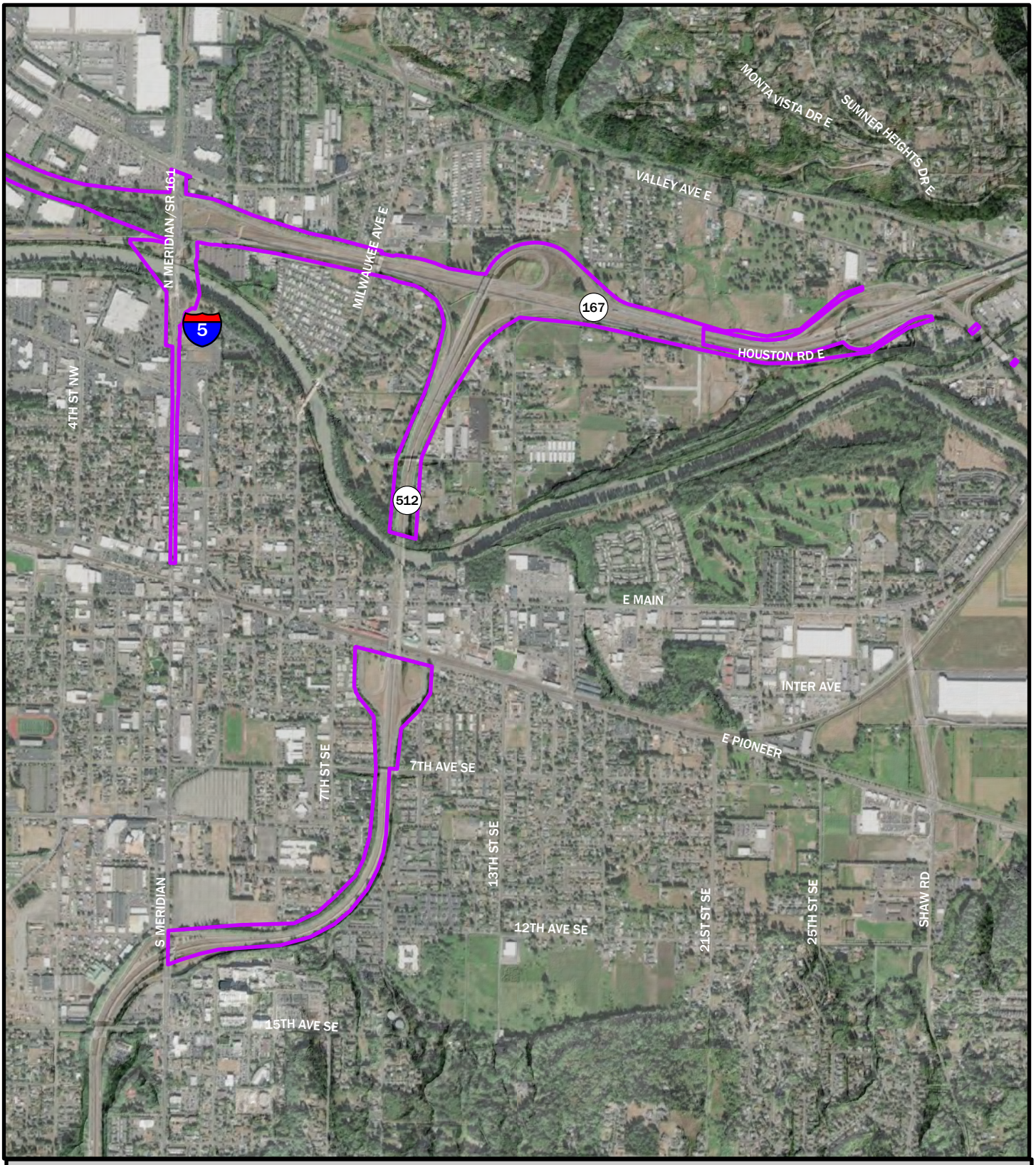

Legend

Study area

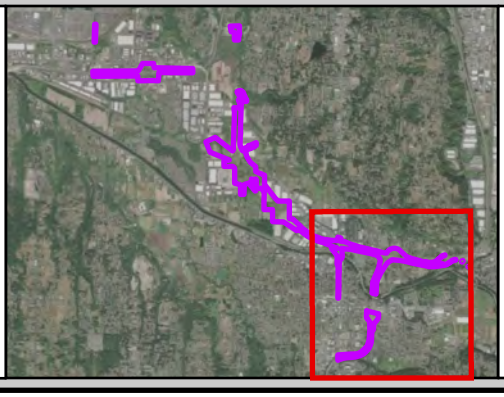

Figure A-6-D.
Aerial Photo of the Study Area for the SR 167 Completion Project, Stage 2.

N

0 500 1,000 2,000
Feet

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Esri Imagery (2021)

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Appendix B. SISU Drainage Analysis

SISU ESG, LLC.
2928 269th AVE NE
Redmond, WA 98053

TECHNICAL MEMORANDUM

DATE: **Revised March 13, 2022** **Draft** December 2, 2021

TO: SR 167 TECHNICAL WORKGROUP

FROM: Larry Dominguez, Ecologist, SISU Environmental

RE: Drainage Analysis SR 167 Project Area from Meridian Ave to 0.4 Mile Southwest of 410 Interchange and Special Notes for Expanded Area

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Background, Purpose, and Authorization

In early May 2021 as the SISU wetland assessment team was continuing work with Herrera, a need was identified to conduct a desktop analysis of hydrologic features from northwest of the Meridian Road crossing to about 1/10th of a mile eastward of the Highway 410 interchange. The objectives were to:

1) Characterize surface hydrology and drainage patterns of the project area,
2) Conduct desktop analysis of areas inaccessible
3) Determine if wetland and ditch assessments could be characterized and mapped based on as-built construction features and engineered hydrology, and
4) Develop understanding of the Wapato Diversion and how its past and current baseline function integrates into the proposed development.

Project managers were not able to identify past permits/documentation that would have either identified wetland areas and/or provided the authorizations to construct on top of fill or previously-altered floodplains that have developed wetland features through time. Thus the team determined to visit all areas with topographic indicators for wetland presence. The field work determined that wetland features developed in long expanses of ditches. The field team took a very conservative approach on hydric soil indicators. This was to be consistent with the methods of prior field work that encountered nuanced features in agricultural fields and other disturbed/developed sites with engineered hydrology.

For this memo, the “assessment team” refers to the SISU ecologist/wetland team and the “survey team” refers to the Alliance One survey team.

Contents

Study Area Characteristics and General Hydrology

Analysis Area Description

The Study area is the southwest extent of the SR 167 project alignment primarily from North Meridian to southwest of the 512/167 interchange and Northwest Wapato RRP (**Figures 1a and 1b**). Out-of-project areas were visited or evaluated via desktop to provide a framework for understanding historical and altered drainage patterns.

Soil Types (**Figure 2**) throughout the area influenced the often marginal wetland characteristics even in areas where engineered hydrology concentrated flows and likely influenced hydroperiods. The Briscot loam and underlying fine sand layers combined with a water table around the 12” depth made for conditions where hydric soil indicators (in the form of redox concentrations or depletions) begin to appear at the 10” more or less, consistently through the study area. This was frequently the determination threshold for wetlands. Despite the low elevation floodplain elevations found adjacent to and within the right-of-way, the Puyallup River down-cutting and elevational change over the decades along with the disconnect due to the levee, has essentially eliminated surface water connectivity in this study area.

As-built drawings gave no indication of original floodplain elevations in relation to the base elevation of engineered ditches and medians. Encounters with original floodplain soil characteristics occurred on the outer toe of fills. Most all median material contained fill to support road fill slope requirements, although some ditch bottoms were excavated to native material. At times gravel was encountered in test pits and may have been intended for fill of over-excavated drainage ditches as part of infiltration trench design.

SFI GIS Coverage

The analysts were provided the GIS coverage of the WSDOT Stormwater Features Inventory (SFI)[1], a coverage developed in response to WSDOT's 2009 NPDES Municipal Stormwater Permit (**Figure 3 and 4**). The intent for its use in review was to have understanding of engineered hydrology and how features were used for surface water runoff management and their influence on developing wetland characteristics within medians, on/off ramp areas and toe slopes/ditches. Where readily visible during the assessment, grates and drains that were part of this inventory were identified. Feature descriptions are part of that inventory and were helpful in determining intended function of engineered and ditches.

The feature points (grates, outlets, discharge points, collector) and lines (flow lines, swales, filters, ditch, pipe) layers were reasonably accurate. None encountered contradicted the locations or descriptions. Not all drainage features in the field were visited. It was not the intent of the analysis to identify in the field every feature, but to capture and describe as many as practicable during the wetland reconnaissance and delineation activities. The months July through October 2021 and March 2022 were the majority of the field seasons where observations on drainage features were considered. The analysts noted these when encountered during the assessment but did not make special effort of searching for them in vegetated areas. The SFI GIS cover is trustworthy and where they are not verified by this assessment via survey or notes, they could confidently be included in baseline conditions for any study.

Grates and outlets were not always identified as wetland outflow controls since it appeared that the design of many of the toe ditches and wetlands within ditches were bidirectional with minor topographic undulations to encourage on-site infiltration. Ditch and wetland depths were predominantly with little depth (4-6"). If they were deeper in construction it was not apparent that water reach depths above that. Densely vegetated side slopes of fill effectively filtered and infiltrated surface water runoff. With these observations, the outlets likely played a minor role in hydroperiod determination and were more driven by topography within the depressions to achieve retention and infiltration to minimize the stormwater volume directly inputting to surface water.

Desktop Analysis Methods

Initial GIS-based desktop analysis was used to understand surface water management, flow vectors and surface water connectivity. The SFI was evaluated to determine if delineations would be necessary in certain areas that are heavily influenced by engineered hydrology. A large portion of hydrologic features were proposed to be discounted for delineation since they were affiliated with constructed ditches. However, the team was not able to produce permits related to the previous construction efforts which may have exempted wetland features from being delineated. Eventually, all features underwent reconnaissance, field verification and/or delineation and functional rating.

Updates on "Waters of the United States" were reviewed.[2] Proposed definition includes "Traditional navigable waters, interstate waters, and the territorial seas, and their adjacent wetlands; most impoundments of ''waters of the United States''; tributaries to traditional navigable waters, interstate waters, the territorial seas, and impoundments, that meet either the relatively permanent standard or the significant nexus standard; wetlands adjacent to impoundments and tributaries, that meet either the relatively permanent standard or the significant nexus standard; and ''other waters'' that meet

[1] https://wsdot.wa.gov/sites/default/files/2018/03/02/Env-StormW-SWFIDefinitions.pdf
[2] https://www.epa.gov/wotus/revising-definition-waters-united-states accessed 03/14/2022

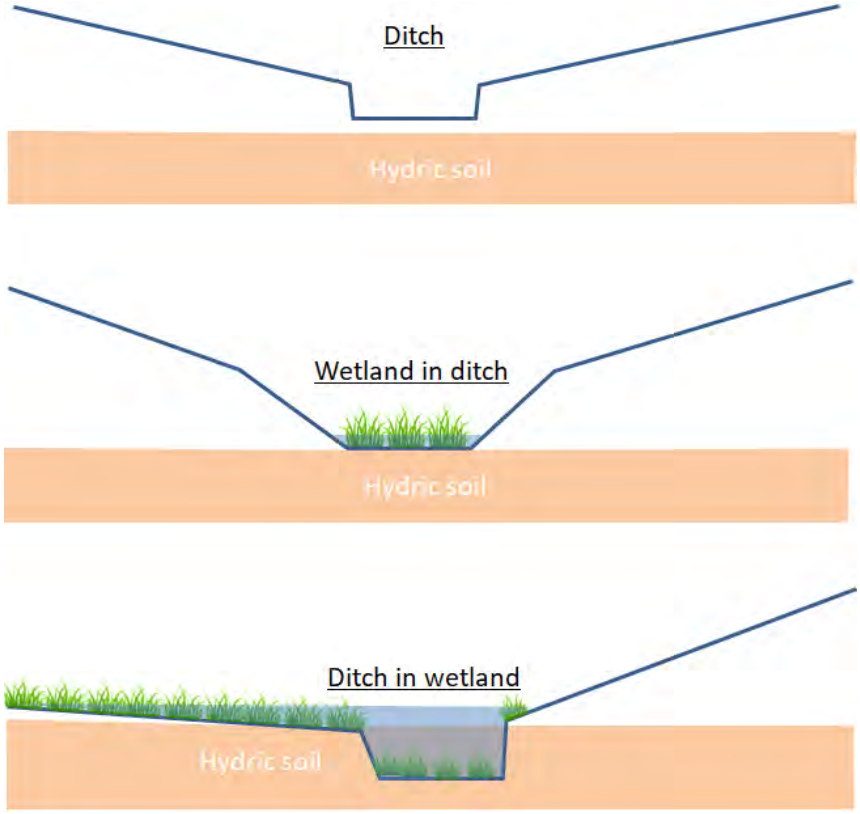
either the relatively permanent standard or the significant nexus standard. Several of the ditch and drain systems were connected to stormwater pipes leading to infiltration or retention areas. Some areas, in particular those areas close to the Puyallup River, were routed to Puyallup river outfalls directly or indirectly.

The proposed rule advances the Clean Water Act's statutory objective to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' section 101(a), as it is based on the best available science concerning the functions provided by upstream tributaries, adjacent wetlands, and ''other waters'' to restore and maintain the water quality of downstream foundational waters. Certainly the ditches and stormwater vaults have eventual connectivity to the Puyallup River and Wapato Creek via groundwater or water table connectivity. Throughout the field season, analysts observed the outlets within ditches alongside the highways and within medians were often associated with wetland soil conditions. After storm events standing water or saturation to surface would also be found in systems with drain grates. This was evidence, along with descriptions of ditch features being used for retention and infiltration, that water was first impounded and infiltrated during storm events until saturation then drainage grates were activated. Although no evaluation of outfall water quality occurred, this analysts suggests that the combination of roadside vegetation, ditches, either by design or from sediment deposition and dense vegetation, contain undulating longitudinal profiles, and moderately high level of soil transmissivity, suggest that the landscape is effective at managing the chemical elements of stormwater runoff water quality.

WSDOT Assessment Guidance for Wetlands, Streams, Buffers and Cut Slope wetlands [3] provided guidance for determinations. Updates to Clean Water Act were considered in which ditches regulated as tributaries are no longer identified by OHWM indicators. They would simply need to have intermittent or perennial flow and flow into another Waters of the United States.

[3] WSDOT Guidance –Delineating Wetlands, Streams, & Buffers Adjacent to or Within Road Prisms; **AND** WSDOT Guidance – Cut Slope Wetlands UPDATED NOVEMBER 2019

For the analysis the analysts delineate complete ditches even if there was a wetland in the ditch which could. For visual purposes and for potential use of categories, the fundamental scenarios encountered were of the cross section types below:



Wapato Creek Diversion

As-built designs signed in April 1977 and construction shortly thereafter indicate the culvert inlet (WDFW number 105 R121519a: Lat/Lon 47.20360, -122.29884) location is under the modern day Kia Auto Sales, crosses Meridian at the intersection of Valley Avenue East and SR 161 (**Figure 5**). Up to 120 cubic feet per second (cfs) can be diverted from Wapato Creek[4] through a less than 2%-sloped half-mile culvert into the Puyallup River. The Wapato Creek Diversion drains an upstream area of 1.48 sq miles (~ 950 acres) (Kresch and Prych 1989). A more recent analysis verifies the contributing drainage area upstream of the diversion is approximately 1.5 square miles (FHWA 2002) but may include more due to out of natural basin stormwater diversions. The culvert project intended to prevent flooding along lower Wapato Creek via peak flow diversion to the Puyallup River rather than Blair Waterway. However, under normal flow conditions, this culvert diverts all the water from upper Wapato Creek into the bypass and only flood flows reach lower Wapato Creek (Kerwin 1999).

Maturing wetlands and greater stormwater retention ability of the Wapato Creek headwaters amidst development may also be increasing infiltration and groundwater connectivity reducing headwater runoff. Although a positive effect on wetland and headwater function, this could be a contributing factor to reduced normal flows through upper Wapato Creek. **Figure 6** provides some imagery from that area compared with a 1990s aerial photo that suggests there was not a diverse wetland as observed today. **Figure 7** depicts the LiDAR view suggesting the Upper Wapato impounds water possibly more than historical due to changes from development and highway construction drainage infiltration objectives.

Fish Habitat and Connectivity

Ditch/wetland outlets have little to no connectivity to large creek surface water. Grates and inlets that are within the diversion area appear to be routed to surface water infiltration ditches or separate culverts other than into the diversion culvert (**Figure 3**). Other than the diverted Upper Wapato Creek and an right bank tributary that quickly becomes high gradient there is no effective fish habitat upstream of any of the catch basin structures depicted as pale squares below. The drainage structures appear to be aligned with the diversion but flow vectors depict a separate fate of outflow than the diversion.

Figures 8 and 9 illustrate the current status of Water-Type designation based on WA Department of Natural Resources[5]. The fate of Upper Wapato Creek within the headwater wetlands area appears to be predominantly retention and infiltration and expanding wetlands. Fish access into the area is highly improbable based on the assessment teams not observing hydrologic connectivity via culvert underneath SR 167. Two small culverts drain the median but are not affiliated with the streams depicted draining foothills to the north. Most of that runoff appears to infiltrate overland, is diverted to stormwater ponds, or makes it to the ditch at the toe of SR 167 and infiltrates.

[4] Some maps indicate this segment above the diversion is named Simons Creek but Simons Creek is a nearby tributary historically entering upper Wapato Creek upstream of the diversion.

[5] WA DNR are the stewards of State Hydrology layer and manage the Water Type system. Water Typing changes are managed through Water Type Modifications process an interagency procedure that provides for on-the ground protocol where modeling may not best represent channel conditions, locations, and fish habitat suitability.

Northwest Wapato RRP Parcels P249 and P252

Parcels P49 and P252 were inaccessible during the assessment period. However analysts accessed the adjacent parcel and were able to view vegetation of the subject parcels. **Figures 10-12** are varying images of the site and the National Wetlands Inventory (NWI) mapping. An evaluation of the parcel immediately to the east resulted in no wetland discovery. The railroad grade maintains a deep trench at the toe that appears to be tied to groundwater levels or at least maintains water for extended periods.

Test pits in the adjacent parcel gave no indications of hydric soil even with hydrology features of bare soil and surface moisture. It is possible that the past agriculture use of the field and compacted loam retains water at the surface seasonally but does not infiltrate. Across Valley Avenue to the north, upland test pits were taken in May 2021. The parcel (P239) is similar in elevation and topography. Soils are noted as dry with only one secondary hydrographic indicator. In nearby Parcel P236, again with similar elevation, soil type and topography, test pits note “no soil indicators down to 27 inches”.

The National Wetland Inventory suggests the site maintains emergent wetland. With the above points the analyst suggests that the northern lobe of the PEM1C wetland be considered for evaluation and potential removal from the Inventory. What can remain is the margin of Wapato Creek which will be under stronger and more regular hydraulic influences.

W117 and W118 – No Survey

The need for traffic control to access sites alongside highway margins was prominent in the assessment. With coordination the assessment team and survey teams were able to acquire sufficient access to all sites. One area that the survey team was not able to reach due to it being a high hazard area with undesired requirement of road closure was wetlands 117 and 118. The assessment team was able to spend a short period within the median to acquire some soil pit information, partially flag and acquire wetland width measurements in anticipation that survey would not be able to access the area.

Figure 13 depicts the area where this was required and provides further explanation on how a reasonable representation of spatial extent and ratings were achieved.

Auxiliary Site Evaluation

In early fall 2021 additional areas were added to the evaluation to determine wetland presence/absence. **Figure 14** shows areas where wetlands were not observed. Wetlands 114 -121 were since added in the Pioneer Ave. on-ramp area, median of SR 167 and a yet to be delineated W122 discovered during recent reconnaissance located on the east edge of Eastbound SR 512 at Pioneer Ave on-ramp.

General Observations

General Floodplain

The floodplain has been heavily altered from historical conditions including engineered diversions, infiltration ditches, collector facilities, filter strips and dispersion areas that effectively manage stormwater runoff within the study area. Throughout the extent of the drainage analysis area (from Meridian southeastward) there were no observed culvert outlets that drained the analysis area into surface waters that connected with Simons Creek or the Puyallup River.

Cumulative Infiltration

The distribution and collector/infiltration network design has contributed to effective stormwater management in which standing water periods appear very short during rainy season. Additionally, dense canary grass vegetation and 3-6 inches of root mats are effectively up-taking surface water to minimize outflow from the right-of-way throughout study area.

A series of LiDAR based images (**Figures 15-16**) indicate the prominence of ditches and efficient control, storage and routing of surface water within the right-of-way.

List of Figures

Figure 10. Northwest Wapato RRP Parcel. The polygon area is outlined as emergent wetland (among other areas along Wapato Creek) in the National Wetlands Inventory. However, LiDAR suggest this area to be in higher elevation that surrounding parcels that did not contain qualifying hydric soils. There is evidence of past roads/trail use and compacted pad for structure and access road.

Figure 11. Northwest Wapato RRP Parcel P240 and P252 Aerial Image. Dense blackberry and other unidentified shrubs are prevalent. The area was being mowed when adjacent parcel visits occurred.

Figure12. Northwest Wapato RRP Parcel P240 and P252 National Wetlands Inventory. Based on adjacent parcel evaluation to the east, observations of dense blackberry and managed landscape from soil compaction, the upper lobe (outlined in dashed yellow polygon) would be subject to further evaluation for being excluded from wetland.

Figure 13. W117 and W118 (Median SR 512) was not surveyed due to traffic safety constraints. Soil pits were recorded for determination and delineation points were recorded with hand-held GPS. The desktop use of LiDAR and hi-resolution aerial imagery depicting vegetation patterns with no overhead canopy provided very reasonable delineations under access constraints.

Figure 14. Auxiliary Evaluation Sites. On August 30, 2020 the Analysis team was informed that 3 new areas required assessment. These were: Meridian Expansion, Pioneer Ramp, and SR 512 WB Auxiliary Lane. No wetlands were present in the Meridian Expansion and Puyallup River Overpass area depicted in images below. Top left image is photo index.

Figure 15. Close-Up of LiDAR Imagery Southwest of 119th Ave. (beyond study area). Large geomorphic channels are historical floodplain channels formed by Summer Heights drainage sub-basins and/or Puyallup overflow channels. This area is a headwater wetland area of Wapato Creek that eventually flows northwesterly towards the Wapato creek Diversion. Green-shaded polygons are County Wetland Inventory and yellow oval is documented wetland out of study area. Wetland areas would be more extensive if formally delineated. The geomorphology suggested a structure would exist to pass water under SR 167 at the wetland circled, however no structure was observed and it appears to serve as an infiltration ditch. The silt loam stays surface saturated in a large part of the natural CWI wetland areas (bracketed area) but overall seems well-drained ground based on the confinement of the basin (See Figures 6 and 7 for more supporting information).

Figure 16. Close-Up of LiDAR Imagery 167/512 Interchange. The common theme of soil indicators was depleted matrix observed at about 9-inch depth. This depth appeared to be pretty consistent indicating that the fluctuating water table was contributing to hydric soil development even in areas of engineered hydrology. Some excavated ditches had lining with cobble and gravel with no hydric soils (examples A). Some ditches or toe slope areas were at elevations right on the margin of wetland criteria for hydric soils and small depressions in designed infiltration ditches would provide just enough elevation difference to meet criteria (examples B).

Figure 1a. Main Drainage Analysis Study Area North Meridian to 0.4 Mile Southwest of Highway 512 Overpass.

Figure 1b. Northwest Wapato RRP Analysis Study Area South of Valley Avenue (yellow polygon).

Figure 2. Output of USDA WebSoil Survey. ***Accessed August 10, 2021.***

Source: USDA Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Pierce County Area, Washington (WA653)

Pierce County Area, Washington (WA653)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6A	Briscot loam	96.4	81.6%
29A	Pilchuck fine sand	1.5	1.2%
31A	Puyallup fine sandy loam	16.0	13.6%
42A	Sultan silt loam	4.2	3.6%
Totals for Area of Interest		**118.1**	**100.0%**

Pierce County Area, Washington

6A—Briscot loam

Map Unit Setting

National map unit symbol: 2hrc
Elevation: 20 to 250 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Description of Briscot

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 11 inches: loam
H2 - 11 to 38 inches: stratified fine sand to silt loam
H3 - 38 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None, Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Figure 3. SFI point locations were fairly accurate when encountered during the assessment. The image below displays the drainage design for N. Meridian and SR 167 on/off ramps. The north flowing stormwater conveyance ditches on the north side of 167 do not seem connected to the Puyallup stormwater outlet. Field observations indicate that the ditch effectively infiltrates more than routing. The subsurface stormwater pipes on both sides of Meridian Ave (labeled S) are connected to grates within delineated wetlands. This is one area that outflows directly into the Puyallup River located at a high flood stage. The pipe manages a limited drainage area and is primarily for stormwater routing.

Figure 4. The other location of surface water discharge outlets (blue dots) from stormwater pipes empty onto elevated floodplain areas and may be outside of the 100-yr flood elevation. The flows are likely dispersed down sloped engineered channel or through uplands. This is a very limited drainage area from the median and road runoff.

Figure 5. June1, 1979 as-built overview for Wapato Creek Diversion approximate overlay on modern aerial. Lower image: Inlet (lower right) and outlet to Puyallup River (lower left) of the Wapato Diversion.

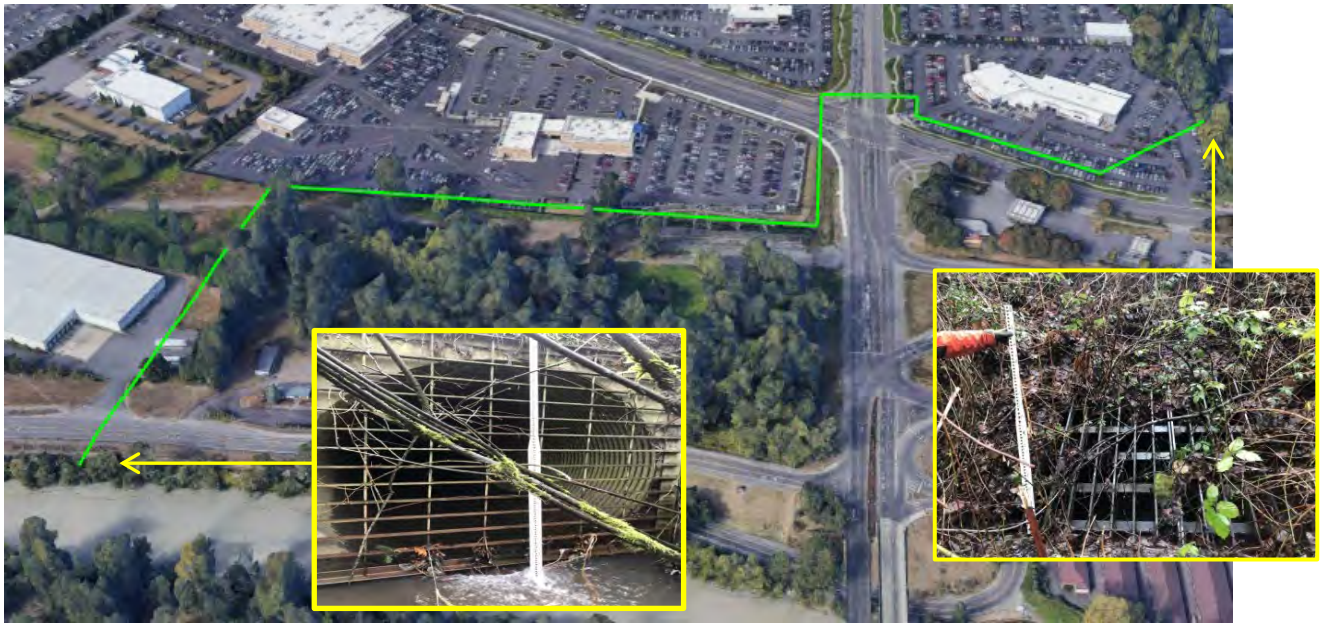


Figure 6. Upper Wapato Creek retains its historical topography of headwater depressional wetland even though development occurred on its perimeter. Longer periods of saturation and impoundment, possibly due to the diversion and culverts' outlet control and other engineered hydrology, allow mature wetland features compared to 1990s photo in lower right.

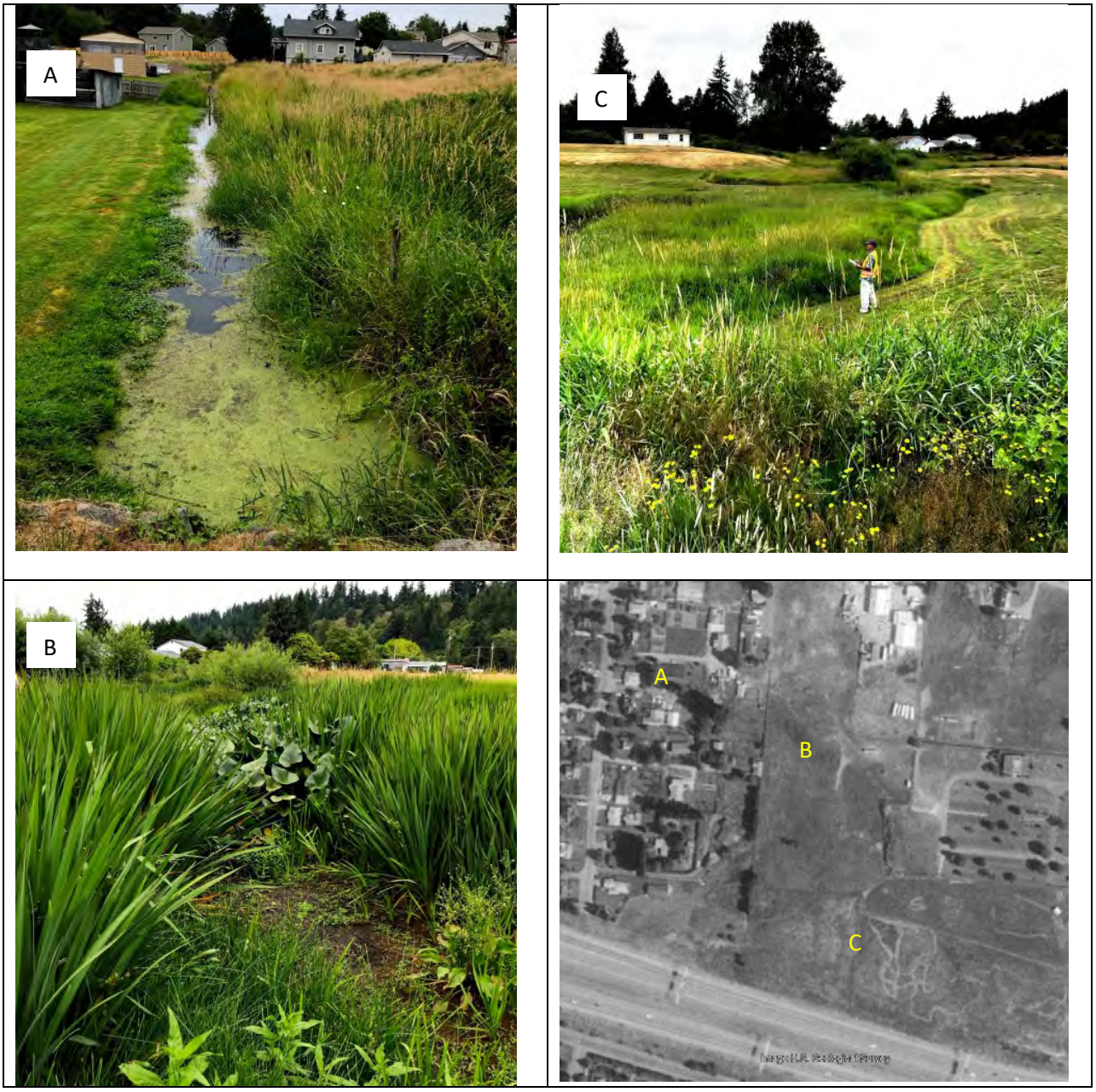


Figure 7. Historical Drainage tendency (red dash) versus modern (black solid). Constrictions from development and increased retention in this headwater area may be reducing flows from headwater area. Indeed the whole floodplain is historical Puyallup River floodplain terrace and channel migration zone but once the floodplain was abandoned surface water from the surrounding area formed drainage channels in the easily deformable loam and sand. The channel may have served as a Puyallup River overflow channel(s) historically but the disconnect due to the levee and down-cutting of the Puyallup River channel has inactivated it from that ability.

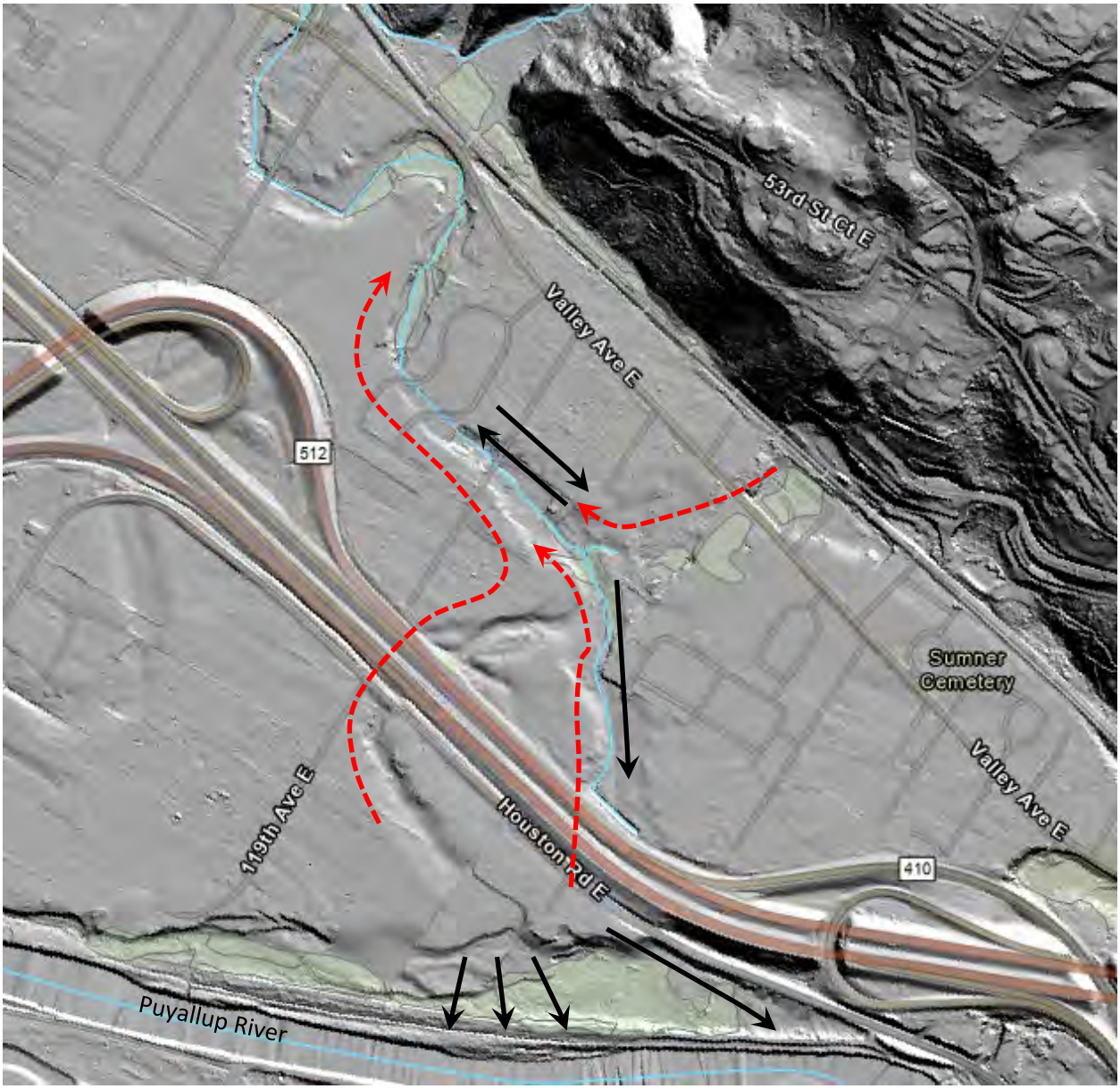


Figure 8. WA-Department of Natural Resources Stream Typing Map from the Forest Practices Activity Mapping tool does not depict the diversion culvert and describes water above the diversion as non-fish bearing. The Digital elevation model (DEM)-derived sub-basin indicates a small watershed area above the diversion. The channel size suggests that this would not be the historical catchment with the channel showing geomorphic features that would typically be of a larger catchment size. Fill from the 112th Ave Ct. and 113th Ave development (oval circle), may have enough topographic relief to be the modern terminus of the upper basin.

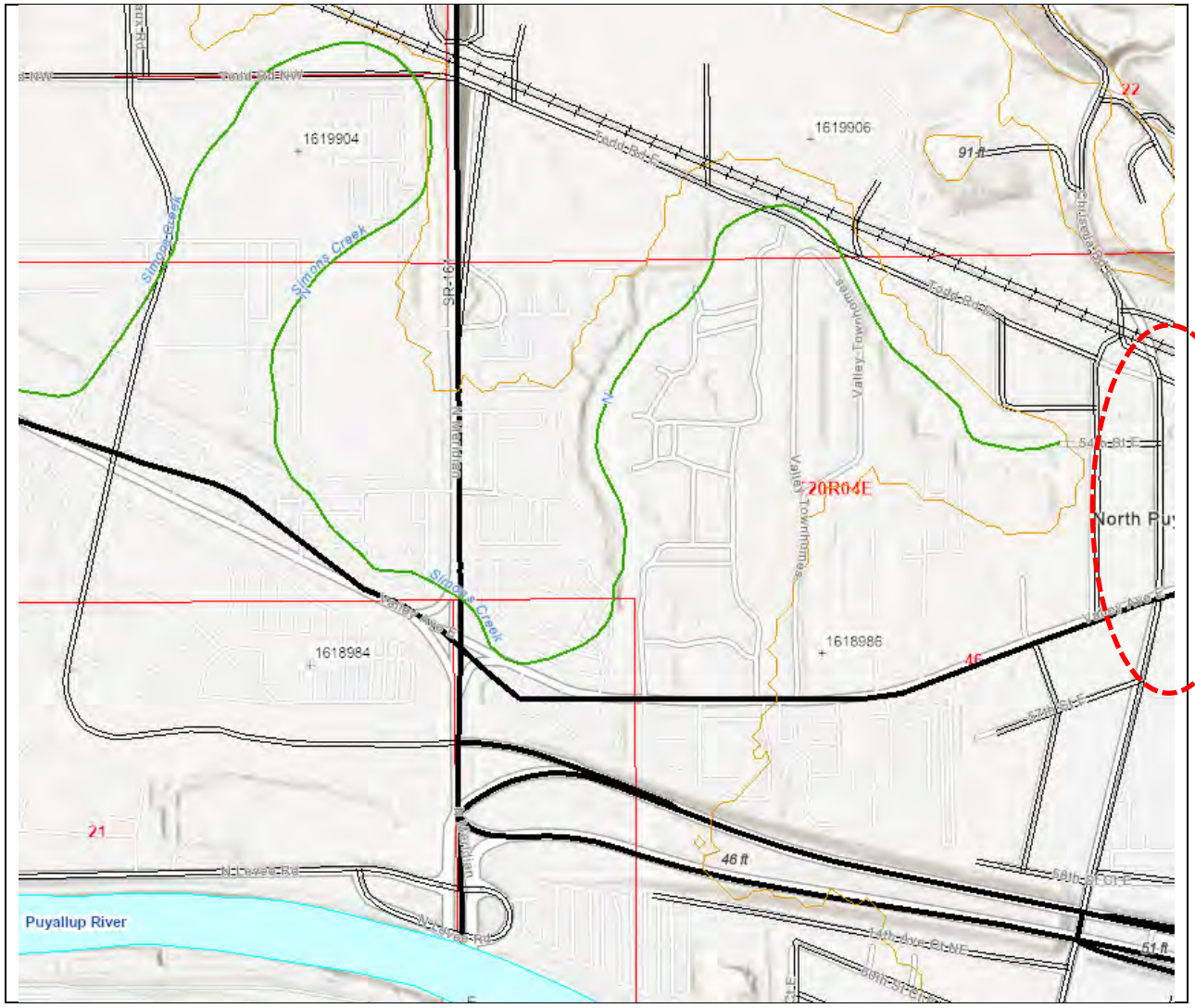


Figure 9. WA-Department of Natural Resources Stream Typing Map from the Forest Practices Activity Mapping indicates fish bearing water and outlet to the Puyallup from the floodplain east of the SR 167 and 512 interchange. Culvert ID 935173 (below right) and 935172 fish passage data notes "Site is Non-fish bearing. Inlet is surface grate in median with no measurable scour. Channel drains into wetland S of Houston Rd w/ no connection to Puyallup R." Analysts did not observe any structures or outlets crossing under SR 167 from the north side as the stream layer suggests. This renders the whole are non-fish bearing unless constant surface water connectivity is verified west of Pony Lake AND those waters are determined as fish-bearing.

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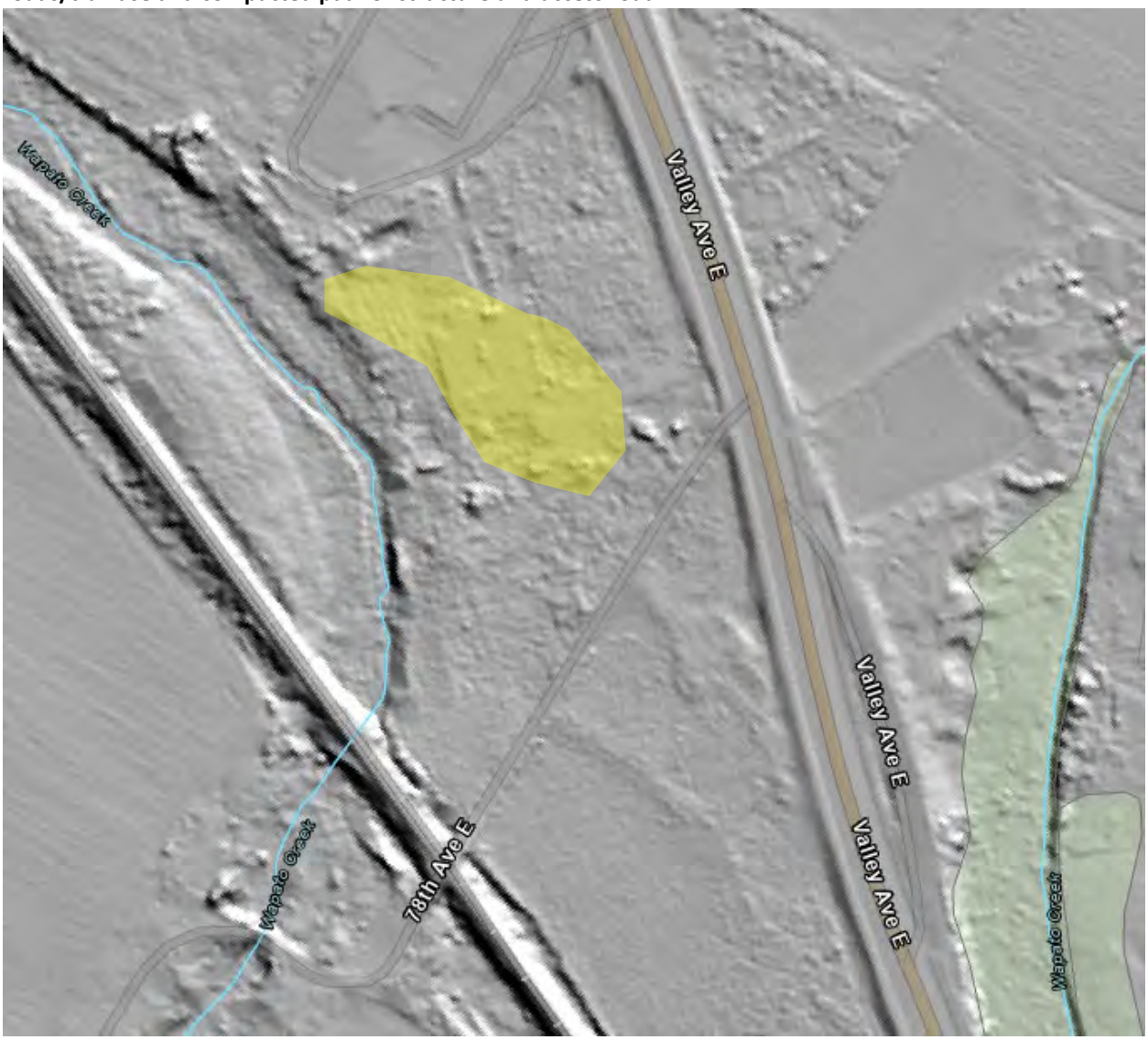

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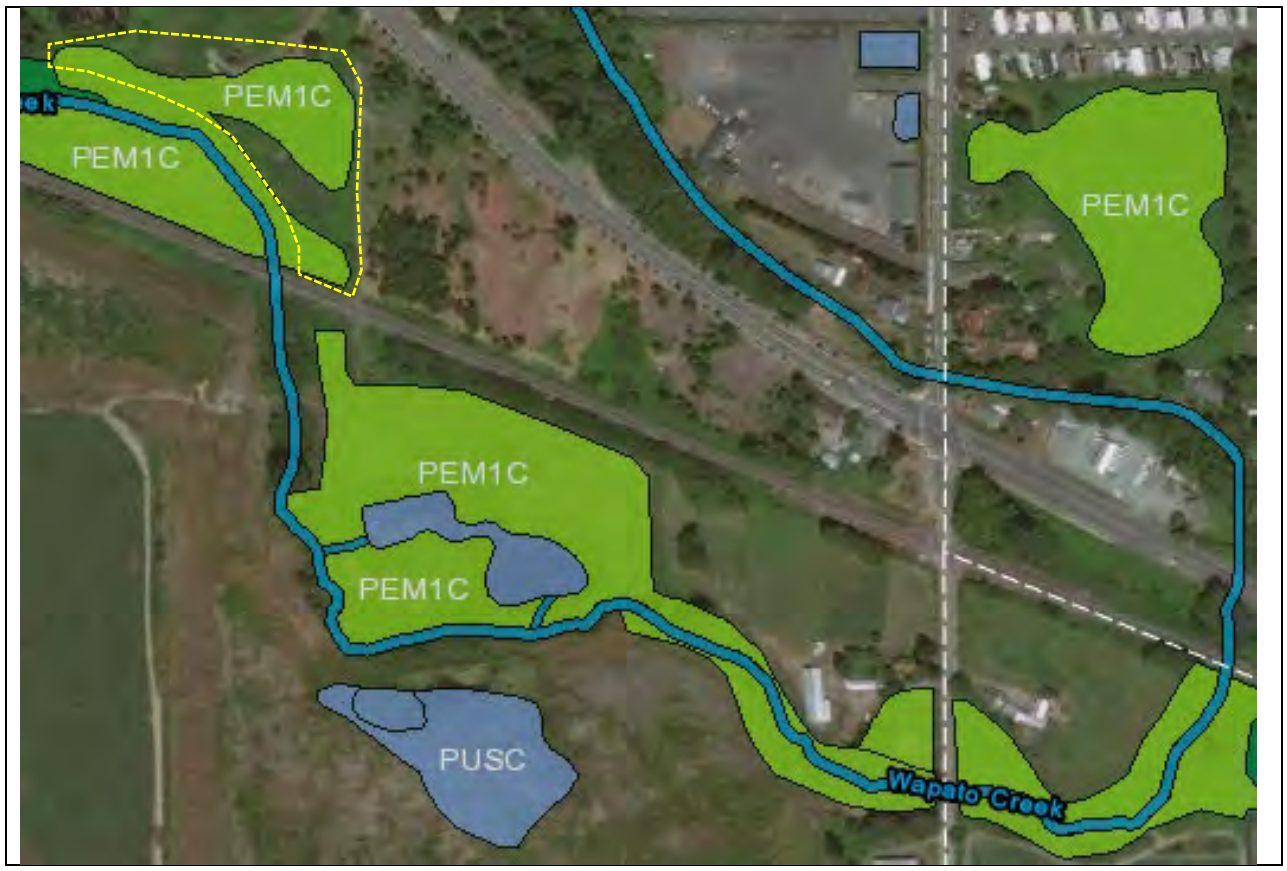

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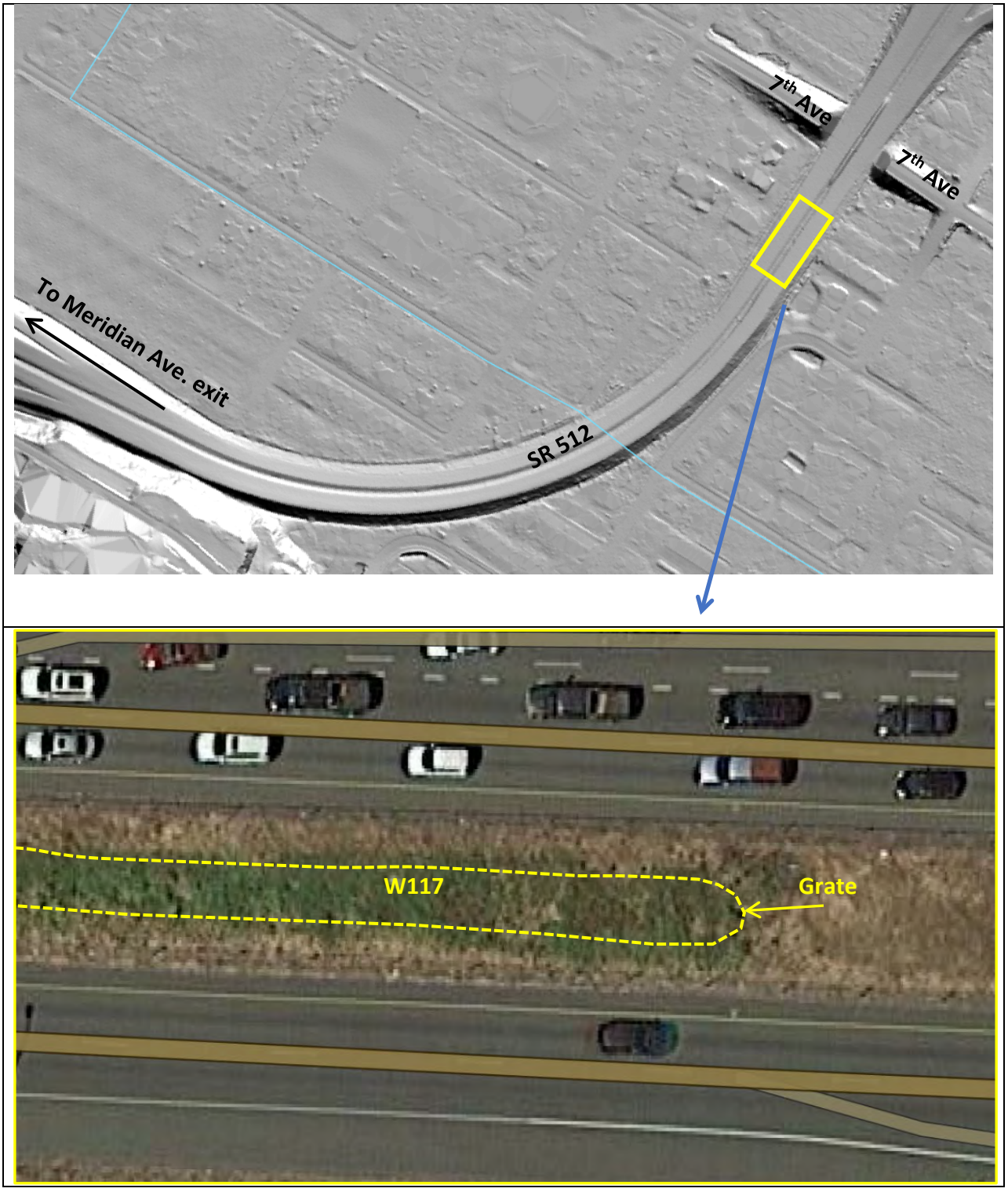


Figure 14. Auxiliary Evaluation Sites.

On August 30, 2020 the Analysis team was informed that 3 new areas required assessment. These were: Meridian Expansion, Pioneer Ramp, and SR 512 WB Auxiliary Lane. No wetlands were present in the Meridian Expansion and Puyallup River Overpass area depicted in images below. Top left image is photo index.

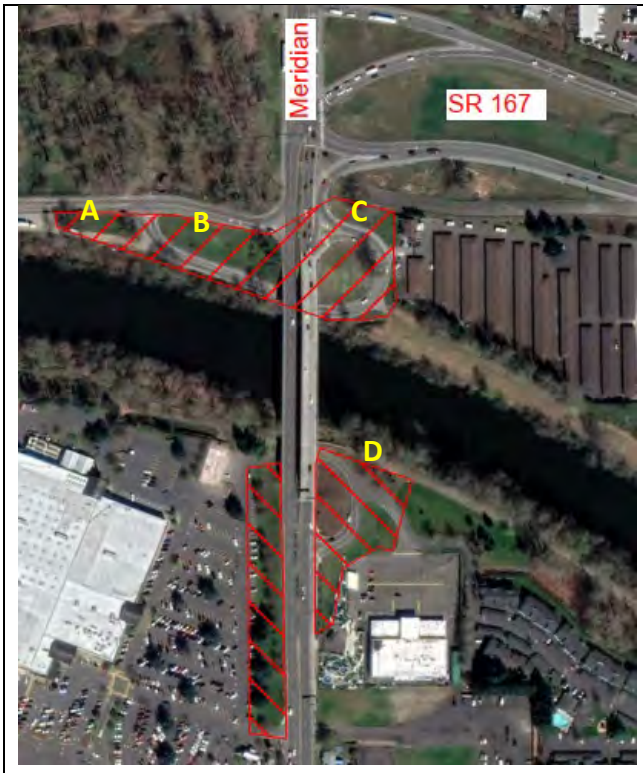


Figure 15. Close-Up of LiDAR Imagery Southwest of 119th Ave. (beyond study area).
Large geomorphic channels are historical floodplain channels formed by Summer Heights drainage sub-basins and/or Puyallup overflow channels. This area is a headwater wetland area of Wapato Creek that eventually flows northwesterly towards the Wapato creek Diversion. Green-shaded polygons are County Wetland Inventory and yellow oval is documented wetland out of study area. Wetland areas would be more extensive if formally delineated. The geomorphology suggested a structure would exist to pass water under SR 167 at the wetland circled, however no structure was observed and it appears to serve as an infiltration ditch. The silt loam stays surface saturated in a large part of the natural CWI wetland areas (bracketed area) but overall seems well-drained ground based on the confinement of the basin (See Figures 6 and 7 for more supporting information).

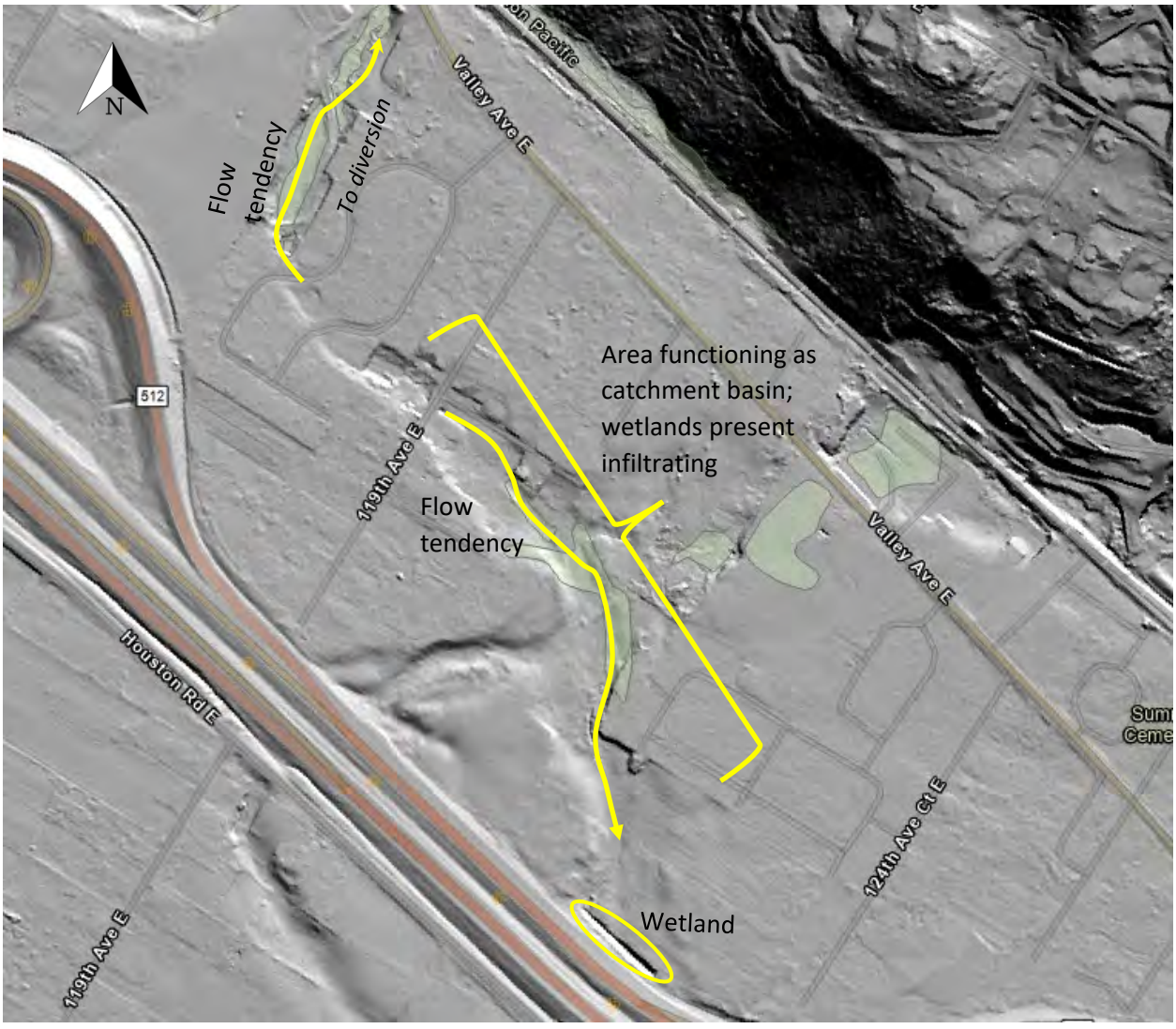
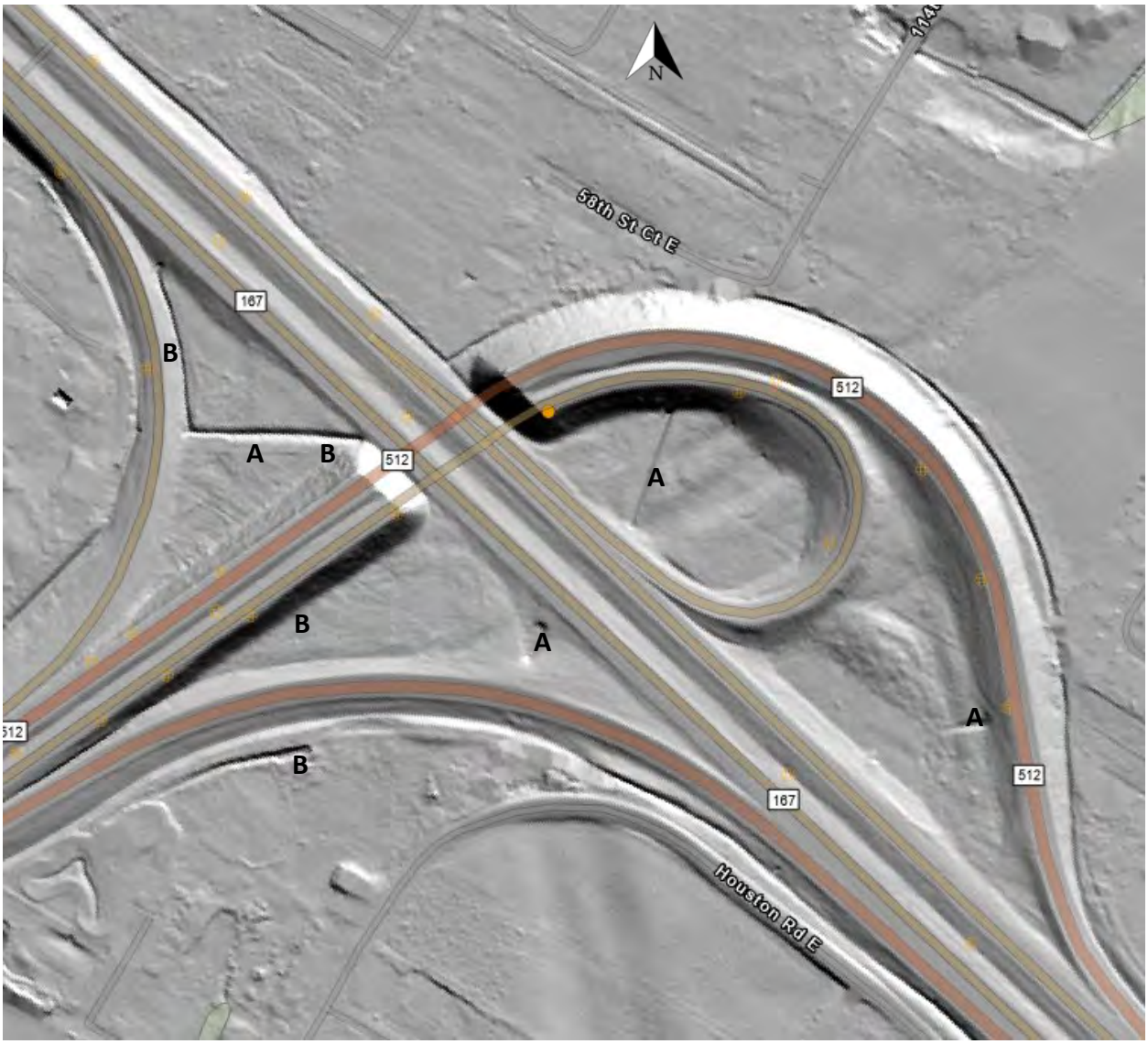


Figure 16. Close-Up of LiDAR Imagery 167/512 Interchange.

The common theme of soil indicators was depleted matrix observed at about 9-inch depth. This depth appeared to be pretty consistent indicating that the fluctuating water table was contributing to hydric soil development even in areas of engineered hydrology. Some excavated ditches had lining with cobble and gravel with no hydric soils (examples A). Some ditches or toe slope areas were at elevations right on the margin of wetland criteria for hydric soils and small depressions in designed infiltration ditches would provide just enough elevation difference to meet criteria (examples B).



References

Kerwin, J. 1999. Salmon habitat limiting factors report for the Puyallup River Basin (Water Resource Inventory Area 10). Washington Conservation Commission, Olympia. http://your.kingcounty.gov/dnrp/library/archive-documents/wlr/wrias/10/salmon-habitat-limiting-factors/pdf/wria-10-salmon-habitat-limiting-factors.pdf Accessed 25 July 2021.

Kresch, D.L., and E.A. Prych. 1989 Streamflow statistics for streams on the Puyallup Indian Reservation, Washington. U.S. GEOLOGICAL SURVEY. Water-Resources Investigations Report 87-4228. Prepared in cooperation with the Puyallup Tribe of Indians. Tacoma, Washington.

Appendix C. Wetland Delineation Data Sheets

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 14-Jul-21

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

Investigator(s): JH, RLB **Section, Township, Range:** S 17 T 20N R 4E

Landform (hillslope, terrace, etc.): Gulch or Gully **Local relief (concave, convex, none):** concave **Slope:** 2.0 % / 1.1 °

Subregion (LRR): LRR A **Lat.:** 47.204711 **Long.:** -122.297099 **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:

Climatic conditions are wetter than normal for this time of year. Site contains hydrophytic vegetation, but lacks hydric soil and wetland hydrology. This 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: 5m 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: 3m rad)			
1. Populus balsamifera	1	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	1	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	100	☑ 90.1%	FACW
2. Galium aparine	5	☐ 4.5%	FACU
3. Cirsium vulgare	1	☐ 0.9%	FACU
4. Conium maculatum	5	☐ 4.5%	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: 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	100	**x 2 =**	200
FAC species	6	**x 3 =**	18
FACU species	6	**x 4 =**	24
UPL species	0	**x 5 =**	0
Column Totals:	112	**(A)**	242 **(B)**

Prevalence Index = B/A = 2.161

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:

Ipomoea sp. occupies 2 percent of herb stratum. Marah sp. occupies 5 percent. Dominance test and prevalence index are met. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: UPL-SISU-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
0-18+	10YR	3/2	100						Silt/loamy 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:

No hydric soil indicators are present at site.

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 primary hydrology indicators are present. Only one secondary hydrology indicator, geomorphic position (D2), is present. Soil is very loose and dry, appears well drained. No wetland hydrology present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 25-Mar-21

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

Investigator(s): RLB, JL, LD, ES **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.223506 **Long.:** -122.325513 **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:
Soil pit is located in an upland; located in prior ag/crop field that was recently planted w/ leek and pumpkin in 2020.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m 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. Epilobium ciliatum	2	☑ 50.0%	FACW
2. Cardamine oligosperma	1	☑ 25.0%	FAC
3. Poa annua	1	☑ 25.0%	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%	
	4	= 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: 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	2	x 2 =	4
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	4	(A)	10 (B)

Prevalence Index = B/A = 2.500

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 and prevelance index. Recent ploughing in ag. feld. Vegetation and soils are highly distrubed.

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

Soil

Sampling Point: UPL-HEC-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
0-15	10YR	3/2	100						Silt Loam	
15-22	10YR	4/3	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 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:

Small patches of depletions and redox below 22 inches; may be historic. 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:

Soils moist from ground surface to 6 inches below the soil surface; drier below 6 inches. Secondary indicator D5 met. Hydrology indicators are not sufficient enough to conclude that wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 06-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP6

Investigator(s): Eliza Spear, Jim Hearsay **Section, Township, Range:** S 21 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.212456 **Long.:** -122.310994 **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:
Ag field (fallow), history of manipulated veg and tilled soil. Photos on ES's phone.

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: 2m rad)			
1. Buddleja davidii	5	☑ 100.0%	FACU
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 rad)			
1. Cirsium vulgare	40	☑ 53.3%	FACU
2. Taraxacum officinale	5	☐ 6.7%	FACU
3. Epilobium anagallidifolium	30	☑ 40.0%	FACU
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%	
	75	= 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: 25

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	80 (A)		320 (B)

Prevalence Index = B/A = 4.000

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:

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

Soil

Sampling Point: UPL-HEC-SP6

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	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 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:

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:

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 02-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP7

Investigator(s): JL, ES **Section, Township, Range:** S 21 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.223995 **Long.:** -122.326284 **Datum:** NAD 1983 H

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

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:
Area shows signs of past disturbance but there is no current activity at the site. Access roads with fill nearby. There are signs of former encampments nearby.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m 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: 2m rad)			
1. Rubus armeniacus	25	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	25	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Cirsium arvense	60	☑ 37.5%	FAC
2. Phalaris arundinacea	100	☑ 62.5%	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%	
	160	**= 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: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	100	**x 2 =**	200
FAC species	60	**x 3 =**	180
FACU species	0	**x 4 =**	0
UPL species	25	**x 5 =**	125
Column Totals:	185	**(A)**	505 **(B)**

Prevalence Index = B/A = 2.730

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 domiinance test and prevalence index.

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

Soil

Sampling Point: UPL-HEC-SP7

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
0-13	10YR	3/2	100						Silt Loam	
13-16	10YR	4/2	90	2.5YR	4/4	10	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 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 hydic 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 21-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP8

Investigator(s): RP. LD **Section, Township, Range:** S 21 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.210791 **Long.:** -122.314868 **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:
Active rhubarb field. Regularly maintained. Top 10 to 12 inches is tilled.

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. Rheum rhaponticum	20	☑ 90.9%	UPL
2. Equisetum arvense	2	☐ 9.1%	FAC
3. Cirsium arvense	0	☐ 0.0%	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%	
	22	= 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: 88

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	20	x 5 =	100
Column Totals:	22 (A)		106 (B)

Prevalence Index = B/A = 4.818

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. Dead Poa annua (approximately 10%) in the test pit. Poa annua growing approximatley 5 feet from the test pit.

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

Soil

Sampling Point: UPL-HEC-SP8

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR	3/2	100						Silt Loam	Till layer
10-20	10YR	4/2	70	7.5YR	4/6	30	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 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 F3 is met. The top 10 inches of the soil appears to be tilled. Sand layer starts at 20 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 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:

Wetland hydrology indicators are not met. Cracked soils present on planted soil mounds. Investigated to approximately 30 inches below the soil surface and did not find hydrology indicators.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 21-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP9

Investigator(s): RP, LD **Section, Township, Range:** S 21 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.20935 **Long.:** -122.312968 **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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present? Yes ○ No ◉	
Wetland Hydrology Present? Yes ○ No ◉	

Remarks:
Southern portion of actively managed rhubarb field. Vegetation and soils are significantly disturbed. No wetland hydrology present.

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: 2m 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. Rheum rhaponticum	20	☑ 100.0%	UPL
2. Equisetum arvense	0	☐ 0.0%	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%	
	20	= 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: 88

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 5.000

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:
No hydric vegetation indicators are met.

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

Soil

Sampling Point: UPL-HEC-SP9

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR	3/2	100						Silt Loam	
12-16	10YR	3/2	60	7.5YR	5/8	20	C	M		
12-16				10YR	5/2	20	D	M		

[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 present. Top 10 to 12 inches of soil is tilled. Sand layer at approximately 30 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 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 wetland hydrology indicators are present. Dug pit tp approximately 24 inches, then auger to 36 inches and did not find signs of hydrology (Saturation/water table).

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **UPL-HEC-SP10**

Investigator(s): ES, GP **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.219543 **Long.:** -122.320335 **Datum:** 1983 HARN

Soil Map Unit Name: Puyallup fine sandy 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:

Test pit is in an alpaca field. Vegetation is regularly grazed - no shrubs, trees or bare ground. Salix sitchensis is rooted on the other side of a fence along railroad grade bordering the site.

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: 2m 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. Ranunculus repens	15	☐ 13.0%	FAC
2. Taraxacum officinale	10	☐ 8.7%	FACU
3. Poa pratensis	90	☑ 78.3%	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%	
	115	**= 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	105	**x 3 =**	315
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	115 **(A)**		355 **(B)**

Prevalence Index = B/A = 3.087

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.

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

Soil

Sampling Point: UPL-HEC-SP10

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						Silty Clay Loam	
14-16	2.5Y	3/3	100						Silty Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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 hydic 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 wetland hydrology indicators are met

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 23-Feb-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP11

Investigator(s): R. Plumb, N. Bartish **Section, Township, Range:** S 21 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20334161 **Long.:** -122.29522190 **Datum:** 1983 HARN

Soil Map Unit Name: Pilchuck fine sand **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 on levee north of Puyallup River. Dominated by Himalayan blackberry. Soils are compacted. Adjacent to raid lined with riprap. Climatic conditions are normal for this time of year. No hydrophytic vegetation, hydric soil, or wetland hydrology are present at site.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m r)			
1. Acer macrophyllum	80	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	80	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m r)			
1. Mahonia aquifolium	10	☑ 33.3%	FACU
2. Rubus armeniacus	20	☑ 66.7%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	**= Total Cover**	
Herb Stratum (Plot size: 1 m r)			
1.	0	☐ 0.0%	
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%	
	0	**= Total Cover**	
Woody Vine Stratum (Plot size: 1 m r)			
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: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	110 (A)		440 (B)

Prevalence Index = B/A = 4.000

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:

Trace amounts of Hedera helix in herb stratum. No indicators of hydrophytic vegetation have been met.

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

Soil

Sampling Point: UPL-HEC-SP11

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 3/3	100					Silt Loam	abundance of roots

[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. Hydric soil is not present at site.

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 wetland hydrology indicators are met

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 23-Feb-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP12

Investigator(s): R. Plumb, N. Bartish **Section, Township, Range:** S 21 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20237 **Long.:** -112.29454 **Datum:** 1983 HARN

Soil Map Unit Name: Pilchuck fine sand **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 on berm/levee on southside of Puyallup River. Area is dominated by knotweed sp. Compacted soils and trails adjacent to shared use path. Climatic conditions are normal for this time of year. No hydrophytic vegetation, hydric soil, or wetland hydrology present at site.

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. Rubus armeniacus	30	☑	100.0%	FACU
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30	**= Total Cover**		
Herb Stratum (Plot size: 1 m rad)				
1. Phalaris arundinacea	40	☑	88.9%	FACW
2. Equisetum hyemale	5	☐	11.1%	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%	
	45	**= 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	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	75 (A)		210 (B)

Prevalence Index = B/A = 2.800

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:

10% of sapling/shrub layer is occupied by a knotweed species. Vegetation meets the prevalence index.

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

Soil

Sampling Point: UPL-HEC-SP12

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
0-17	10YR 3/2	100					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 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. Hydric soil is not present at site.

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 wetland hydrology present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 11-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** UPL-HEC-SP13

Investigator(s): R. Plumb, N. Bartish **Section, Township, Range:** S 21 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.203953 **Long.:** -122.295863 **Datum:** 1983 HARN

Soil Map Unit Name: Pilchuck fine sand **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 in forested depression north of N. Levee Road. Canopy is dominated by black cottonwood. Climatic conditions are normal for this time of year. No wetland soil or hydrology indicators present.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)				
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 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.	0	☐	0.0%	
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%	
	0	= 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: 100

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	60	x 3 =	180	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	60	(A)	180	(B)

Prevalence Index = B/A = 3.000

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 the dominance test and prevalence index.

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

Soil

Sampling Point: UPL-HEC-SP13

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
0-8	10YR 2/2	100					Silt Loam	cobble
8-16	10YR 3/3	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 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 hydrology indicators present.

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)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features 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 ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? 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 1B **City/County:** Fife, Pierce County **Sampling Date:** 30-Apr-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W47-SP1

Investigator(s): SW, JL **Section, Township, Range:** S 8 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.23465 **Long.:** -122.32801 **Datum:** NAD 1983

Soil Map Unit Name: Sultan silt loam **NWI classification:** PFO

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 thre wetland parameters met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m)			
1. Populus balsamifera	20	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m)			
1. Salix sitchensis	100	☑ 95.2%	FACW
2. Spiraea douglasii	5	☐ 4.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	105	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	20	☑ 90.9%	FACW
2. Cirsium arvense	2	☐ 9.1%	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%	
	22	= Total Cover	
Woody Vine Stratum (Plot size: 1m)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 80

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	125	**x 2 =**	250
FAC species	22	**x 3 =**	66
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	147	**(A)**	316 **(B)**

Prevalence Index = B/A = 2.150

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:
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: W47-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
0-11	10YR	3/2	100						Silt Loam	
11-15	10YR	4/1	95	7.5YR	4/6	5	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 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: compacted soil (silt loam)

Depth (inches): 15

Hydric Soil Present? Yes ◉ No ○

Remarks:

F3 indicator 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:

Secondary indicators B9, D2, and D5 were met.

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

Project/Site: SR 167, Stage 1B **City/County:** Fife, Pierce County **Sampling Date:** 30-Apr-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W47-SP2

Investigator(s): SW, JL **Section, Township, Range:** S 8 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.23443 **Long.:** -122.32815 **Datum:** NAD 1983

Soil Map Unit Name: Sultan silt loam **NWI classification:** PFO

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. Hydric soil indicator present, vegetation and hydrology indicators not present.

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. Rubus armeniacus	5	☑ 33.3%	FAC
2. Cytisus scoparius	10	☑ 66.7%	UPL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Tanacetum vulgare	30	☑ 61.2%	FACU
2. Leucanthemum vulgare	2	☐ 4.1%	FACU
3. Hypericum perforatum	10	☑ 20.4%	FACU
4. Vicia sativa	2	☐ 4.1%	UPL
5. Phalaris arundinacea	5	☐ 10.2%	FACW
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	49	= 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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	5	**x 2 =**	10
FAC species	5	**x 3 =**	15
FACU species	42	**x 4 =**	168
UPL species	12	**x 5 =**	60
Column Totals:	64	**(A)**	253 **(B)**

Prevalence Index = B/A = 3.953

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

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

Soil

Sampling Point: W47-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
0-8	10YR	3/2	100						Loam	
8--15	2.5YR	4/2	60	7.5YR	4/6	40			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 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: cobble

Depth (inches): 15

Hydric Soil Present? Yes ◉ No ○

Remarks:

F3 indicator 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:** Fife, Pierce County **Sampling Date:** 30-Apr-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W47-SP3

Investigator(s): SW, JL **Section, Township, Range:** S 8 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.23547 **Long.:** -122.32631 **Datum:** NAD 1983

Soil Map Unit Name: Shalcar muck **NWI classification:** PFO

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:
PEM. All three wetland parameter met.

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: 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:
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: W47-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
0-24	10YR	3/1	100						Silt Loam	
24-30	10YR	4/1	70	7.5YR	5/6	30	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 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:

A12 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):	24
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 surface. Water table present at 24 inches. Indicator A3 met. Secondary indicatore D5 also met.

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

Project/Site: SR 167, Stage 1B **City/County:** Fife, Pierce County **Sampling Date:** 30-Apr-19

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W47-SP4

Investigator(s): SW, JL **Section, Township, Range:** S 8 T 20N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.23570 **Long.:** -122.32644 **Datum:** NAD 1983

Soil Map Unit Name: Shalcar muck **NWI classification:** PFO

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:
PSS. All three wetland parameters met.

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. Cornus alba	100	☑ 95.2%	FACW
2. Rubus armeniacus	5	☐ 4.8%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	105	= Total Cover	
Herb Stratum (Plot size: 1m)			
1.	20	☑ 36.4%	FAC
2. Veronica anagallis-aquatica	15	☑ 27.3%	OBL
3. Ranunculus aquatilis	15	☑ 27.3%	OBL
4. Phalaris arundinacea	5	☐ 9.1%	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%	
	55	= 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	30	**x 1 =**	30
FACW species	105	**x 2 =**	210
FAC species	25	**x 3 =**	75
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	160	**(A)**	315 **(B)**

Prevalence Index = B/A = 1.969

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:
#1 in herb stratum is Agrostis spp., presumed FAC. Dominance test and prevelence index indicators met.

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

Soil

Sampling Point: W47-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
0-4	10YR	3/1	100						Silt Loam	
4-10	10YR	3/1	70	10YR	4/6	30	C	M	Silt Loam	
10-16	10YR	4/1	100						Silt Loam	
16-20	10YR	4/1	50	10/yr	5/8	50	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 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:

F6 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):	4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

A3 and B4 indicators met.

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

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

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W47-SP5**

Investigator(s): GP, NB **Section, Township, Range:** **S** 8 **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.:** 47.23508829 **Long.:** -122.32489170 **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 met. Soil pit located approximatley 40 feet north of stormwater pond near 26th Ave. Located within fill/removal of mitigation site.

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. Plantago lanceolata	2	☐ 2.1%	FACU
2. Geranium molle	5	☐ 5.2%	UPL
3. Holcus lanatus	5	☐ 5.2%	FAC
4. Agrostis capillaris	80	☑ 82.5%	FAC
5. Juncus effusus	5	☐ 5.2%	FACW
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	97	**= 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	5	**x 2 =**	10
FAC species	85	**x 3 =**	255
FACU species	2	**x 4 =**	8
UPL species	5	**x 5 =**	25
Column Totals:	97	**(A)**	298 **(B)**

Prevalence Index = B/A = 3.072

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.

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

Soil

Sampling Point: W47-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
0-6	10YR	3/1	100						Sandy Loam	
6-14	10YR	3/1	90	10YR	3/2	10	C	M	Gravelly sandy loam	Restrictive gravel layer at 14 inches

[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: Gravel

Depth (inches): 14

Hydric Soil Present? Yes ◉ No ○

Remarks:

Recently disturbed, undeveloped mitigation soils that seem to be on track to meeting wetland soil indicators (redox dark surface).

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):	7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	2

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Hydrology indicators A32 and A3 are met.

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

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

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W47-SP6**

Investigator(s): GP, NB **Section, Township, Range:** **S** 8 **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.:** 47.23508938 **Long.:** -122.32484129 **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 test pit located 10 feet east of SP-5 on slope near mitigation site. Approximately 1.5 feet higher than SP-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. Plantago lanceolata	18	☐ 18.0%	FACU
2. Geranium molle	5	☐ 5.0%	UPL
3. Vicia americana	2	☐ 2.0%	FAC
4. Agrostis capillaris	75	☑ 75.0%	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%	
	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	0	**x 2 =**	0
FAC species	77	**x 3 =**	231
FACU species	18	**x 4 =**	72
UPL species	5	**x 5 =**	25
Column Totals:	100 **(A)**		328 **(B)**

Prevalence Index = B/A = 3.280

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.

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

Soil

Sampling Point: W47-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
0-12	10YR 3/1	100					Sandy Loam	Gravel refusal at 12 inches

[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: Gravel

Depth (inches): 12

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 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 ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	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:** 30-Mar-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP1**

Investigator(s): DR, ES, LD, JH **Section, Township, Range:** **S** 8 **T** 29N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.233248 **Long.:** -122.327143 **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 3 wetland parameters are met. PSS pit.

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: 2m rad)			
1. Spiraea douglasii	40	☑ 72.7%	FACW
2. Rubus armeniacus	15	☑ 27.3%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	55	**= Total Cover**	
Herb Stratum (Plot size: 1m rad)			
1. Phalaris arundinacea	60	☑ 80.0%	FACW
2. Poa abbreviata	10	☐ 13.3%	FACU
3. Ranunculus repens	5	☐ 6.7%	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%	
	75	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 25

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	100	**x 2 =**	200
FAC species	20	**x 3 =**	60
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	130	**(A)**	300 **(B)**

Prevalence Index = B/A = 2.308

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 and prevelance index.

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

Soil

Sampling Point: W83-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
0-3	10YR	3/2	100						gravely silt/silt loam	
3-17	10YR	4/1	60	5YR	4/4	40	C	M	Silty 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:

Hydric soil indicator F3 is met. Some evidence of past fill at surface and at 10 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 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):	12
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:

Wetland hydrology indicators A2 and A3 are present. Secondary indicator D5 met.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 30-Mar-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP2**

Investigator(s): DR, ES, LD, JH **Section, Township, Range:** **S** 8 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.233366 **Long.:** -122.327121 **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:
Upland pit.

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: 2m rad)			
1. Cytisus scoparius	15	☑ 33.3%	UPL
2. Rubus armeniacus	30	☑ 66.7%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	45	**= Total Cover**	
Herb Stratum (Plot size: 1m rad)			
1. Tanacetum vulgare	60	☑ 85.7%	FACU
2. Phalaris arundinacea	5	☐ 7.1%	FACW
3. Poa abbreviata	5	☐ 7.1%	FACU
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%	
	70	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 30

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	5	**x 2 =**	10
FAC species	30	**x 3 =**	90
FACU species	65	**x 4 =**	260
UPL species	15	**x 5 =**	75
Column Totals:	115	**(A)**	435 **(B)**

Prevalence Index = B/A = 3.783

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.

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

Soil

Sampling Point: W83-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
0-18	2.5Y	4/1	90	10YR	3/6	10	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 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 F3 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:

No hydology indicators present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 31-Mar-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP3**

Investigator(s): LD, JH, RP, JL **Section, Township, Range:** **S** 8 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.23015 **Long.:** -122.32733 **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 3 wetland parameters are met. PFO wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Populus balsamifera	80	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Cornus alba	20	☑ 90.9%	FACW
2. Rubus armeniacus	2	☐ 9.1%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	22	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Epilobium ciliatum	1	☐ 100.0%	FACW
2.		☐ 0.0%	
3.		☐ 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%	
	1	= Total Cover	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 99

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	21	**x 2 =**	42
FAC species	82	**x 3 =**	246
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	103	**(A)**	288 **(B)**

Prevalence Index = B/A = 2.796

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, and prevalence index.

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

Soil

Sampling Point: W83-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
0-7	10YR	3/2	100						Silt Loam	
7-16	10YR	3/2	60	5YR	4/6	40	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 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):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 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:** 31-Mar-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP4**

Investigator(s): LD, RP **Section, Township, Range:** **S** 8 **T** 29N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.22981 **Long.:** -122.327609 **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 3 wetland parameters are met. Former ag field, history of manipulated vegetation and tilled soils.

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: 2m 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	85	☑ 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%	
	85	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 15

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	85	**x 2 =**	170
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	85	**(A)**	170 **(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: W83-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
0-2										Organcic root matter
2-16	10YR	3/2	75	5YR	4/4	25	C	M	Silty Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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: Clay

Depth (inches): 16

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicators A4 and F6 are met. Restrictive layer at 16".

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):	1
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:

Wetland hydrology indicators A2 and A3 are met. Secondary indicator D5 is met. Surface water present 2 feet from the soil pit.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 01-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP5**

Investigator(s): JL, LD **Section, Township, Range:** **S** 17 **T** 29N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.224596 **Long.:** -122.32584 **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 3 wetland parameters are met. Soil pit is located in agricultural field with history of manipulated vegetation and tilled soils. PEM pit in ditch extending from larger wetland complex.

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: 2m 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: 1m rad)			
1. Ranunculus repens	15	☑ 75.0%	FAC
2. Epilobium ciliatum	1	☐ 5.0%	FACW
3. Cardamine oligosperma	2	☐ 10.0%	FAC
4. Rumex acetosa	2	☐ 10.0%	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%	
	20	= Total Cover	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 80

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	1	**x 2 =**	2
FAC species	19	**x 3 =**	57
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	20 **(A)**		59 **(B)**

Prevalence Index = B/A = 2.950

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, and prevalence index.

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

Soil

Sampling Point: W83-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	3/2	100						Silt Loam	
8-16	10YR	4/2	65	7.5YR	4/6	35	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 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 F3 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):	14
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	10

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicator A3 is met.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 01-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W83-SP6

Investigator(s): JL, LD **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.224596 **Long.:** -122.32584 **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:
UPL pit is ag field adjacent to wetland ditch. Soil pit is located in agricultural field with history of manipulated vegetation and tilled soils.

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: 1m rad)			
1. Cardamine oligosperma	80	☑ 100.0%	FAC
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%	
	80	= Total Cover	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

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	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		240 (B)

Prevalence Index = B/A = 3.000

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 dominance test, and prevalence index.

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

Soil

Sampling Point: W83-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 3/2	100					Silt Loam	Highly compacted below 11"

[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 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 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:

Wetland hydrology is not present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 01-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W83-SP7**

Investigator(s): ES, JH **Section, Township, Range:** **S** 8 **T** 29N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.229314 **Long.:** -122.326679 **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:
Soil pit is located in former agricultural field with history of manipulated vegetation and tilled soils.

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: 2m 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: 1m rad)			
1. Chamerion angustifolium ssp. circumvagum	15	☐ 14.3%	FACU
2. Trifolium albopurpureum	90	☑ 85.7%	FACU
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: 1m 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: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4.000

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:
No hydrophytic vegetation indicators are met.

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

Soil

Sampling Point: W83-SP7

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR	3/2	100						Silt Loam	
12-18	10YR	3/4	90	7.45YR	4/6	10	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 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 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 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):	14

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Saturation is present at 14 inches. Wetland hydrology indicators are not present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 06-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W86-SP1**

Investigator(s): JH, ES **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.224347 **Long.:** -122.327418 **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 3 wetland parameters are met. Test pit is approximately 100 feet south of stockpile, approximately 50 feet north of the sidewalk.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Populus balsamifera	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Rubus armeniacus	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	90	☑ 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%	
	90	**= 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: 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	90	**x 2 =**	180
FAC species	30	**x 3 =**	90
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	120	**(A)**	270 **(B)**

Prevalence Index = B/A = 2.250

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 domiinance test and prevalence index.

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

Soil

Sampling Point: W86-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
0-2	10YR	3/2	100						Silt Loam	Roots present in the top 2 inches
2-14	10YR	4/1	75	10YR	4/6	25	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 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 F3 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:

Secondary hydrology indicators B9, D2, and D5 are present. Soils are damp but not saturated.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 06-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W86-SP2**

Investigator(s): JH, ES **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.224414 **Long.:** -122.326343 **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:
Evidence of active human encampment (trash, carpet).

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Salix babylonica	10	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Rubus armeniacus	80	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	5	☑ 38.5%	FACW
2. Epilobium anagallidifolium	5	☑ 38.5%	FACU
3. Trifolium pratense	3	☑ 23.1%	FACU
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%	
	13	**= 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: 90

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	15	**x 2 =**	30
FAC species	80	**x 3 =**	240
FACU species	8	**x 4 =**	32
UPL species	0	**x 5 =**	0
Column Totals:	103	**(A)**	302 **(B)**

Prevalence Index = B/A = 2.932

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. Salix looks like ornamental species planted at edge of agricultural field.

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

Soil

Sampling Point: W86-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	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 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 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 hydology indicators present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Puyallup **Sampling Date:** 07-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W87-SP1**

Investigator(s): RB, LD **Section, Township, Range:** **S** 20 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213383 **Long.:** -122.317272 **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 3 wetland parameters are met. Soil pit located within PFO wetland ~ 100 feet south of stream 14/ditch along agricultural field.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m rad)			
1. Alnus rubra	20	☑ 40.0%	FAC
2. Populus balsamifera	30	☑ 60.0%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	50	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2m rad)			
1. Cornus alba	75	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	75	**= Total Cover**	
Herb Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
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%	
	0	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 100

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	75	**x 2 =**	150
FAC species	50	**x 3 =**	150
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	125	**(A)**	300 **(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:

Vegetation meets the dominance test and prevalence index. Lots of exposed ground with water.

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

Soil

Sampling Point: W87-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
0-1	NA									Organic litter, moss, undecomposed leaves &
1-4	10YR	4/2	72	2.5YR	5/8	3	C	M	Silt Loam	
				7.5YR	4/6	25	C	M		
4-10	10YR	5/1	65	10YR	4/3	35	C	PL	Silt Loam	
10-16	7.5YR	4/2	50	7.5YR	5/6	10	C	M	Sandy Loam	with pockets of pure sand & undecomposed organic
				7.5YR	3/4	40	C	M		material between 2nd & 3rd layer.

[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 F3 is met. Oxidized rhizospheres 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 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:

Wetland hydrology indicators B8, B9, and C3 are met. Secondary indicators B9, D2, and D5 are met. Soils moist to dry however other primary and secondary indicators present. Depressed forested area that appears to have either historic or present water table fluctation and possible surface flooding from stream ditches to the north and possibly from the west during storm and high flow events.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Puyallup **Sampling Date:** 07-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W87-SP2**

Investigator(s): RB, LD **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.21336 **Long.:** -122.31735 **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:
Upland pit located on berm between W87 and drainage ditch/stream 15. Upland pit ~ 20 feet SW of W87-SP1

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m rad)			
1. Populus balsamifera	75	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	75	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2m rad)			
1. Rubus spectabilis	35	☑ 44.3%	FAC
2. Oemleria cerasiformis	3	☐ 3.8%	FACU
3. Corylus cornuta	1	☐ 1.3%	FACU
4. Symphoricarpos albus	40	☑ 50.6%	FACU
5.	0	☐ 0.0%	
	79	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Hedera helix	100	☑ 100.0%	FACU
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: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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	0	**x 2 =**	0
FAC species	110	**x 3 =**	330
FACU species	144	**x 4 =**	576
UPL species	0	**x 5 =**	0
Column Totals:	254 **(A)**		906 **(B)**

Prevalence Index = B/A = 3.567

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 hydric vegetation indicators are met. Significant ground ivy has established on berm and has completely dominated herb strata.

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

Soil

Sampling Point: W87-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	Roots in the top 2"

[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 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 wetland hydrology indicators present. Soils on berm only moist to dry.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 08-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W88-SP1**

Investigator(s): JL, RP **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213705 **Long.:** -122.312528 **Datum:** NAD 1983 H

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:
All 3 wetland parameters are met. PEM pit in ditch upgradient from stream.

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: 2m rad)			
1. Cornus alba	2	☐ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Trifolium repens	60	☑ 47.2%	FAC
2. Juncus effusus	2	☐ 1.6%	FACW
3. Holcus lanatus	40	☑ 31.5%	FAC
4. Phalaris arundinacea	5	☐ 3.9%	FACW
5. Poa annua	10	☐ 7.9%	FAC
6. Carex obnupta	5	☐ 3.9%	OBL
7. Deschampsia cespitosa	5	☐ 3.9%	FACW
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	127	**= 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: 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	5	**x 1 =**	5
FACW species	14	**x 2 =**	28
FAC species	110	**x 3 =**	330
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	129	**(A)**	363 **(B)**

Prevalence Index = B/A = 2.814

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 and prevalence index.

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

Soil

Sampling Point: W88-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	100						Sandy Loam	
8-16	10YR	4/1	85	5YR	3/4	15	C	M	Silty Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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 F3 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):	14
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicator A3 is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 08-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W88-SP2**

Investigator(s): JL, RP **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213704 **Long.:** -122.312512 **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:
Upland pit at top of ditch.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m 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. Holcus lanatus	20	☐ 16.9%	FAC
2. Phalaris arundinacea	90	☑ 76.3%	FACW
3. Ranunculus repens	5	☐ 4.2%	FAC
4. Cirsium arvense	1	☐ 0.8%	FAC
5. Equisetum arvense	2	☐ 1.7%	FAC
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	118	**= 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	90	**x 2 =**	180
FAC species	28	**x 3 =**	84
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	118 **(A)**		264 **(B)**

Prevalence Index = B/A = 2.237

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 for hydrophytic vegetation, dominance test and prevalance index.

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

Soil

Sampling Point: W88-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
0-6	10YR	3/2	100						Silt Loam	
6-9	10YR	3/3	80	10YR	3/1	18	D	M	Silt Loam	
				5YR	4/6	2	C	PL	Silt Loam	
9-16	10YR	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 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 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:

Secondary hydrology indicator D2 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:** Puyallup/Pierce **Sampling Date:** 15-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W88-SP3**

Investigator(s): RG, JL **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213712 **Long.:** -122.312371 **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:
Upland pit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Thuja plicata	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	**= 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. Geranium molle	1	☐ 1.0%	UPL
2. Plantago major	2	☐ 2.0%	FAC
3. Taxodium distichum	5	☐ 5.0%	OBL
4. Holcus lanatus	40	☑ 40.0%	FAC
5. Cardamine oligosperma	1	☐ 1.0%	FAC
6. Vicia americana	5	☐ 5.0%	FAC
7. Cirsium arvense	5	☐ 5.0%	FAC
8. Equisetum arvense	1	☐ 1.0%	FAC
9. Dactylis glomerata	40	☑ 40.0%	FACU
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: 15

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	5	**x 1 =**	5
FACW species	0	**x 2 =**	0
FAC species	69	**x 3 =**	207
FACU species	40	**x 4 =**	160
UPL species	1	**x 5 =**	5
Column Totals:	115 **(A)**		377 **(B)**

Prevalence Index = B/A = 3.278

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 domiinance test and prevalence index. Thuja spp. appears to be onamental Thuja occcidentalis.

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

Soil

Sampling Point: W88-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
0-6	10YR	3/2	100						Silt Loam	
6-16	10YR	4/12	90	5YR	4/6	10	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 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 F3 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:

No wetland hydrology indicators are met

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 13-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W90-SP1**

Investigator(s): RP, RG **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

Landform (hillslope, terrace, etc.): Channel/ditch bottom **Local relief (concave, convex, none):** Concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.21388 **Long.:** -122.313804 **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 3 wetland parameters are met. Soil pit within depressional 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: 2m rad)			
1. Rubus armeniacus	3	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	3	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Holcus lanatus	60	☑ 75.9%	FAC
2. Eleocharis palustris	15	☐ 19.0%	OBL
3. Equisetum arvense	1	☐ 1.3%	FAC
4. Rorippa palustris	2	☐ 2.5%	OBL
5. Epilobium brachycarpum	1	☐ 1.3%	UPL
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	79	**= 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: 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	17	**x 1 =**	17
FACW species	0	**x 2 =**	0
FAC species	64	**x 3 =**	192
FACU species	0	**x 4 =**	0
UPL species	1	**x 5 =**	5
Column Totals:	82	**(A)**	214 **(B)**

Prevalence Index = B/A = 2.610

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 and prevalence index. 20% open water adjacent to plot.

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

Soil

Sampling Point: W90-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
0-5	10YR	3/2	100						Silt Loam	
5-16	10YR	3/2	75	7.5YR	4/6	15	C		Silt Loam	
				10YR	4/1	10	C		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 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 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):	11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	6

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicators A2 and A3 are met. Soil pit on 2% slope, with bottom end of slope abutting water. Hydrology indicators assessed from top of bank. Standing water is present 12 inches away from test pit.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Puyallup **Sampling Date:** 13-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W90-SP2**

Investigator(s): RP, RG **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213862 **Long.:** -122.313789 **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:

Upland pit adjancent to ditched wetland with clear topographic break between the two. Marginal hydrophitc vegetation consisting of mixed FAC grasses and minimal cover from FAC and FACU tree saplings. Soils minimally saturted at 8 inches.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Betula pendula	2	☑ 66.7%	FACU
2. Populus balsamifera	1	☑ 33.3%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	3	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m rad)			
1. Rubus armeniacus	2	☐ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Cirsium arvense	2	☐ 2.0%	FACU
2. Dactylis glomerata	13	☐ 12.9%	FACU
3. Holcus lanatus	85	☑ 84.2%	FAC
4. Equisetum arvense	1	☐ 1.0%	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%	
	101	= Total Cover	
Woody Vine Stratum (Plot size: 1m 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: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	91	**x 3 =**	273
FACU species	15	**x 4 =**	60
UPL species	0	**x 5 =**	0
Column Totals:	106	**(A)**	333 **(B)**

Prevalence Index = B/A = 3.142

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. Flat area adjacent to depressional wetland. Dominated by naturalized grasses.

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

Soil

Sampling Point: W90-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	3/2	100							

[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 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):	20
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	8

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydology indicators A3 is present Minimal saturation observed at 8 inches..

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 03-Nov-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W90-SP3**

Investigator(s): JH, RLB **Section, Township, Range:** **S** 17 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Ditch **Local relief (concave, convex, none):** concave **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.21387 **Long.:** -122.31379 **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:

Climatic conditions are normal for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at sampling site. Site is located 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. Populus balsamifera	10	☑ 76.9%	FAC
2. Salix sitchensis	3	☑ 23.1%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	13	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Holcus lanatus	50	☑ 54.3%	FAC
2. Cirsium arvense	2	☐ 2.2%	FAC
3. Agrostis capillaris	40	☑ 43.5%	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%	
	92	**= 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: 8

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	3	**x 2 =**	6
FAC species	102	**x 3 =**	306
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		312 **(B)**

Prevalence Index = B/A = 2.971

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:

Cornus sericea occupies 15% of sapling statum. Rubus spp. (berry cultivar) occupies 5% of shrub stratum. Dominance test and prevalence index are met at site. Hydrophytic vegetation present.

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

Soil

Sampling Point: W90-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
0-2	10YR	4/2	100						Loamy Silt	
2-15+	10YR	4/2	70	2.5Y	4/1	D	M		Loamy Silt	
				5YR	4/6	C	M		Loamy 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:

Hydric soil indicator depleted matrix (F3) is met. Hydric soil is present at site.

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:

Three secondary hydrology indicators, drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5) are met. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 14-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W91-SP1

Investigator(s): LD, JH **Section, Township, Range:** S 16 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213504 **Long.:** -122.315099 **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 3 wetland parameters are met.

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: 2m 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	10	☑ 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%	
	10	= 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: 90

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	10	**x 2 =**	20
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	10 **(A)**		20 **(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 the rapid test for hydrophitic vegetation, dominance test, and prevalence index.

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

Soil

Sampling Point: W91-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
0-16	10YR	4/1	65	7.5YR	4/6	35	C	M	Silty Clay	Concentrations in the matrix and pore linings

[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 F3 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):	9

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydology indicators A3, B8, and B9 are met. Secondary indicators D2 and D5 are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 14-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W91-SP2**

Investigator(s): LD, JH **Section, Township, Range:** **S** 21 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.213105 **Long.:** -122.315145 **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:
Upland

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. Rubus armeniacus	60	☑ 96.8%	FAC
2. Populus balsamifera	2	☐ 3.2%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	62	**= Total Cover**	
Herb Stratum (Plot size: 1m rad)			
1. Cirsium arvense	1	☐ 6.3%	FAC
2. Poa palustris	15	☑ 93.8%	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%	
	16	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m 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: 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	0	**x 2 =**	0
FAC species	78	**x 3 =**	234
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	78	**(A)**	234 **(B)**

Prevalence Index = B/A = 3.000

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 the dominance test and prevalence index.Blue grasses (Poa spp.) unable to be identified; lack flower and presumed FAC.

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

Soil

Sampling Point: W91-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
0-4	10YR	3/2	85	2.5YR	4/2	5	D	M	Loamy clay	
				7.5YR	4/3	10	C	M		
5-16	5Y	4/1	65	7.5YR	4/4	35	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 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 S5 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:

No wetland hydrology indicators are met

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

Project/Site: SR 167 Stage 2 **City/County:** Pierce County **Sampling Date:** 14-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W91-SP3**

Investigator(s): LD, JH **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.214004 **Long.:** -122.315157 **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:
Upland. Conditions drier than normal. No wetland parameters present.

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. Rubus armeniacus	2	☐ 100.0%	FAC
2.		☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Poa palustris	100	☑ 99.0%	FAC
2. Equisetum telmateia	1	☐ 1.0%	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%	
	101	**= 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	1	**x 2 =**	2
FAC species	102	**x 3 =**	306
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	103 **(A)**		308 **(B)**

Prevalence Index = B/A = 2.990

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 and prevalence index.

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

Soil

Sampling Point: W91-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
0-9	10YR	3/2	100						Silty Clay	
9-16	10YR	3/2	80	2.5YR	4/2	10	D	M	Silty Clay	Redox is faint
				5YR	4/3	10	C	M	Silty Clay	Redox is faint

[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: gravel

Depth (inches): 16

Hydric Soil Present? Yes ○ No ◉

Remarks:

No 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:

Secondary wetland hydrology indicator D2 is present. No primary wetland hydrology 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:** 08-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W89-SP1**

Investigator(s): RB, JH **Section, Township, Range:** **S** 21 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.212012 **Long.:** -122.316371 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** PSS

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 3 wetland parameters are met. Small PSS marginal wetland located in disturbed, regenerating riparian forest. Located ~ 30 fr from study area/propert boundary.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m rad)			
1. Fraxinus latifolia	5	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2m rad)			
1. Cornus alba	70	☑ 93.3%	FACW
2. Rubus armeniacus	5	☐ 6.7%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	75	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1.	0	☐ 0.0%	
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%	
	0	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 100

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	75	**x 2 =**	150
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	80	**(A)**	165 **(B)**

Prevalence Index = B/A = 2.063

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 for hydrophitic vegetation, dominance test, and prevalence index. Evidence of historic clearing and grading activities are present. Small depressional PSS located with a maturing red alder, cottonwood, and Oregon ash forest at edge of property line.

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

Soil

Sampling Point: W89-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
0-10	10YR	4/2	68	10YR	5/8	2	C	M	Silt Loam	
				10YR	6/6	20	C	M	Silt Loam	
				10YR	4/1	10	D	M	Silt Loam	
10-16	10YR	4/2	40	10YR	6/6	20	C	PL	Silty Clay Loam	
	10YR	5/1	40							

[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:

Soils met indicator F3. Soils contain significent depletions and redox only with this spot. Soils surrounding this small wetland had no depletions and little redox.

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):	8

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicator A3 is met. Secondary indicators D2 and D5 are met. Saturation ecountered from surface to 8 inches below surface, only moist below that. Wetland is within very slight microdepression and appears to receive direct precipitation that perches and infiltrates in this location as well receiving some sheet flow drainage from the adjacent property/gravel lot from the south.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 13-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W89-SP2**

Investigator(s): RB, JH **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.21388 **Long.:** -122.313804 **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:

Data pit approximately 40 feet NE of W89 wetland pit, located between W89 and upland berm/stream 15 (SISU Ditch 1 formerly).

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m rad)			
1. Alnus rubra	65	☑ 70.7%	FAC
2. Populus balsamifera	25	☑ 27.2%	FAC
3. Betula pendula	2	☐ 2.2%	FACU
4.	0	☐ 0.0%	
	92	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 3 m rad)			
1. Fraxinus latifolia	20	☑ 71.4%	FACW
2. Symphoricarpos albus	5	☐ 17.9%	FACU
3. Rubus armeniacus	0	☐ 0.0%	FAC
4. Cornus alba	3	☐ 10.7%	FACW
5.	0	☐ 0.0%	
	28	**= Total Cover**	
Herb Stratum (Plot size: 1m rad)			
1. Polystichum munitum	3	☐ 100.0%	FACU
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%	
	3	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 67

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	23	**x 2 =**	46
FAC species	90	**x 3 =**	270
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	123	**(A)**	356 **(B)**

Prevalence Index = B/A = 2.894

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. 30% moss cover present at test pit

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

Soil

Sampling Point: W89-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	2.5YR	4/3	100						Silt Loam	worms
16+	10YR	5/3		10YR	5/1	5	D	M	Silt Loam	oxidized rhizosheres
				5YR	3/4	1	C	M	Silt Loam	oxidized rhizospheres

[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 no present. Roots at 12".

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):	7

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicators A3 and C3 are met. Secondary indicator D5 is met. Hydrology from rain, surface runoff only. Hydrology and hydric soils are not in same depth. Saturation is very minor and appears to be from recent rainfall. Infiltration and winter dry out is still occurring. Dry below 7".

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 15-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W92-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** 16 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.215614 **Long.:** -122.315996 **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 3 wetland parameters are met. Wetland 92 is an agricultural field. Appears to have been fallow in 2020. Only early pioneering herbaceous species present; however, some hydric/non-hydric veg able to be used in delineations.

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. Juncus effusus	25	☑ 45.5%	FACW
2. Equisetum arvense	15	☑ 27.3%	FAC
3. Phalaris arundinacea	5	☐ 9.1%	FACW
4. Poa pratensis	10	☐ 18.2%	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%	
	55	**= 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	30	**x 2 =**	60
FAC species	25	**x 3 =**	75
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	55	**(A)**	135 **(B)**

Prevalence Index = B/A = 2.455

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. Field grasses difficult to ID due to lack of florescence.

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

Soil

Sampling Point: W92-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
0-10	GLE1	3/10	90	7.5YR	4/3	10	C	M	Clay Loam	
10-18	GLE1	4/10	60	7.5YR	5/6	40	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:

Hydric soil indicator A4 and F2 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):	9
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:

Wetland hydrology primary indicators A3, B1, B2, B8, and C1 are met. Secondary indicators D2 and D5 are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 15-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W92-SP2**

Investigator(s): LD, JH **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.215532 **Long.:** -122.3162 **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:
Upland

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. Rubus armeniacus	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	50	☑ 92.6%	FACW
2. Equisetum arvense	2	☐ 3.7%	FAC
3. Geranium robertianum	1	☐ 1.9%	FACU
4. Epilobium ciliatum	1	☐ 1.9%	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%	
	54	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m 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: 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	51	**x 2 =**	102
FAC species	12	**x 3 =**	36
FACU species	1	**x 4 =**	4
UPL species	0	**x 5 =**	0
Column Totals:	64	**(A)**	142 **(B)**

Prevalence Index = B/A = 2.219

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 domiinance test and prevalence index.

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

Soil

Sampling Point: W92-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	99	7.5YR	4/2	1	C	M	Silty Clay	Faint redox

[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 hydic 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 wetland hydrology indicators are met

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W92-SP3**

Investigator(s): RLB, JH **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

Landform (hillslope, terrace, etc.): **Local relief (concave, convex, none):** concave **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.215603 **Long.:** -122.31612 **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 but hydrophytic vegetation wetland parameters are met. Vegetation disturbed due to tillage. Wetland pit within regularly tilled agricultural field in lowest gradient point in SE corner of field. Indicators of regular ponding in winter and following storms.

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: 2m 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. Poa annua	0	☐ 0.0%	FAC
2. Epilobium ciliatum	0	☐ 0.0%	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%	
	0	**= 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: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

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

No hydrophytic vegetation indicators are met. Trace cover of Poa annua and Epilobium ciliatum. Presense of more persistent ponding in this field's lowest point is suppressing plant growth. All plants encountered in this ag field (in wetland or upland) are either annual, short-lived, weedy, or recently germinated and therefore; naturally problematic for determination

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

Soil

Sampling Point: W92-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	4/2	100						Silty Clay	
4-6	10YR	4/2	91	5YR	4/4	2	C	M	Silty Clay	
				5YR	4/1	7	D	M		
6-15	Gley 1	4/10Y	75	2.5YR	4/4	2	C	M	Silty Clay	
	10YR	4/2	23							
15-16	Gley 1	4/N	50	7.5YR	4/3	50	C	M	Sand layer with silts	Interface between layers

[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 F2, F3, F8 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):	18
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	13

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydology indicators B4, B6, and B8 are present. Secondary indicators B10 and D2 are also present. Active water table fluctuation evident in agricultural field as well as regular surface ponding in low points.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W92-SP4

Investigator(s): RB, JH **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.215777 **Long.:** -122.31652 **Datum:** D North Ame

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:
Soil pit located NW of W92-SP3 (wetland pit) on slightly higher ground where both more plants are growing and less evidence of surface ponding.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
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. Epilobium ciliatum	5	☑ 41.7%	FACW
2. Matricaria discoidea	1	☐ 8.3%	FACU
3. Draba praealta	3	☑ 25.0%	FAC
4. Poa annua	1	☐ 8.3%	FAC
5. Chenopodium album	2	☐ 16.7%	FACU
6. Cucurbita californica	0	☐ 0.0%	UPL
7. Sonchus oleraceus	0	☐ 0.0%	UPL
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	12	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 88

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	5	**x 2 =**	10
FAC species	4	**x 3 =**	12
FACU species	3	**x 4 =**	12
UPL species	0	**x 5 =**	0
Column Totals:	12	**(A)**	34 **(B)**

Prevalence Index = B/A = 2.833

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 and prevalence index.

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

Soil

Sampling Point: W92-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
0-11	10YR	4/2	89	10YR	5/1	10	D	M	Silt Loam	faint
				10YR	5/6	1	C	M	Silt Loam	
11-12	10YR	4/2	60	Gley 2	5/10BG	38	D	M	Silt Loam	
				10YR	5/6	2	C	M	Silt Loam	
12-16	10YR	4/2	40	Gley 2	5/10BG	42	D	M	Silt Loam	
				10YR	4/6	15	C	M	Silt Loam	
				5YR	3/4	3	C	PL	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 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 F2 and F3 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):	16

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydrology indicators B4 and B6 present. Secondary indicator D5 also present. Slight moisture at 10 inches but no saturation encountered until 16 inches

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 20-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W93-SP1

Investigator(s): LD, RLB **Section, Township, Range:** S 17 T 29N R 04E

Landform (hillslope, terrace, etc.): Sloped ag field **Local relief (concave, convex, none):** concave **Slope:** 3.0 % / 1.7 °

Subregion (LRR): LRR A **Lat.:** 47.215166 **Long.:** -122.316609 **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 3 wetland parameters are met. Wetland 93 is an agricultural field. Appears to have been fallow in 2020 --> only early pioneering herbaceous species present; however, some hydric/non-hydric vegetatoin able to be used in delineations.

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: 2m 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. Ranunculus repens	1	☐ 2.5%	FAC
2. Epilobium ciliatum	2	☐ 5.0%	FACW
3. Capsella bursa-pastoris	2	☐ 5.0%	FACU
4. Myosurus minimus	35	☑ 87.5%	OBL
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%	
	40	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 60

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	35	x 1 =	35
FACW species	2	x 2 =	4
FAC species	1	x 3 =	3
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	40 (A)		50 (B)

Prevalence Index = B/A = 1.250

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 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: W93-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
0-10	7.5YR	5/2	98	7.5YR	4/3	2	C	M	Silt Loam	tilled soil layer/has old redox and depletions mix
10-16	7.5YR	4/2	75	5YR	4/6	25	C	M	Silt Loam	
16-20	7.5YR	4/2	50	7.5YR	5/1	25	D	M	Sandy Loam	With sand pockets
				7.5YR	3/4	25	C	M		

[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 F3 is met. Hydric soil layer below disturbance zone where water table interacts.

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:

Wetland hydology indicators B2, B6, B8, and C3 are met. Secondary indicators D5 is also present. Clear evidence of winter season surface ponding which dries out by mid-spring.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 20-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W93-SP2**

Investigator(s): LD, RLB **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

Landform (hillslope, terrace, etc.): upland edge of ag field **Local relief (concave, convex, none):** convex **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR A **Lat.:** 47.215431 **Long.:** -122.316555 **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:
Upland pit in agricultural field between ditch and north end of the field. Located approximately 20 feet south of ditched/stream segment between field.

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. Cardamine oligosperma	35	☑ 38.0%	FAC
2. Epilobium ciliatum	7	☐ 7.6%	FACW
3. Cerastium glomeratum	20	☑ 21.7%	FACU
4. Poa annua	5	☐ 5.4%	FAC
5. Capsella bursa-pastoris	25	☑ 27.2%	FACU
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	92	**= 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: 8

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	7	**x 2 =**	14
FAC species	40	**x 3 =**	120
FACU species	45	**x 4 =**	180
UPL species	0	**x 5 =**	0
Column Totals:	92	**(A)**	314 **(B)**

Prevalence Index = B/A = 3.413

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 present.

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

Soil

Sampling Point: W93-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	7.5YR	4/4	99	7.5YR	5/6	1	C	M	Silt Loam	
14-20	7.5YR	4/2	60	7.5YR	4/6	40	C	M	Silt Loam	With sand deposits

[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 soil indicators are present. Soil pit in spot that appears to be a highest point in the agricultural field. Soil has evidence of tillage from 0-10 inches below surface hydric soils start at ~14-16 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 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):	36
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:

Wetland hydrology indicator B6 is present. However, soils dry and crumbly. Highly disturbed/tilled soil. Winter surface inundation and soil texture explains the surface cracks. Water table too far down to be considered wetland. Slight moisture pockets at 14-16" with soil pore linings.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Puyallup **Sampling Date:** 28-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W94-SP1**

Investigator(s): GD, DR **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218538 **Long.:** -122.320674 **Datum:** NAD 1983 H

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:

All 3 wetland parameters are met. In slight depression near wetland boundary boundary. FACW species increase towards Wapato Creek.

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. Juncus effusus	10	☐ 9.1%	FACW
2. Iris pseudacorus	5	☐ 4.5%	OBL
3. Festuca arundinacea	90	☑ 81.8%	FAC
4. Ranunculus repens	5	☐ 4.5%	FAC
5. Cirsium arvense	0	☐ 0.0%	FAC
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	110	= 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	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		310 (B)

Prevalence Index = B/A = 2.818

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. Evidence of grazing.

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

Soil

Sampling Point: W94-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
0-3	10YR	2/1	90	7.5YR	3/3	10	C	M	Sandy Clay Loam	
3-14	7.5YR	3/1	70	7.5YR	3/4	30	C	M	Sandy Clay Loam	
14-16	10YR	4/1	60	10YR	3/6	40	C	M	Sandy Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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. Percentage of sand increases with depth.

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):	14

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydology indicator C3 is present. Oxidized rhizospheres present in top 2 inches.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 28-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W94-SP2

Investigator(s): GP, DR **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218565 **Long.:** -122.320678 **Datum:** NAD 1983 H

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:
Test pit is located approximately 10 feet west 82nd ave and 40 feet north of creek

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: 2m 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. Cirsium arvense	5	☐ 4.8%	FAC
2. Ranunculus repens	20	☐ 19.0%	FAC
3. Holcus lanatus	40	☑ 38.1%	FAC
4. Anthoxanthum odoratum	40	☑ 38.1%	FACU
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: 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	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	105 (A)		355 (B)

Prevalence Index = B/A = 3.381

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

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

Soil

Sampling Point: W94-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
0-9	10YR	3/2	98	7.5YR	3/4	2	C	M	Sandy Loam	
9-16	2.5YR	2.5/1	90	10YR	3/6	10	C	M	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:

Hydric soil indicator S5 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:

No wetland hydrology indicators present. Test pit is slightly higher than SP-1.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 28-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W94-SP3

Investigator(s): GD, DR, JL **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.21886 **Long.:** -122.320887 **Datum:** NAD 1983 H

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:

All 3 wetland parameters are met. Wetland located in depression farther from road, maps as PEM soils, hydro, and veg are all marginal but meet indicators.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
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. Holcus lanatus	40	☑ 36.4%	FAC
2. Anthoxanthum odoratum	40	☑ 36.4%	FACU
3. Cirsium arvense	0	☐ 0.0%	FAC
4. Ranunculus repens	5	☐ 4.5%	FAC
5. Festuca arundinacea	25	☑ 22.7%	FAC
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	110	= 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: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	110 (A)		370 (B)

Prevalence Index = B/A = 3.364

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 meets the dominance test. Vegetation is grazed.

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

Soil

Sampling Point: W94-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	5/2	100						Silty Clay	
4-16	10YR	3/2	90	10YR	3/6	10	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:

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:

Wetland hydology indicator C3 is present. Secondary indicator D2 is also present. Oxidized rhizospheres are present from 4-12 inches, 5% more at depth.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 28-Apr-21

Applicant/Owner: GP, JL, DR **State:** WA **Sampling Point:** **W94-SP4**

Investigator(s): CL **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218849 **Long.:** -122.320888 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** PEM1B

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:
Test pit is located on a slightly higher topo than the wetland pits.

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. Holcus lanatus	80	☑ 80.0%	FAC
2. Anthoxanthum odoratum	20	☑ 20.0%	FACU
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.	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	0	**x 2 =**	0
FAC species	80	**x 3 =**	240
FACU species	20	**x 4 =**	80
UPL species	0	**x 5 =**	0
Column Totals:	100	**(A)**	320 **(B)**

Prevalence Index = B/A = 3.200

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. Vegetation has been grazed, dead nettle and Canada thistle nearby.

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

Soil

Sampling Point: W94-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
0-4	10YR 2/2						Sandy Clay Loam	
4-16	10YR 3/2						Sandy Clay Loam	More clay than top

[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 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 28-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W94-SP5**

Investigator(s): DR< GP **Section, Township, Range:** **S** 17 **T** 29N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.219398 **Long.:** -122.322826 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** PEM1B

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 3 wetland parameters are met. Test pit is located approximately 100 feet east of wetland boundary. PFO pit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3m rad)			
1. Populus balsamifera	70	☑ 60.9%	FAC
2. Alnus rubra	40	☑ 34.8%	FAC
3. Fraxinus latifolia	5	☐ 4.3%	FACW
4.	0	☐ 0.0%	
	115	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
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 rad)			
1. Phalaris arundinacea	20	☐ 19.0%	FACW
2. Juncus effusus	5	☐ 4.8%	FACW
3. Alopecurus pratensis	80	☑ 76.2%	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%	
	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: 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	30	**x 2 =**	60
FAC species	190	**x 3 =**	570
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	220	**(A)**	630 **(B)**

Prevalence Index = B/A = 2.864

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 and prevalence index. Rubus armeniacus is reooted upslope of the wetland.

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

Soil

Sampling Point: W94-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
0-5	10YR	2/2	100						Silty Clay Loam	
5-16	10YR	3/2	83	2.5YR	2.5/4	20	C	M	Silty Clay Loam	
				5YR	3/4	5	C	M	Silty Clay Loam	
				10YR	3/1	10	D	M	Silty Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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):	11

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland hydology indicator A3 is present. Secondary indicator D2 is also present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W95-SP1

Investigator(s): ES, DR, GP **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218365 **Long.:** -122.319876 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy loam **NWI classification:** PEM1C

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 3 wetland parameters are met. PEM test pit in floodplain of Wapato Creek.

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: 2m 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.	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 the rapid test for hydrophitic vegetation, dominance test, and prevalence index.

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

Soil

Sampling Point: W95-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
0-7	10YR	2/1							Organic	
7-18	10YR	2/1							Organic	Organic but more silty clay
18-20	10YR	2/1							Organic	High content of undecomposed organic
20-23	10YR	3/2	98	10YR	4/6	2	C	M	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:

Hydric soil indicators A2 and A4 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):	10
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:

Wetland hydology indicator A2, A3, and C1 are present. Secondary indicator D2 and D5 are also present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W95-SP2

Investigator(s): DR, GP, ES **Section, Township, Range:** S 17 T 29N R 4E

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

Subregion (LRR): LRR A **Lat.:** 47.218467 **Long.:** -122.319765 **Datum:** 1983 HARN

Soil Map Unit Name: Puyallup fine sandy loam **NWI classification:** PEM1C

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.

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: 2m rad)			
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: 1m rad)			
1. Phalaris arundinacea	45	☑ 45.0%	FACW
2. Poa pratensis	55	☑ 55.0%	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%	
	100	= 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: 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	45	**x 2 =**	90
FAC species	60	**x 3 =**	180
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105	**(A)**	270 **(B)**

Prevalence Index = B/A = 2.571

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 domiinance test and prevalence index. Trace cover of Cirsium arvense and Equisetum arvense present at the test pit.

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

Soil

Sampling Point: W95-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
0-20	10YR	3/3	100						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 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 hydic 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W95-SP3

Investigator(s): ES, DR, GP **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218046 **Long.:** -122.319345 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** PEM1C

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 3 wetland parameters are met.

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. Spiraea douglasii	0	☐ 0.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 1m 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: 1m 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:
Vegetation meets the 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: W95-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
0-13	10YR	2/1	100						Organic	Traces of silt
13-16	10YR	2/1	100						Silt loam	Organic inclusions

[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 A3 and A4 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):	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:

Wetland hydology indicator A2, A3, and C1 are present. Secondary indicator D2 and D5 are also present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 29-Apr-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** W95-SP4

Investigator(s): GP, DR **Section, Township, Range:** S 17 T 29N R 04E

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

Subregion (LRR): LRR A **Lat.:** 47.218931 **Long.:** -122.31801 **Datum:** NAD 1983 H

Soil Map Unit Name: Sultan silt loam **NWI classification:** PFO

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 3 wetland parameters are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Fraxinus latifolia	40	☑ 36.4%	FACW
2. Salix scouleriana	70	☑ 63.6%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
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.	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	140	x 2 =	280
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	210 (A)		490 (B)

Prevalence Index = B/A = 2.333

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 domiinance test and prevalence index.

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

Soil

Sampling Point: W95-SP4

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						Organic	

[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)
- [x] 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 A1 and A4 are met.

Hydrology

Wetland Hydrology Indicators:

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

- [x] 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)
- [x] 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):	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:

Wetland hydrology indicators A1, A2, A3, and C1 are met. Secondary indicators D2 and D5 are met. Geomorphic position 5' near creek.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W98-SP1**

Investigator(s): LD, RLB **Section, Township, Range:** **S** 17 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** concave **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.22418 **Long.:** -122.32427 **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:
Data pit located approximately 2' from stream edge on wetland bench/terrace

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 3 m rad)			
1. Alnus rubra	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2m rad)			
1.		☐ 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. Vicia americana	5	☐ 4.7%	FAC
2. Phalaris arundinacea	100	☑ 94.3%	FACW
3. Urtica dioica	1	☐ 0.9%	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%	
	106	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m 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: 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	100	**x 2 =**	200
FAC species	16	**x 3 =**	48
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	116	**(A)**	248 **(B)**

Prevalence Index = B/A = 2.138

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 and prevalence index. Bamboo found in Sapling/Shrub 20% dominant. Presumed NI.

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

Soil

Sampling Point: W98-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
0-3	7.5YR	3/3	65	7.5YR	5/1	35	D	M	Silty Clay	Roots
3-11	7.5YR	4/1	93	7.5YR	4/4	7	C	PL	Silty Clay	Oxidized rhizospheres
11-15	7.5YR	3/1	68	2.5YR	3/6	25	C	PL	Silty Clay	Oxidized rhizospheres/root channels
				2.5YR	4/6	7	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:

Soil indicator F3 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):	17
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:

Wetland hydology indicator A3 and C3 are present. Secondary indicator D5 is also present. Surface water from Wapato Creek present approximately 2 feet from the soil pit.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 08-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W98-SP2**

Investigator(s): LD, RLB **Section, Township, Range:** **S** 17 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.22424 **Long.:** -122.32443 **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:

Data pit located on higher elevation end of creek terrace. Includes angular fill rock that may have been filled into wetland edge with historic stormwater pond to north, or this site may have been used as a burn pit and trash dump and capped with rock fill.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 2m rad)			
1. Rubus armeniacus	45	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	45	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	100	☑ 95.2%	FACW
2. Galium aparine	5	☐ 4.8%	FACU
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 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: 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	100	**x 2 =**	200
FAC species	45	**x 3 =**	135
FACU species	5	**x 4 =**	20
UPL species	0	**x 5 =**	0
Column Totals:	150 **(A)**		355 **(B)**

Prevalence Index = B/A = 2.367

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:

Dominance test and prevalence index indicators met.

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

Soil

Sampling Point: W98-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
0-4	7.5YR	3/4	100						Silt	Thick root zone
4-12	7.5YR	3/3	100						Silty Clay	abundant rock fill

[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: Rock fill

Depth (inches): 4-12"

Hydric Soil Present? Yes ○ No ◉

Remarks:

Rock fill layer encountered starting at 4 inches and appears to extend beyond 12 inches below the surface. 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 hydrology indicators present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 15-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W101-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** Q43 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20115 **Long.:** -122.26623 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy loam **NWI classification:** PEM1C

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:

Record drought/heat year; soil may be native, SW conveyance and overland feed from other wetlands to NE - part of complex in cemetary. All three wetland parameters are met.

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. Rubus armeniacus	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= 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: 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	100	**x 2 =**	200
FAC species	15	**x 3 =**	45
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	115	**(A)**	245 **(B)**

Prevalence Index = B/A = 2.130

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:

In other wetlands of mosaic - Nuphar lutea, Juncus effusus. Dominance test and prevalence index indicators are met.

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

Soil

Sampling Point: W101-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
0-2									Duff	Duff
2-6	10YR	3/2	80	5YR	4/1	15	D	M	Silt	
				7.5YR	4/6	5	C	M	Silt	
6-17	5Y	4/1	65	7.5YR	4/6	35	C	M	Sandy Silt	Prominent

[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 A11 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):
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 from overhead flow and channel upstream. Wetland hydrology secondary indicators B9, D2, and D5 are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 15-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W101-SP2**

Investigator(s): JH, LD **Section, Township, Range:** **S** Q43 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** none **Slope:** 35.0 **%** / 19.3 **°**

Subregion (LRR): LRR A **Lat.:** 47.20114 **Long.:** -122.26625 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy loam **NWI classification:** PEM1C

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:
Record drought/heat year. Highway cut slope to ditch, resulting in disturbed hydrology. Only two wetland indicators are met.

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. Rubus armeniacus	40	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	80	☑ 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%	
	80	= 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: 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	80	**x 2 =**	160
FAC species	40	**x 3 =**	120
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	120	**(A)**	280 **(B)**

Prevalence Index = B/A = 2.333

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:
Domiance test and prevalence index indicators are met.

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

Soil

Sampling Point: W101-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	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 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: none

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 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:

Only secondary hydrology indicator D5 is met.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W102-SP1**

Investigator(s): JH, RLB **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 6.0 % / 3.4 °

Subregion (LRR): LRR A **Lat.:** 47.20097 **Long.:** -122.27833 **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:
Record Drought/heat year, has not rained significantly in several months, soil is very dry. All three wetland indicators are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Rubus armeniacus	8	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	8	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Equisetum telmateia	20	☐ 19.0%	FACW
2. Cirsium arvense	3	☐ 2.9%	FAC
3. Agrostis capillaris	40	☑ 38.1%	FAC
4. Carex deweyana	40	☑ 38.1%	FAC
5. Epilobium ciliatum	2	☐ 1.9%	FACW
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 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: 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	22	**x 2 =**	44
FAC species	91	**x 3 =**	273
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	113	**(A)**	317 **(B)**

Prevalence Index = B/A = 2.805

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:
Hydrophytic vegetation indicators dominance test and prevalence index are met.

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

Soil

Sampling Point: W102-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
0-2	10YR	4/2	100						silt	roots
2-9	10YR	4/2	100						silt	
9-16	10YR	5/2	70	5YR	4/4	10	C	M	Sandy silt	
	10YR	4/2	20							

[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: None

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator F3 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:

Small, marginal wetland area within a shallow road side ditch during peak summer conditions in a record dry year. Based on presence of wetland vegetation and hydric soil conditions - saturated condiations (only) are presumed in early growing season. Secondary indicator D2 is also met

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup/Pierce **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W102-SP2**

Investigator(s): JH, RLB, LD **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 6.0 % / 3.4 °

Subregion (LRR): LRR A **Lat.:** 47.20089 **Long.:** -122.27846 **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:
Data pit located south of W102 boundary within ditch, record heat/drought year. Only one wetland parameter is met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
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 rad)			
1. Agrostis capillaris	65	☑ 60.7%	FAC
2. Phalaris arundinacea	5	☐ 4.7%	FACW
3. Cirsium arvense	10	☐ 9.3%	FAC
4. Equisetum telmateia	25	☑ 23.4%	FACW
5. Holcus lanatus	2	☐ 1.9%	FAC
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 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: 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	30	**x 2 =**	60
FAC species	82	**x 3 =**	246
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	112	**(A)**	306 **(B)**

Prevalence Index = B/A = 2.732

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:
Domiance test and prevalence index indicators met.

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

Soil

Sampling Point: W102-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						Silt	Roots 0-6"

[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: None

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 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 is not presumed due to lack of hydric soil indicator. Soil is completely dry. Secondary indicator D2 is present

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W103-SP1**

Investigator(s): LD, JH, RLB **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 4.0 **%** / 2.3 **°**

Subregion (LRR): LRR A **Lat.:** 47.20138 **Long.:** -122.27894 **Datum:** NAD 1983 H

Soil Map Unit Name: Briscot loam **NWI classification:** PEM1A

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:

Data pit located in PHAR patch at base of overpass. Drain grates just above wetland found at top of overpass. Toe of slope wetland appears to receive stormwater from overpass. Historic dry/hot year. All three wetland parameters are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 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	90	☑ 81.1%	FACW
2. Cirsium arvense	1	☐ 0.9%	FAC
3. Agrostis capillaris	20	☐ 18.0%	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%	
	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: 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	90	**x 2 =**	180
FAC species	21	**x 3 =**	63
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	111 **(A)**		243 **(B)**

Prevalence Index = B/A = 2.189

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: W103-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	4/2	100						Silt Loam	Roots
9-16	10YR	4/2	90	10YR	5/2	5	C	M	Silt Loam	
				5YR	4/6	5	C	M		

[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: None

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator F3 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 is dry,no other primary indicators; however, record drough/heat year with hydric vegetation and soils, early growing season hydrology/saturation is presumed

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W103-SP2**

Investigator(s): RLB, JH, LD **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 2.5 % / 1.4 °

Subregion (LRR): LRR A **Lat.:** 47.20128 **Long.:** -122.27895 **Datum:** NAD 1983 H

Soil Map Unit Name: Briscot loam **NWI classification:** PEM1A

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:

Data pit just south of W102 boundary/SE of PHAR patch. Located in bentgrass area outside of PHAR. Record drought/heat. Only one wetland indicator is met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 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. Agrostis capillaris	50	☑ 47.6%	FAC
2. Agrostis stolonifera	50	☑ 47.6%	FAC
3. Cirsium arvense	5	☐ 4.8%	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%	
	105	**= 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: 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	0	**x 2 =**	0
FAC species	105	**x 3 =**	315
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		315 **(B)**

Prevalence Index = B/A = 3.000

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:

Dominance test and prevalence index indicators are met.

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

Soil

Sampling Point: W103-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
0-15+	10YR 4/2	100					Silt Loam	roots in top 4"

[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 were 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincoporated Pierce County **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W104-SP1**

Investigator(s): RLB/JH **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 12.5 **%** / 7.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.20219 **Long.:** -122.27950 **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:

Data pit located with very low drainage ditch at toe of slope/embankment. Ditch approximately 7 feet to bottom from top of slope on west side. Record heat/drought year. All wetland parameters are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1.		☐ 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. Festuca arundinacea	10	☐ 9.5%	FAC
2. Agrostis capillaris	80	☑ 76.2%	FAC
3. Cirsium arvense	15	☐ 14.3%	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%	
	105	**= 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	0	**x 2 =**	0
FAC species	105	**x 3 =**	315
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		315 **(B)**

Prevalence Index = B/A = 3.000

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:

Large Himalayan Blackberry/thick hedge on north/east sides of ditch and overpass embankment. Rooted outside of the wetland, provides 65 percent cover. Vegetation meets the dominance test and prevalence index.

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

Soil

Sampling Point: W104-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	4/2	100						Silt Loam	
9-16	10YR	4/2	65	10YR	5/1	25	D	M	Silt Loam	
				7.5YR	4/4	10	C	M		

[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: None

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator F3 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 is moist but not saturated. Early season saturation presumed. Secondary indicator D2 is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 22-Jul-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W104-SP2**

Investigator(s): JH, RLB **Section, Township, Range:** **S** Q44 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 10.0 **%** / 5.7 **°**

Subregion (LRR): LRR A **Lat.:** 47.20200 **Long.:** -122.28000 **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:
Record drought/heat year. Data plot located approximately 100' upslope of W104-SP1. Only one wetland parameter is met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 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. Agrostis capillaris	30	☑ 28.6%	FAC
2. Agrostis stolonifera	60	☑ 57.1%	FAC
3. Festuca arundinacea	10	☐ 9.5%	FAC
4. Cirsium arvense	5	☐ 4.8%	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%	
	105	**= 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: 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	0	**x 2 =**	0
FAC species	105	**x 3 =**	315
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		315 **(B)**

Prevalence Index = B/A = 3.000

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:
Dominance test and prevalence index indicators are met.

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

Soil

Sampling Point: W104-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
0-11	10YR	4/2	100						Silt Loam	
11-16	10YR	4/2	80	10YR	5/1	10	D	M	Silt Loam	
				5YR	4/4	10	C	M		

[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: None

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators 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):

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:** Unincorporated Pierce County **Sampling Date:** 18-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W105-SP1**

Investigator(s): Dominguez, Sprague **Section, Township, Range:** **S** Q46 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20211 **Long.:** -122.28077 **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:
Record drought/heat year. Channelized area cut into historic floodplain elevation. All three wetland indicators are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Symphoricarpos albus	10	☑ 50.0%	FACU
2. Rubus spectabilis	10	☑ 50.0%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Juncus effusus	95	☑ 96.0%	FACW
2. Carex stipata	2	☐ 2.0%	OBL
3. Cirsium arvense	1	☐ 1.0%	FAC
4. Hypericum canadense	1	☐ 1.0%	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%	
	99	**= 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: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	**x 1 =**	2
FACW species	96	**x 2 =**	192
FAC species	11	**x 3 =**	33
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	119	**(A)**	267 **(B)**

Prevalence Index = B/A = 2.244

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:
Dominance test and prevalence index indicators are met.

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

Soil

Sampling Point: W105-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
0-7	10YR	4/2	100						Silt Loam	dry
7-16	10YR	5/2	75	7.5YR	4/3	25	C	M	Silt Loam	dry

[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: None

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soil indicator F3 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:

Primary hydrology indicator C4 and secondary indicators B10 and D2 are present. Delineated during drought conditions, early season wetland hydrology presumed.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 18-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W105-SP2**

Investigator(s): Dominguez, Sprague **Section, Township, Range:** **S** Q46 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** none **Slope:** 20.0 **%** / 11.3 **°**

Subregion (LRR): LRR A **Lat.:** 47.20196 **Long.:** -122.28056 **Datum:** WGS84

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:
Record drought/heat year.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Symphoricarpos albus	15	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Rubus ursinus	35	☑ 87.5%	FACU
2. Hypericum perforatum	5	☐ 12.5%	FACU
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%	
	40	**= Total Cover**	
Woody Vine Stratum (Plot size: 1m 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: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	0	**x 3 =**	0
FACU species	55	**x 4 =**	220
UPL species	0	**x 5 =**	0
Column Totals:	55 **(A)**		220 **(B)**

Prevalence Index = B/A = 4.000

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:
No hydrophytic vegetation indicators are met.

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

Soil

Sampling Point: W105-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
0-10	10YR	4/2	100						Silt Loam	
10-14	7.5YR	6/1	80	7.5YR	4/3	20	D	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 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:

Next to deep ditch. Non-wetland vegetation and upland position (elevation) relative to ditch. 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:** Unincorporated Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W106-SP1**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.202765 **Long.:** -122.274105 **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:
Conditions are normal for this time of year. No significant disturbance to vegetation, soil, or hydrology. All three wetland parameters are met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3m 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	99	☑ 99.0%	FACW
2. Lotus corniculatus	1	☐ 1.0%	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%	
	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	99	**x 2 =**	198	
FAC species	1	**x 3 =**	3	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	100	**(A)**	201	**(B)**

Prevalence Index = B/A = 2.010

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:
Dense reed canary grass lining channel. Terminates at ditch. All features contained within the culvert outlet area. Rubus armeniacus in different soil/not in wetland. Rapid test indicator is met, as well as dominance test and prevalence index.

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

Soil

Sampling Point: W106-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	2/1	90	7.5YR	3/3	10	C	M	Loam	
9-16	10YR	4/2	75	10YR	4/4	25	C	M	Loam	road runoff 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:

Sediment deposition from froad runoff (silt/sand mixed with loam). Redox in depleted soil within 12 inches. Primary hydric soil indicators A11 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):	0
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:

Standing water visible at outlet of pipe. Primary indicators A3 and B2 present with secondary indicators B10 and D2.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W106-SP2**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.202765 **Long.:** -122.274105 **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:
Climatic/hydrologic conditions are normal for this time of year.Only one wetland parameter is met. This site is not within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Rubus laciniatus	40	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	75	☑ 93.8%	FACW
2. Lotus tenuis	5	☐ 6.3%	FACU
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%	
	80	**= 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	75	**x 2 =**	150
FAC species	0	**x 3 =**	0
FACU species	45	**x 4 =**	180
UPL species	0	**x 5 =**	0
Column Totals:	120	**(A)**	330 **(B)**

Prevalence Index = B/A = 2.750

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:
Hydrophytic vegetation indicator prevalence test is met.

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

Soil

Sampling Point: W106-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
0-5	10YR	3/2	100						Silt Loam	Soil is dry
5-16	10YR	5/3	100						Silt Loam	Blocky, layered colors due to silt deposition/seas

[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 depletion, no hydric soil indicators met. Hydric soil is not present at site.

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 is dry, no indicators of wetland hydrology are present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W107-SP1**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.202435 **Long.:** -122.273978 **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:
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: 5m 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: 3 m rad)			
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 rad)			
1. Phalaris arundinacea	10	☑ 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%	
	10	**= 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: 90

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	10	**x 2 =**	20
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	15	**(A)**	35 **(B)**

Prevalence Index = B/A = 2.333

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:
Low vegetative cover as indicator of sparsely vegetated concave survace. Dominance test and prevalence index are met.

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

Soil

Sampling Point: W107-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
0-5	10YR	4/3	100	10YR	4/4	30	C	M	Loam	
5-16	10YR	5/2	70	10YR	4/4	30	C	M	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:

Hydric soil indicator F3 (depleted matrix) 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:

Primary hydrology indicators B2 and B8 are present, as well as secondary indicators B10 and D2.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W107-SP2**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.202435 **Long.:** -122.273978 **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:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present at site. Soil pit taken in forested subclass.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m rad)			
1. Populus balsamifera	65	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	65	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 3 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	10	☑ 76.9%	FACW
2. Lotus tenuis	2	☐ 15.4%	FACU
3. Asclepias fascicularis	1	☐ 7.7%	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%	
	13	**= 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: 78

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	10	**x 2 =**	20
FAC species	66	**x 3 =**	198
FACU species	2	**x 4 =**	8
UPL species	0	**x 5 =**	0
Column Totals:	78	**(A)**	226 **(B)**

Prevalence Index = B/A = 2.897

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:
Hydrophytic vegetation indicators dominance test and prevalence index are met.

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

Soil

Sampling Point: W107-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
0-3	10YR	4/2	100						Loam	
3-16	10YR	4/2	70	7.5YR	4/4	30	D	M	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:

Hydric soil indicator F3 (depleted matrix) is met. Hydric soil is present at site.

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:

Wetland hydrology indicators B2 (sediment deposits), B8 (sparsley vegetated concave surface) are met. Secondary indicators B10 (drainage patterns) and D2 (geomorphic position) met. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W107-SP3**

Investigator(s): Dominguez, Schulz **Section, Township, Range:** **S** 22 **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.:** 47.20240 **Long.:** -122.27442 **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:
Hydrophytic vegetation is present. No hydric soil or wetland hydrology in site, therefore site is determined to not be within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3m 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. Cirsium arvense	75	☑ 58.6%	FAC
2. Agrostis capillaris	40	☑ 31.3%	FAC
3. Epilobium palustre	10	☐ 7.8%	OBL
4. Lolium perenne	3	☐ 2.3%	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%	
	128	**= 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	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	118	x 3 =	354
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	128 (A)		364 (B)

Prevalence Index = B/A = 2.844

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:
Dominance test and prevalence index indicators are met. Hydrophytic vegetation present at site.

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

Soil

Sampling Point: W107-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
0-18	10YR	3/3	100						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. Hydric soil is not present at site.

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 wetland hydrology present. Assumed by non-hydric soil and lack of hydrology indicators.

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

Project/Site: SR 167 Stage 2 **City/County:** Pierce County **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W108-SP1**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.199507 **Long.:** -122.279769 **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:
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: 5m rad)			
1. Populus balsamifera	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 3 m rad)			
1. Rubus armeniacus	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	100	☑ 90.9%	FACW
2. Lathyrus pratensis	10	☐ 9.1%	UPL
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%	
	110	**= 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: 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	100	**x 2 =**	200
FAC species	25	**x 3 =**	75
FACU species	0	**x 4 =**	0
UPL species	10	**x 5 =**	50
Column Totals:	135	**(A)**	325 **(B)**

Prevalence Index = B/A = 2.407

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:
Lathyrus pratensis in wetland area, some rooting within wetland boundary. Hydrophytic vegetation indicators dominance test and prevalence index are met.

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

Soil

Sampling Point: W108-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
0-7	10YR	4/2	100						Loam	
7-16	10YR	4/2	75	10YR	4/1-4/2	25	D	M	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:

Hydric soil indicator F3 is present. Redox color is either 10YR 4/1 or 10YR 4/2. Hydric soil is present at site.

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:

Primary hydrology indicator B2 (sediment deposits) is present. Secondary indicators B10 (drainage patterns), D2 (Geomorphic position), and D5 (FAC-neutral test) also present at site. Wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W108-SP2**

Investigator(s): Dominguez, Heresy **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.199270 **Long.:** -122.281857 **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:
Climatic conditions at site are normal for this time of year. Hydrophytic vegetation is present, however there are no hydric soils or wetland hydrology at site. This site 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. Rubus armeniacus	50	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	50	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Poa annua	95	☑ 100.0%	FAC
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%	
	95	= 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: 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	0	**x 2 =**	0
FAC species	145	**x 3 =**	435
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	145 **(A)**		435 **(B)**

Prevalence Index = B/A = 3.000

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:
Hydrophytic vegetation indicators dominance test and prevalence index are met. Sheet flow from road runoff

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

Soil

Sampling Point: W108-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
0-11	10YR 4/2	100					silt gravel	gravel placed for ditch maintenance, not natural

[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: Gravel cobble

Depth (inches): 11

Hydric Soil Present? Yes ○ No ◉

Remarks:

No hydric soil indicators are present at this site. Soil is very dry, dug until refusal was met. Refusal was a compact gravel layer.

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:

Only one secondary indicator, geomorphic position (D2) is met at site. There is no saturation, no water table, and no surface water present at site. No wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W109-SP1**

Investigator(s): Dominguez, Schulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20390 **Long.:** -122.29185 **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:
Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at sampling site. Site is located within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Rubus armeniacus	20	☑ 66.7%	FACU
2. Alnus rubra	10	☑ 33.3%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Agrostis capillaris	85	☑ 83.3%	FAC
2. Juncus effusus	5	☐ 4.9%	FACW
3. Cirsium arvense	5	☐ 4.9%	FAC
4. Hypericum perforatum	5	☐ 4.9%	FACU
5. Daucus carota	2	☐ 2.0%	FACU
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	102	**= 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: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	5	**x 2 =**	10
FAC species	100	**x 3 =**	300
FACU species	27	**x 4 =**	108
UPL species	0	**x 5 =**	0
Column Totals:	132	**(A)**	418 **(B)**

Prevalence Index = B/A = 3.167

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:
Dominance test is met, hydrophytic vegetation is present at sampling site.

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

Soil

Sampling Point: W109-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
0-4	10YR	4/2	100						Silt Loam	
4-16	10YR	4/2	80	10YR	4/4	20	D	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 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:

Roots present in upper 3 inches of soil. Hydric soil indicator depleted matrix (F3) is present at site.

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:

Primary indicator sediment deposits (B2) is met, as well as two secondary indicators: drainage patterns (B10) and geomorphic position (D2).

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 30-Aug-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W109-SP2**

Investigator(s): Dominguez, Schulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20390 **Long.:** -122.29184 **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:

Climatic conditions are normal for this time of year. No hydrophytic vegetation, hydric soils, or wetland hydrology are present at site. The 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: 5m 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: 3 m rad)			
1. Rubus armeniacus	15	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Agrostis capillaris	50	☑ 53.2%	FAC
2. Anthoxanthum odoratum	40	☑ 42.6%	FACU
3. Cirsium arvense	2	☐ 2.1%	FAC
4. Phalaris arundinacea	2	☐ 2.1%	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%	
	94	**= 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: 6

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	2	**x 2 =**	4
FAC species	52	**x 3 =**	156
FACU species	55	**x 4 =**	220
UPL species	0	**x 5 =**	0
Column Totals:	109	**(A)**	380 **(B)**

Prevalence Index = B/A = 3.486

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

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

Soil

Sampling Point: W109-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						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 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 were met at this site. Hydric soil is 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 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 primary or secondary hydrology indicators are present at this site. Wetland hydrology is 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:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W111-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20206 **Long.:** -122.28124 **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:

Site is experiencing typical climatic conditions. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at site. Site is sampled 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. 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 rad)			
1. Phalaris arundinacea	100	☑ 87.0%	FACW
2. Cirsium arvense	15	☐ 13.0%	FAC
3.		☐ 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%	
	115	**= 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: 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	100	**x 2 =**	200
FAC species	20	**x 3 =**	60
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	120 **(A)**		260 **(B)**

Prevalence Index = B/A = 2.167

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:

Despite offering cover at the site, trees and shrubs are rooted uphill and outside of wetland boundary. Regardless, dominance test and prevalence index indicators are all present at site. Hydrophytic vegetation is present.

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

Soil

Sampling Point: W111-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	4/2	100						Loam	
9-16	10YR	4/2	65	10YR	5/2	30	D	M	Silt Loam	
				7.5YR	4/6	5	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 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 depleted matrix (F3) is met. Hydric soil is present at site.

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 indicators water stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5) are met at site. Wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W111-SP2**

Investigator(s): Hearsey, Dominguez **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.20240 **Long.:** -122.28184 **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:

Climatic/hydrologic conditions are typical at site. Soil has been disturbed, resulting in a mixed matrix. Hydrophytic vegetation, hydric soil, and wetland hydrology are absent at site. 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. Juglans nigra	90	☑ 100.0%	UPL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Rubus armeniacus	100	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	100	= Total Cover	
Herb Stratum (Plot size: 1 m rad)			
1. Polystichum munitum	5	☑ 100.0%	FACU
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%	
	5	= 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: 95

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	0	**x 2 =**	0
FAC species	100	**x 3 =**	300
FACU species	5	**x 4 =**	20
UPL species	90	**x 5 =**	450
Column Totals:	195	**(A)**	770 **(B)**

Prevalence Index = B/A = 3.949

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. Hydrophytic vegetation is not present at site.

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

Soil

Sampling Point: W111-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
0-17	10YR	3/2	80						Loam	
0-17	10YR	4/4	20							mixed matrix

[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 has been disturbed resulting in a mixed matrix with no redox features. No hydric soil indicators are met. Hydric soil is not present at site.

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:

Only one secondary indicator, geomorphic position (D2) is met. Wetland hydrology is not present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W112-SP1**

Investigator(s): Shulz, Dominguez **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.19945 **Long.:** -122.28125 **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:

Climatic/hydrologic conditions are typical for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at site. This 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. Poa annua	10	☑ 100.0%	FAC
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%	
	10	**= 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: 90

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	10	**x 3 =**	30
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	10	**(A)**	30 **(B)**

Prevalence Index = B/A = 3.000

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:

High percentage of bare ground. Dry on surface, heavily shaded area. Lots of trees and shrubs canopy over the site, but are rooted outside of the site. Dominance test and prevalence index 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: W112-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
0-5	10YR	4/2	100						Silt Loam	
5-16	10YR	4/2	75	10YR	4/4	25	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 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 depleted matrix (F3) is met. Hydric soil is present at site.

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:

Primary hydrology indicator water marks (A3) present. Secondary indicators drainage patterns (B10) and geomorphic position (D2) present. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W112-SP2**

Investigator(s): Dominguez, Schulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.200712 **Long.:** -122.280762 **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:

Climatic conditions are normal for this time of year. Site does not have hydrophytic vegetation, hydric soil, or wetland hydrology. This 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. Prunus laurocerasus	20	☑ 100.0%	UPL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2 m rad)			
1. Rubus armeniacus	70	☑ 82.4%	FAC
2. Corylus cornuta	15	☐ 17.6%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	85	= Total Cover	
Herb Stratum (Plot size: 1m rad)			
1.	0	☐ 0.0%	
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%	
	0	= 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: 100

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	0	**x 2 =**	0
FAC species	70	**x 3 =**	210
FACU species	15	**x 4 =**	60
UPL species	20	**x 5 =**	100
Column Totals:	105	**(A)**	370 **(B)**

Prevalence Index = B/A = 3.524

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. Hydrophytic vegetation is not present at site.

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

Soil

Sampling Point: W112-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
0-10	10YR	4/2	80						Silt Loam	
0-10	10YR	5/2	20						Silt Loam	
10-15	10YR	4/2	100						Silt Loam	
15-18	10YR	4/2	98	10YR	4/4	2	C	M	Silt Loam	trace - exceeds depth criteria for hydric

[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. Hydric soil is not present at site.

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 at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 02-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W113-SP1**

Investigator(s): Dominguez, Shulz **Section, Township, Range:** **S** 22 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.19985 **Long.:** -122.27960 **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:

Climatic/hydrologic conditions are normal for this time of year. All three wetland parameters are met. Site is determined to be 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. Rubus armeniacus	35	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	35	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Agrostis capillaris	90	☑ 94.7%	FAC
2. Equisetum arvense	5	☐ 5.3%	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%	
	95	**= 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: 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	0	**x 2 =**	0
FAC species	130	**x 3 =**	390
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	130 **(A)**		390 **(B)**

Prevalence Index = B/A = 3.000

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:

Trace amounts of Juncus sp. found in herb stratum. Dominance test and prevalence index are met.

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

Soil

Sampling Point: W113-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	4/2	100						Silt Loam	
9-16	10YR	4/2	80	10YR	4/4	20	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 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 for depleted matrix (F3) are present. Hydric soil present at site.

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 indicators for drainage patterns (B10) and geomorphic position (D2) are present. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 08-Sep-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W113-SP2**

Investigator(s): Dominguez, Shultz **Section, Township, Range:** **S** 22 **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.:** 47.19951 **Long.:** -122.27985 **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:

Climatic/hydrologic conditions are typical for this time of year. Though hydrophytic vegetation is present, site lacks wetland hydrology and hydric soils. This 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. Rubus armeniacus	75	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	75	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	60	☑ 60.0%	FACW
2. Equisetum telmateia	40	☑ 40.0%	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%	
	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: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (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	75	**x 4 =**	300
UPL species	0	**x 5 =**	0
Column Totals:	175	**(A)**	500 **(B)**

Prevalence Index = B/A = 2.857

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:

Hydrophytic indicator for the dominance test and prevalence inddex are met at this site. Hydrophytic vegetation is present.

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

Soil

Sampling Point: W113-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	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 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 are met at site.

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 hydrology indicators are present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 13-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W114-SP1**

Investigator(s): R Baker / L Dominguez **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): ditch **Local relief (concave, convex, none):** concave **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.18652 **Long.:** -122.28332 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:
Climatic/hydrologic conditions are drier than normal for this time of year. GPS coordinates are an estimate based on wetland location. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present at sampling site. Site is located within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3m rad)			
1. Corylus avellana	2	☐ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	**= 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	2	**x 4 =**	8
UPL species	0	**x 5 =**	0
Column Totals:	102 **(A)**		208 **(B)**

Prevalence Index = B/A = 2.039

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:
Ditch wetland with mixed conifers/deciduous trees overhanging but rooted in upland side slopes. Corylus avellana and Equisetum telmateia are both present in trace amounts. Rapid test, dominance test, and the prevalence index are met. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W114-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
1-4	10YR	3/1	95	10YR	5/8	5	C	M	Silt Loam	oxidized rhizospheres
4-8	10YR	5/2	75	5YR	4/6	25	C	M	Silt Loam	
8-16	10YR	4/2	70	5YR	3/4	30	C	M	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 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 depleted matrix (F3) and redox dark surface (F6) are met.

Hydric soil is present at site.

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:

Surface ponding observed in a ditch outside of data plot approximately 20 feet north. Primary indicators for saturation (A3) and oxidized rhizospheres on living roots (C3) are present. Secondary indicators B9 and D5 also present. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 13-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W114-SP2**

Investigator(s): R Baker / L Dominguez **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Ditcch **Local relief (concave, convex, none):** concave **Slope:** 4.0 **% /** 2.3 **°**

Subregion (LRR): LRR A **Lat.:** 47.18638 **Long.:** -122.28335 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:

Paired upland pit with W113 SP1. Climatic/hydrologic conditions are drier than normal for this time of year. GPS coordinates estimated based on location of wetland. Hydrophytic vegetation is present at site. Site does not contain hydric soil or wetland hydrology. Sampled area is not within a

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m rad)			
1. Acer macrophyllum	55	☑ 84.6%	FACU
2. Pseudotsuga menziesii	10	☐ 15.4%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	65	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 3 m rad)			
1. Acer circinatum	7	☑ 58.3%	FAC
2. Rubus armeniacus	5	☑ 41.7%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	12	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Agrostis capillaris	20	☑ 20.0%	FAC
2. Equisetum arvense	40	☑ 40.0%	FAC
3. Festuca arundinacea	15	☐ 15.0%	FAC
4. Phalaris arundinacea	25	☑ 25.0%	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 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: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	25	**x 2 =**	50
FAC species	87	**x 3 =**	261
FACU species	65	**x 4 =**	260
UPL species	0	**x 5 =**	0
Column Totals:	177	**(A)**	571 **(B)**

Prevalence Index = B/A = 3.226

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:

Herbs are the dominants and only veg within the ditch. Trees and most shrubs are up on side slopes - Rubus armeniacus is within the ditch bottom approximately 20 feet north of data plot. Site meets the dominance test. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W114-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
0-1	10YR 3/2	100						Duff, organics, thick roots
1-5	10YR 3/2	100					sandy loam	Thick roots
5-13	10YR 3/2	100						medium gravel/cobbles and larger roots

[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: Rocks/gravel/cobbles

Depth (inches): 12

Hydric Soil Present? Yes ○ No ◉

Remarks:

No redox or 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:

Soil is dry, crumbly. Secondary indicator geomorphic position (D2) is met. Site does not contain wetland hydrology.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 14-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W115-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.18583 **Long.:** -122.28336 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:

Site is in ditch by road prism. Soil is likely native, but has been disturbed. Climatic/hydrologic conditions are drier than normal for this time of year. 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. Sonchus arvensis	15	☐ 18.1%	FACU
2. Equisetum arvense	8	☐ 9.6%	FAC
3. Phalaris arundinacea	60	☑ 72.3%	FACW
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%	
	83	**= 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: 17

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	60	**x 2 =**	120
FAC species	8	**x 3 =**	24
FACU species	15	**x 4 =**	60
UPL species	0	**x 5 =**	0
Column Totals:	83	**(A)**	204 **(B)**

Prevalence Index = B/A = 2.458

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. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W115-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
0-2	10YR	2/2	100						Loam	Duff layer
2-5	10YR	2/2	100						Loam	
5-12	10YR	4/2	75	7.5YR	4/4	25	C	M	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: rocks

Depth (inches): 12

Hydric Soil Present? Yes ◉ No ○

Remarks:

Refusal at 12 inches. Hydric soil indicator depleted matrix (F3) is met. Hydric soil is present at site.

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:

Three secondary hydrology indicators, water stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5) are met. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 13-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W116-SP1**

Investigator(s): R Baker / L Dominguez **Section, Township, Range:** **S** 34 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Ditch **Local relief (concave, convex, none):** concave **Slope:** 3.0 **% /** 1.7 **°**

Subregion (LRR): LRR A **Lat.:** 47.18204 **Long.:** -122.28485 **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:

Data plot located in ditch (D-SISU-12) on south bound lanes on the west side. Climatic/hydrologic conditions are drier than normal for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are all present. 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: 5m 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: 3 m rad)			
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 rad)			
1. Phalaris arundinacea	100	☑ 98.0%	FACW
2. Cirsium arvense	2	☐ 2.0%	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%	
	102	**= 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: 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	100	**x 2 =**	200
FAC species	7	**x 3 =**	21
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	107 **(A)**		221 **(B)**

Prevalence Index = B/A = 2.065

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:

Dominance test and prevalence index indicators are present at site. Hydrophytic vegetation present.

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

Soil

Sampling Point: W116-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	3/2	100						Loam	roots
9-14+	10YR	4/2	85	10YR	5/6	15	C	PL/M	Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy 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 depleted matrix (F3) is met. Hydric soil is present at site.

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:

Primary hydrology indicator oxidized rhizospheres on living roots (C3) present. Secondary indicators Geomorphic position (D2) and FAC-neutral test (D5) also present. Wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 14-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W116-SP2**

Investigator(s): JH, LD **Section, Township, Range:** **S** 34 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.18279 **Long.:** -122.28403 **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:

Pit is located near highway ditch, resulting in a disturbed area. Climatic/hydrologic conditions are drier than normal for this time of year. Wetland hydrology is present, but hydrophytic vegetation and hydric soil are not. 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. Rubus armeniacus	30	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	20	☑ 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%	
	20	**= 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: 60

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	20	**x 2 =**	40
FAC species	0	**x 3 =**	0
FACU species	30	**x 4 =**	120
UPL species	0	**x 5 =**	0
Column Totals:	50	**(A)**	160 **(B)**

Prevalence Index = B/A = 3.200

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:

Though reed canarygrass is present at site it does not meet the dominance test. Hydrophytic vegetation is not present at site.

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

Soil

Sampling Point: W116-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
0-13	10YR	3/2	100						Loam	
13-16	10YR	4/2	80	10YR	5/1	10	D	M	Loam	
13-16				7.5YR	5/6	10	C	M	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:

Depleted matrix and redox soil layer are too low in the profile. 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:

Primary indicator for sparsely vegetated concave surface (B8) is met. Secondary indicator D2 (geomorphic position) also met. Wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 15-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W119-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Slope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR): LRR A **Lat.:** 47.18995 **Long.:** -122.28398 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:

Area is mowed, grated for highway, grate collects water resulting in disturbances for vegetation, soil, and hydrology. Climatic/hydrologic conditions are drier than normal for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are present. 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	60	☑ 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%	
	60	= 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	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	60 (A)		120 (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:

Mowed field grasses occupy 40% of herb stratum and are presumed FAC. Site meets rapid test, dominance test, and prevalence index indicators. Hydrophytic vegetation is present.

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

Soil

Sampling Point: W119-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	100						Loam	
8-16	10YR	4/2	60	10YR	5/1	15	D	M	Loam	
				7.5YR	4/6	25	C	M	Loam	Prominent

[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 depleted matrix (F3) is met. Hydric soil is present at site.

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:

Three secondary hydrology indicators, drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5) are present. Wetland hydrology is present at site.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 15-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W119-SP2**

Investigator(s): JH, LD **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.19020 **Long.:** -122.28397 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:
Mowing occurs regularly at site resulting in disturbance. Climatic/hydrologic conditions are drier than normal for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are absent from site. 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. Populus balsamifera	20	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= 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. Taraxacum officinale	3	☑ 33.3%	FACU
2. Achillea millefolium	3	☑ 33.3%	FACU
3. Trifolium arvense	3	☑ 33.3%	UPL
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%	
	9	= 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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	20	**x 3 =**	60
FACU species	6	**x 4 =**	24
UPL species	3	**x 5 =**	15
Column Totals:	29	**(A)**	99 **(B)**

Prevalence Index = B/A = 3.414

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:
Mowed, unidentifiable planted grasses occupy 99% of herb statum. No hydrophytic indicators are met. Hydrophytic vegetation is not present at site.

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

Soil

Sampling Point: W119-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	3/2	100						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 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 15-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W120-SP1**

Investigator(s): JH, LD **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR): LRR A **Lat.:** 47.18972 **Long.:** -122.28190 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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:

Site area is regularly mowed resulting in vegetation disturbances. Climatic/hydrologic conditions are drier than normal for this time of year. 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	90	☑ 94.7%	FACW
2. Sonchus arvensis	5	☐ 5.3%	FACU
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%	
	95	**= 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	90	**x 2 =**	180
FAC species	0	**x 3 =**	0
FACU species	5	**x 4 =**	20
UPL species	0	**x 5 =**	0
Column Totals:	95	**(A)**	200 **(B)**

Prevalence Index = B/A = 2.105

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:

Mowed, unidentifiable field grasses occupy 5% of herb stratum. Rapid test, dominance test, and prevalence index are met. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W120-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	3/2	100						Sandy Loam	
9-16	10YR	4/1	75	7.5YR	4/6	25	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 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 depleted matrix (F3) is met. Hydric soil is present at site.

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:

Three secondary hydrology indicators, drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5) are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Puyallup, Pierce **Sampling Date:** 15-Oct-21

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W120-SP2**

Investigator(s): JH, LD **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** none **Slope:** 4.0 **%** / 2.3 **°**

Subregion (LRR): LRR A **Lat.:** 47.18966 **Long.:** -122.28180 **Datum:**

Soil Map Unit Name: Puyallup fine sandy 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:

Area is mowed, resulting in vegetation distubances. Climatic/hydrologic conditions are drier than normal for this time of year. Hydrophytic vegetation, hydric soil, and wetland hydrology are absent from site. 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.	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. Sonchus asper	30	☑ 100.0%	FACU
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%	
	30	**= 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: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	0	**x 3 =**	0
FACU species	30	**x 4 =**	120
UPL species	0	**x 5 =**	0
Column Totals:	30 **(A)**		120 **(B)**

Prevalence Index = B/A = 4.000

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:

70% of herb stratum is occupied by mowed, unidentifiable field grass. No hydrophytic vegetation indicators met. Hydrophytic vegetation is not present at site.

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

Soil

Sampling Point: W120-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	3/1	100						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 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 wetland hydrology indicators are met.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 21-Jan-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W127-SP1**

Investigator(s): RP, GP **Section, Township, Range:** **S** 17 **T** 20N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.21654 **Long.:** -122.321 **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 indicators present. Depressional PEM wetland. Test pit is located approximately 5 feet from area of surface ponding. Soils slightly compacted compared to surrounding area.

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. Ranunculus repens	5	☐ 3.7%	FAC
2. Agrostis stolonifera	90	☑ 66.7%	FAC
3. Phalaris arundinacea	40	☑ 29.6%	FACW
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%	
	135	**= 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: 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	40	x 2 =	80
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		365 (B)

Prevalence Index = B/A = 2.704

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 and prevalence index.

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

Soil

Sampling Point: W127-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
0-7	10YR	3/2	100						Silt Loam	
7-16	10YR	3/1	90	7.5YR	3/4	10	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 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 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):	1
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:

Wetland hydrology indicators A2 and A3 present.

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

Project/Site: SR 167 Stage 2 **City/County:** Fife/Pierce **Sampling Date:** 21-Jan-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W127-SP2**

Investigator(s): RP, GP **Section, Township, Range:** **S** 17 **T** 20N **R** 04E

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

Subregion (LRR): LRR A **Lat.:** 47.21644 **Long.:** -122.321 **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:

Upland soil pit located in open field consisting of mixed FAC grasses likely planted from past agriculture uses. Soils are showing marginal hydric indicators but redox features are not distinct or prominent. High water table and saturated soils were present during January 22, 2022 site visit but

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. Festuca arundinacea	5	☐ 4.8%	FAC
2. Agrostis stolonifera	90	☑ 85.7%	FAC
3. Ranunculus repens	10	☐ 9.5%	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%	
	105	**= 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	0	**x 2 =**	0
FAC species	105	**x 3 =**	315
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		315 **(B)**

Prevalence Index = B/A = 3.000

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 dominance test and prevalence index.

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

Soil

Sampling Point: W127-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
0-10	10YR	3/2	80	10YR	3/3	20	C	M	Silt Loam	
10-16	10YR	3/1	70	10YR	3/4	30	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 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 are not present. Redox features are not distinct or prominent.

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):	2
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:

Wetland hydology indicators A2 and A3 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:** 05-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W130-SP1**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.196307 **Long.:** -122.281999 **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:

Site contains hydrophytic vegetation, hydric soil and wetland hydrology. The 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: 5m 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: 3 m rad)			
1. Rubus armeniacus	25	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	25	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Phalaris arundinacea	80	☑ 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%	
	80	**= 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: 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	80	**x 2 =**	160
FAC species	25	**x 3 =**	75
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105	**(A)**	235 **(B)**

Prevalence Index = B/A = 2.238

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:

15 percent of the herb stratum is occupied but unidentified field grasses. Meets the dominance test and prevalence index. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W130-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	3/2	100						Silt Loam	with gravel
9-15	10YR	4/1	70	5YR	4/6	30	C	M	Silt Loam	with 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:

Hydric soil indicator depleted matrix (F3) is met. Hydric soil is present at site.

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:

Primary indicators for surface water, high water table, and saturation are all present at site. Secondary indicators water-stained leaves and FAC-neutral test are also present. Site contains wetland hydrology.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 05-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W130-SP2**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 27 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.196486 **Long.:** -122.281930 **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:

Site contains hydrophytic vegetation and wetland hydrology, but lacks hydric soils. The 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: 5m 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: 3 m rad)			
1. Rubus armeniacus	40	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Agrostis gigantea	100	☑ 100.0%	FAC
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: 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	0	**x 2 =**	0
FAC species	140	**x 3 =**	420
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	140 **(A)**		420 **(B)**

Prevalence Index = B/A = 3.000

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:

Various field grasses occupy 100 percent of the herb stratum. These are assumed FAC and are represented by Agrostis gigantea on this form. Site meets indicators for dominance test and prevalence index. Sampled area contains hydrophytic vegetation.

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

Soil

Sampling Point: W130-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
0-8	10YR	3/1	100						Silty Loam	
8-16	10YR	4/1	100						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 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:

Between 15 and 16 inches less than 2 percent of the matrix has redox concetrations. No hydric soil indicators are present at test 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):	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	5

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Area has had recent rain. Primary indicators for high water table (A3) and saturation (A2) are present at site, as well as the secondary indicator for geomorphic position (D2). Site contains wetland hydrology.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 05-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W131-SP1**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 43 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.2005072 **Long.:** -122.2613386 **Datum:** NAD 1983 H

Soil Map Unit Name: Puyallup fine sandy 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 associated with constricted ditch and fill. Site contains hydrophytic vegetation, hydric soil and wetland hydrology. The 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: 5m 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: 3 m rad)			
1. Rubus armeniacus	40	☑ 75.5%	FAC
2. Oemleria cerasiformis	10	☐ 18.9%	FACU
3. Cornus sericea	3	☐ 5.7%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	53	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1. Ranunculus repens	70	☑ 73.7%	FAC
2. Juncus effusus	25	☑ 26.3%	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%	
	95	**= 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: 5

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	28	**x 2 =**	56
FAC species	110	**x 3 =**	330
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	148	**(A)**	426 **(B)**

Prevalence Index = B/A = 2.878

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:

Reed canary grass outside of plot. Site meets the dominance test and prevalence index. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W131-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
0-4	10YR	3/2	100						Loam	
4-10	2.5YR	4/1	100						Silt Loam	
10-14	2.5YR	4/1	75	7.5YR	4/6	25	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 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:

Indicator for hydrogen sulfide (A4) is met. Hydric soil is present at site.

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):	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Flowing water due to recent storms. Primary indicators for high water table (A2), saturation (A3), and hydrogen sulfide odor (C1) present at test pit. Wetland hydrology is present.

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

Project/Site: SR 167 Stage 2 **City/County:** Unincorporated Pierce County **Sampling Date:** 05-Mar-22

Applicant/Owner: WSDOT **State:** WWA **Sampling Point:** **W131-SP2**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 43 **T** 20N **R** 4E

Landform (hillslope, terrace, etc.): slope **Local relief (concave, convex, none):** concave **Slope:** 10.0 **%** / 5.7 **°**

Subregion (LRR): LRR A **Lat.:** 47.200600 **Long.:** -122.261437 **Datum:** None

Soil Map Unit Name: Puyallup fine sandy 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:

Disturbance at test pit due to fill. Sampled area contains hydrophytic vegetation, but lacks hydric soil and wetland hydrology. This test pit is not within a wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 5m 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: 3 m rad)			
1. Rubus armeniacus	75	☑ 83.3%	FAC
2. Oemleria cerasiformis	15	☐ 16.7%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	90	**= Total Cover**	
Herb Stratum (Plot size: 1 m rad)			
1.	0	☐ 0.0%	
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%	
	0	**= 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	0	**x 2 =**	0
FAC species	75	**x 3 =**	225
FACU species	15	**x 4 =**	60
UPL species	0	**x 5 =**	0
Column Totals:	90	**(A)**	285 **(B)**

Prevalence Index = B/A = 3.167

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 at plot passes the dominance test. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W131-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
0-17	10YR	3/3	100						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 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 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:** 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:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W137-SP1**

Investigator(s): J. Hearsey, L. Domingez **Section, Township, Range:** **S** 07 **T** 20N **R** 4E

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

Subregion (LRR): LRR A **Lat.:** 47.240350 **Long.:** -122.355542 **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 ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Site contains hydrophytic vegetation, hydric soil and wetland hydrology. The 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: W137-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						Silt Loam	
9-16	10YR	4/1	93	7.5YR	5/8	5	C	M	Silt Loam	
				GL1	5/GY2	20	D	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 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 for depleted matrix (F3) is met. Hydric soil is present at site.

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):	3
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:

Primary hydrology indicators high water table (A2) and saturation (A3) are present as well as secondary indicators drainage patterns (B10) and FAC-neutral test (D5). Wetland hydrology is present at site.

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:** **W137-SP2**

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

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** none **Slope:** 45.0 **% /** 24.2 **°**

Subregion (LRR): LRR A **Lat.:** 47.240626 **Long.:** -122.355645 **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:

Road prism sample site. No hydrophytic vegetation, hydric soils, or wetland hydrology are present at site. The 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.	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. Plantago lanceolata	13	☐ 11.8%	FACU
2. Vicia americana	2	☐ 1.8%	FAC
3. Agrostis gigantea	95	☑ 86.4%	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%	
	110	**= 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	0	**x 2 =**	0
FAC species	97	**x 3 =**	291
FACU species	13	**x 4 =**	52
UPL species	0	**x 5 =**	0
Column Totals:	110	**(A)**	343 **(B)**

Prevalence Index = B/A = 3.118

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:

Unidentified field grasses occupy 95 percent of the herb stratum and are presumed FAC. They are represented by Agrostis gigantea on this form. This plot meets the dominance test. Hydrophytic vegetation is present at sampled area.

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

Soil

Sampling Point: W137-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
0-5	10YR	2/1	100						Loamy Sand	
5-10	10YR	3/2	100						Loamy Sand	
10-12	10YR	3/2	60						Loamy Sand	
	10YR	4/4	40						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 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/turned matrix. 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 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:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W138-SP1**

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

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

Subregion (LRR): LRR A **Lat.:** 47.241512 **Long.:** -122.355175 **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: W138-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
0-7	10YR	4/1	100						Silt Loam	
7-17	10YR	4/1	75	7.5YR	4/6	25	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 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 depleted matrix (F3) is met. Hydric soil is present at site.

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):	7
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 has a water table at 7 inches and saturation to surface. Hydrology indicators A2 and A3 are met. Wetland hydrology is present at site.

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:** **W138-SP2**

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

Landform (hillslope, terrace, etc.): Slope **Local relief (concave, convex, none):** none **Slope:** 50.0 **%** / 26.6 **°**

Subregion (LRR): LRR A **Lat.:** 47.24173 **Long.:** -122.35503 **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 from aerial image. Sampled area contains hydrophytic vegetation but lacks hydric soil and wetland hydrology. The 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.	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. Agrostis gigantea	86	☑ 94.5%	FAC
2. Plantago lanceolata	5	☐ 5.5%	FACU
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: 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	0	**x 2 =**	0
FAC species	86	**x 3 =**	258
FACU species	5	**x 4 =**	20
UPL species	0	**x 5 =**	0
Column Totals:	91 **(A)**		278 **(B)**

Prevalence Index = B/A = 3.055

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:
Unidentified field grasses occupy 86 percent of herb stratum and are presumed FAC represented by Agrostis gigantea on this field form, which results in this plot meeting the dominance test. Hydrophytic vegetation is present at site.

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

Soil

Sampling Point: W138-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
0-5	10YR	3/2	100						Gravelly Sand	
5-16	10YR	4/2	100						Gravelly 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:

No hydric soil indicators present at site.

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:** 23-Mar-22

Applicant/Owner: WSDOT **State:** WA **Sampling Point:** **W138-SP3**

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

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

Subregion (LRR): LRR A **Lat.:** 47.241389 **Long.:** -122.354842 **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. Samped area is located adjacent to I5 between on and off ramps. 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. Acer rubrum	100	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	100	= 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	85	☑ 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%	
	85	= 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: 15

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	85	**x 2 =**	170
FAC species	100	**x 3 =**	300
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	185	**(A)**	470 **(B)**

Prevalence Index = B/A = 2.541

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 dominance test and prevalence index. Hydrophytic vegetation is present at site

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

Soil

Sampling Point: W138-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
0-8	10YR	3/1							Silt Loam	
8-16	10YR	4/1	65	7.5YR	5/4				Clay 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:

Hydric soil indicator depleted matrix (F3) is met. Hydric soil is present at site.

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):	5
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 high water table (A2) and saturation (A3) are met. Water table is present at 5 inches and the soil pit is saturated to the surface. Wetland hydrology is present at site.

Appendix D. 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	D-1
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-2
Flow directions and associated features	n/a	D-2a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-2
Map of the contributing basin	D 4.3, D 5.3	D-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	D-4
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 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*

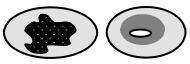
COMMENTS:

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 D-1.
Cowardin Classes for Wetland 1.

0 270 540 1,080 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Permanently flooded
- Saturated only
- Seasonally flooded

Figure D-2.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 1.

N

0 290 580 1,160 Feet

HERRERA

ESRI, Aerial (2021)

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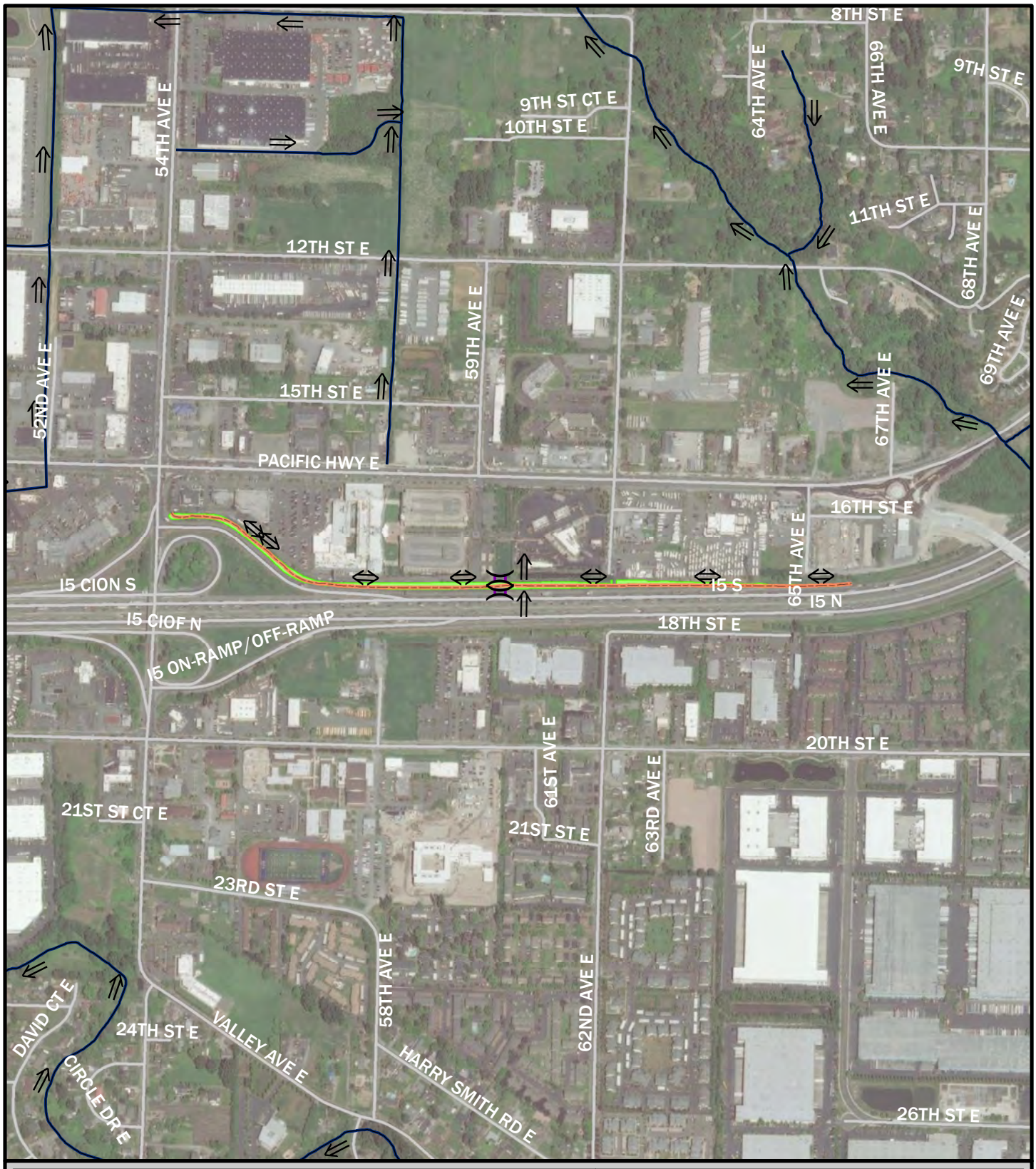

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland

Figure D-2a.
Flow Directions and Features Associated with Wetland 1.

N

0 380 760 1,520 Feet

HERRERA

Esri, Aerial (2021)

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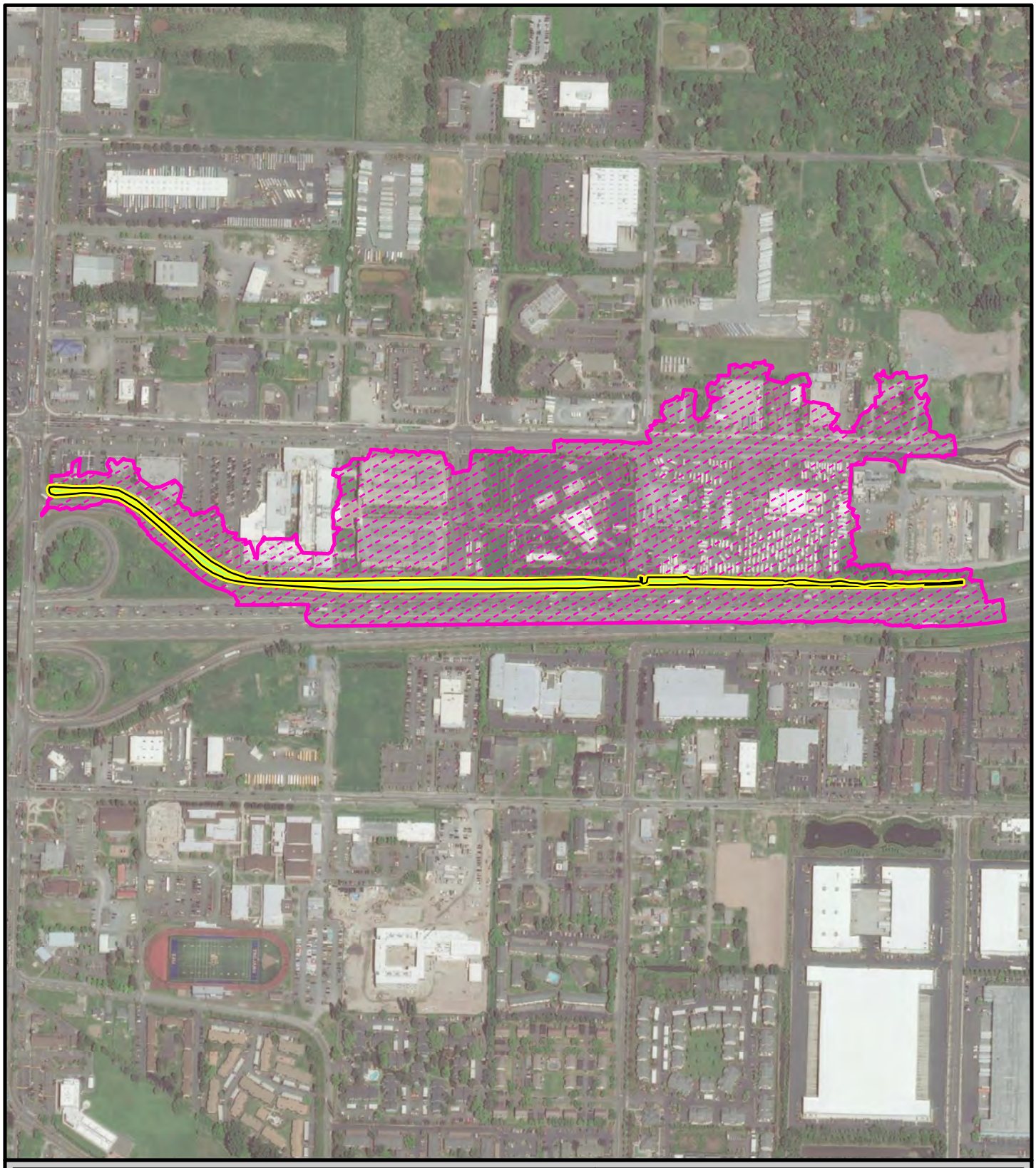

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-3.
Map of Contributing Basin for Wetland 1.

N

0 280 560 1,120 Feet

HERRERA

Esri, Aerial (2021)

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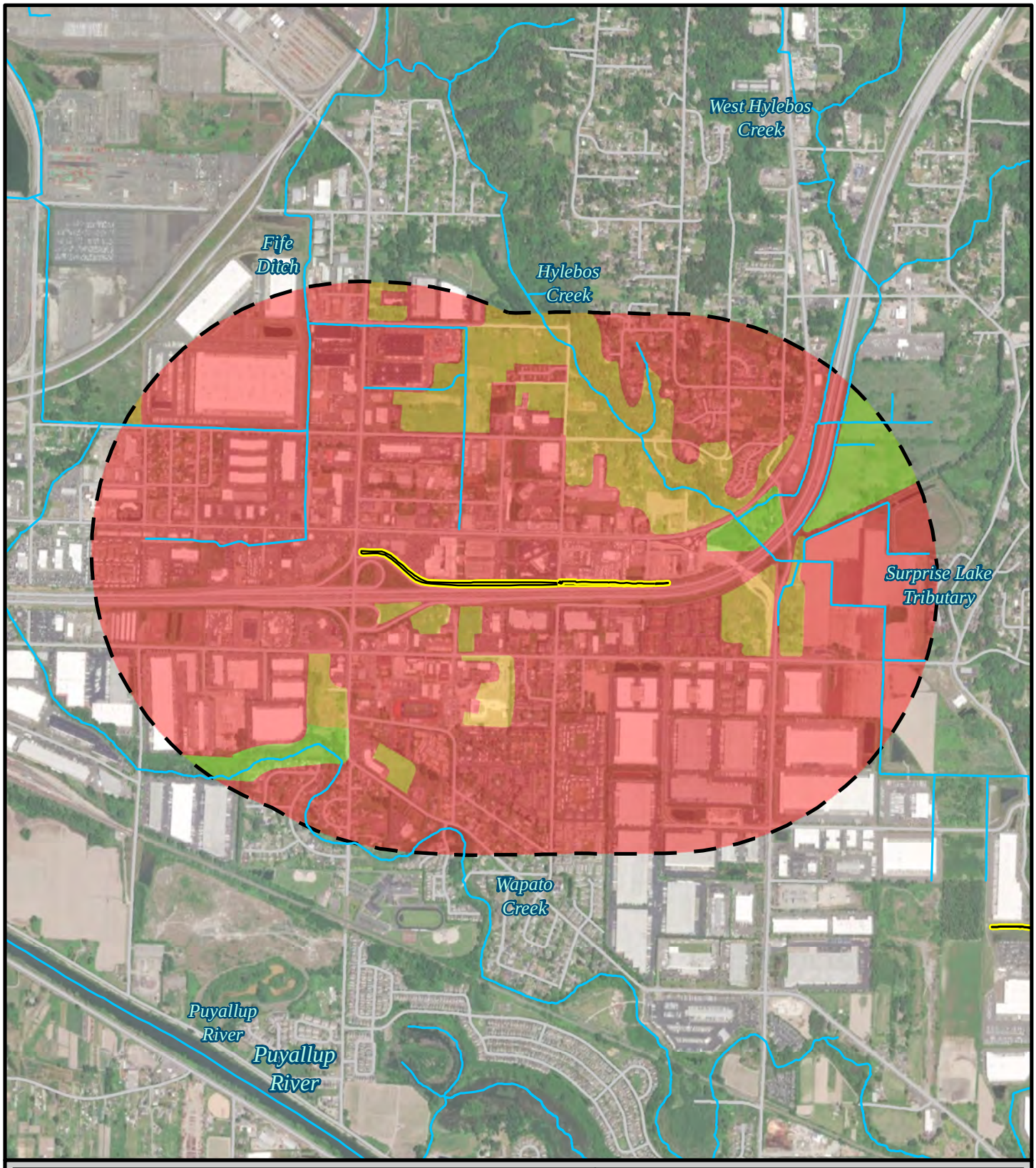

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-4.
Habitat Within a 1-km Boundary of Wetland 1.

N

0 800 1,600 3,200 Feet

HERRERA

Esri, Aerial (2021)

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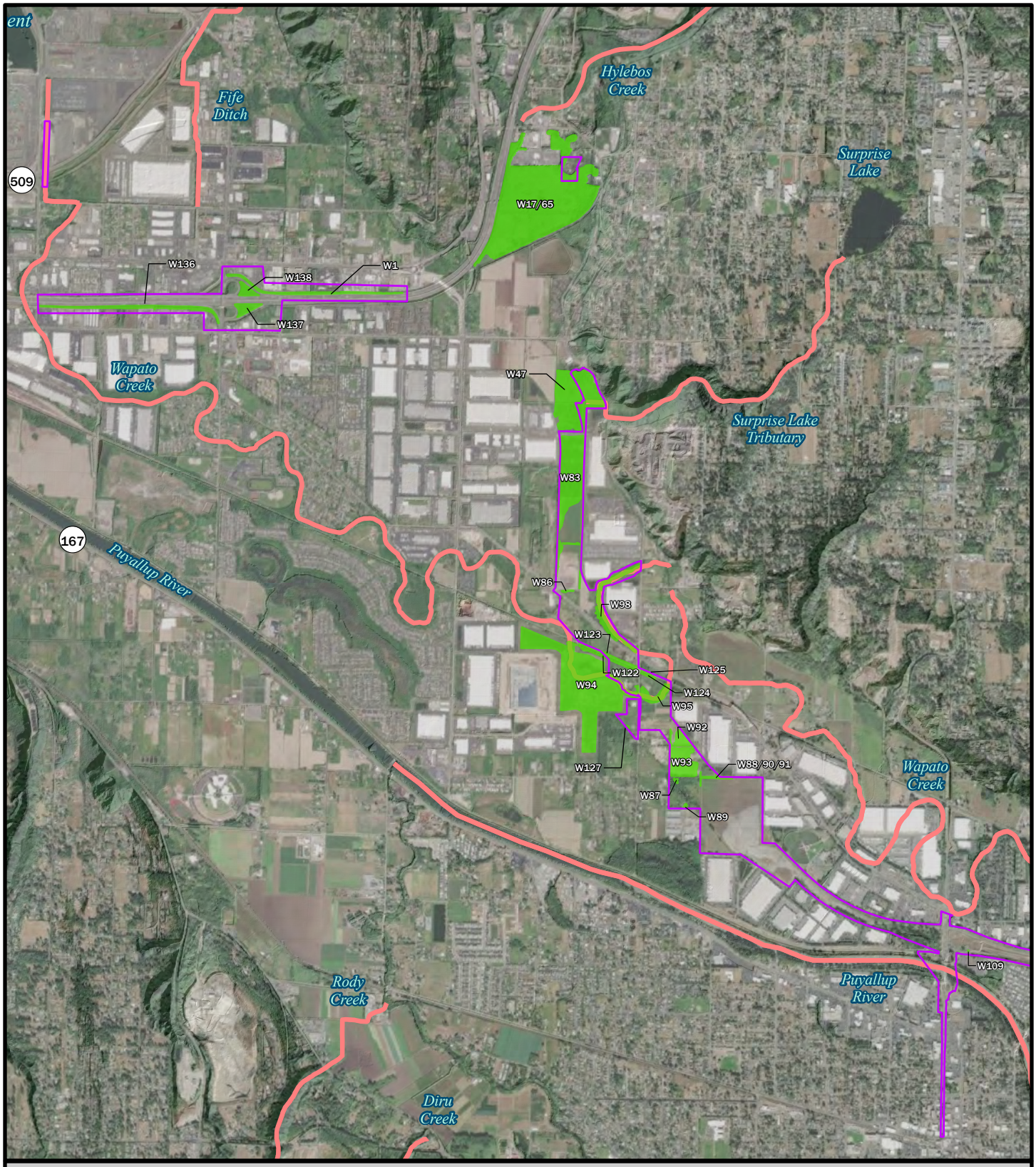

Legend

- Study area
- 303(d) listed waters
- Wetland area

Figure D-5-A.
303(d) Waters in the Vicinity of the Stage 2 Study Area.

N

0 1,000 2,000 4,000 Feet

HERRERA

Esri Imagery (2021)

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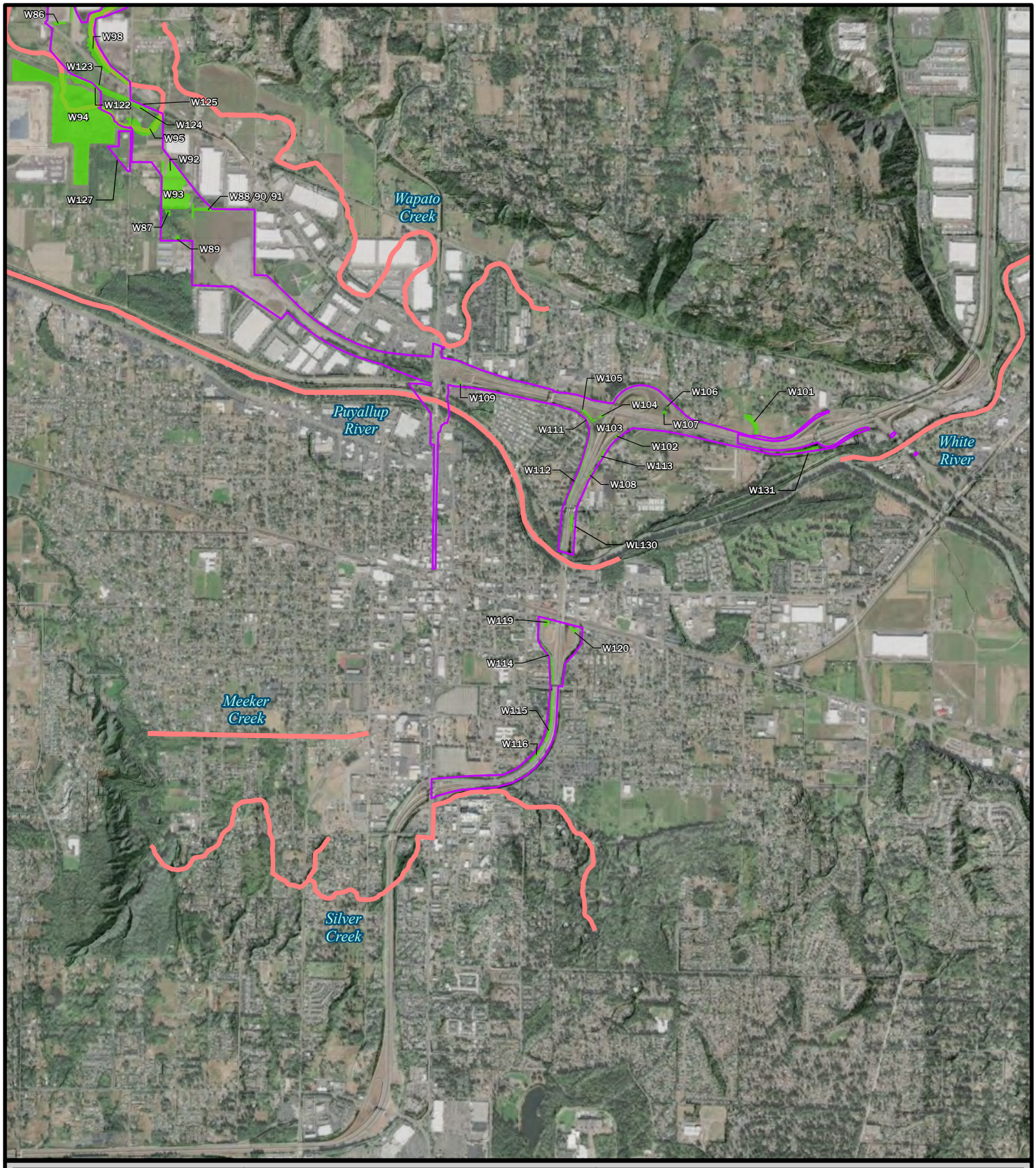

Legend

- Study area
- 303(d) listed waters
- Wetland area

Figure D-5-B.
303(d) Waters in the Vicinity of the Stage 2 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

Legend | Filter | Zoom | Tools

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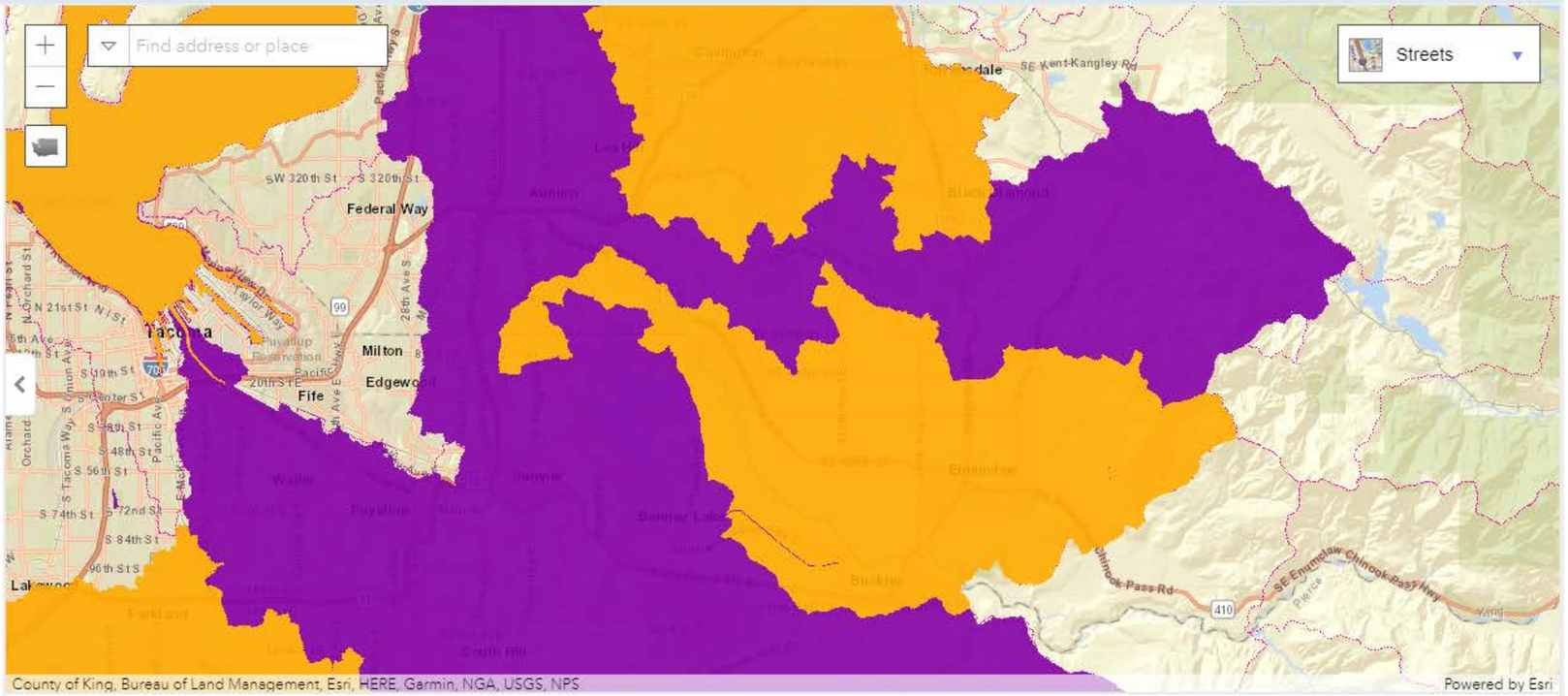
WQ Improvement Projects Filter

- 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	D-7
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-8
Flow directions and associated features	n/a	D-8a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-8
Map of the contributing basin	D 4.3, D 5.3	D-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	D-10
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 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*

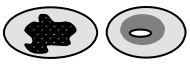
COMMENTS:

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

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-7.
Cowardin Classes for Wetland 17/65.

N

0 200 400 800 Feet

HERRERA

ESRI, Aerial (2021)

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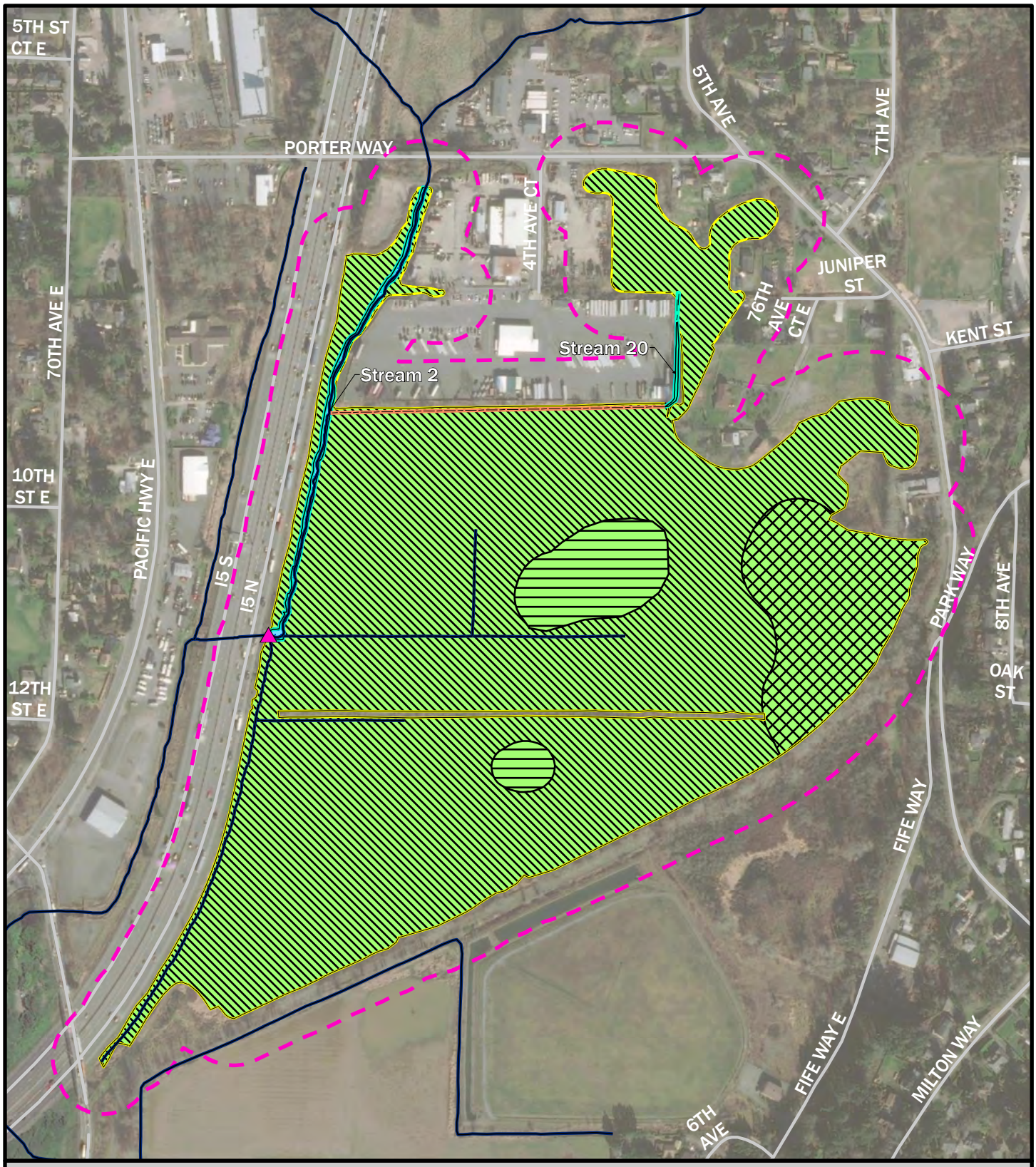

Legend

- Estimated ditch centerline
- Streams (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Permanently flooded
- Saturated only
- Seasonally flooded
- Permanently flowing stream

Figure D-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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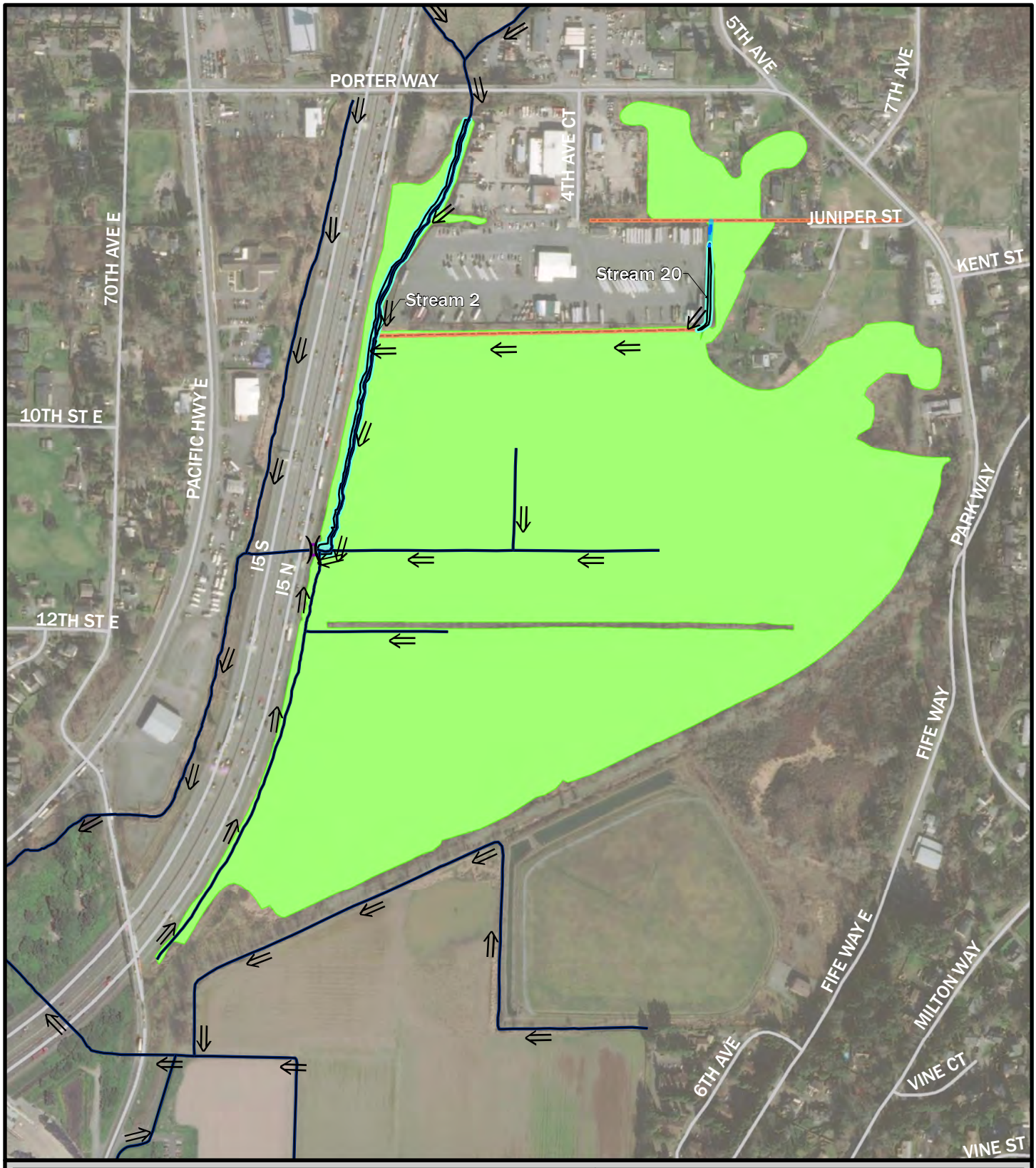

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-8a.
Flow Directions and Features Associated with Wetland 17/65.

N

0 230 460 920 Feet

HERRERA

Esri, Aerial (2021)

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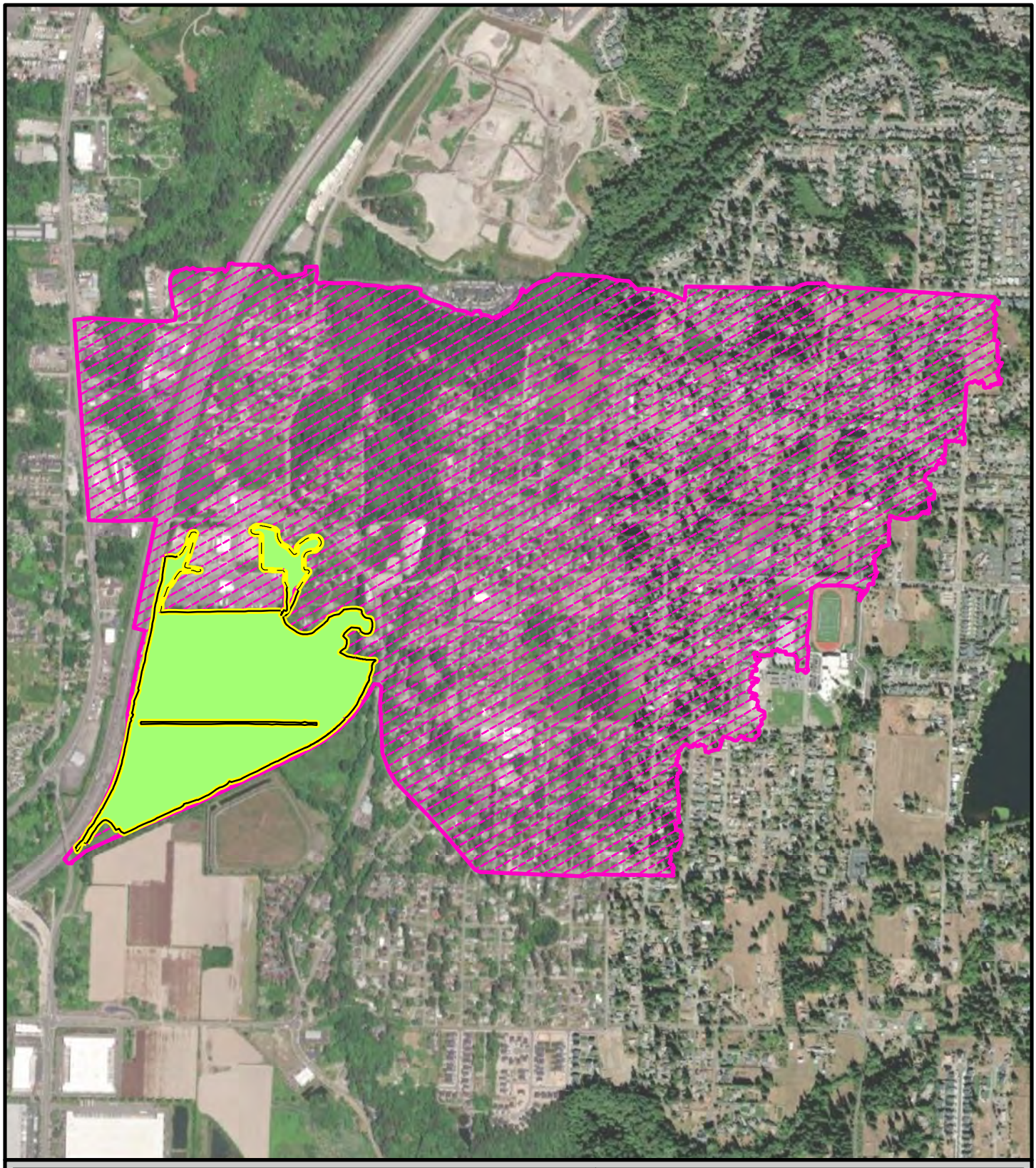

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-9.
Map of Contributing Basin for Wetland 17/65.

N

0 600 1,200 2,400 Feet

HERRERA

Esri, Aerial (2021)

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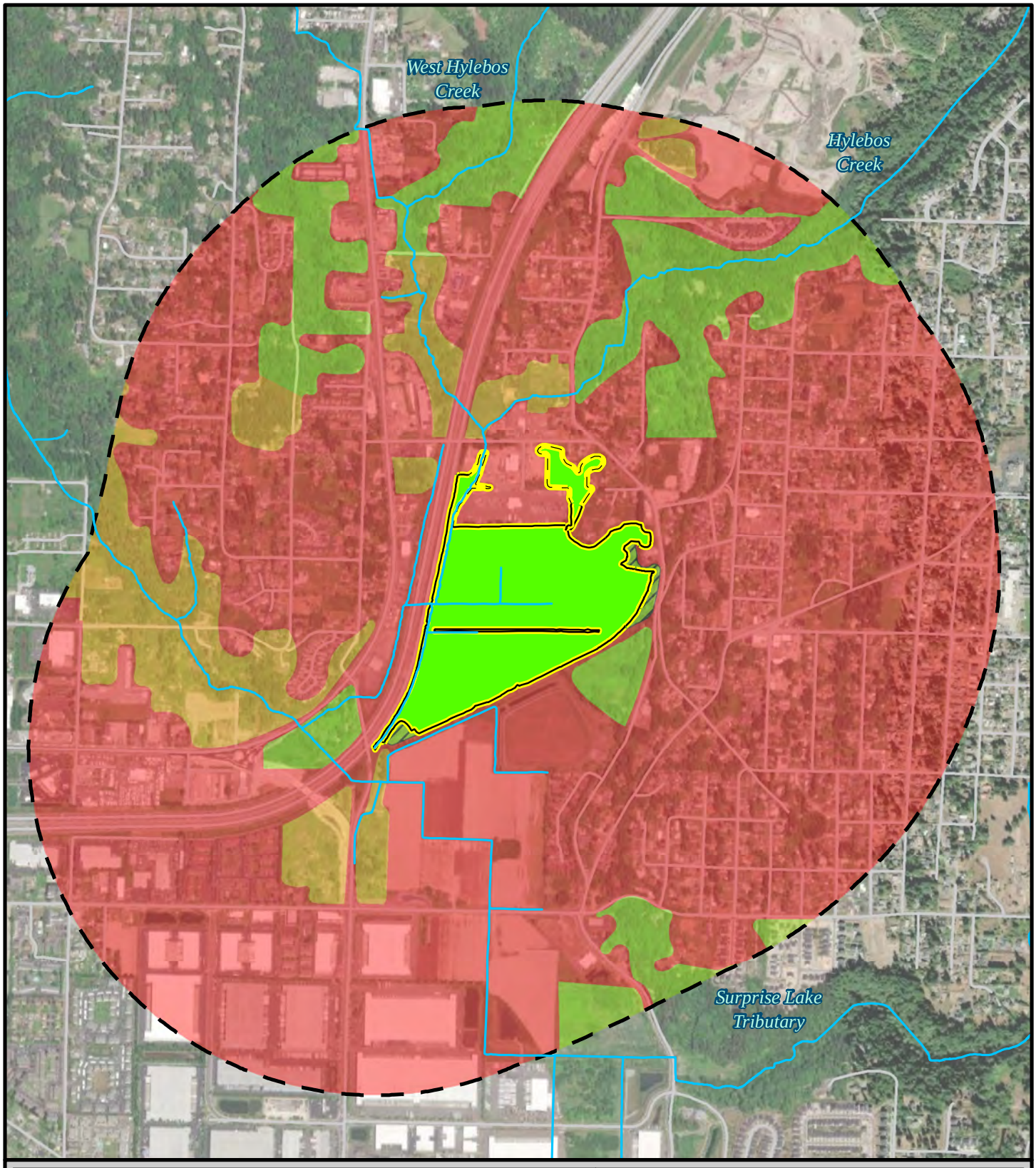

Legend

- 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 D-10.
Habitat Within a 1-km Boundary of Wetland 17/65.

N

0 650 1,300 2,600 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 47

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 47 Date of site visit: 4/30/2019, 3/16/2022

Rated by S. Wall Trained by Ecology? ☒ Yes ☐ No Date of Training : April 2015

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☒ Yes ☐ No

Additional HGM Classes (*if multiple*): Riverine

Source of base aerial photo/map Google Earth Aerial, 2018

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	H	
Landscape Potential	M	H	L	
Value	M	H	H	**TOTAL**
Score Based on Ratings	6	8	7	21

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	D-11
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-12
Flow directions and associated features	n/a	D-12a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-12
Map of the contributing basin	D 4.3, D 5.3	D-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	D-14
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 47

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 a highly constricted permanently flowing outlet | 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: _____ Choose an item.	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: Wetland is within the mapped Shalcar Muck soil series, but organic soils were not found 2 inches below surface.

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 a highly constricted permanently flowing outlet | 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 are 3 ft or more above the surface or bottom of outlet | points = 7	7
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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	9

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 47

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

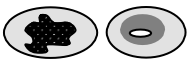
Rating of Value If score is: 2–4 = H *Record the rating on the first page*

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 47

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*)	4
Total for H 1 Add the points in the boxes above	16

Rating of Site Potential If score is: 15–18 = H *Record the rating on the first page*

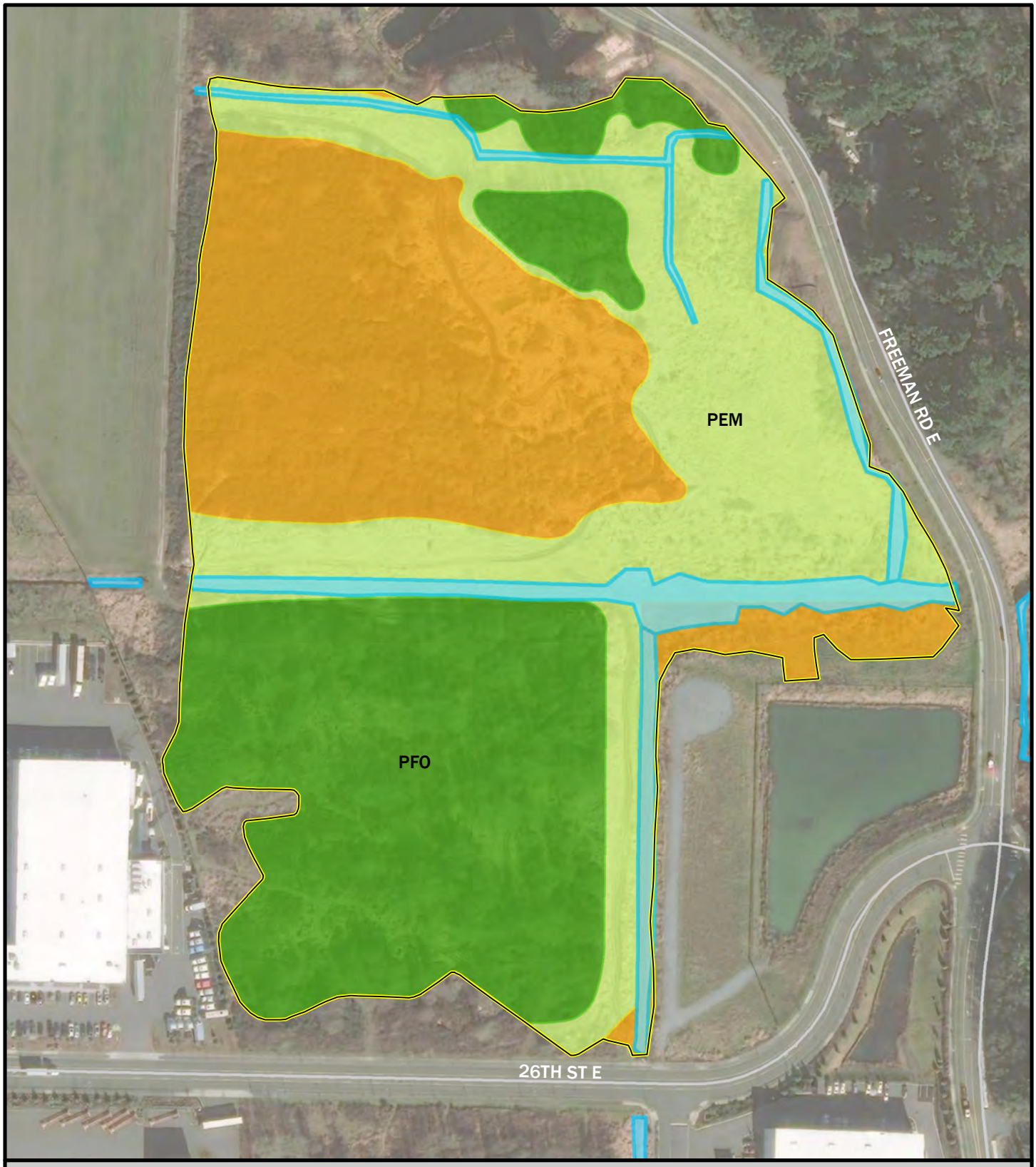
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0.1**+** [(% moderate and low intensity land uses)/2] 0.0 **= 0.1**% If total accessible 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 12.5**+** [(% moderate and low intensity land uses)5.2/2] 2.6 **= 15.1**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 82.3% >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 47

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

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-11.
Cowardin Classes for Wetland 47.

0 90 180 360 Feet

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ESRI, Aerial (2021)

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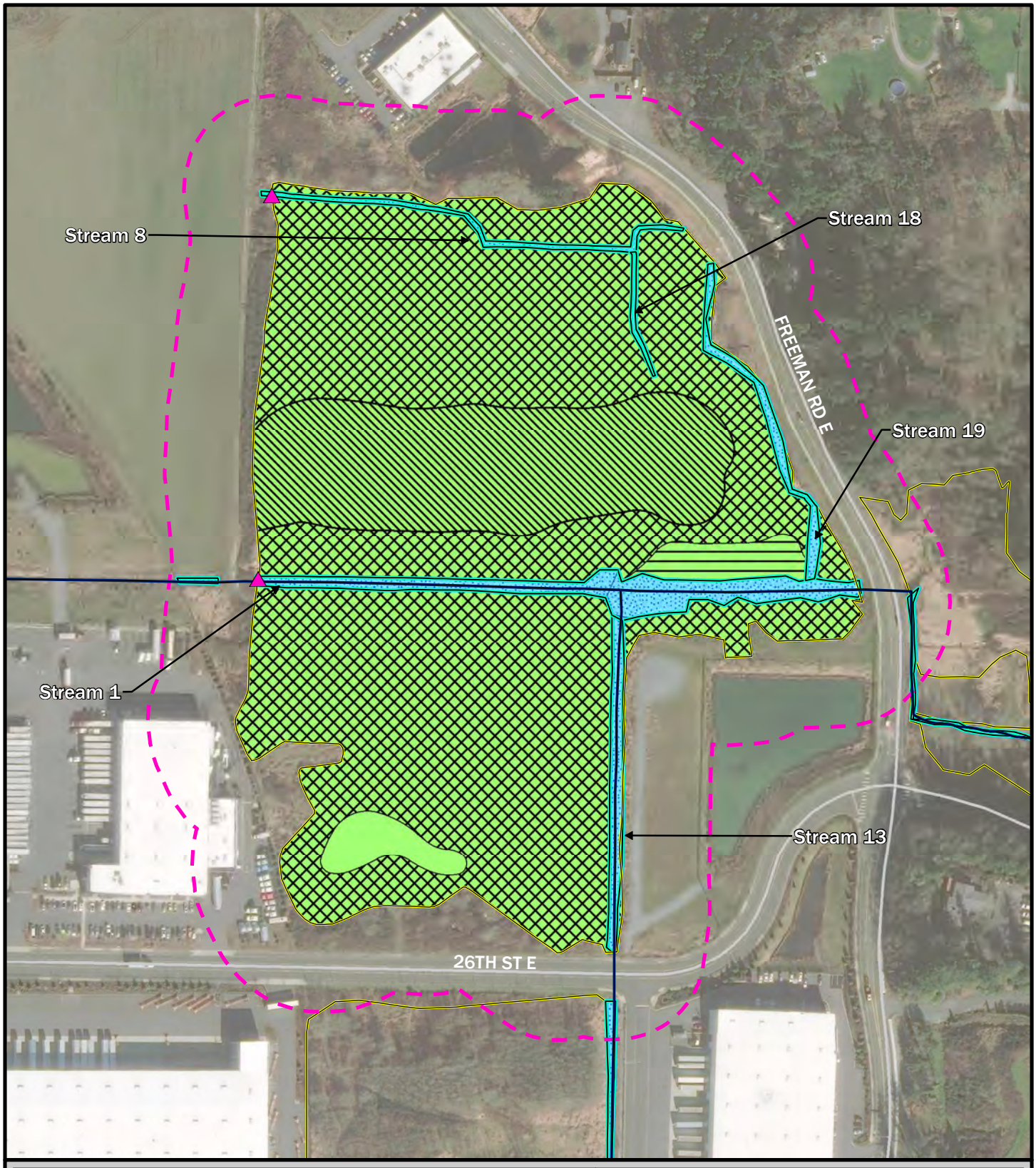

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Permanently flooded
- Saturated only
- Seasonally flooded
- Permanently flowing stream
- Seasonally flowing stream

Figure D-12.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 47.

N

0 115 230 460 Feet

HERRERA

ESRI, Aerial (2021)

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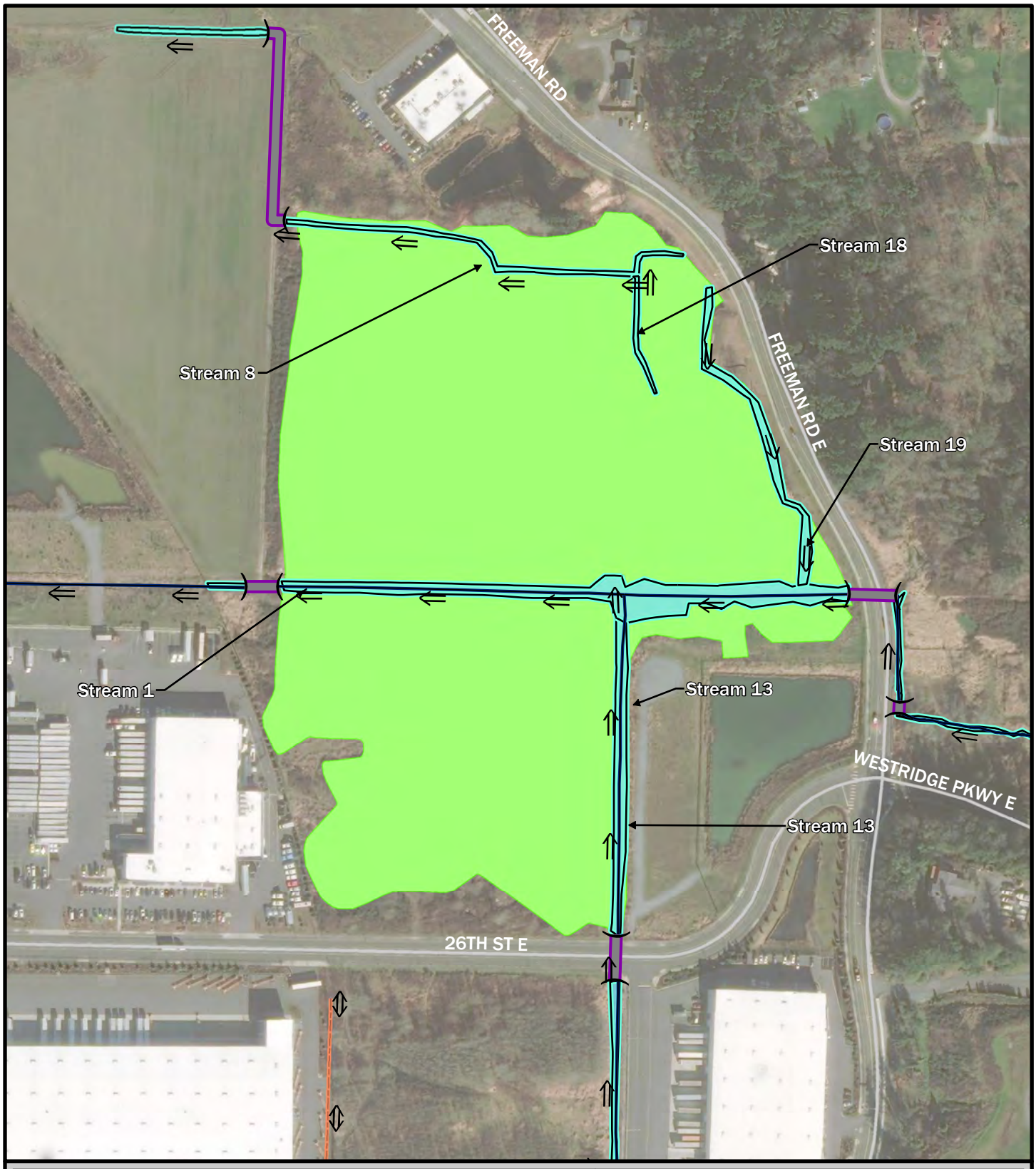

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland
- Stream
- Delineated OHWM

Figure D-12a.
Flow Directions and Features Associated with Wetland 47.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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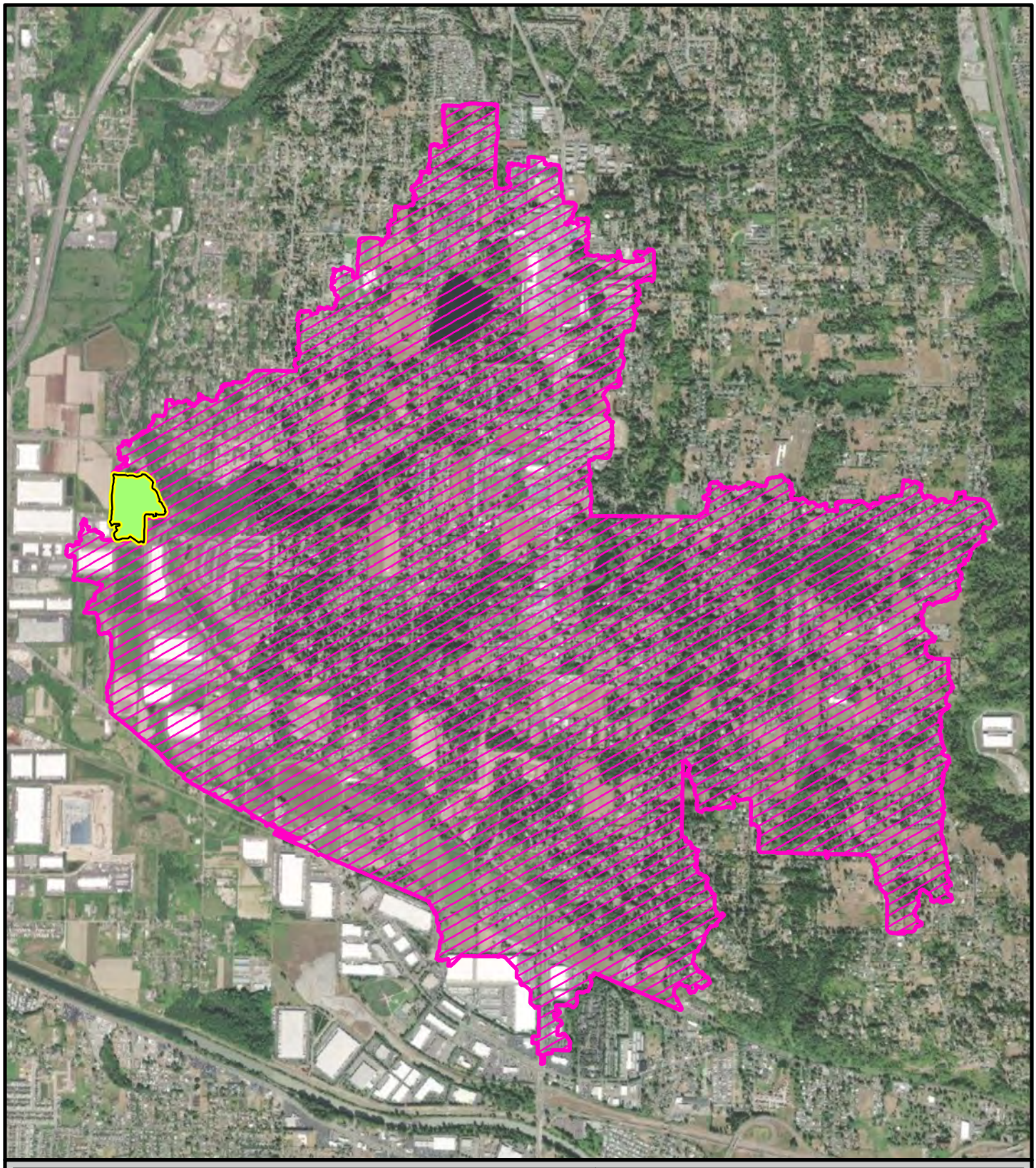

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-13.
Map of Contributing Basin for Wetland 47.

N

0 1,300 2,600 5,200 Feet

HERRERA

Esri, Aerial (2021)

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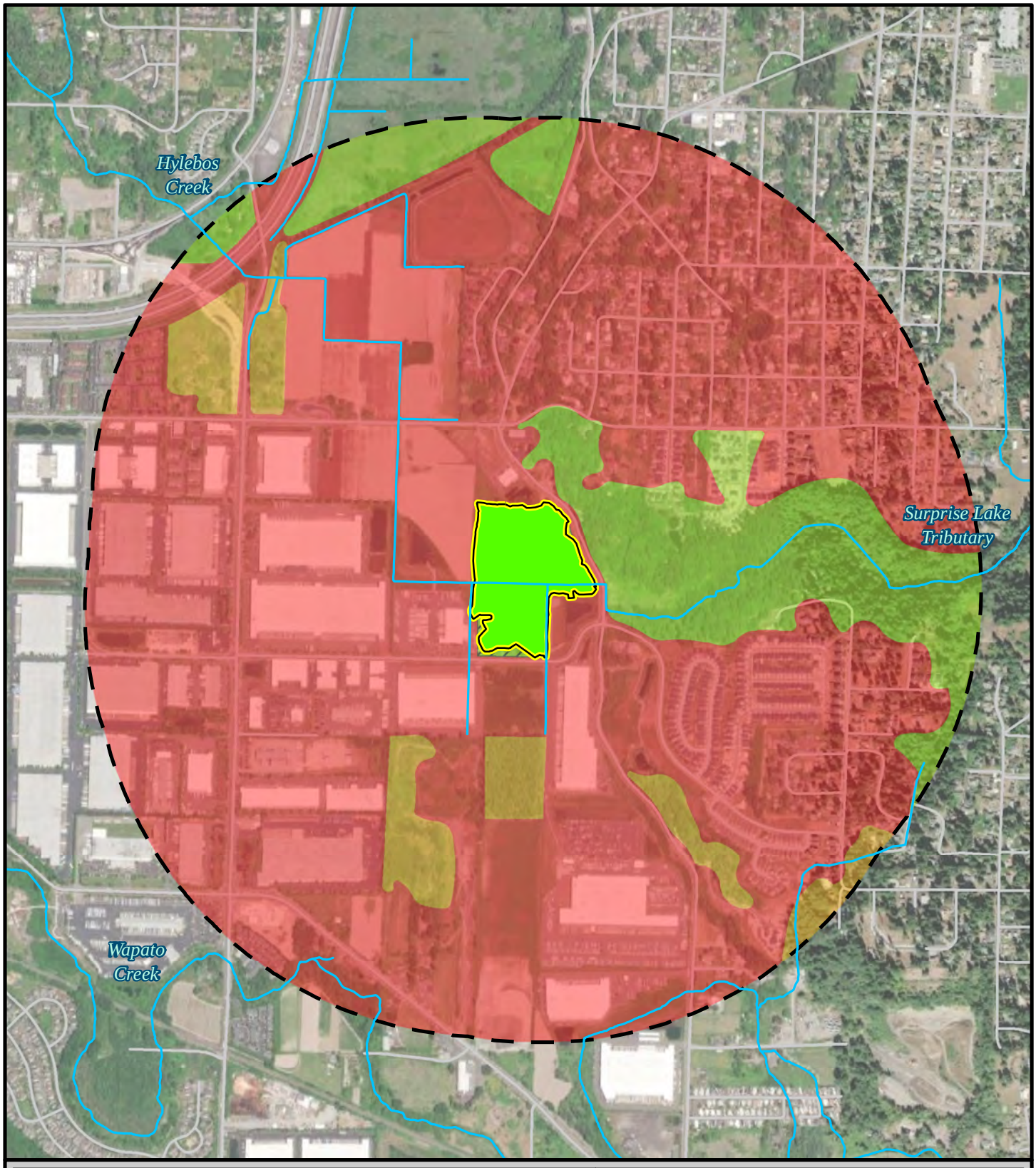

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-14.
Habitat Within a 1-km Boundary of Wetland 47.

N

0 550 1,100 2,200 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 83

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 83 Date of site visit: 3/30/2021, 3/31/2021, 4/1/2021

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, 2020

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	L	M	
Landscape Potential	M	H	L	
Value	M	H	M	**TOTAL**
Score Based on Ratings	6	7	5	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	D-15
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-16
Flow directions and associated features	n/a	D-16a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-16
Map of the contributing basin	D 4.3, D 5.3	D-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	D-18
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 83

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 a highly constricted permanently flowing outlet | 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 = 2	2
Total for D 1 Add the points in the boxes above (F9 key)	9

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:

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 a highly constricted permanently flowing outlet | 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 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 more than 100 times the area of the unit | points = 0	0
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*

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*

Wetland name or number: Wetland 83

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**	3 types present | points = 2 **2 points** **2 points**	2
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

Wetland name or number: Wetland 83

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 	2
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☒ 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*)	3
Total for H 1 Add the points in the boxes above	13

Rating of Site Potential If score is: 7–14 = M *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 **+** [(% moderate and low intensity land uses)0/2] 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 15.6**+** [(% moderate and low intensity land uses)15.2/2] 7.6 **= 23.2**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: **70.9%** >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 83

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*	

COMMENTS: Qualifying snags and logs were present in the forested portion of the wetland, but not outside of wetland within 100m.

Legend

- Stream
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-15.
Cowardin Classes for Wetland 83.

N

0 200 400 800 Feet

HERRERA

ESRI, Aerial (2021)

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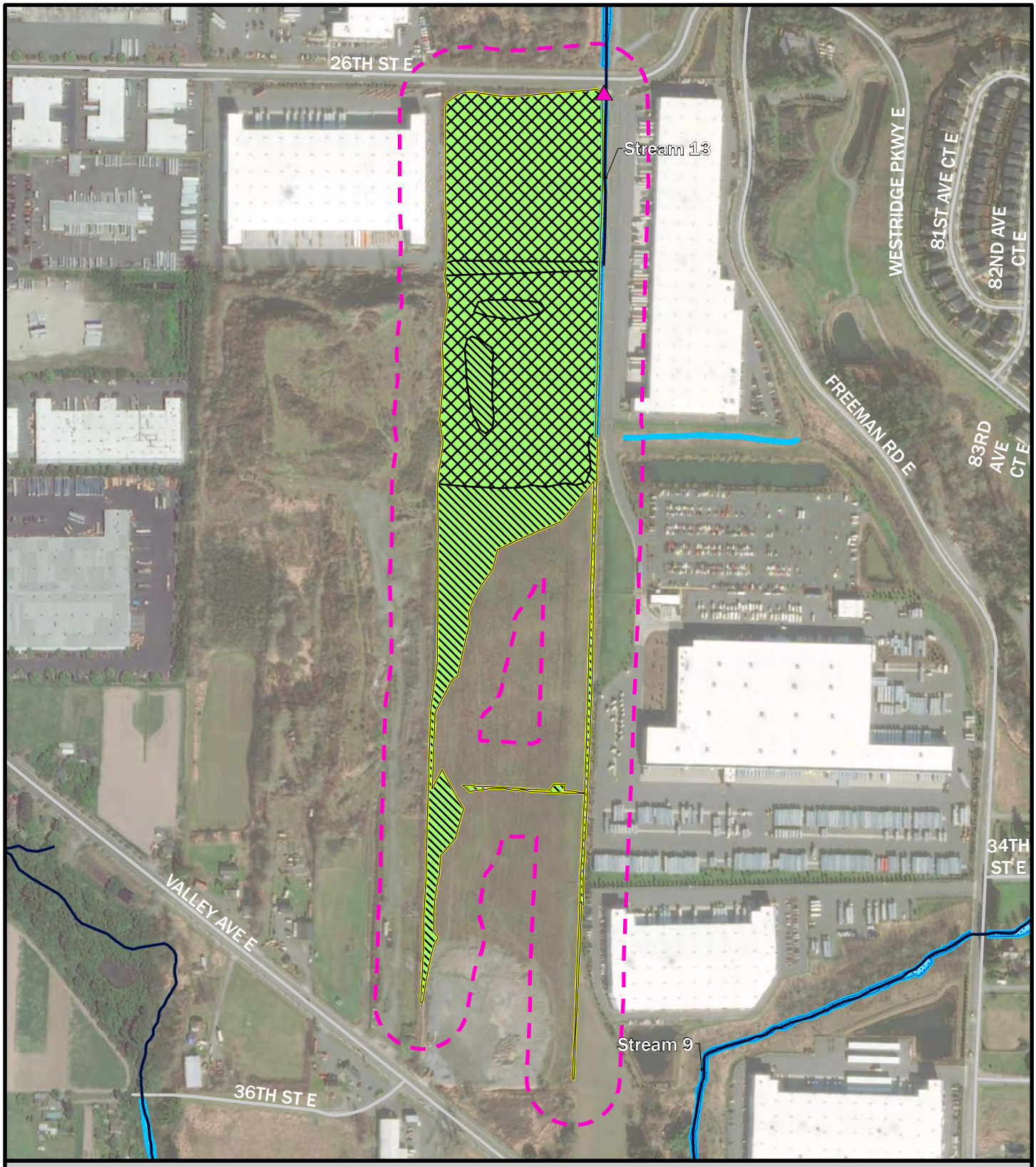

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded
- Permanently flowing stream

Figure D-16.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 83.

N

0 225 450 900 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 D-16a.
Flow Directions and Features Associated with Wetland 83.

N

0 225 450 900 Feet

HERRERA

Esri, Aerial (2021)

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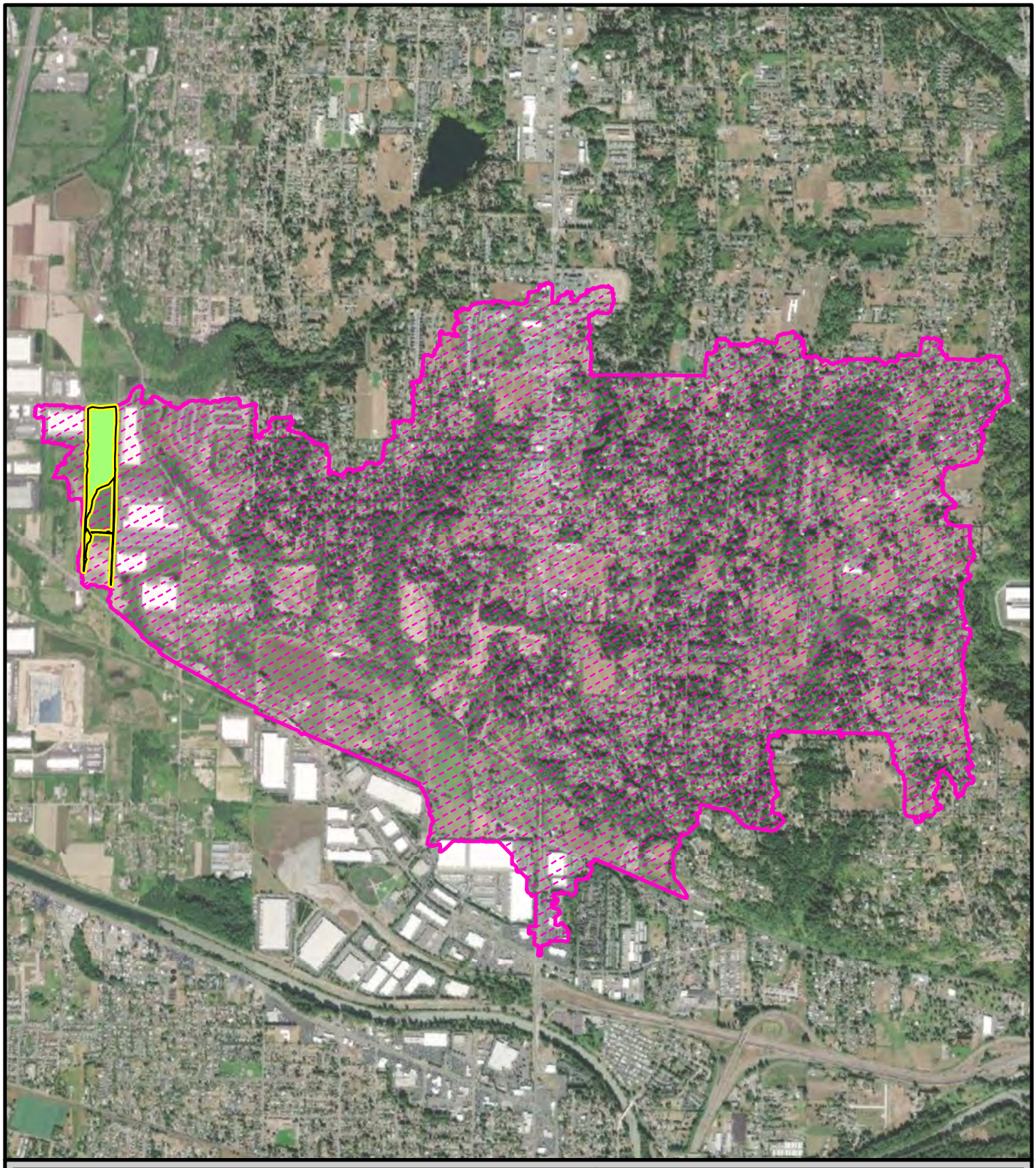

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-17.
Map of Contributing Basin for Wetland 83.

N

0 1,250 2,500 5,000 Feet

HERRERA

Esri, Aerial (2021)

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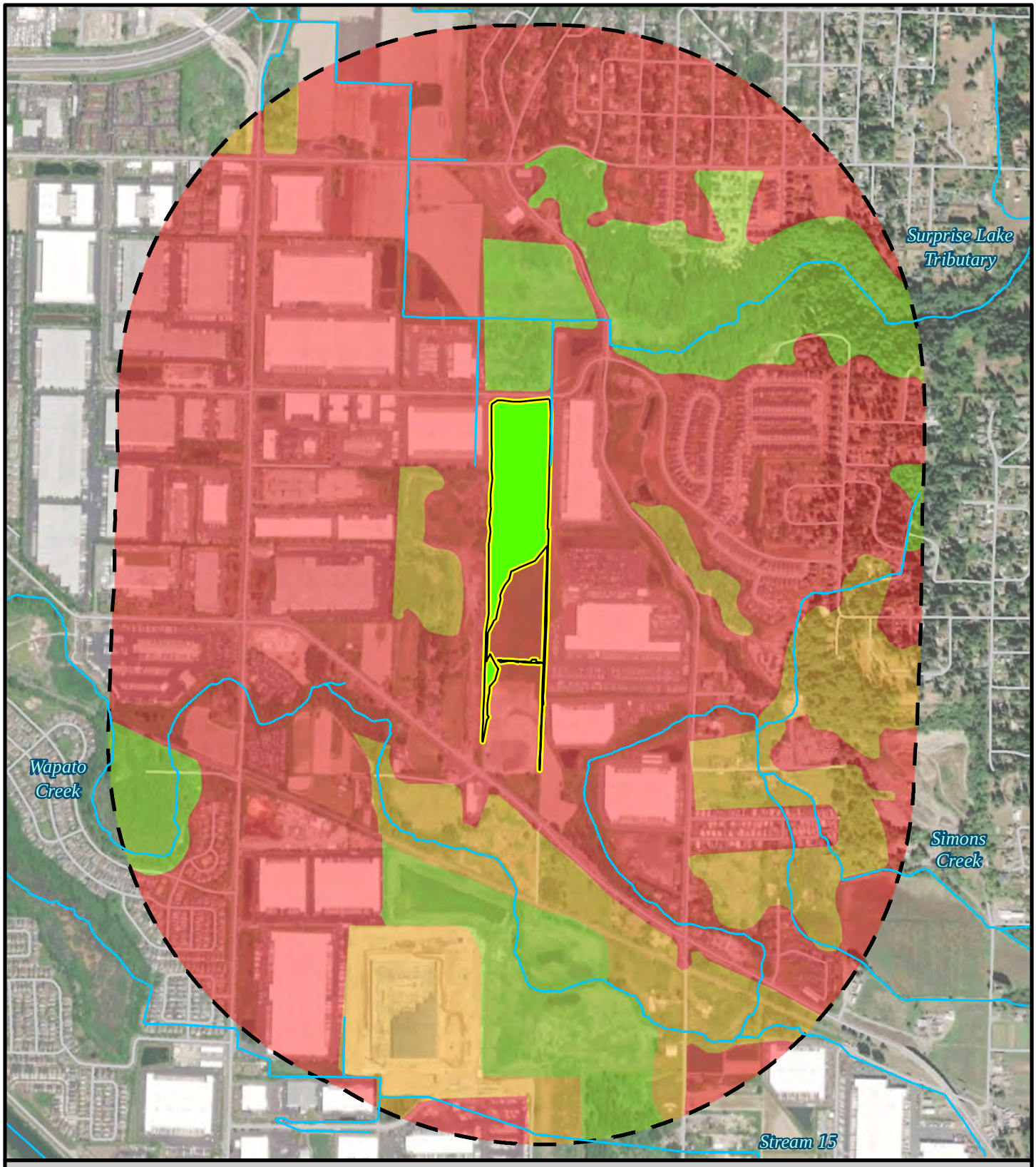

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-18.
Habitat Within a 1-km Boundary of Wetland 83.

N

0 600 1,200 2,400 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 86

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 86 Date of site visit: 4/6/2021

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, 2020

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	M	L	
Value	M	H	L	**TOTAL**
Score Based on Ratings	6	7	3	16

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	D-19
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-20
Flow directions and associated features	n/a	D-20a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-20
Map of the contributing basin	D 4.3, D 5.3	D-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	D-22
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 86

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 > 1/4 total area of wetland | points = 2	2
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? No = 0	0
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	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: encampment activity_____ Yes = 1	1
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:

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 10 to 100 times the area of the unit | points = 3	3
Total for D 4 Add the points in the boxes above	10

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 86

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?	No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	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.)?	No = 0	0
Total for D 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 1 or 2 = M *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

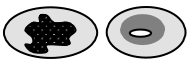
Rating of Value If score is: 2–4 = H *Record the rating on the first page*

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 86

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**+** [(% moderate and low intensity land uses)0/2] 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 9.6**+** [(% moderate and low intensity land uses)25.1/2] 12.6 **= 22.2**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: **69.9%** >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 86

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 D-19.
Cowardin Classes for Wetland 86.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-20.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 86.

N

0 60 120 240 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-20a.
Flow Directions and Features Associated with Wetland 86.

N

0 60 120 240 Feet

HERRERA

ESRI, Aerial (2020)

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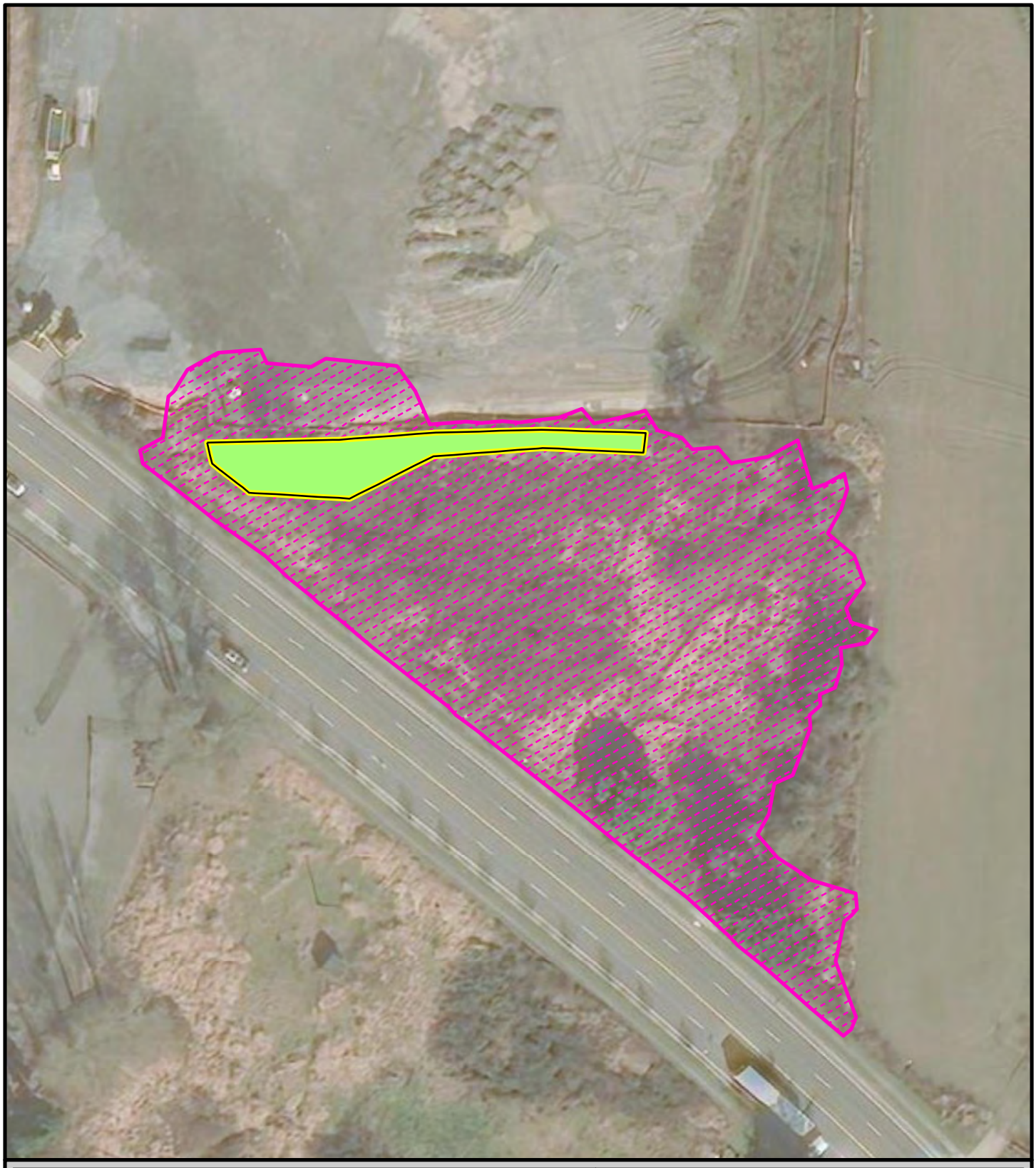

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-21.
Map of Contributing Basin for Wetland 86.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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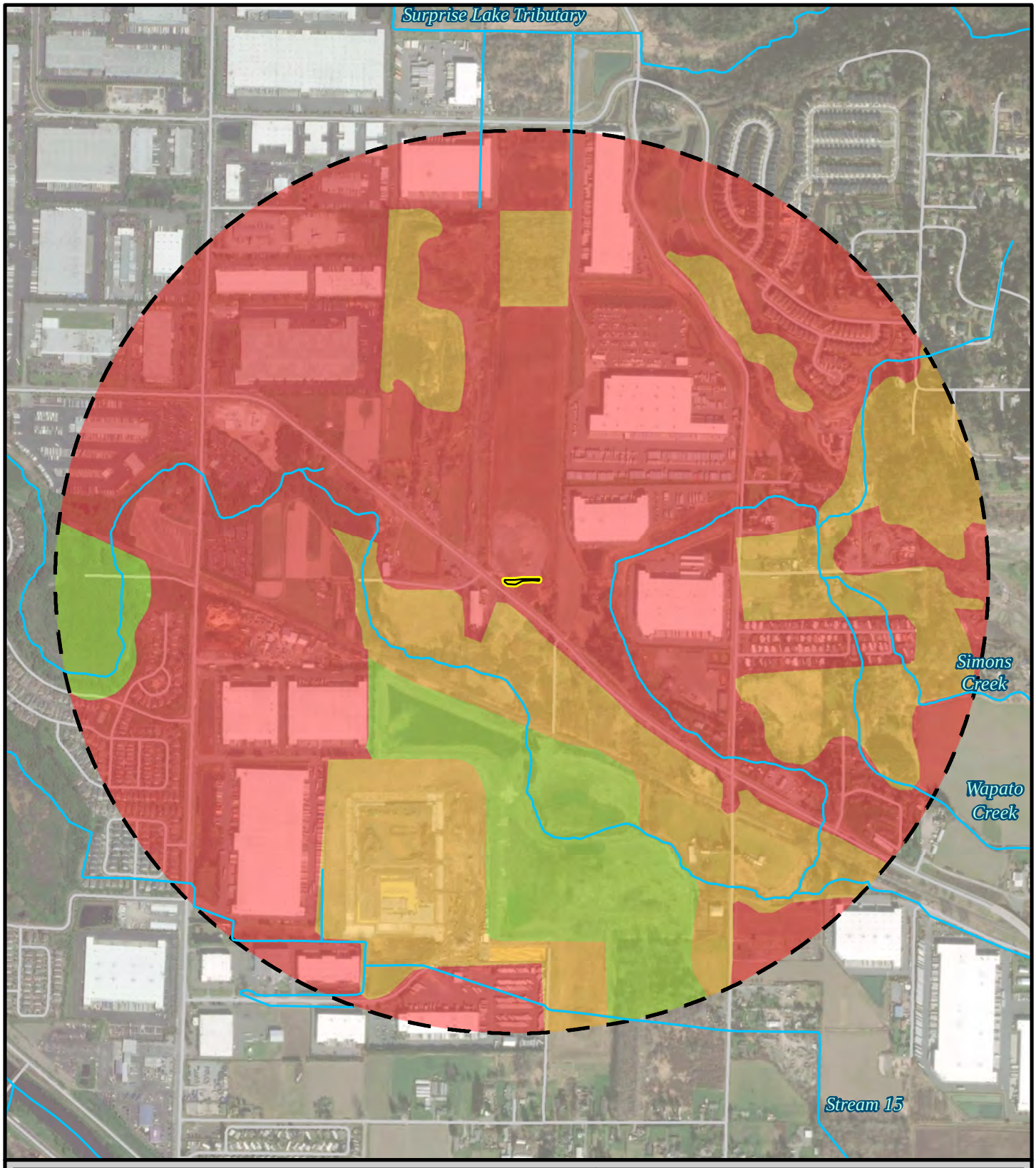

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-22.
Habitat Within a 1-km Boundary of Wetland 86.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 87

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 87 Date of site visit: 4/8/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	M	
Landscape Potential	M	M	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	7	6	6	19

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	D-23
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-24
Flow directions and associated features	n/a	D-24a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-24
Map of the contributing basin	D 4.3, D 5.3	D-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	D-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 87

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 < 1/4 total area of wetland | points = 0	0
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? No = 0	0
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	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: Homeless encampment/trash Yes = 1	1
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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Area to the North of wetland (across Stream 14) is active conventional agriculture. TMDLs in place for the Puyallup.

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 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	7

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

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? No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1	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.)? No = 0	0
Total for D 5 Add the points in the boxes above	1

Rating of Landscape Potential If score is: 1 or 2 = M *Record the rating on the first page*

Wetland name or number: Wetland 87

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value If score is: 1 = M *Record the rating on the first page*	
COMMENTS: Wetland is adjacent to conventional ag fields and streams, but not connected to streams via surface flow.	

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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**	2 types present | points = 1 **2 points** **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: 5–19 species | points = 1		1

Wetland name or number: Wetland 87

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 	1
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*)	3
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: 7–14 = M *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 1.3**+** [(% moderate and low intensity land uses)2.7/2] 1.4 **= 2.7**% 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 14.1**+** [(% moderate and low intensity land uses)16.5/2] 8.3 **= 22.4**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 69.3**%** >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 87

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

Cowardin class

- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-23.
Cowardin Classes for Wetland 87.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2020)

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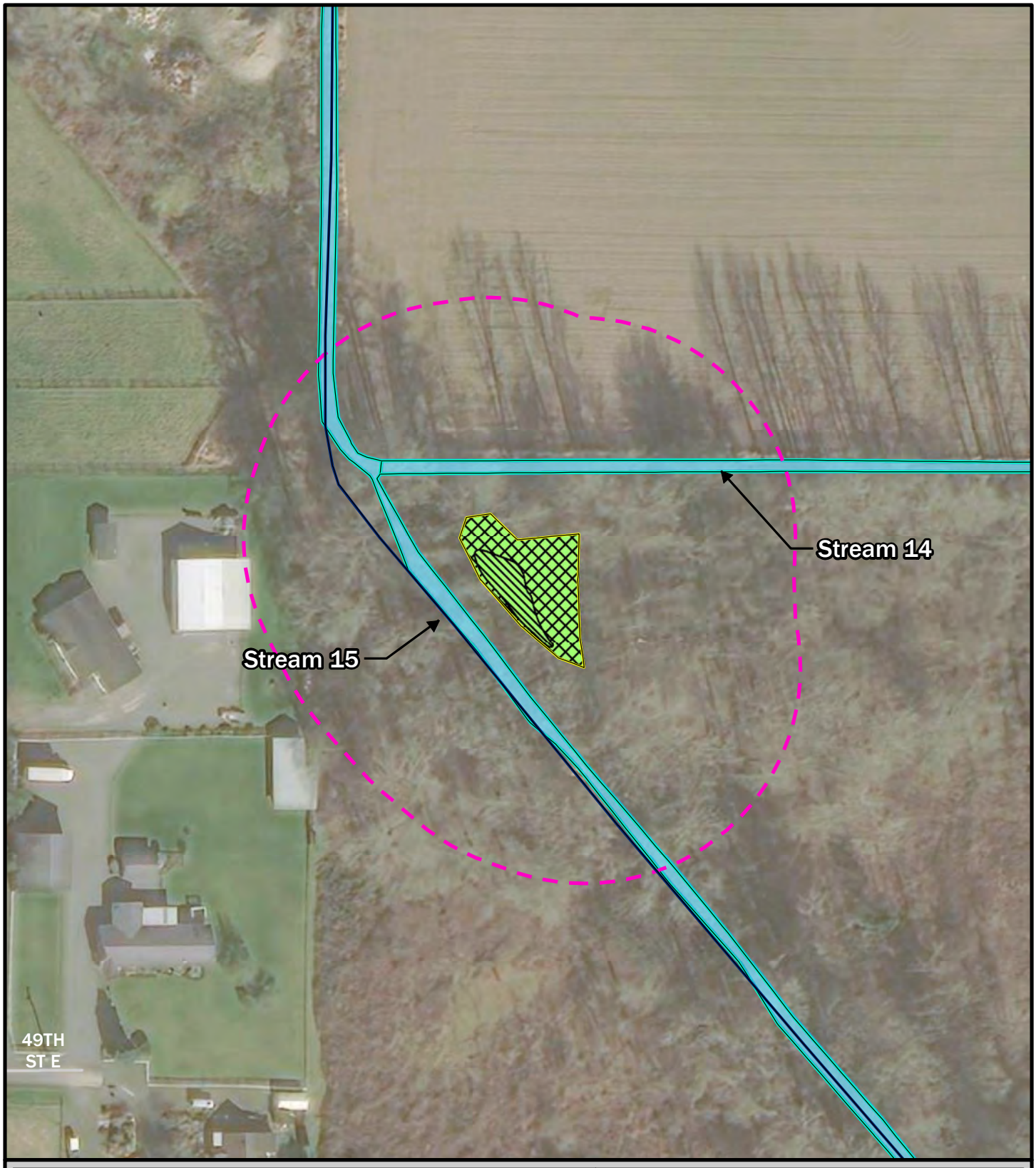

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Wetland
- Stream
- 150ft boundary

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-24.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 87.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Delineated OHWM
- Streams (Pierce County 2021)
- Wetland
- Stream

Figure D-24a.
Flow Directions and Features Associated with Wetland 87.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2020)

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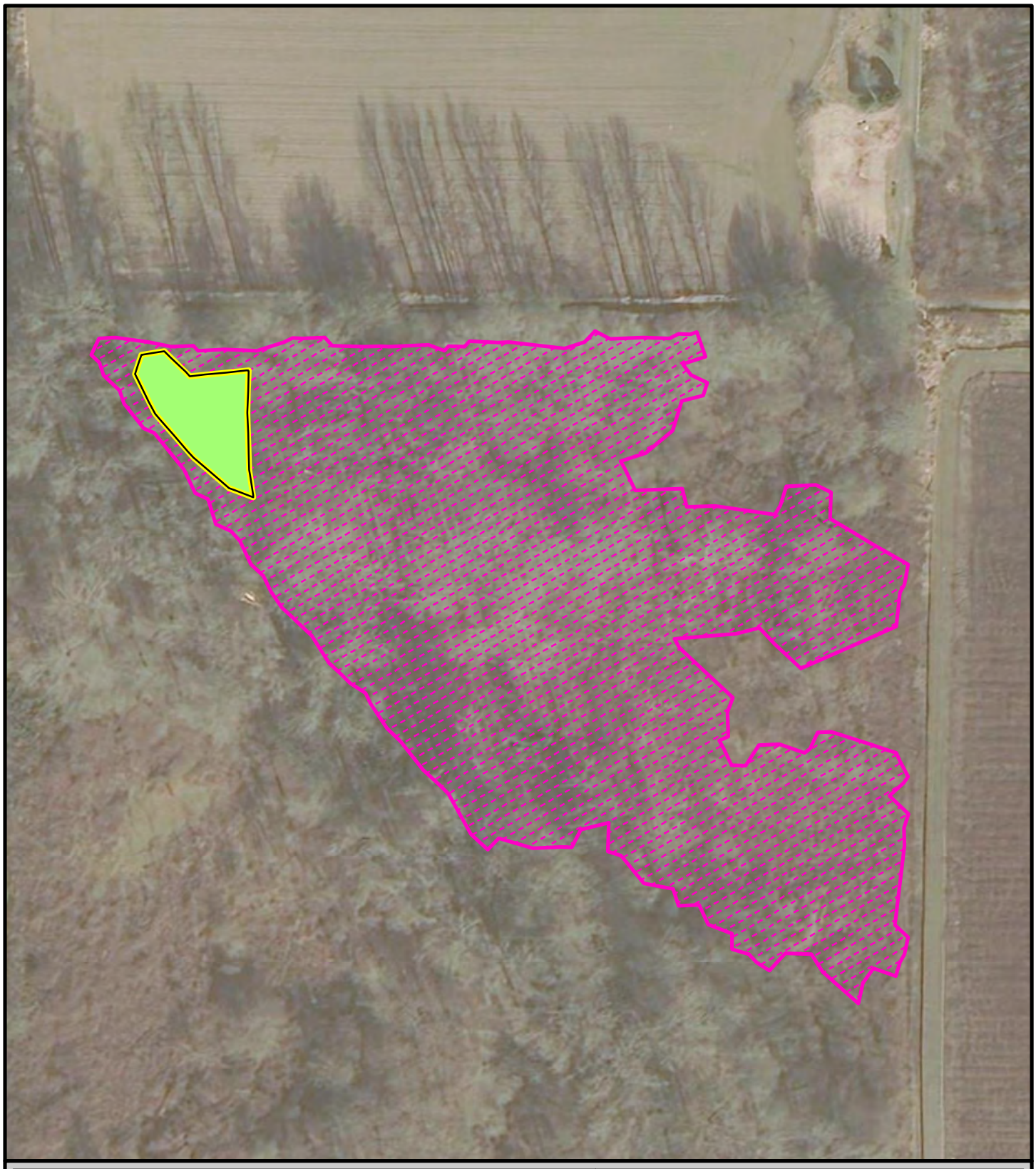

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-25.
Map of Contributing Basin for Wetland 87.

N

0 50 100 200 Feet

HERRERA

Esri, Aerial (2021)

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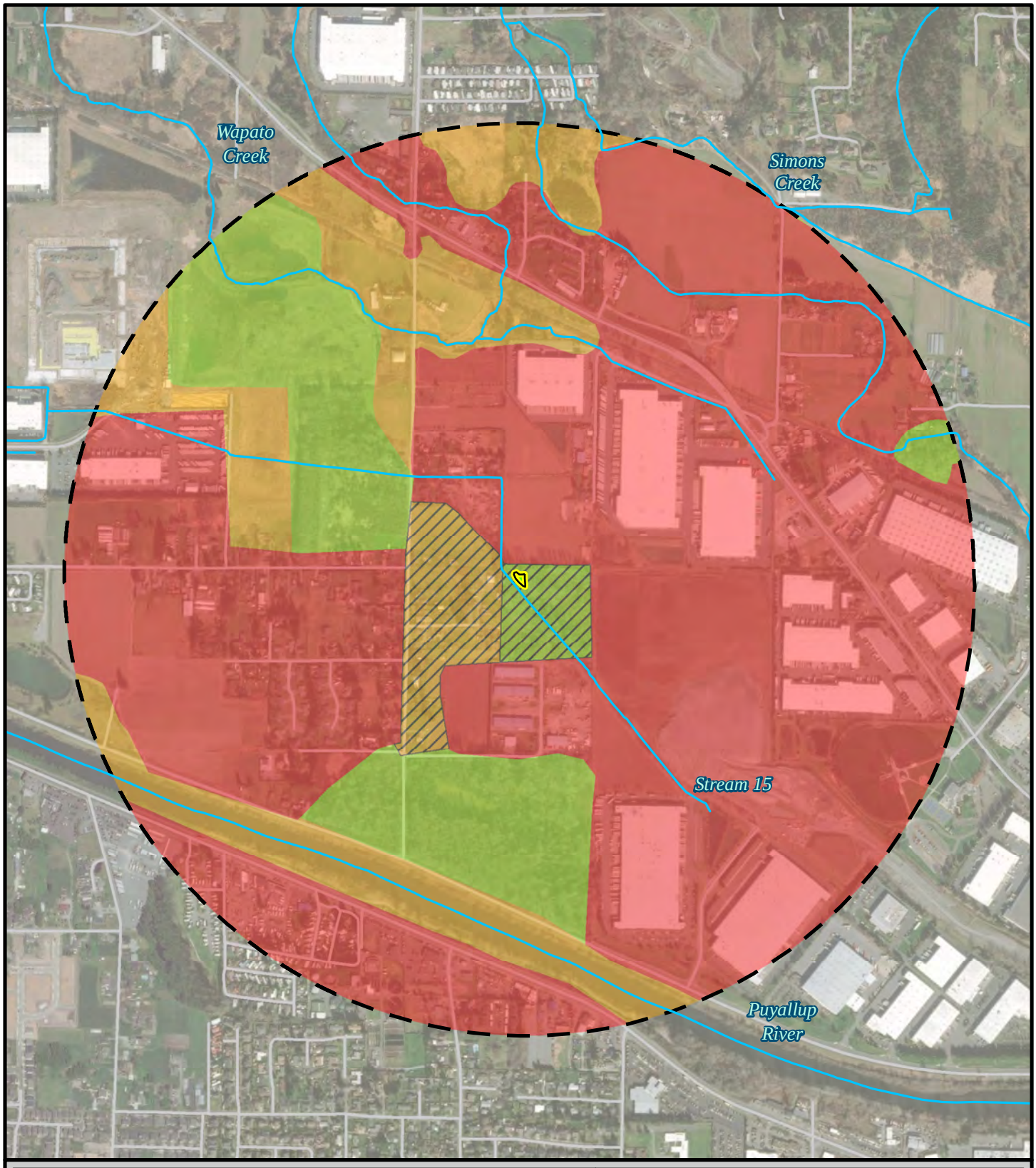

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-26.
Habitat Within a 1-km Boundary of Wetland 87.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 88/90/91

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 88/90/91 Date of site visit: 4/8/2021, 4/13/2021, 4/14/2021, 4/15/2021, 11/03/2021

Rated by R. Plumb 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, 2020

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	L	
Landscape Potential	H	H	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	8	7	5	20

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	**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	D-27
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-28
Flow directions and associated features	n/a	D-28a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-28
Map of the contributing basin	D 4.3, D 5.3	D-29
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	D-30
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 88/90/91

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: Homeless encampments nearby, trash and waste observed in surrounding area_____ 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? 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*)? Choose an item.	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: The wetland receives stormwater pond discharges and is adjacent to conventional crop agriculture. Wetland is upstream of Puyallup River that has TMDLs in place.

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 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	8

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 88/90/91

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

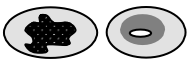
COMMENTS:

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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 88/90/91

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 	1
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	5

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 1.2**+** [(% moderate and low intensity land uses)2.4/2] 1.2 **=** **2.4**% 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 15.2**+** [(% moderate and low intensity land uses)12.8/2] 6.4 **=** **21.6**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
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	-1

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 88/90/91

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

Cowardin class

- PEM - Palustrine emergent
- PSS - Palustrine scrub-shrub

Figure D-27.
Cowardin Classes for Wetland 88/90/91.

N

0 62.5 125 250 Feet

HERRERA

ESRI, Aerial (2021)

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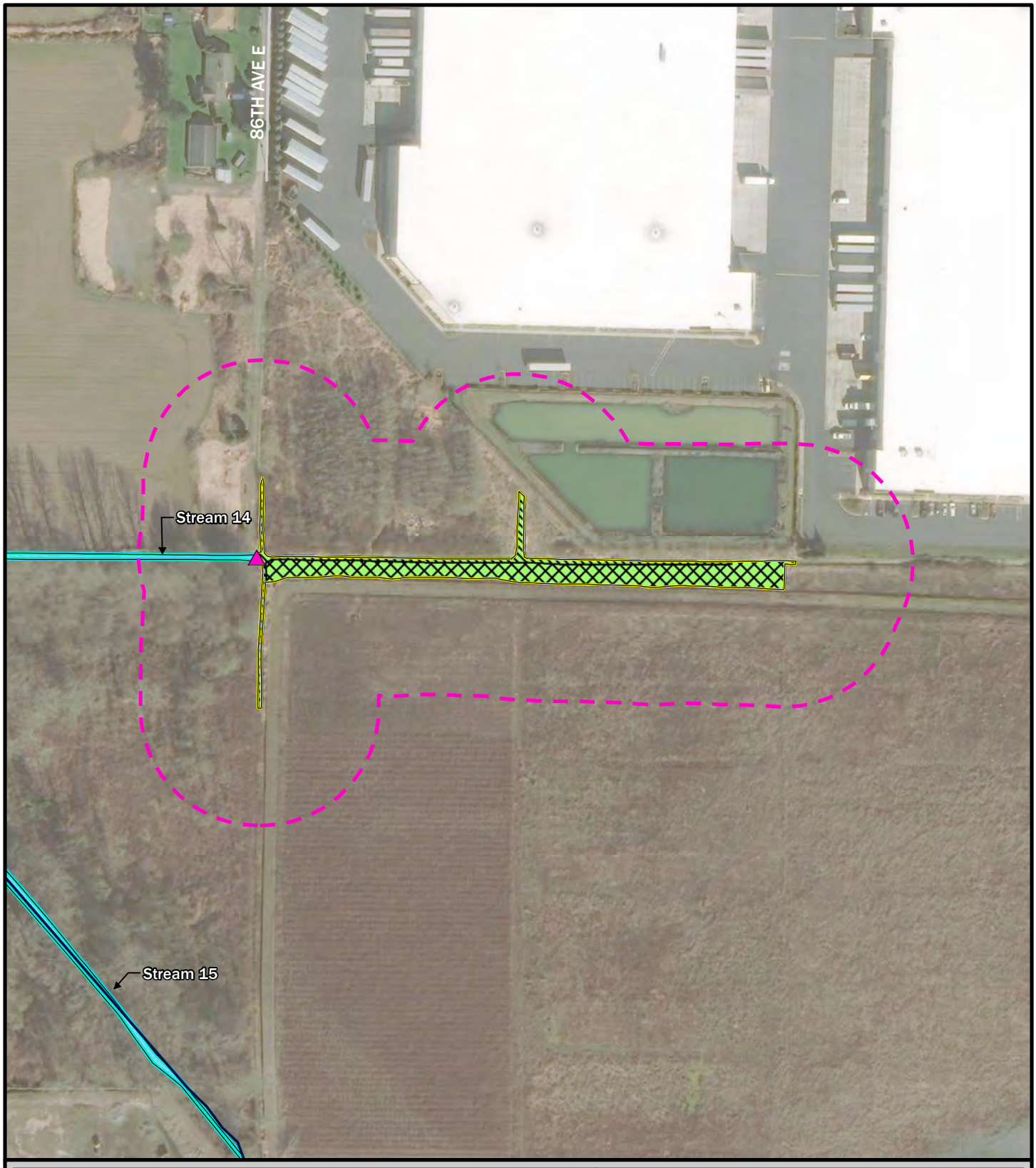

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded
- Seasonally flowing stream

Figure D-28.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 88/90/91

N

0 87.5 175 350 Feet

HERRERA

ESRI, Aerial (2021)

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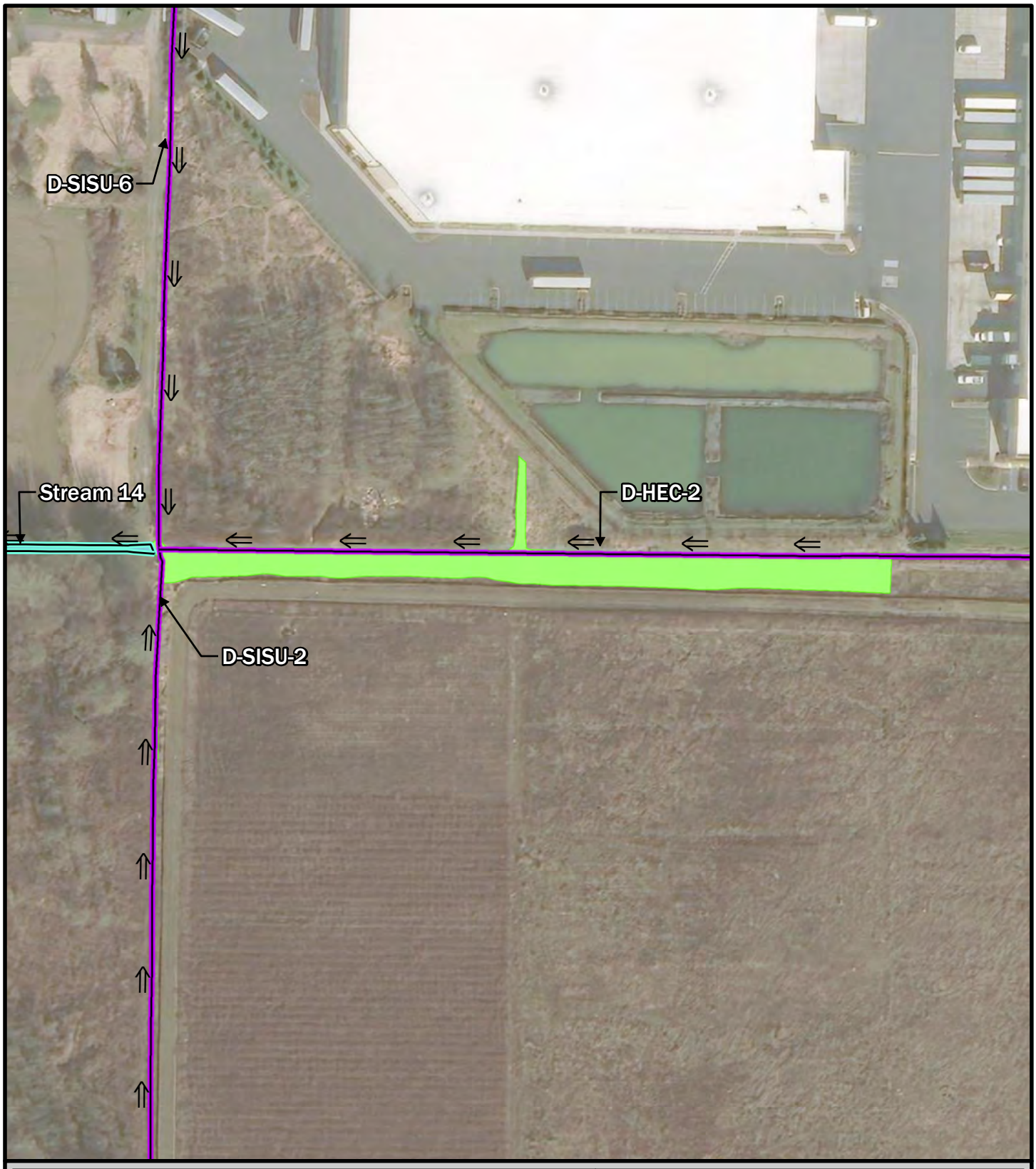

Legend

- Flow Direction
- Surveyed ditches
- Wetland
- Stream
- Delineated OHWM

Figure D-28a.
Flow Directions and Features Associated with Wetland 88/90/91.

N

0 62.5 125 250 Feet

HERRERA

ESRI, Aerial (2020)

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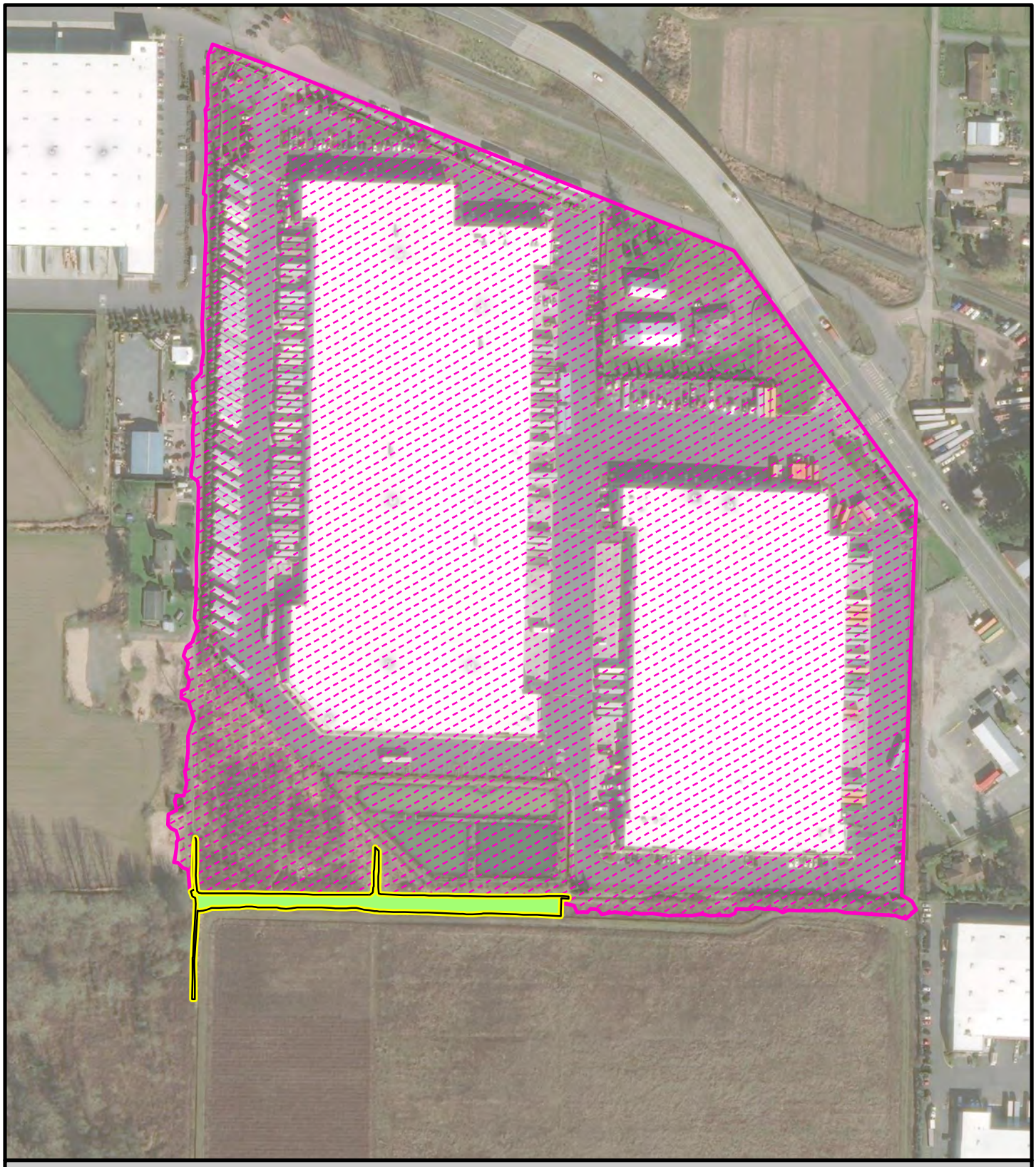


Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-29.
Map of Contributing Basin for Wetland 88/90/91.

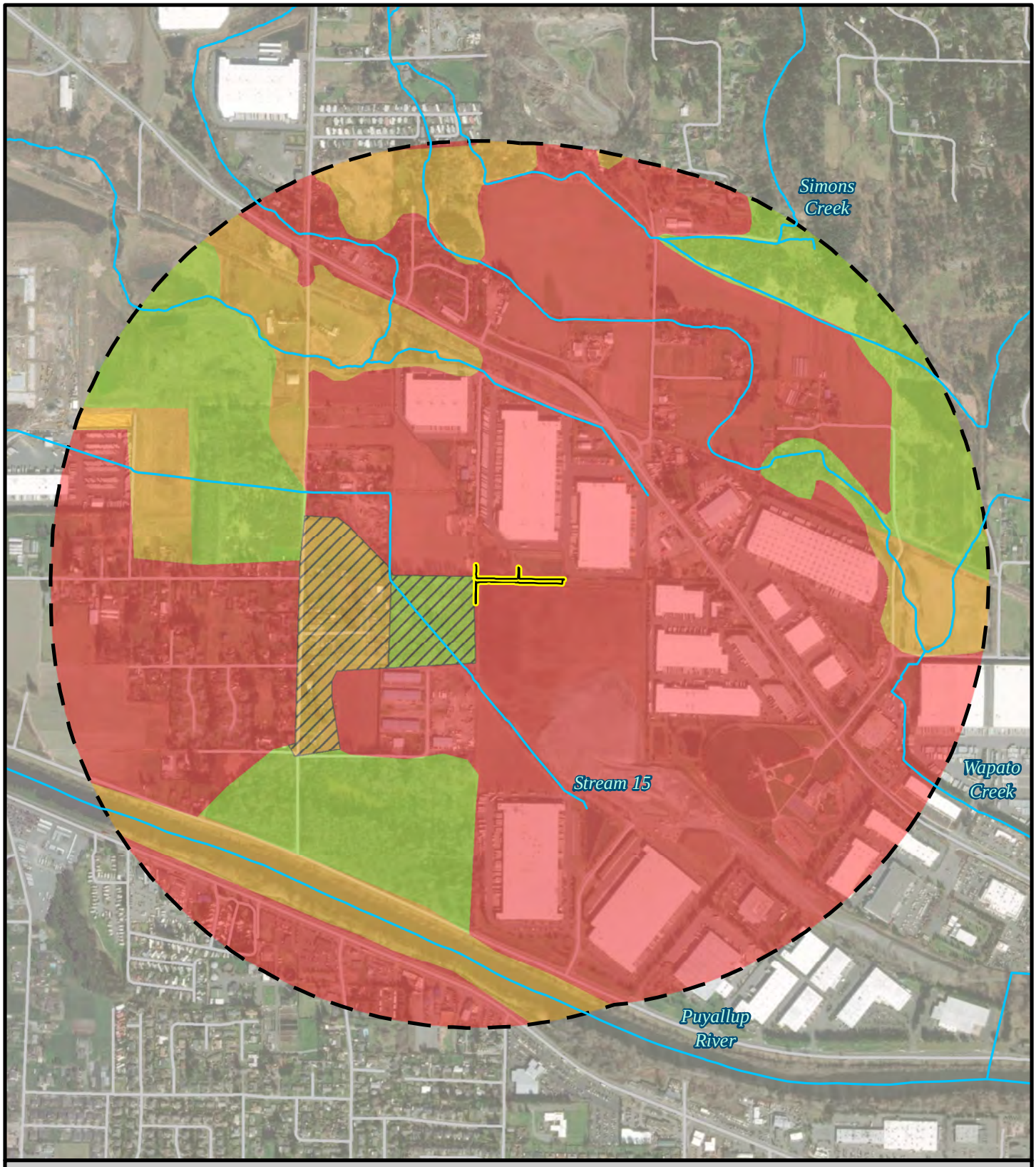
N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_ContributingBasin_WLX_letter.mxd



Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-30.
Habitat Within a 1-km Boundary of Wetland 88/90/91.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 89

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 89 Date of site visit: 4/8/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	L	
Landscape Potential	H	H	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	8	7	5	20

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	**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	D-31
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-32
Flow directions and associated features	n/a	D-32a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-32
Map of the contributing basin	D 4.3, D 5.3	D-33
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	D-34
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 89

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 > 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 < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	6

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: Trash/Homeless encampments 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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland is upstream of the Puyallup River, which has set TMDLs

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 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	9

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

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*

Wetland name or number: Wetland 89

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value If score is: 1 = M *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
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

Wetland name or number: Wetland 89

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 1.3**+** [(% moderate and low intensity land uses)2.7/2] 1.4 **= 2.7**% 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 11.9**+** [(% moderate and low intensity land uses)14.1/2] 7.1 **= 19.0**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 73.9% >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 89

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

Cowardin class

PSS - Palustrine scrub-shrub

Figure D-31.
Cowardin Classes for Wetland 89.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Wetland
- Stream
- 150ft boundary
- Hydroperiod
- Saturated only

Figure D-32.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 89.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Streams (Pierce County 2021)
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Delineated OHWM

Figure D-32a.
Flow Directions and Features Associated with Wetland 89.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-33.
Map of Contributing Basin for Wetland 89.

N

0 50 100 200 Feet

HERRERA

Esri, Aerial (2021)

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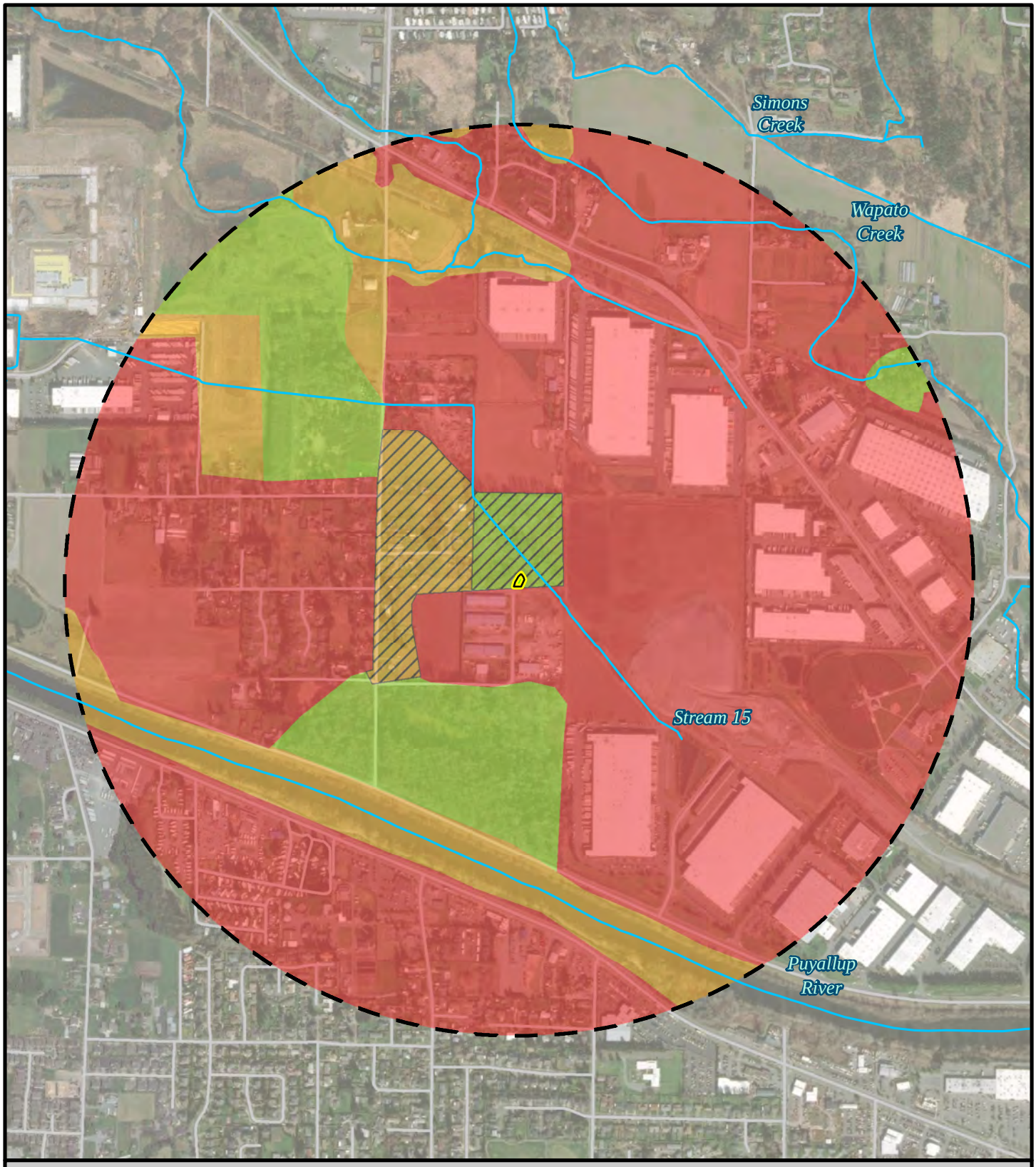

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-34.
Habitat Within a 1-km Boundary of Wetland 89.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 92

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 92 Date of site visit: 4/20/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	H	H	L	
Value	H	M	M	**TOTAL**
Does Score Based on Ratings	8	7	4	19

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	D-35
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-36
Flow directions and associated features	n/a	D-36a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-36
Map of the contributing basin	D 4.3, D 5.3	D-37
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	D-38
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 92

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 < 1/10 of area | points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > 1/2 total area of wetland | points = 4	4
Total for D 1 Add the points in the boxes above (F9 key)	6

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? Yes = 1	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1–D 2.3? Source: Agricultural spraying of herbicide/pesticide w/in wetland Yes = 1	1
Total for D 2 Add the points in the boxes above	4

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland is an active conventional ag field. Wetland outlets to Stream 15 and stormwater pond outlets connected to wetland. Pierce County indicates homes adjacent to wetland are on septic. Wetland is located upstream of Puyallup which has TMDLs in place.

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 between 2 ft to <3 ft from surface or bottom of outlet | points = 5	5
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	10

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 92

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

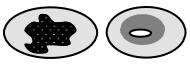
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 92

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.* 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*)	1
Total for H 1 Add the points in the boxes above	3

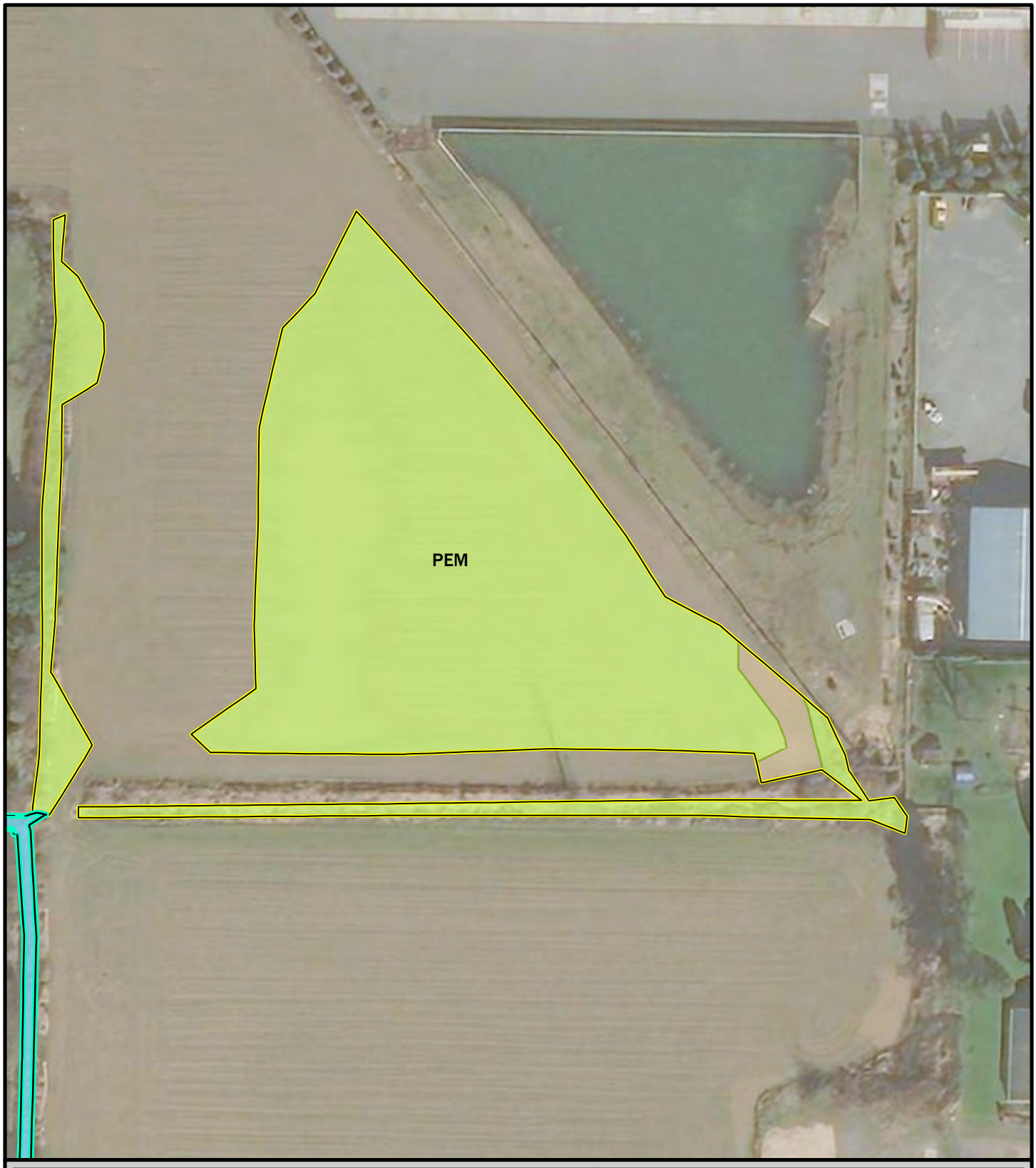
Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

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 15.9**+** [(% moderate and low intensity land uses)18.2/2] 9.1 **= 25.0**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 65.9% >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 92

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

- Stream
- Delineated OHWM
- Estimated OHWM
- Delineated wetland boundary
- Bare ground

Cowardin class

- PEM - Palustrine emergent

Figure D-35.
Cowardin Classes for Wetland 92.

N

0 37.5 75 150 Feet

HERRERA

ESRI, Aerial (2021)

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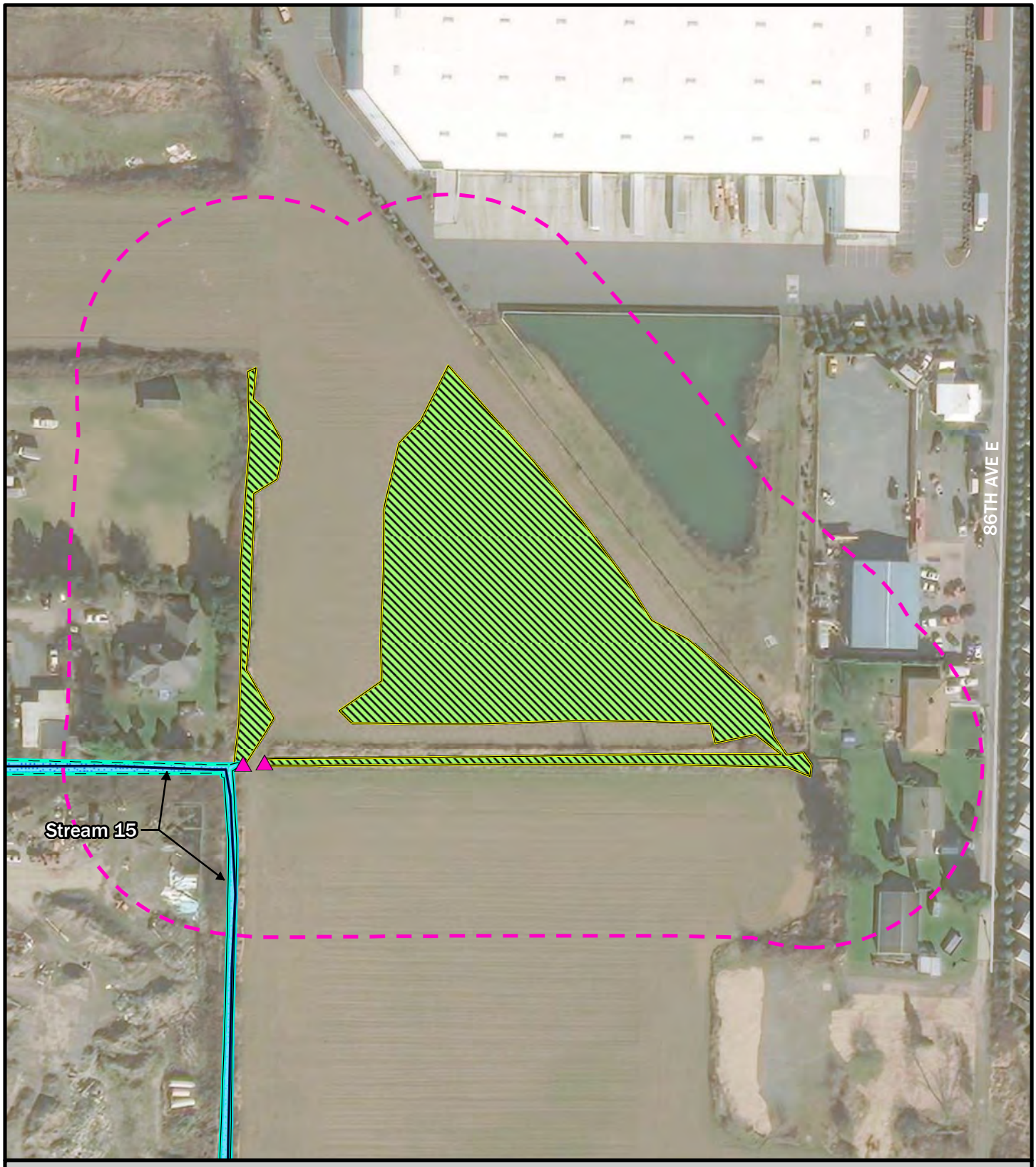

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Seasonally flooded
- Permanently flowing stream
- Seasonally flowing stream

Figure D-36.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 92.

N

0 60 120 240 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-36a.
Flow Directions and Features Associated with Wetland 92.

N

0 62.5 125 250 Feet

HERRERA

Esri, Aerial (2021)

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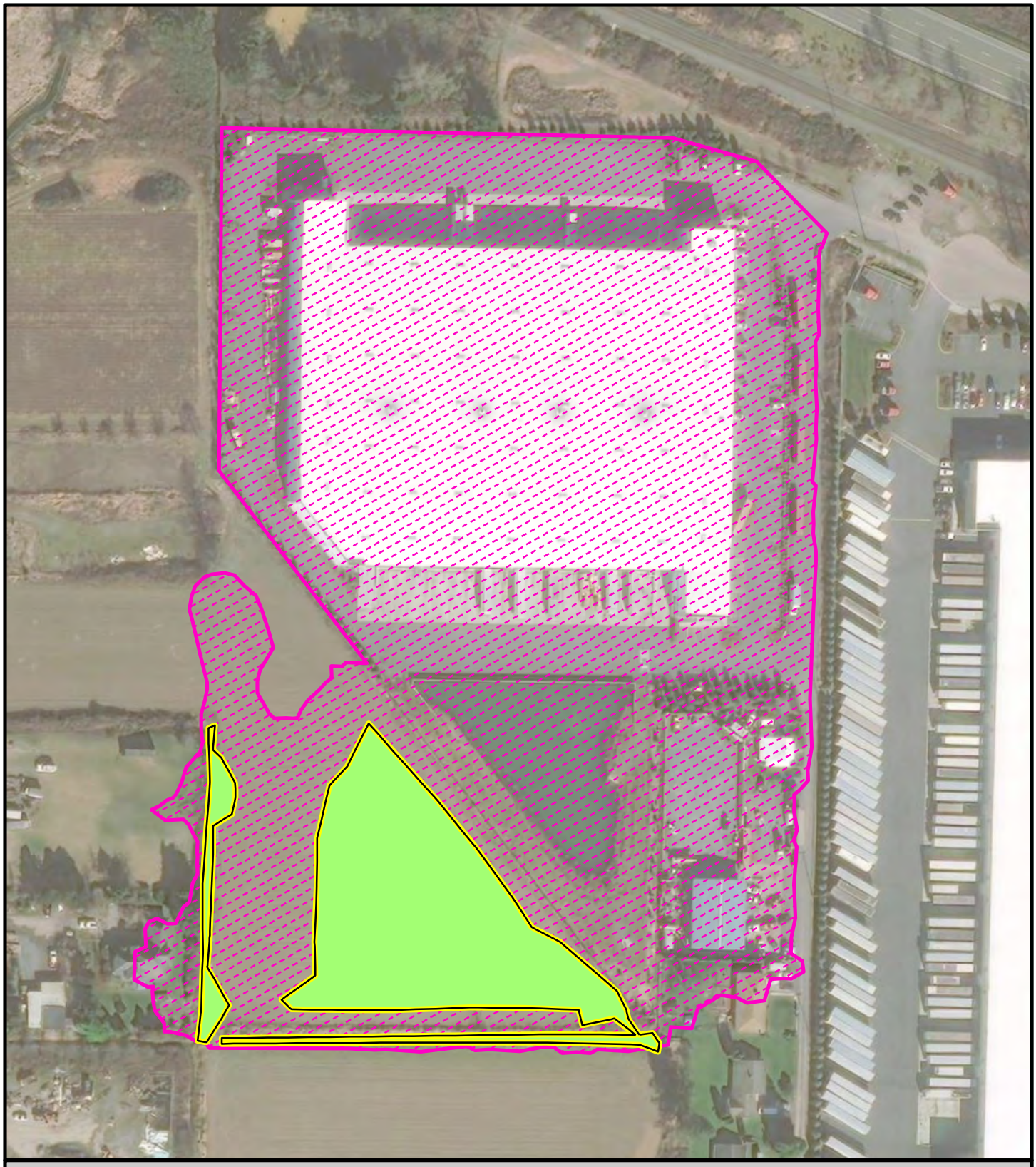

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-37.
Map of Contributing Basin for Wetland 92.

N

0 75 150 300 Feet

HERRERA

Esri, Aerial (2021)

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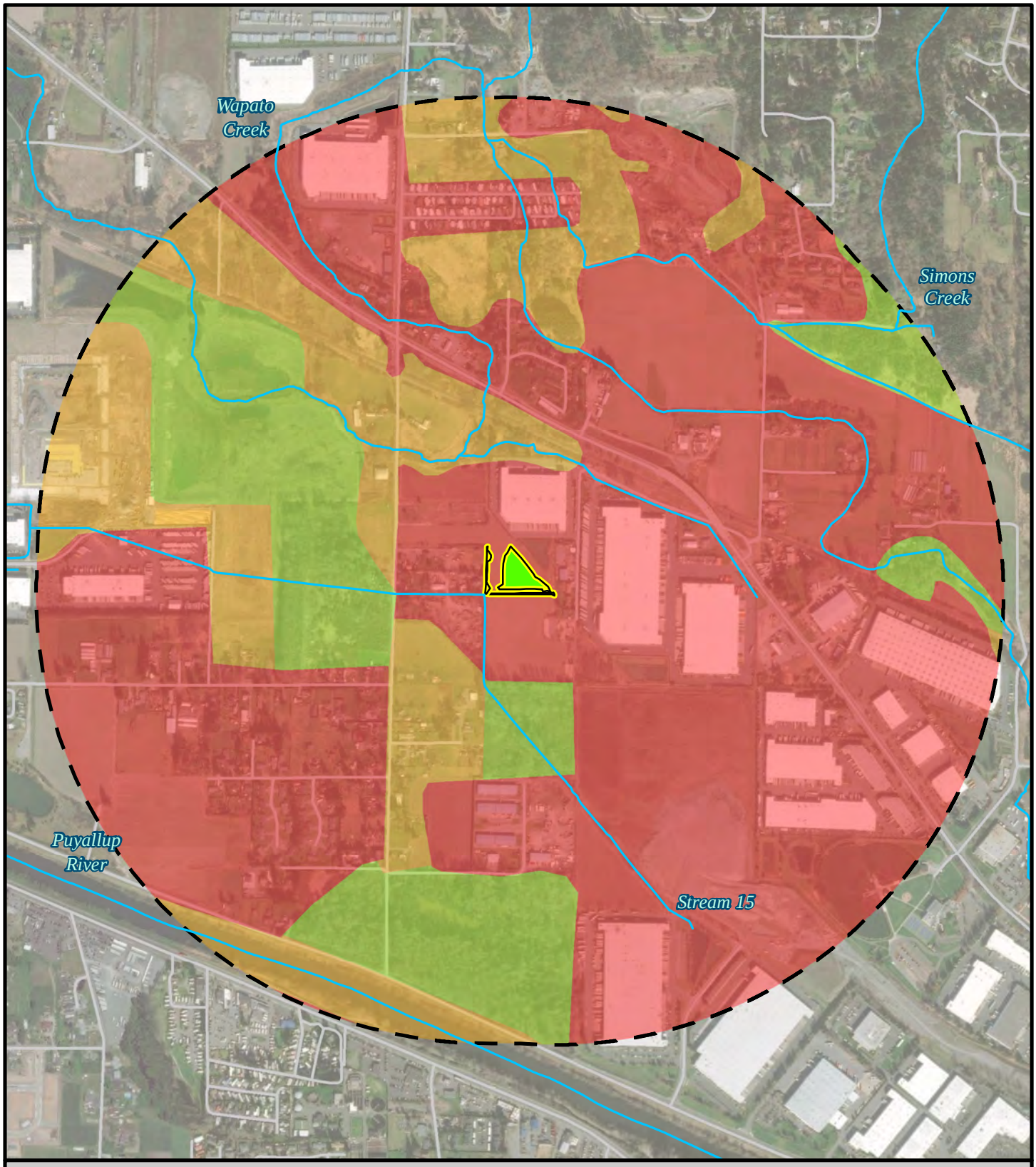

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-38.
Habitat Within a 1-km Boundary of Wetland 92.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 93

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 93 Date of site visit: 4/20/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	L	M	L	
Landscape Potential	H	H	L	
Value	H	M	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	D-39
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-40
Flow directions and associated features	n/a	D-40a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-40
Map of the contributing basin	D 4.3, D 5.3	D-41
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	D-42
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 93

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 < 1/10 of area | points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	3

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1	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? Yes = 1	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1–D 2.3? Source: waterfowl droppings Yes = 1	1
Total for D 2 Add the points in the boxes above	4

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland is adjacent to Stream 14, but does not have direct connection. Pierce County indicates homes on septic in area of wetland. Wetland is upstream of Puyallup, which has TMDLs in place.

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 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	9

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 93

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

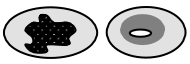
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 93

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.* 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*)	1
Total for H 1 Add the points in the boxes above	3

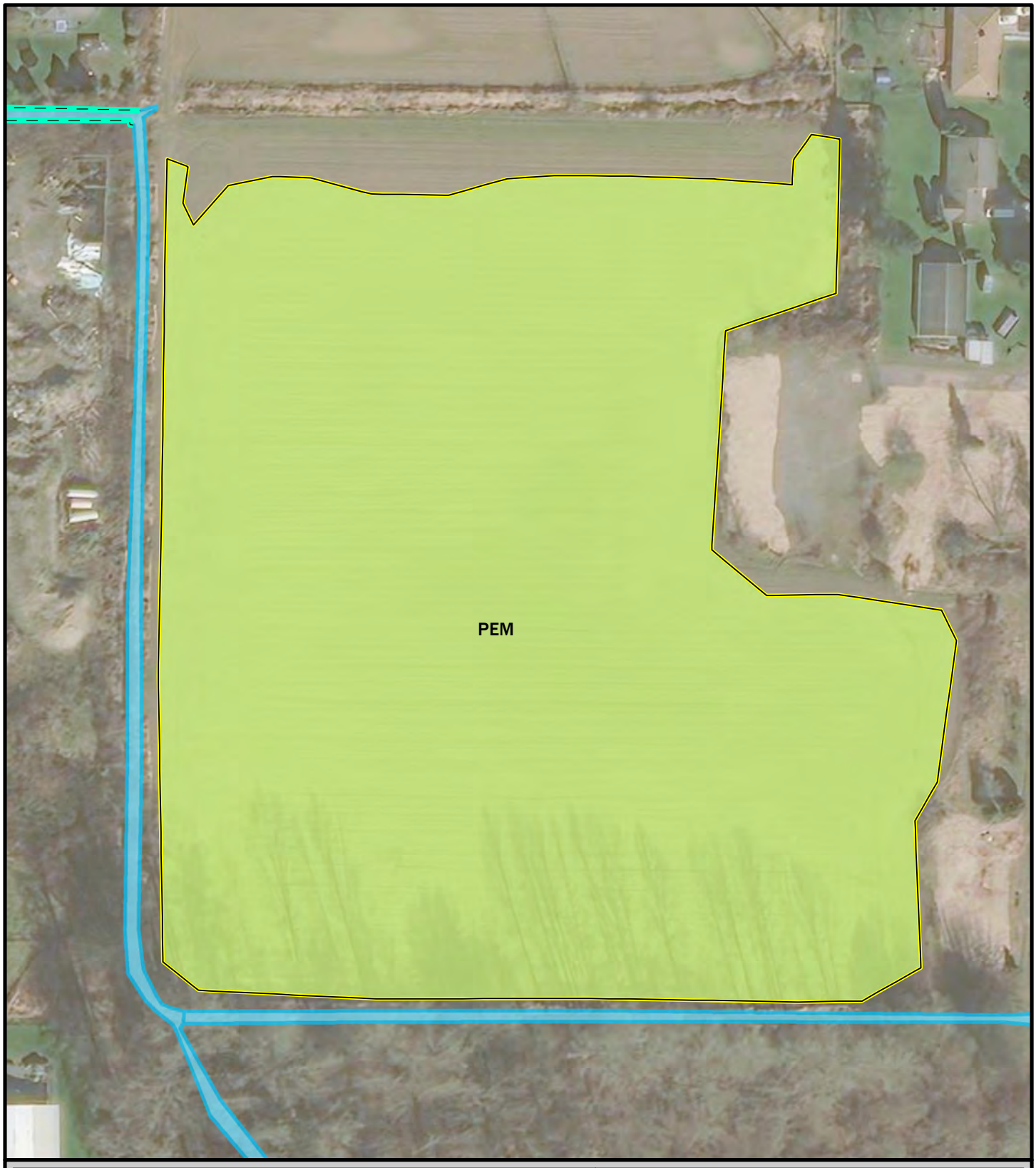
Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

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 1.1**+** [(% moderate and low intensity land uses)2.3/2] 1.2 **= 2.3**% 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 14.4**+** [(% moderate and low intensity land uses)18.1/2] 9.1 **= 23.5**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 67.5% >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 93

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

- Stream
- Delineated wetland boundary
- Estimated OHWM

Cowardin class

- PEM - Palustrine emergent

Figure D-39.
Cowardin Classes for Wetland 93.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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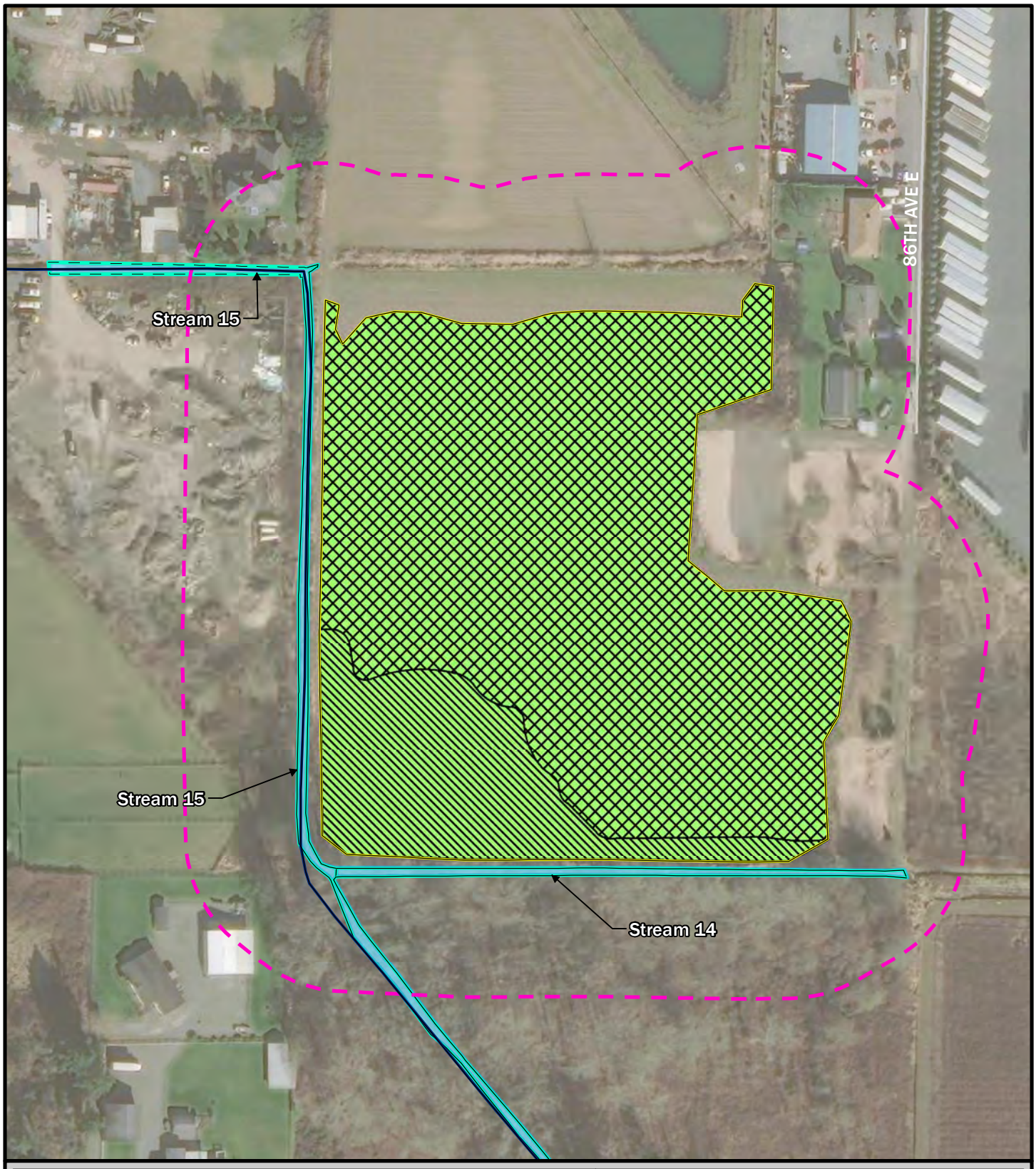

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-40.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 93.

N

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2021)

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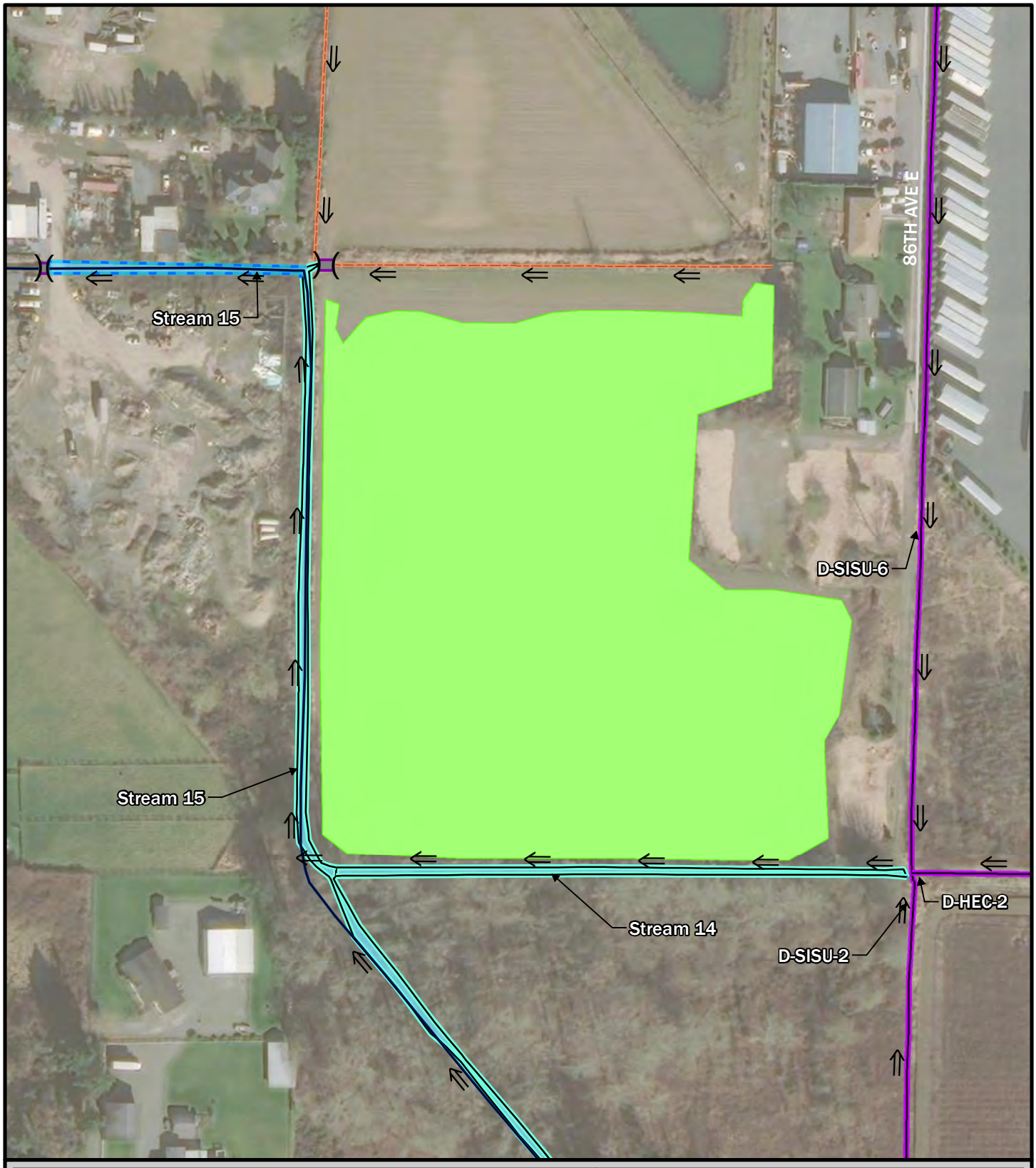

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-40a.
Flow Directions and Features Associated with Wetland 93.

N

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2020)

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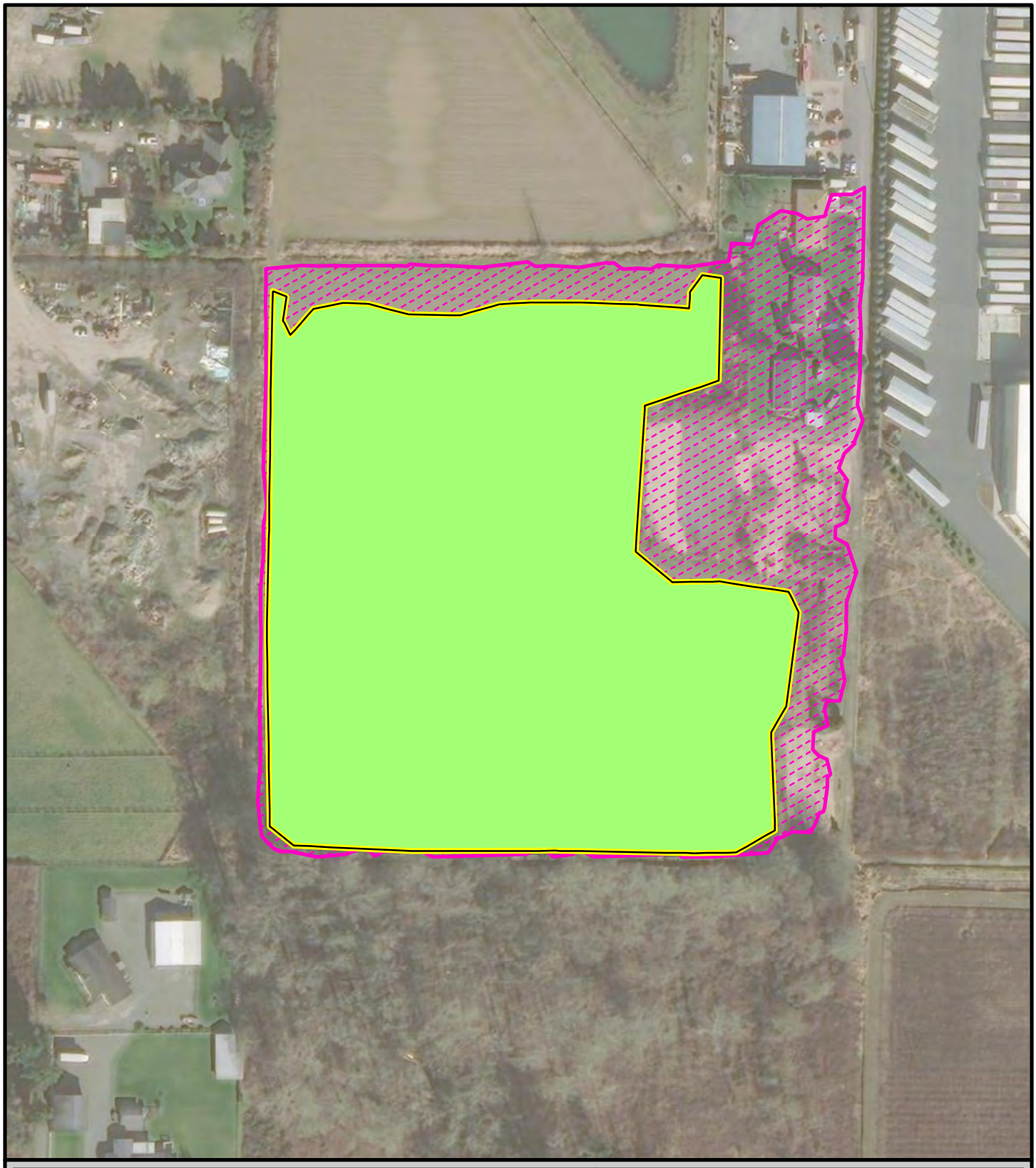

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-41.
Map of Contributing Basin for Wetland 93.

N

0 75 150 300 Feet

HERRERA

Esri, Aerial (2021)

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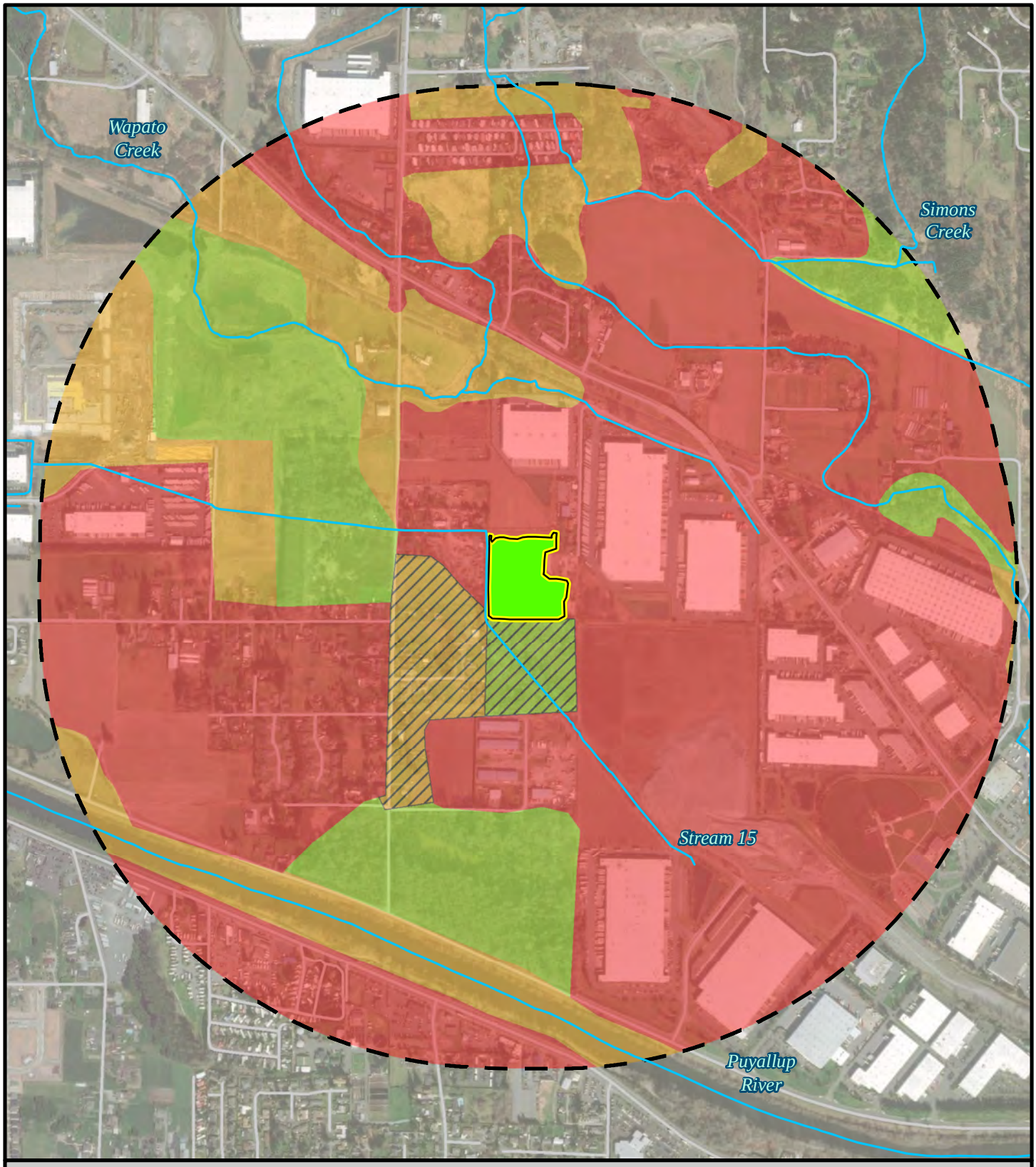

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Low/Moderate Intensity and accessible
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-42.
Habitat Within a 1-km Boundary of Wetland 93.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 94

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 94 Date of site visit: 4/28/2021

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*): Riverine

Source of base aerial photo/map ESRI Aerial, 2020

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	M	M	M	
Landscape Potential	H	H	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	8	7	6	21

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	D-43
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-44
Flow directions and associated features	n/a	D-44a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-44
Map of the contributing basin	D 4.3, D 5.3	D-45
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	D-46
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 94

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 < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	6

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: receives runoff from livestock areas_____ 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

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 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 94

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

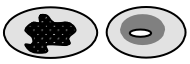
Rating of Value If score is: 1 = M *Record the rating on the first page*

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	3 structures | points = 2	2
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 94

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*)	3
Total for H 1 Add the points in the boxes above	13

Rating of Site Potential If score is: 7–14 = M *Record the rating on the first page*

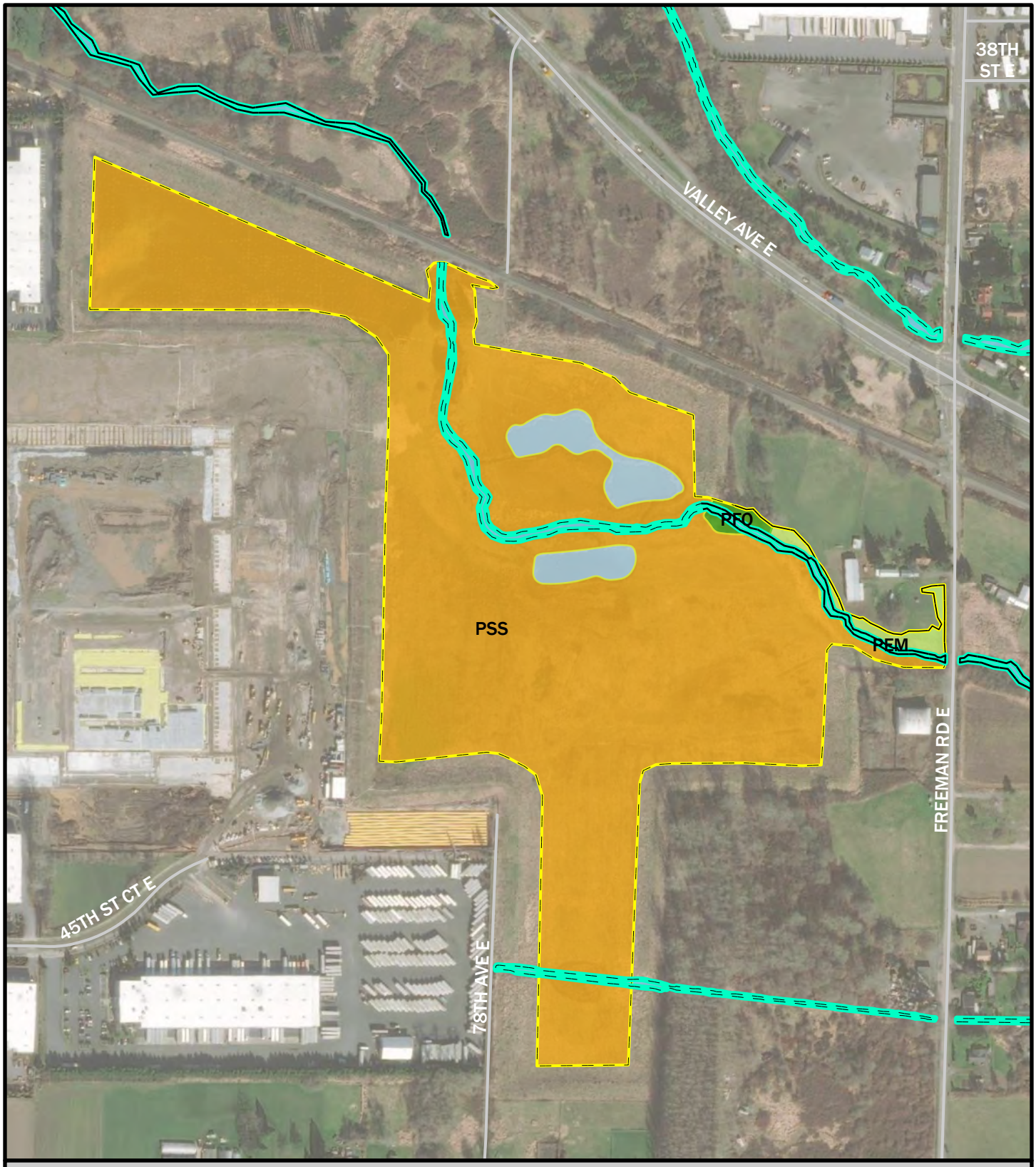
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 2.8**+** [(% moderate and low intensity land uses)8.2/2] 4.1 **= 6.9**% If total accessible 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 10.0**+** [(% moderate and low intensity land uses)19.6/2] 9.8 **= 19.8**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 70.5% >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 94

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 OHWM
- Estimated OHWM
- Delineated wetland boundary
- Estimated wetland boundary
- Open Water

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-43.
Cowardin Classes for Wetland 94.

N

0 200 400 800 Feet

HERRERA

ESRI, Aerial (2021)

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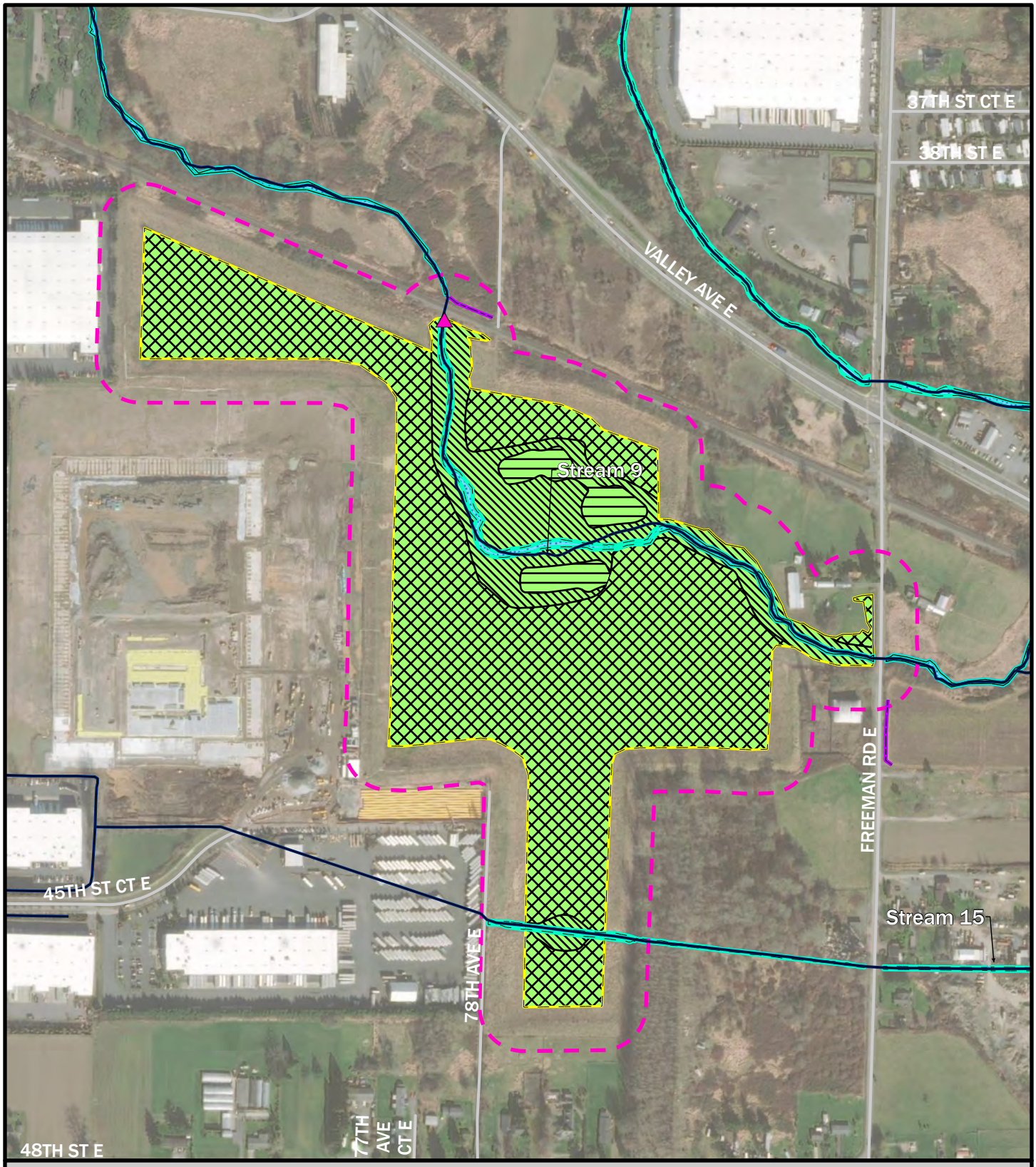

Legend

- Stream (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet
- Surveyed ditches

Hydroperiod

- Permanently flooded
- Saturated only
- Seasonally flooded
- Permanently flowing stream

Figure D-44.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 94.

N

0 235 470 940 Feet

HERRERA

ESRI, Aerial (2021)

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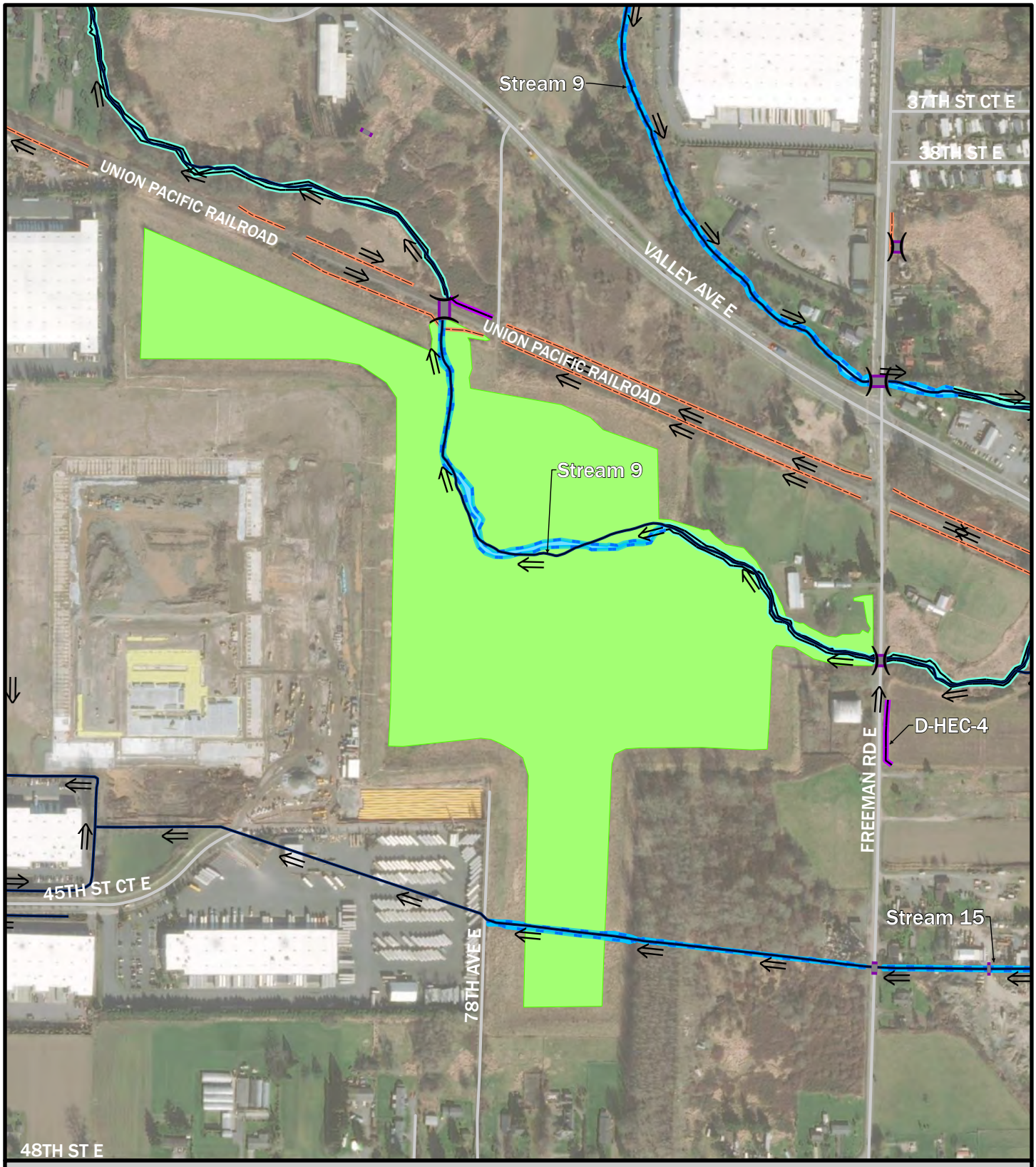

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Ditch (survey)
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-44a.
Flow Directions and Features Associated with Wetland 94.

N

0 235 470 940 Feet

HERRERA

Esri, Aerial (2021)

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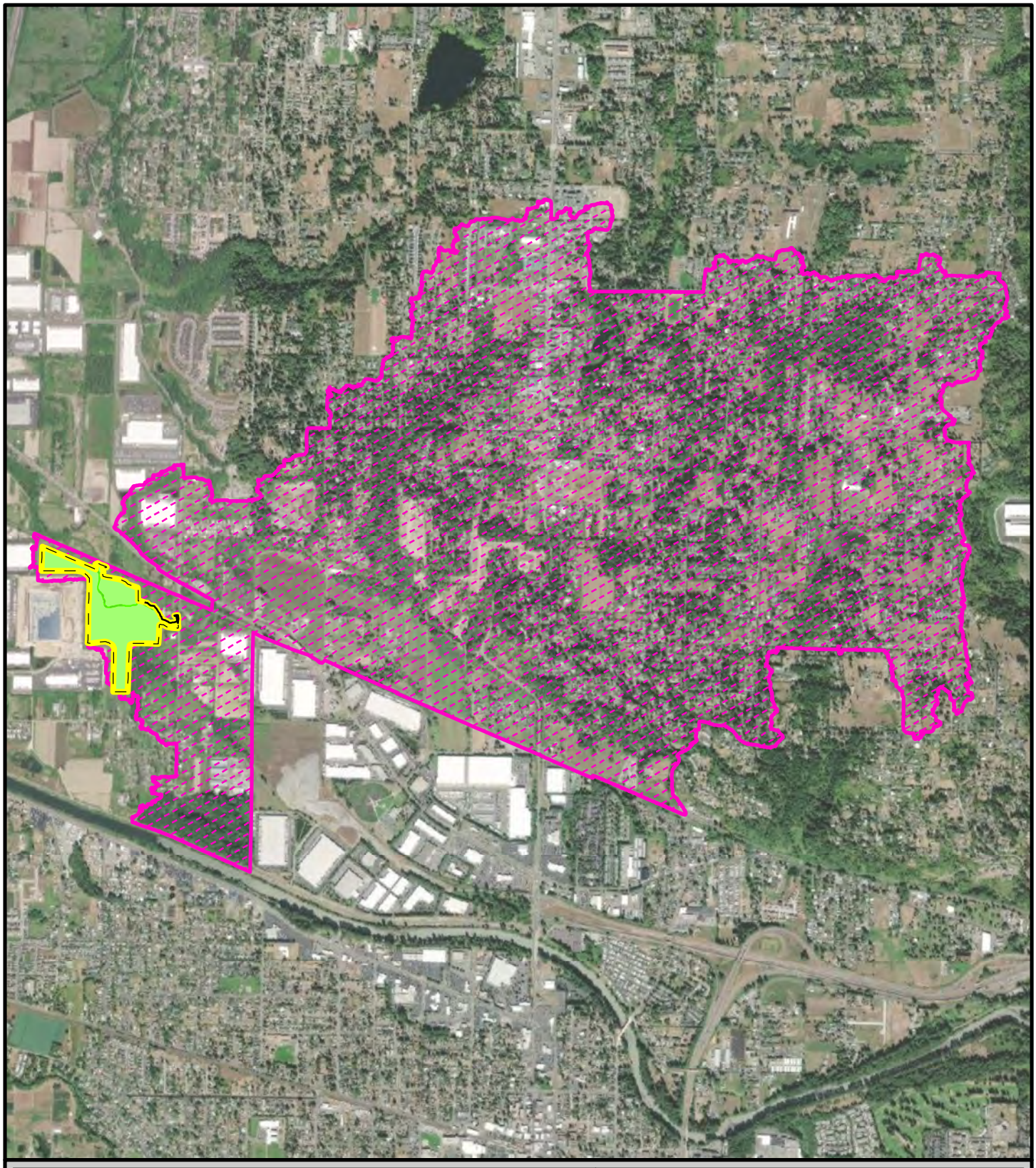

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-45.
Map of Contributing Basin for Wetland 94.

N

0 1,250 2,500 5,000 Feet

HERRERA

Esri, Aerial (2021)

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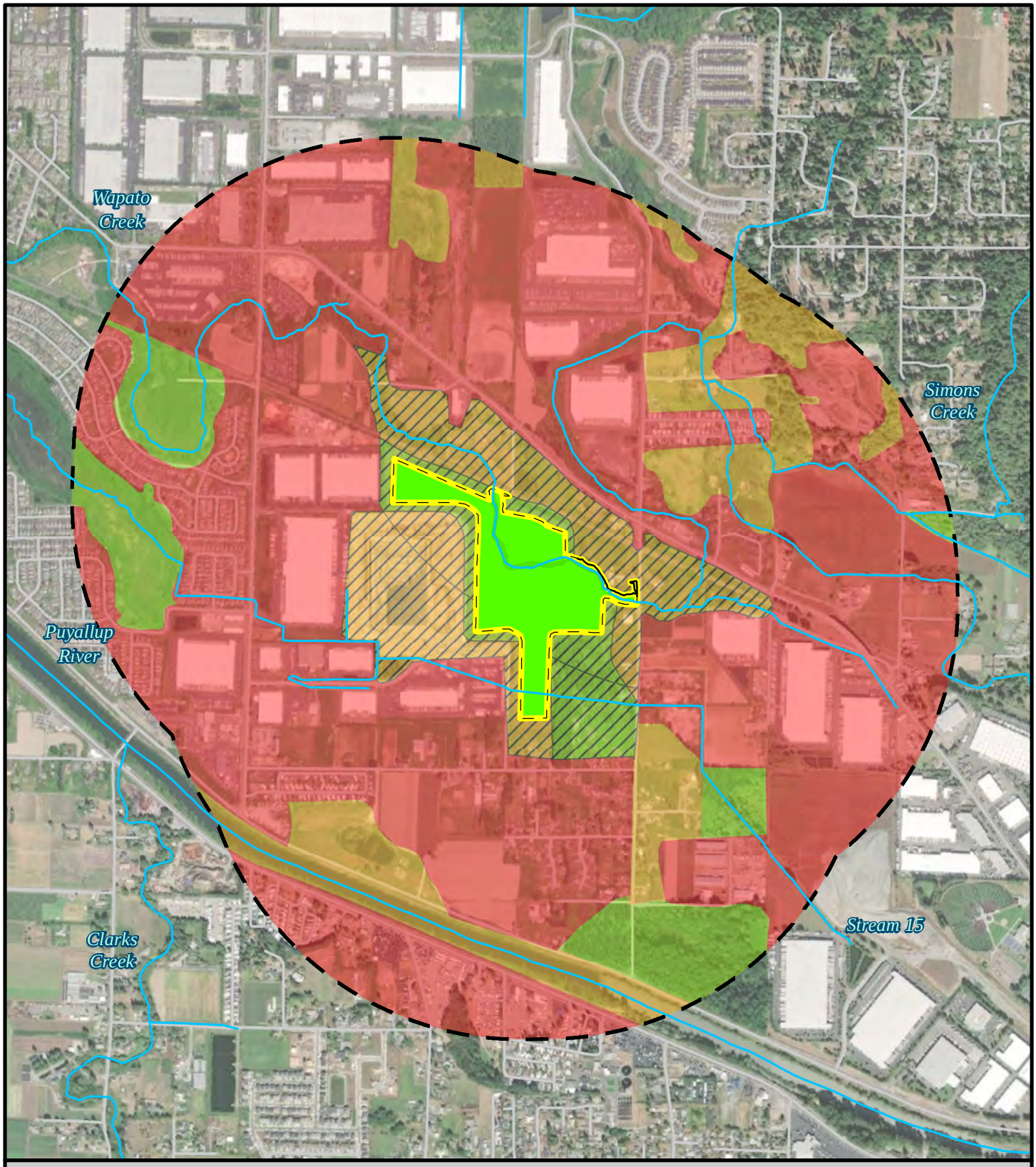

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-46.
Habitat Within a 1-km Boundary of Wetland 94.

N

0 700 1,400 2,800 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 95

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 95 Date of site visit: 4/29/2021

Rated by J. LeClerc Trained by Ecology? ☒ Yes ☐ No Date of Training Oct. 2019

HGM Class used for rating Riverine Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2020

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	
Circle the appropriate ratings				
Site Potential	M	M	M	
Landscape Potential	H	M	L	
Value	M	M	H	**TOTAL**
Score Based on Ratings	7	6	6	19

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

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	D-47
Hydroperiods and boundary of area within 150 ft of the wetland	H 1.2, R 2.4	D-48
Flow directions and associated features	n/a	D-48a
Ponded depressions	R 1.1	D-49
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	D-50
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	D-49
Map of the contributing basin	R 2.2, R 2.3, R 5.2	D-51
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	D-52
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	D-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	D-6

Wetland name or number: Wetland 95

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions present but cover <1/2 area of wetland | points = 2		2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs >2/3 area of the wetland | points = 8		8
Total for R 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

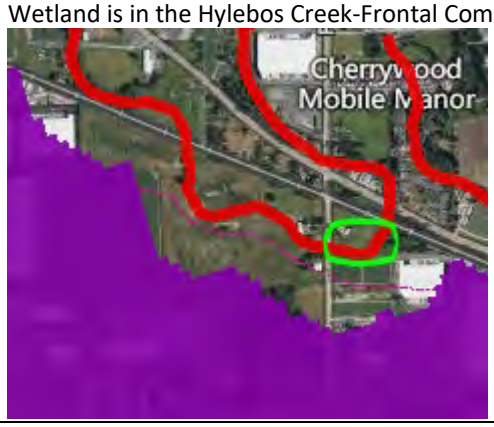
R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 1	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1	1
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1	1
R 2.4. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1–R 2.4? **If yes,** other sources: homeless encampments nearby	Yes = 1	1
Total for R 2	Add the points in the boxes above	6

Rating of Landscape Potential If score is: 3–6 = H *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1	1
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	No = 0	0
R 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 drainage in which the unit is found*)	No = 0	0
Total for R 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: Wapato upstream of Meridian is diverted to discharge directly to Puyallup River, which has TMDLs in place. Wetland is in the Hylebos Creek-Frontal Commencement Bay subbasin which does not have TMDLs in place at site.



Wetland name or number: Wetland 95

Hydrologic Functions – Indicators that site functions to reduce flooding and stream erosion	
R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).* If the ratio is 5–<10 | points = 4	4
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes)*. Forest or shrub for >1/3 area | points = 7	7
Total for R 4 — Add the points in the boxes above	11
Rating of Site Potential — If score is: 6–11 = M — *Record the rating on the first page*	

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0	0
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1	1
R 5.3. Is the up-gradient stream or river controlled by dams?	No = 1	1
Total for R 5 — 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*		

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* Surface flooding problems are in a subbasin farther down-gradient | points = 1	1
R 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 R 6 — Add the points in the boxes above	1
Rating of Value — If score is: 1 = M — *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.* — 3 structures | points = 2 ☐ 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	2

Wetland name or number: Wetland 95

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 points** ☐ **Freshwater tidal wetland** **2 points**	3 types present | points = 2	2
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.* **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	Moderate | points = 2	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*)		2
Total for H 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 7–14 = M *Record the rating on the first page*

Wetland name or number: Wetland 95

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)6.6/2] 3.3 **= 3.3**% 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 13.3 **+** [(% moderate and low intensity land uses)23.4/2] 11.7 **= 25.0**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 63.3% >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*

H 3.0. Is the habitat provided by the site valuable to society? — 2

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

Rating of Value If score is: 2 = H *Record the rating on the first page*

Legend

- Stream
- Delineated wetland boundary
- Estimated wetland boundary

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-47.
Cowardin Classes for Wetland 95.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2020)

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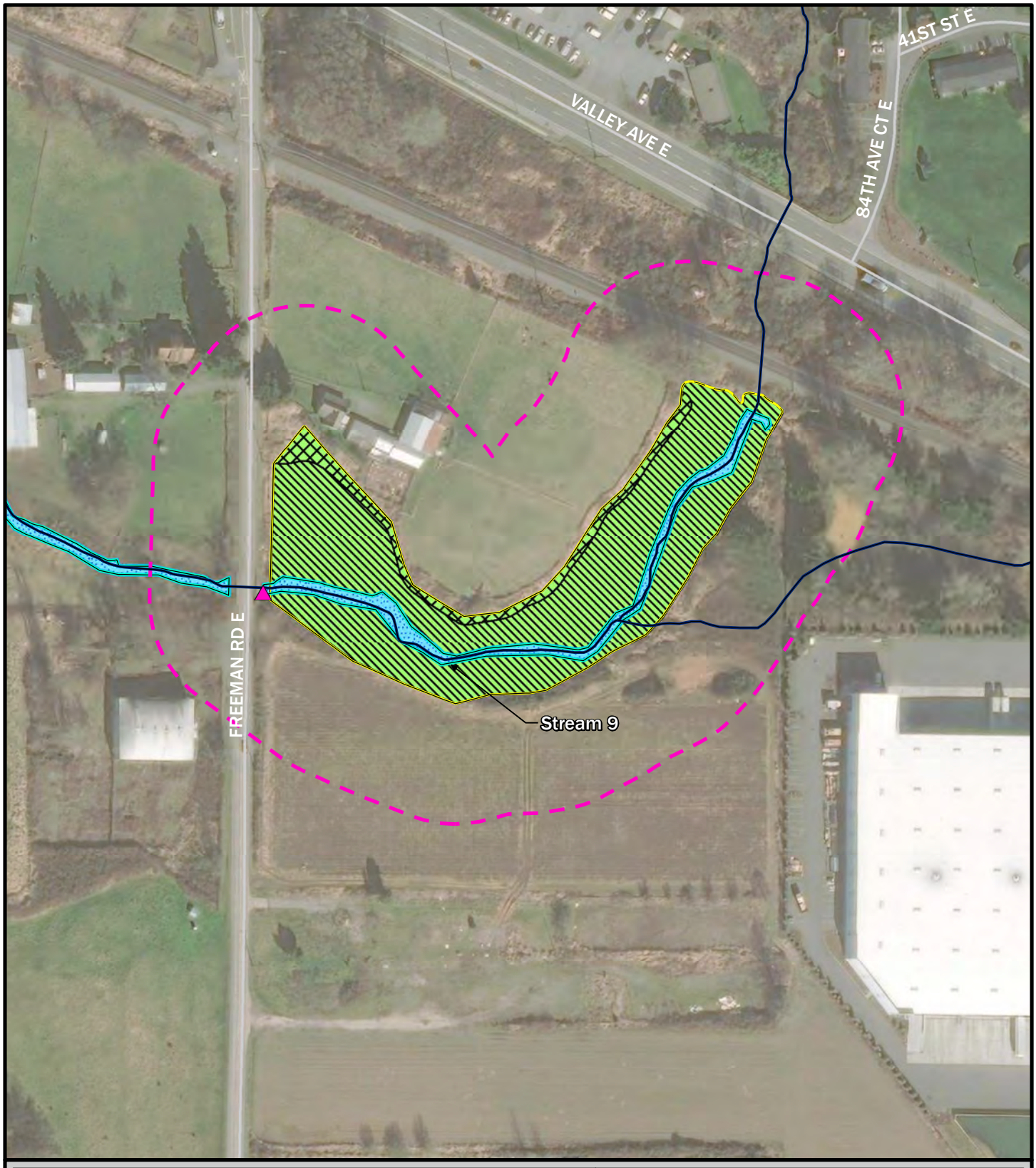

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Delineated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded
- Permanently flowing stream

Figure D-48.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 95.

N

0 85 170 340 Feet

HERRERA

ESRI, Aerial (2021)

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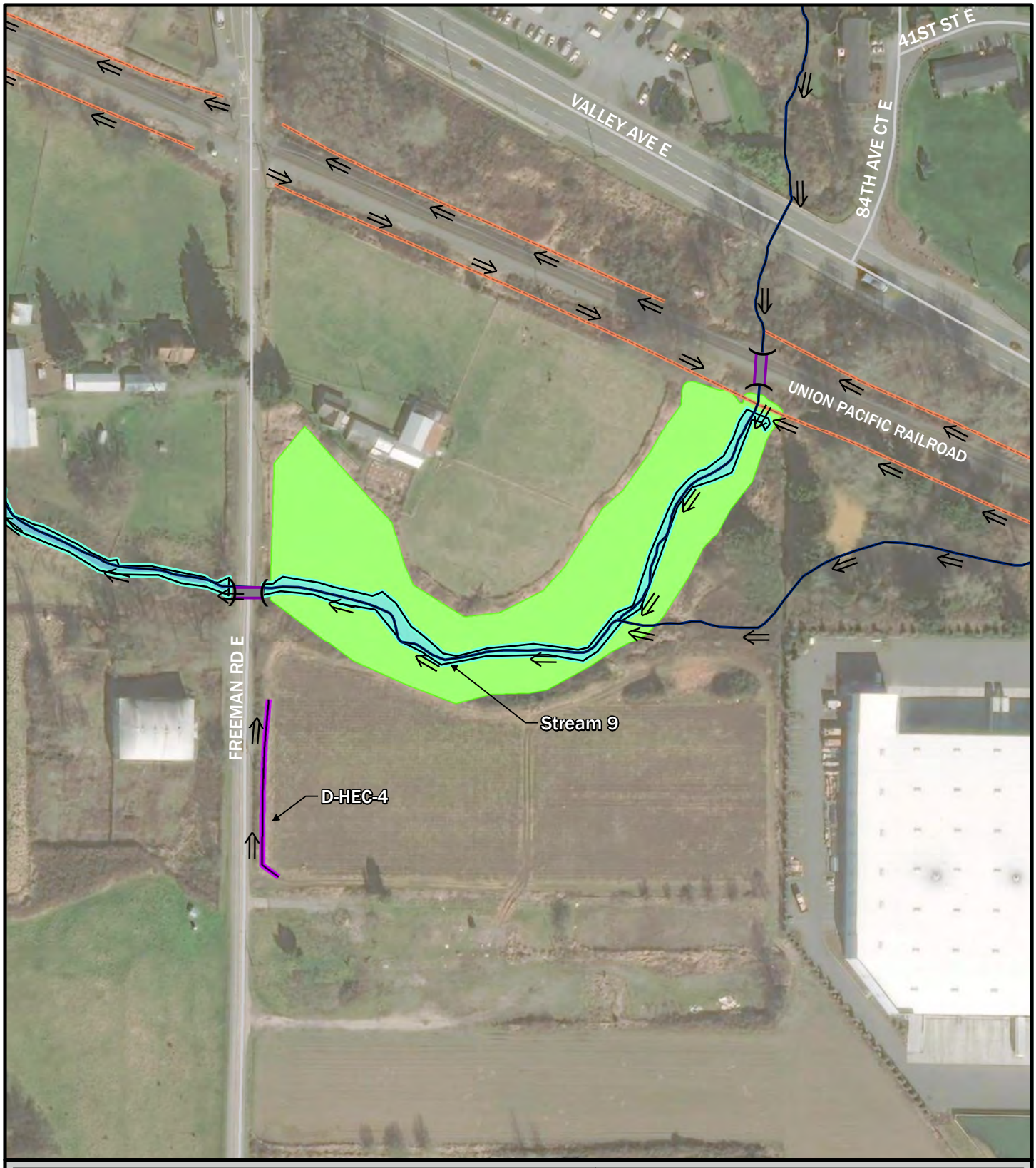

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Delineated OHWM

Figure D-48a.
Flow Directions and Features Associated with Wetland 95.

N

0 85 170 340 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Wetland
- Stream
- Ponded depressions
- Wetland width
- Stream width
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-49.
Ponded Depressions in Wetland 95 and the Width of the Unit vs. the Width of the Stream.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Stream
- Delineated wetland boundary
- Estimated wetland boundary

Plant cover

- Forest or shrub
- Ungrazed or unmowed emergent plants

Figure D-50.
Plant Cover of Trees, Shrubs, and Herbaceous Plants in Wetland 95.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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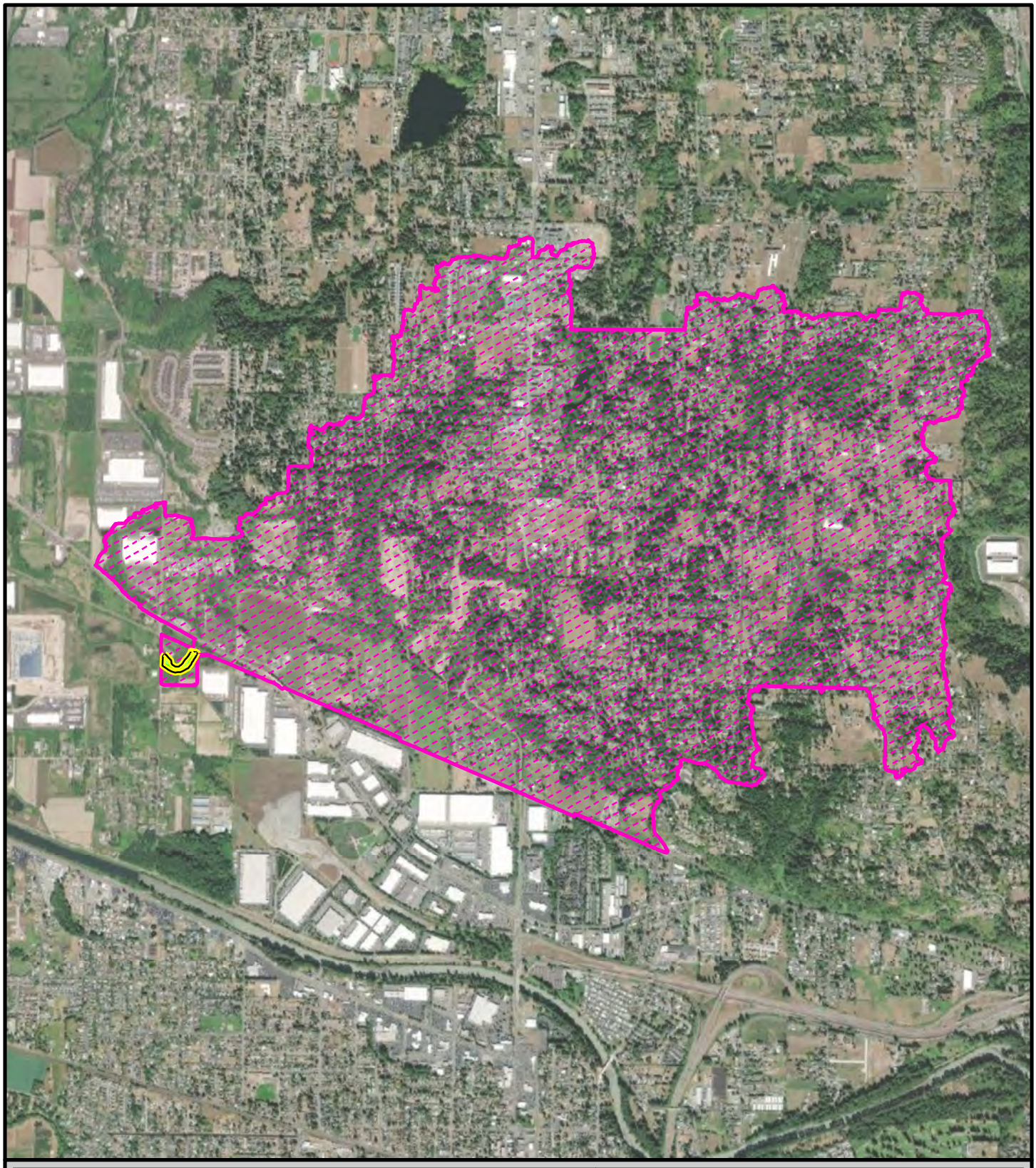

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-51.
Map of Contributing Basin for Wetland 95.

N

0 1,250 2,500 5,000 Feet

HERRERA

Esri, Aerial (2021)

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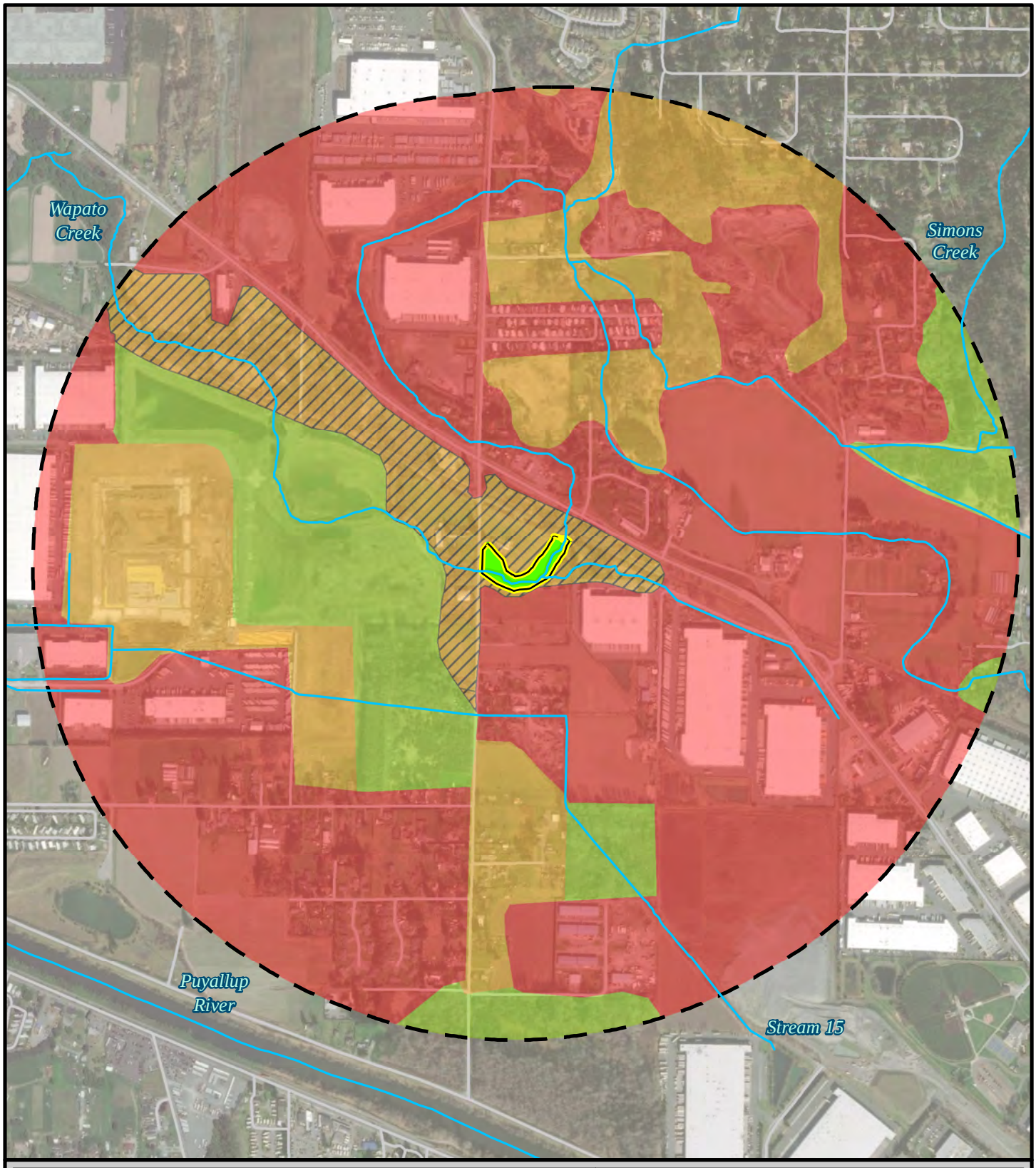

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-52.
Habitat Within a 1-km Boundary of Wetland 95.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 98

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 98 Date of site visit: 7/8/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

HGM Class used for rating Riverine Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes (*if multiple*): n/a

Source of base aerial photo/map ESRI Aerial, 2020

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H	M	M	
Landscape Potential	H	H	L	
Value	M	M	H	**TOTAL**
Score Based on Ratings	8	7	6	21

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

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	D-53
Hydroperiods and boundary of area within 150 ft of the wetland	H 1.2, R 2.4	D-54
Flow directions and associated features	n/a	D-54a
Ponded depressions	R 1.1	D-55
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	D-56
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	D-55
Map of the contributing basin	R 2.2, R 2.3, R 5.2	D-57
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	D-58
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	D-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	D-6

Wetland name or number: Wetland 98

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >1/2 area of wetland | points = 4		4
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs >2/3 area of the wetland | points = 8		8
Total for R 1	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*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1	1
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1	1
R 2.4. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1–R 2.4? **If yes,** other sources: Homeless encampments/Human wastes/garbage	Yes = 1	1
Total for R 2	Add the points in the boxes above	6

Rating of Landscape Potential If score is: 3–6 = H *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1	1
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	No = 0	0
R 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 drainage in which the unit is found*)	No = 0	0
Total for R 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:

Hydrologic Functions – Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).* If the ratio is 1–<5 | points = 2		2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes)*. Forest or shrub for >1/3 area | points = 7		7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 98

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1	1
R 5.3. Is the up-gradient stream or river controlled by dams?	No = 1	1
Total for R 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*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* Surface flooding problems are in a subbasin farther down-gradient | points = 1		1
R 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 R 6	Add the points in the boxes above	1
Rating of Value	If score is: 1 = M	*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	3 structures | points = 2	2
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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 98

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 	2
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points*. ☐ 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*)	1
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: 7–14 = M *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 9.1**+** [(% moderate and low intensity land uses)21.5/2] 10.8 **= 19.9**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 69.4% >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 98

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

Cowardin class

- PEM - Palustrine emergent
- PFO - Palustrine forested
- PSS - Palustrine scrub-shrub

Figure D-53.
Cowardin Classes for Wetland 98.

0 135 270 540 Feet

HERRERA

ESRI, Aerial (2021)

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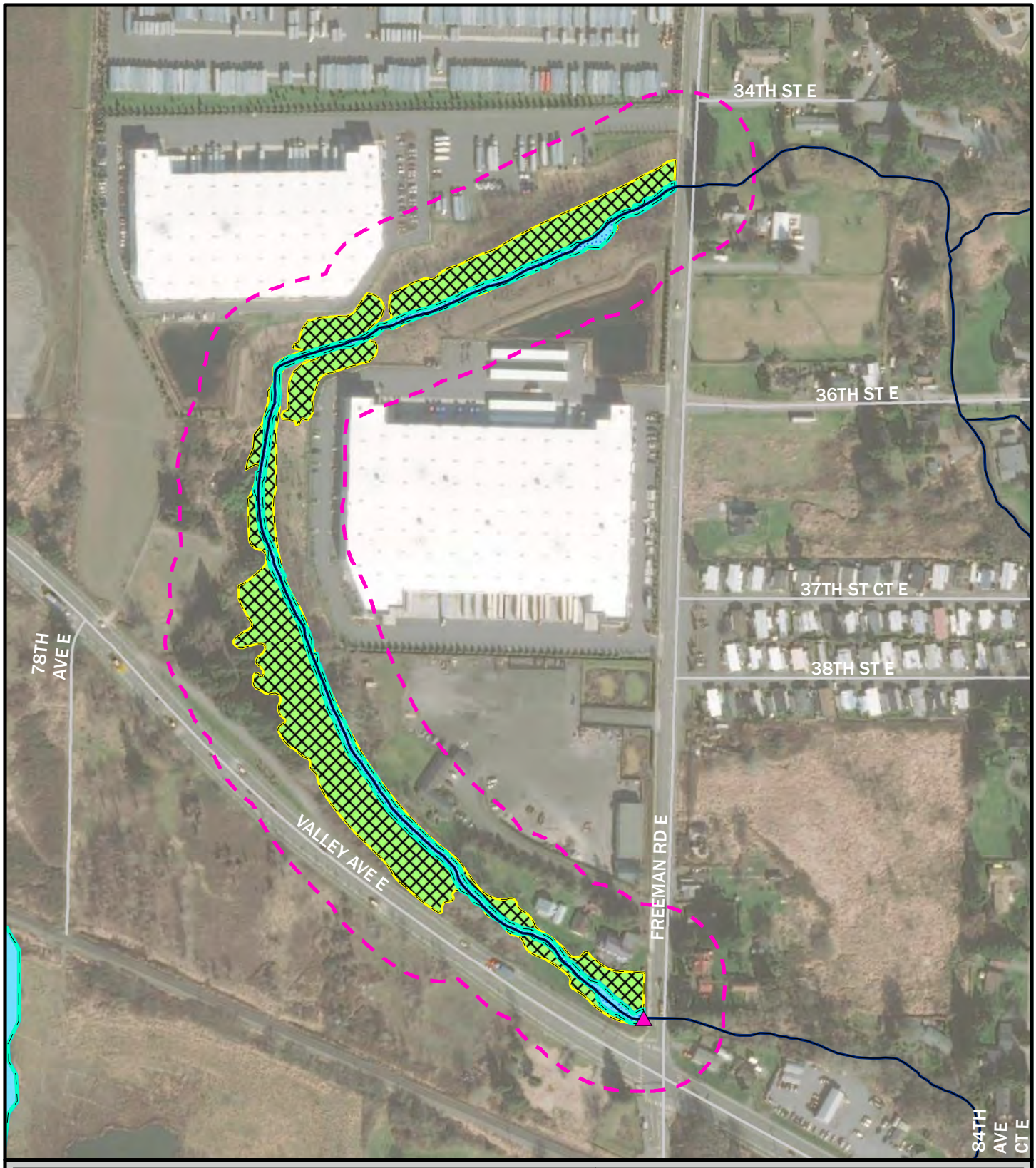

Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Permanently flowing stream

Figure D-54.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 98.

N

0 150 300 600 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated OHWM
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland
- Stream

Figure D-54a.
Flow Directions and Features Associated with Wetland 98.

N

0 150 300 600 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Wetland
- Stream
- Delineated wetland boundary
- Estimated wetland boundary
- Estimated OHWM
- Ponded depressions
- Wetland width
- Stream width

Figure D-55.
Ponded Depressions in Wetland 98 and the Width of the Unit vs. the Width of the Stream.

N

0 135 270 540 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Stream
- Delineated wetland boundary
- Estimated wetland boundary

Plant cover

- Forest or shrub
- Neither forest, shrub, nor ungrazed emergent plants
- Ungrazed or unmowed emergent plants

Figure D-56.
Plant Cover of Trees, Shrubs, and Herbaceous Plants in Wetland 98.

0 135 270 540 Feet

HERRERA

ESRI, Aerial (2021)

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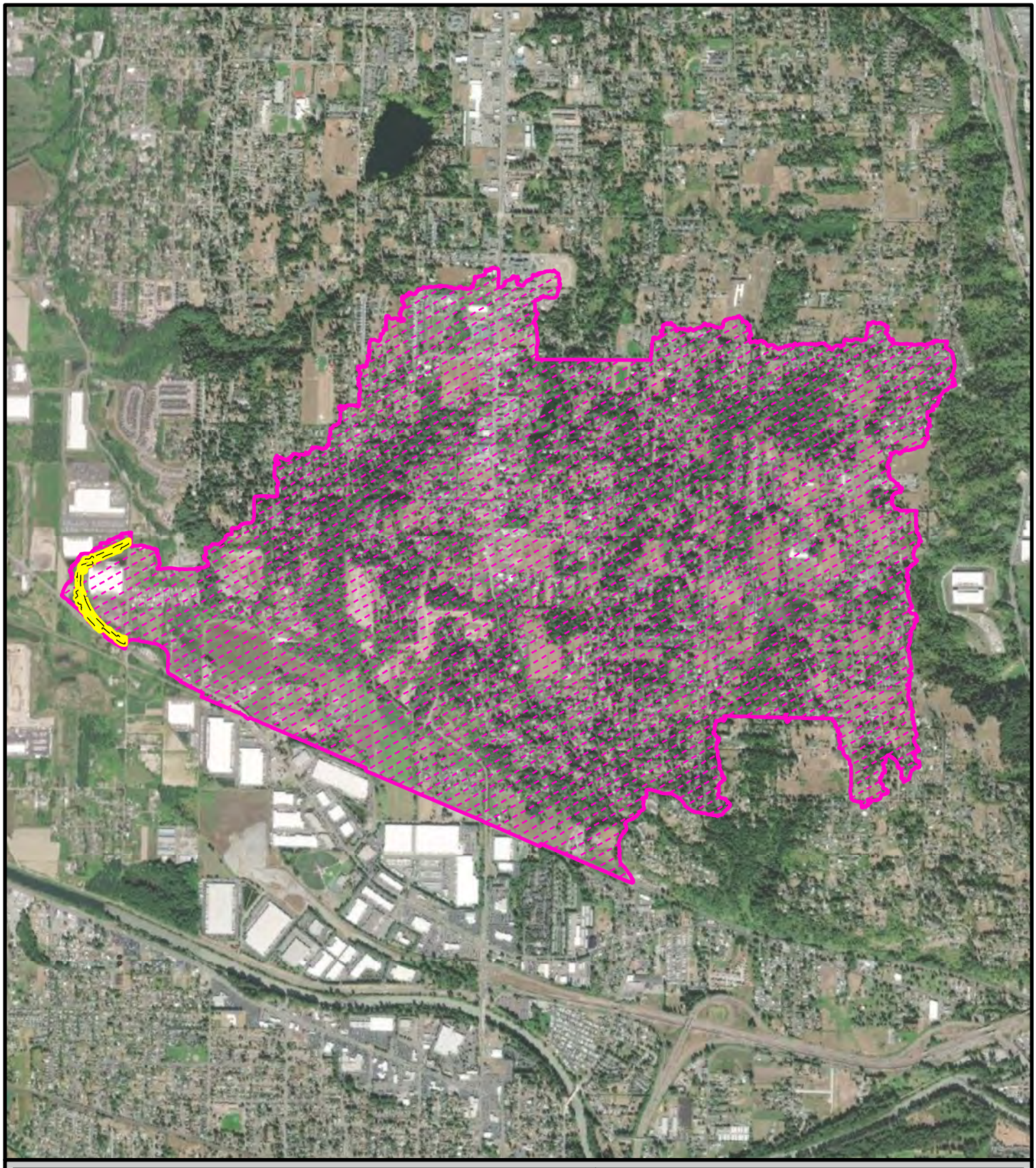

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-57.
Map of Contributing Basin for Wetland 98.

N

0 1,250 2,500 5,000 Feet

HERRERA

Esri, Aerial (2021)

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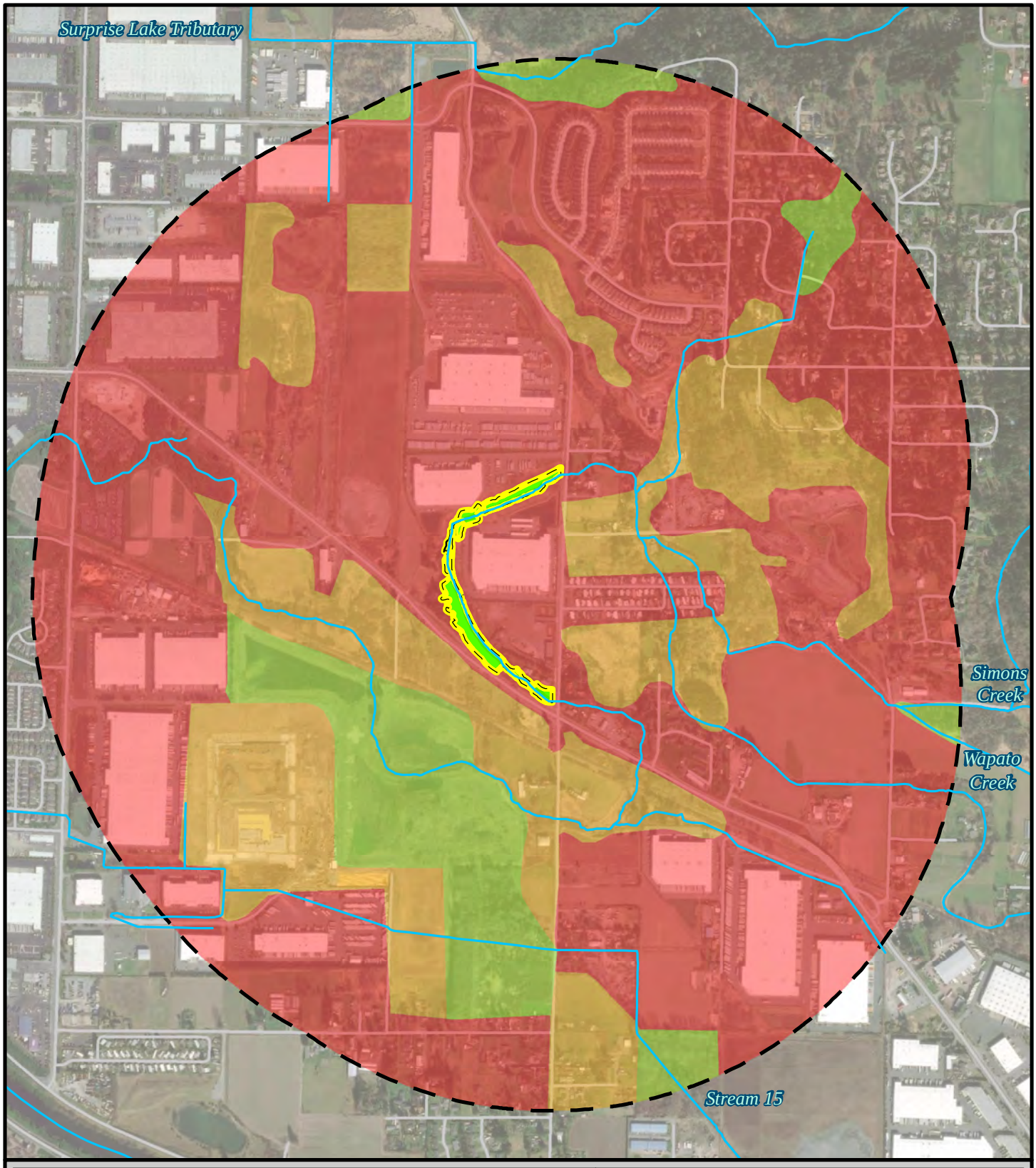

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-58.
Habitat Within a 1-km Boundary of Wetland 98.

N

0 550 1,100 2,200 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 101

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 101 Date of site visit: 7/15/2021

Rated by L. Dominguez Trained by Ecology? ☒ Yes ☐ No Date of Training June 2016

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, 2020

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	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	**TOTAL**
Score Based on Ratings	7	5	4	16

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	D-59
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-60
Flow directions and associated features	n/a	D-60a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-60
Map of the contributing basin	D 4.3, D 5.3	D-61
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	D-62
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 101

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 > 1/2 total area of wetland | points = 4	4
	11

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?	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*)?	Yes = 2	2
Total for D 3	Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: D2.4: Cemetery within 150 feet of wetland is accounted for in D2.2; D3.3: Wetland is in the Puyallup River subbasin (HUC 12) and is upstream of the Wapato Creek diversion to Puyallup River. The Puyallup River subbasin has TMDLs in place and contains several streams with 303d listings.

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 101

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.)?	No = 0	0
Total for D 5	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 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**		1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

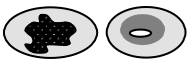
COMMENTS: D6.1: Wetland is upstream of Wapato Creek diversion to Puyallup River, so it is considered within Puyallup basin

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 101

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)5.5/2] 2.8 **=** **2.8**% 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 9.9 **+** [(% moderate and low intensity land uses)21.3/2] 10.7 **=** **20.6**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 101

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

Estimated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure D-59.
Cowardin Classes for Wetland 101.

0 40 80 160 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-60.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 101.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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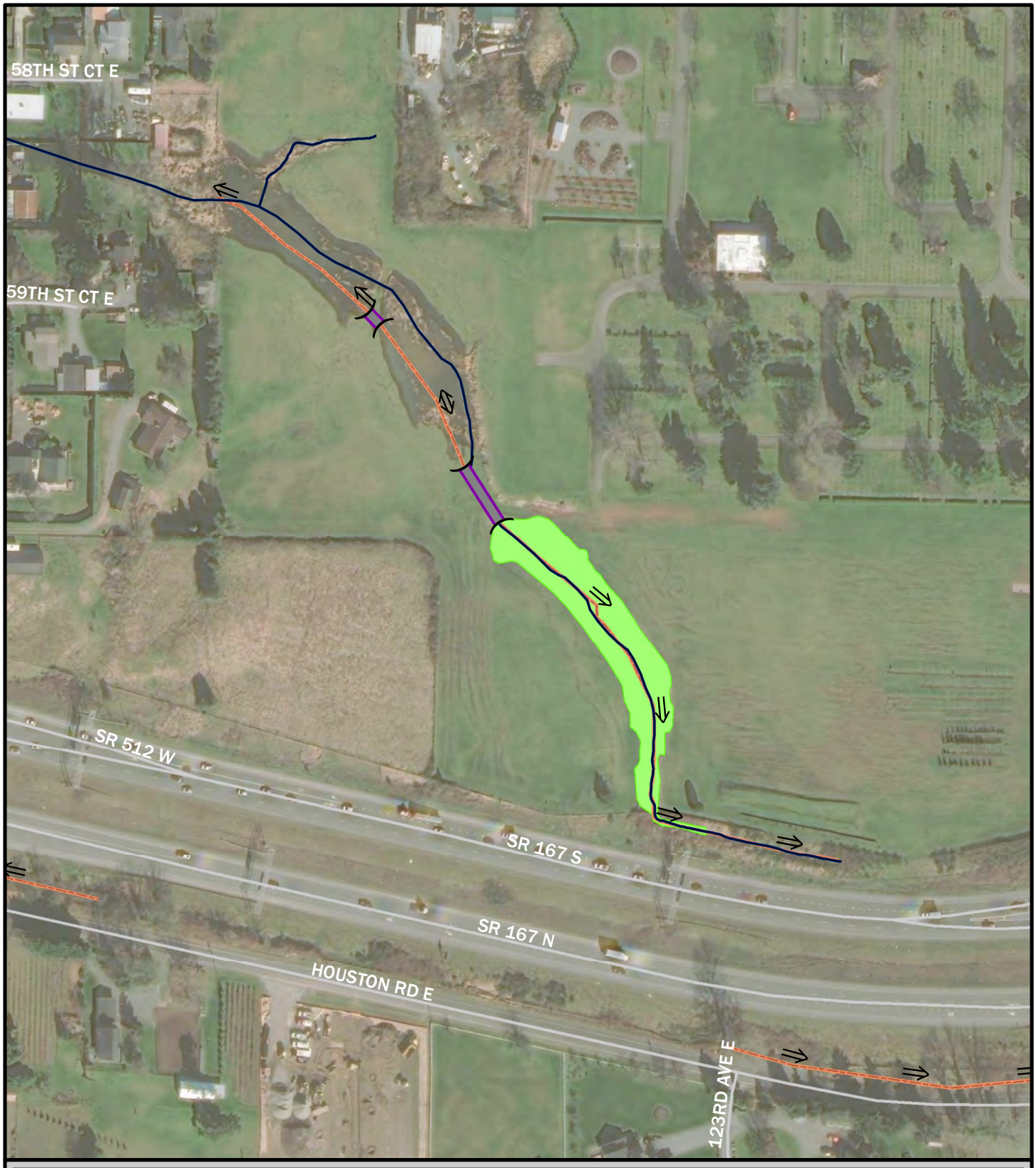

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Culverts
- Wetland

Figure D-60a.
Flow Directions and Features Associated with Wetland 101.

N

0 100 200 400 Feet

HERRERA

Esri, Aerial (2021)

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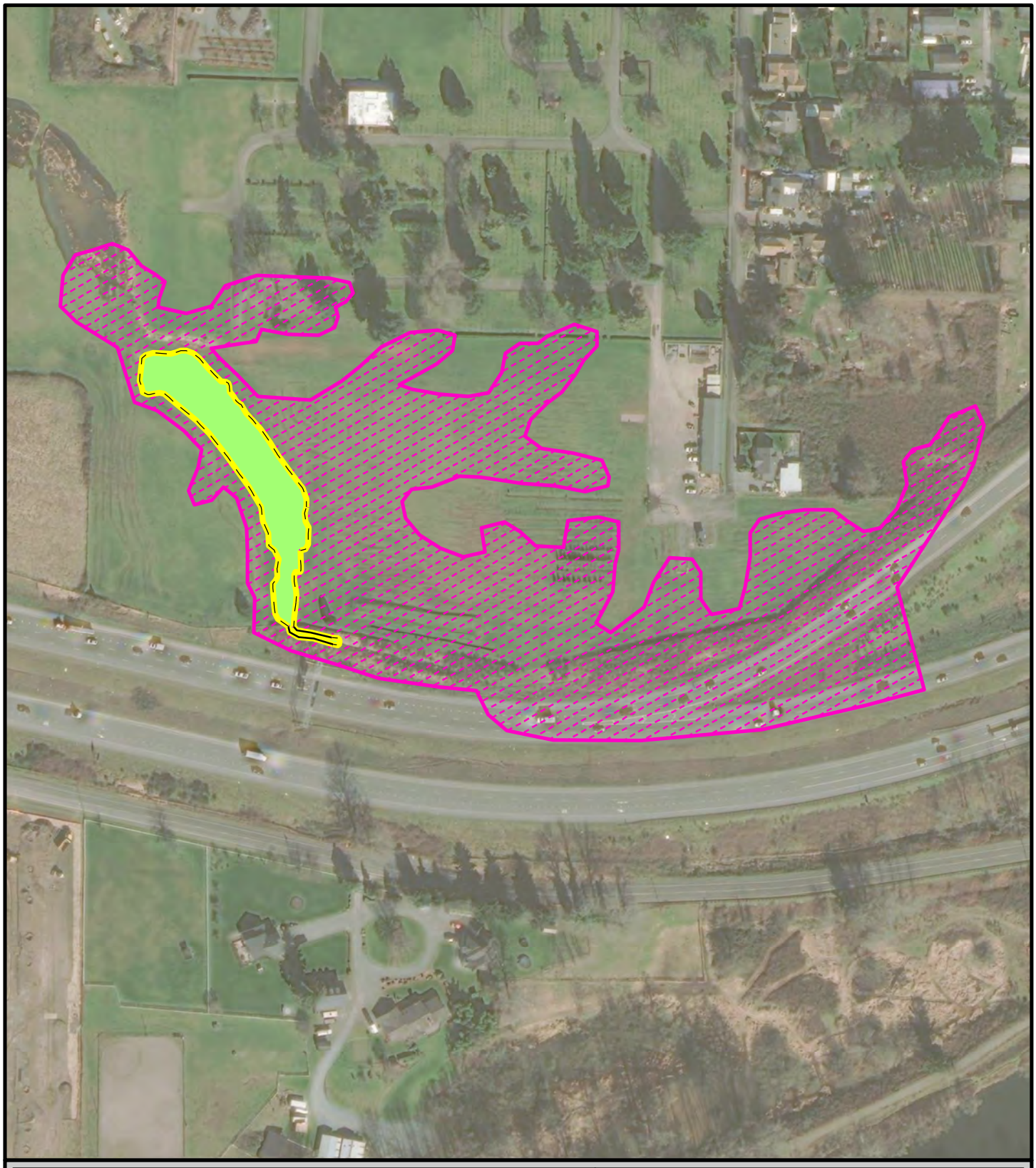

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-61.
Map of Contributing Basin for Wetland 101.

N

0 110 220 440 Feet

HERRERA

Esri, Aerial (2021)

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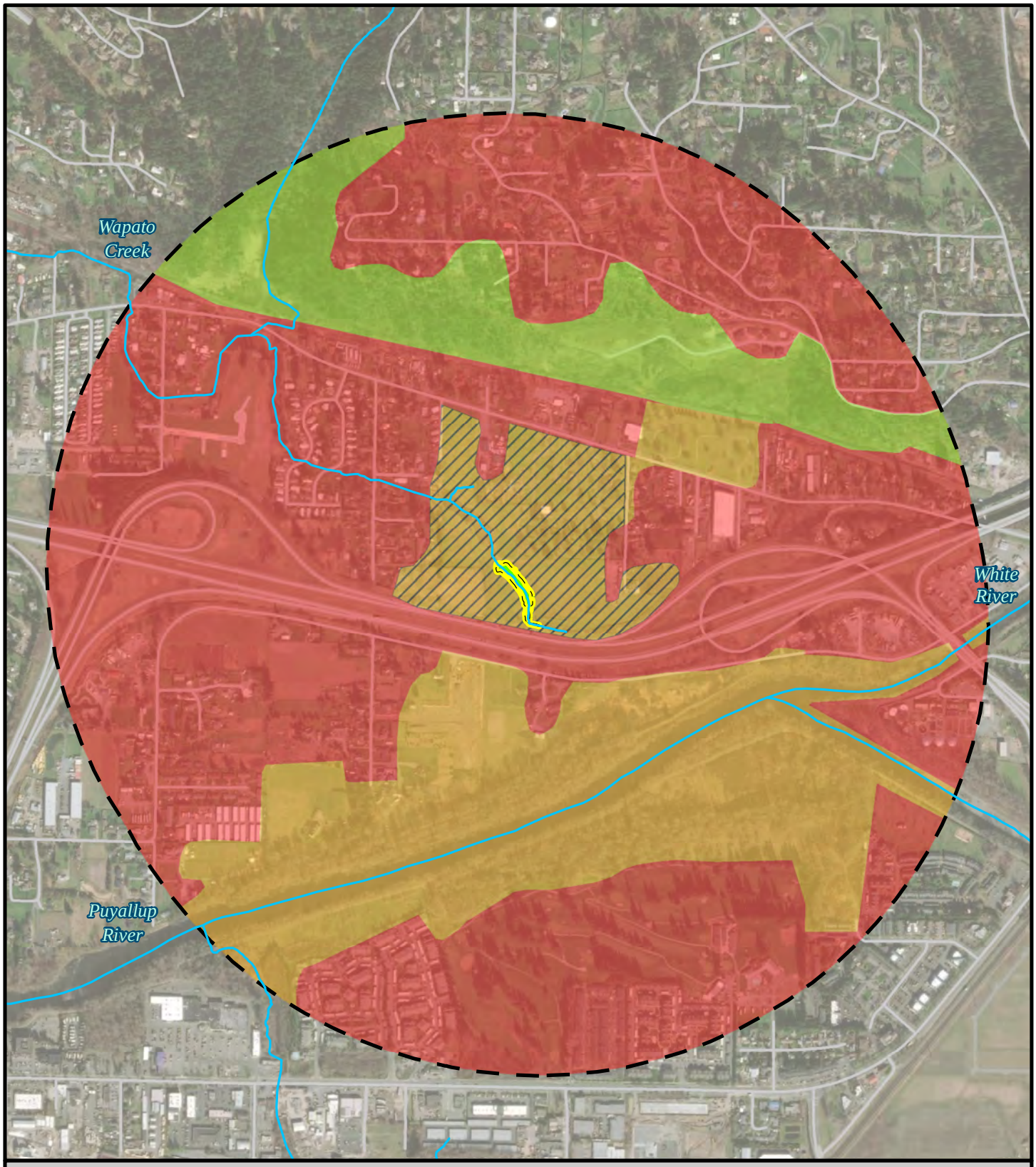

Legend

- 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 D-62.
Habitat Within a 1-km Boundary of Wetland 101.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 102

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 102 Date of site visit: 7/22/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-63
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-64
Flow directions and associated features	n/a	D-64a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-64
Map of the contributing basin	D 4.3, D 5.3	D-65
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	D-66
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 102

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

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 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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 102

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*

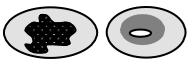
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. <u>The unit is in a landscape that has flooding problems</u>. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>.* 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value If score is: 1 = M *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 102

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.* 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 5.1**+** [(% moderate and low intensity land uses)24.0/2] 12.0 **= 17.1**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
H 2.3. Land use intensity in 1 km Polygon: 70.9% >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 102

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

- Stream
- Delineated wetland boundary

Cowardin class

- PEM - Palustrine emergent

Figure D-63.
Cowardin Classes for Wetland 102.

0 15 30 60 Feet

HERRERA

ESRI, Aerial (2020)

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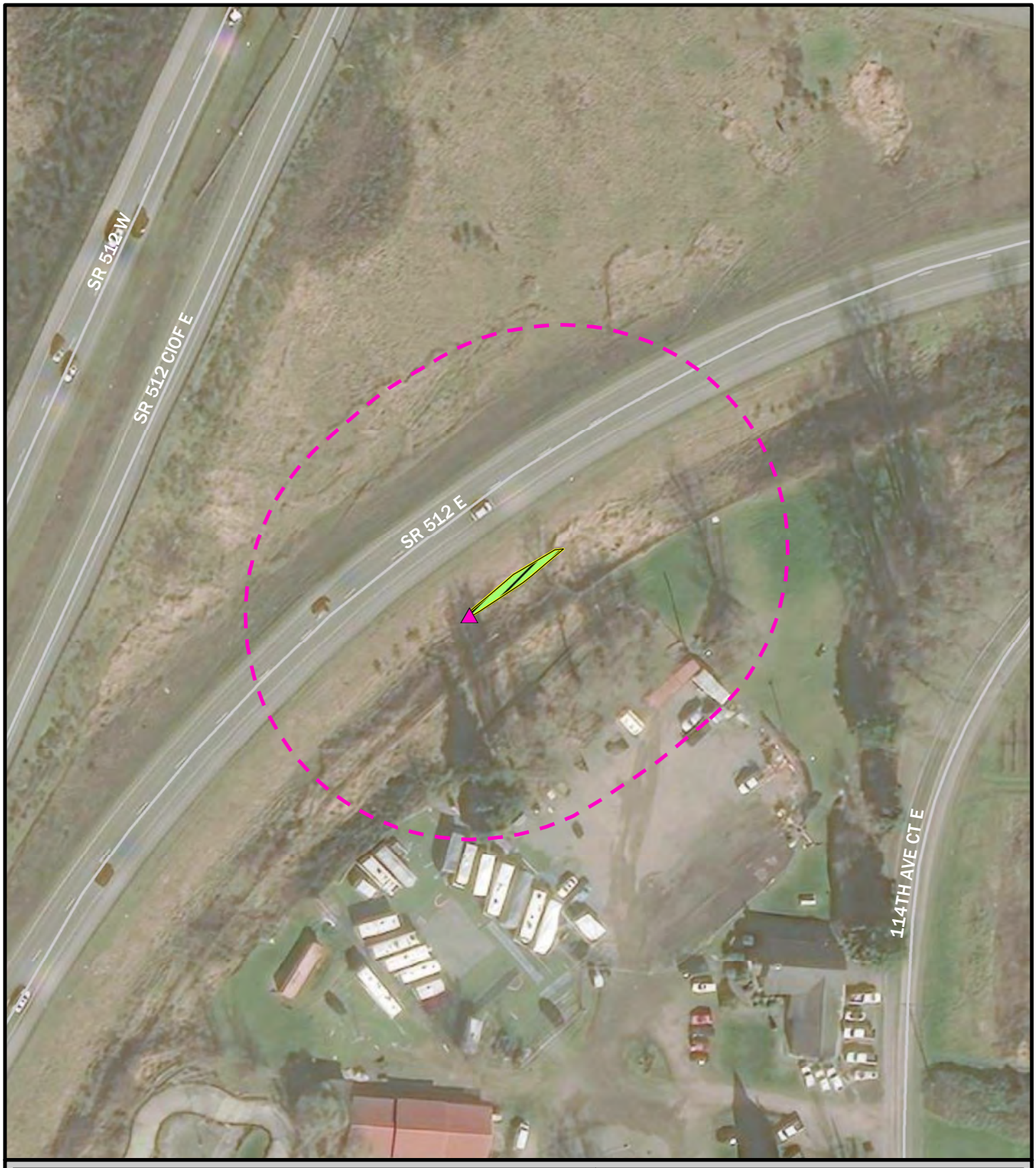

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-64.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 102.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Ordinary high water mark
- Wetland
- Other
- Surveyed ditches

Figure D-64a.
Flow Directions and Features Associated with Wetland 102.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2020)

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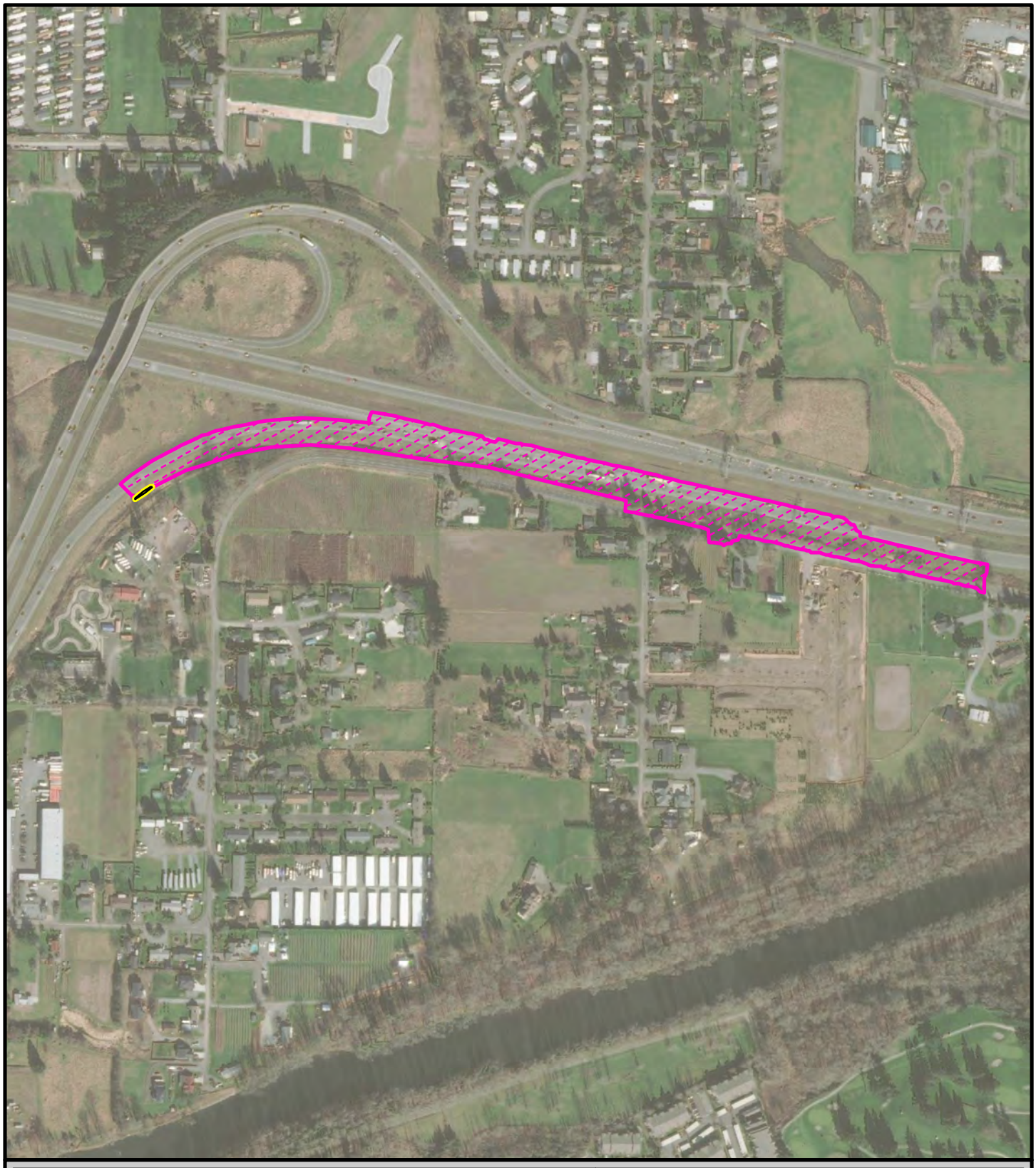

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-65.
Map of Contributing Basin for Wetland 102.

N

0 250 500 1,000 Feet

HERRERA

Esri, Aerial (2021)

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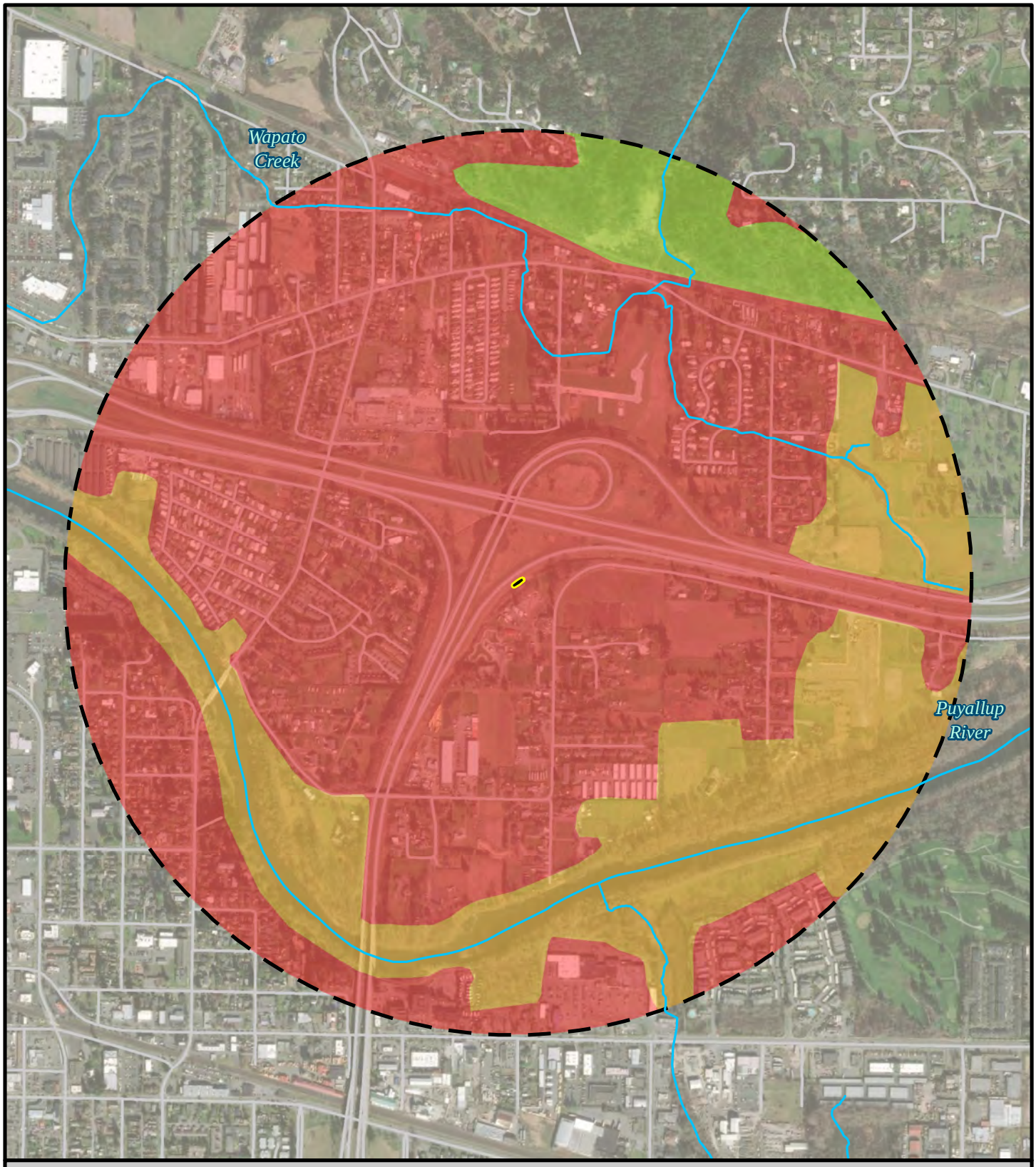

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-66.
Habitat Within a 1-km Boundary of Wetland 102.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 103

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 103 Date of site visit: 7/22/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	H	L	L	**TOTAL**
Score Based on Ratings	7	5	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	D-67
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-68
Flow directions and associated features	n/a	D-68a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-68
Map of the contributing basin	D 4.3, D 5.3	D-69
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	D-70
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 103

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 < 1/4 total area of wetland | points = 0	0
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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Puyallup has TMDLs

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 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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	4

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 103

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. <u>The unit is in a landscape that has flooding problems</u>. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>.* 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):** Wetland flow dissipates into large field surrounded by roads	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*	

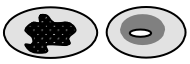
COMMENTS:

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 103

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 5.4**+** [(% moderate and low intensity land uses)22.3/2] 11.2 **= 16.6**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
H 2.3. Land use intensity in 1 km Polygon: 72.3% >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 103

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

Stream

Delineated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure D-67.
Cowardin Classes for Wetland 103.

N

0 15 30 60 Feet

HERRERA

ESRI, Aerial (2020)

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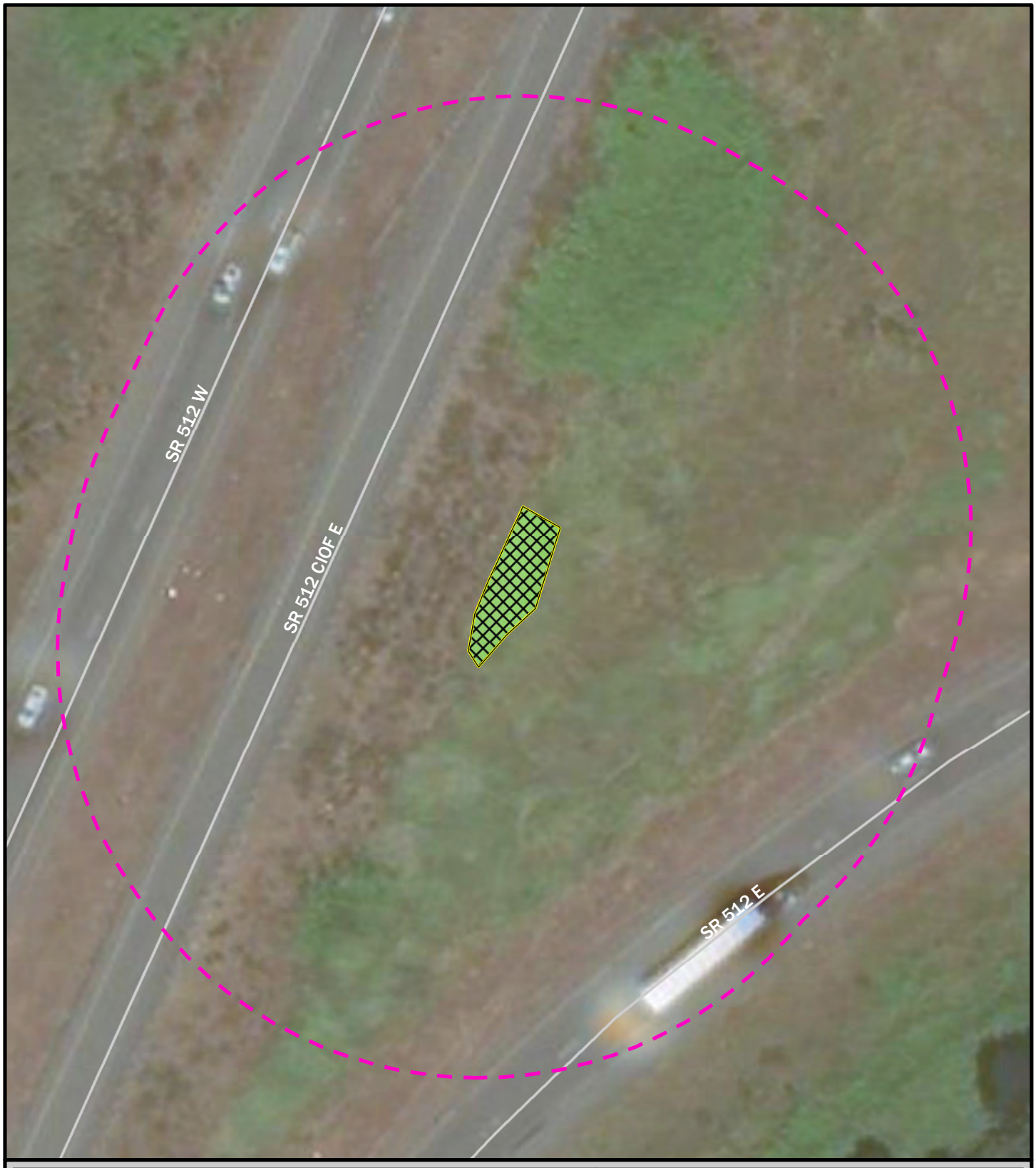

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary

Hydroperiod

- Saturated only

Figure D-68.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 103.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland

Figure D-68a.
Flow Directions and Features Associated with Wetland 103.

N

0 40 80 160 Feet

HERRERA

ESRI, Aerial (2020)

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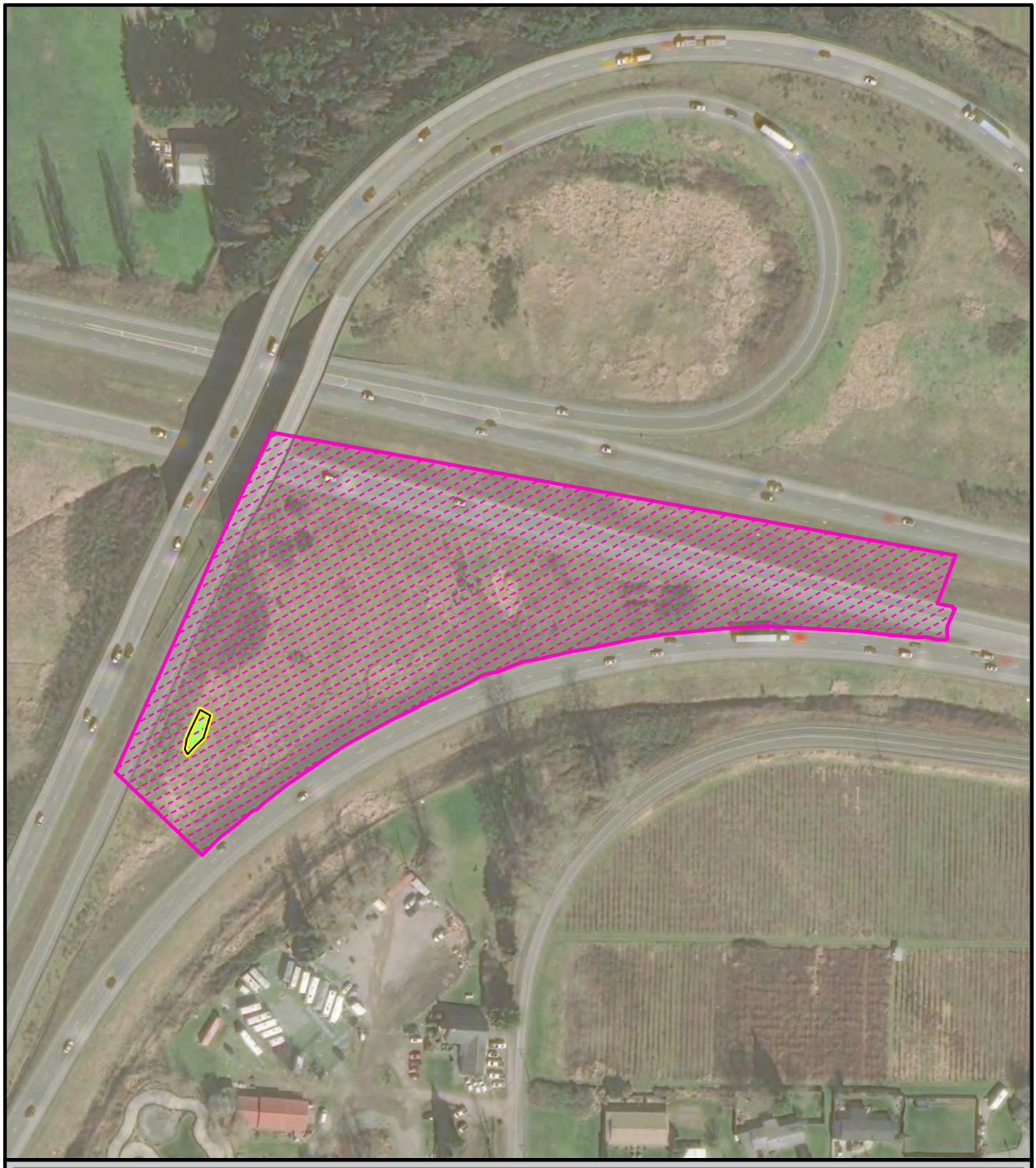

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-69.
Map of Contributing Basin for Wetland 103.

N

0 90 180 360 Feet

HERRERA

Esri, Aerial (2021)

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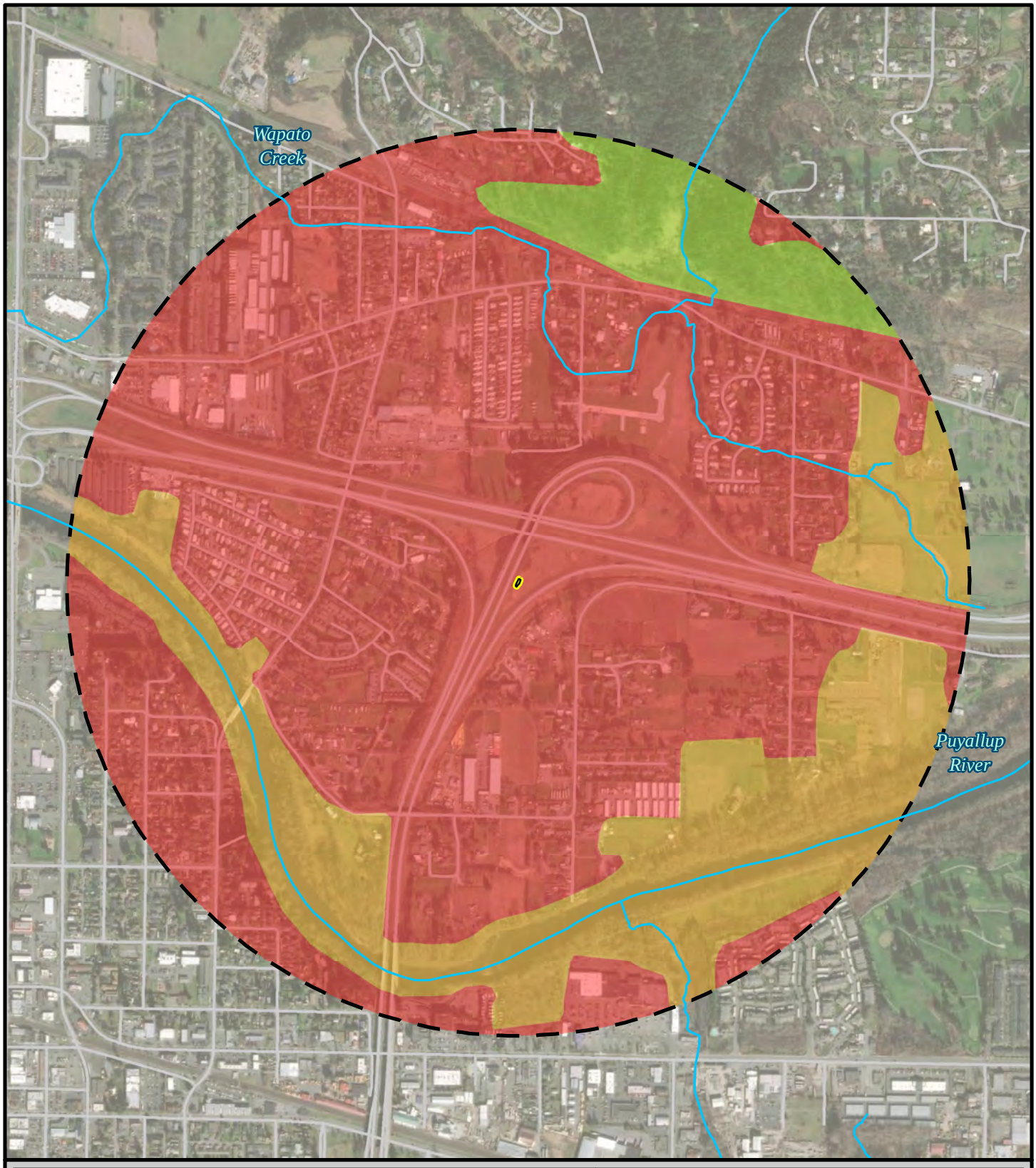


Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-70.
Habitat Within a 1-km Boundary of Wetland 103.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 104

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 104 Date of site visit: 7/22/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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 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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-71
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-72
Flow directions and associated features	n/a	D-72a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-72
Map of the contributing basin	D 4.3, D 5.3	D-73
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	D-74
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 104

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Puyallup is on 303d list and has TMDLs

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 104

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*

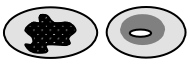
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. <u>The unit is in a landscape that has flooding problems</u>. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>.* 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value If score is: 1 = M *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 104

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.* 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 6.6**+** [(% moderate and low intensity land uses)19.5/2] 9.8 **= 16.4**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 73.9% >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 104

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

Stream

Delineated wetland boundary

Cowardin class

PEM - Palustrine emergent

Figure D-71.
Cowardin Classes for Wetland 104.

N

0 15 30 60 Feet

HERRERA

ESRI, Aerial (2020)

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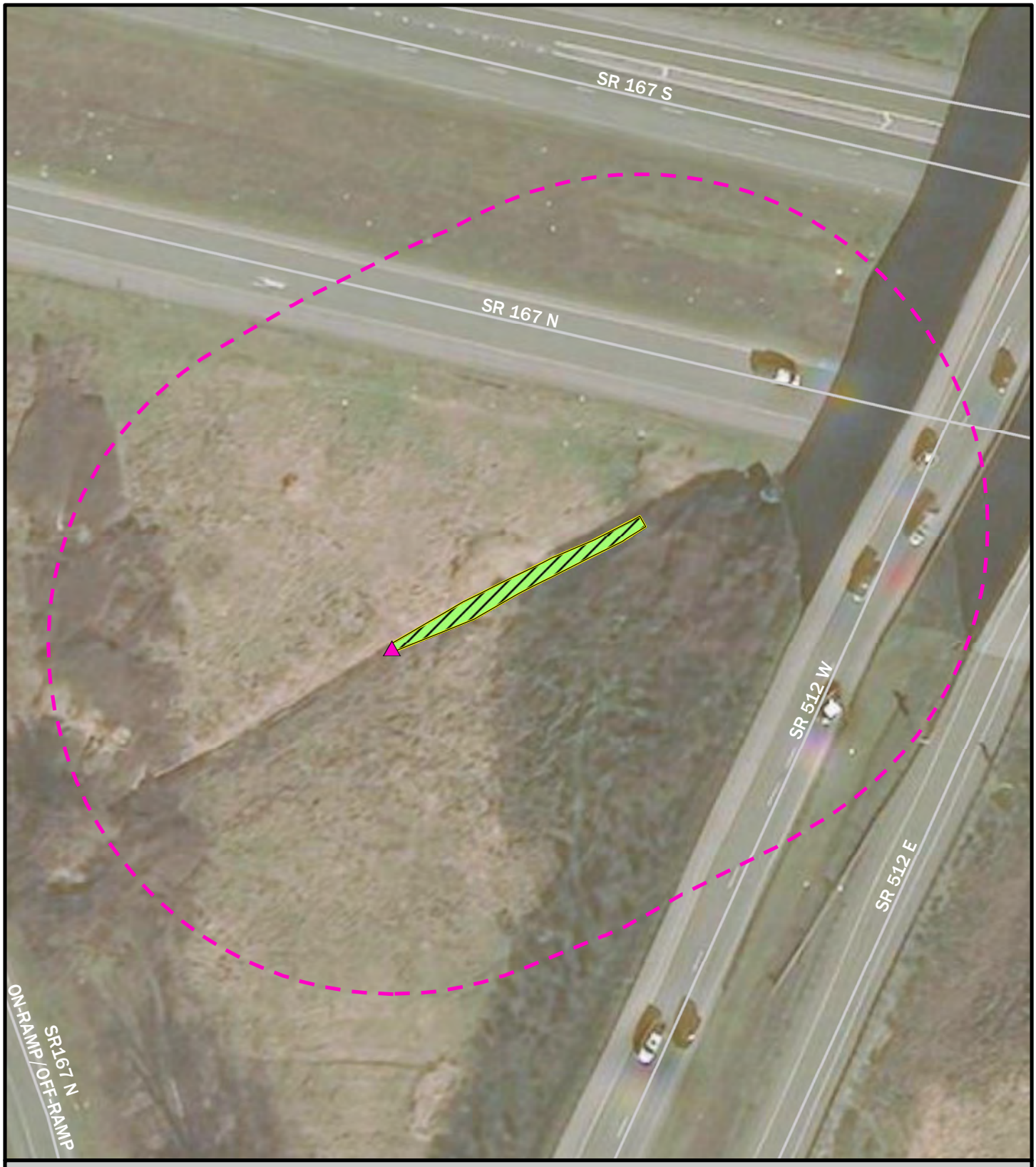

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-72.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 104.

N

0 30 60 120 Feet

HERRERA

ESRI, Aerial (2021)

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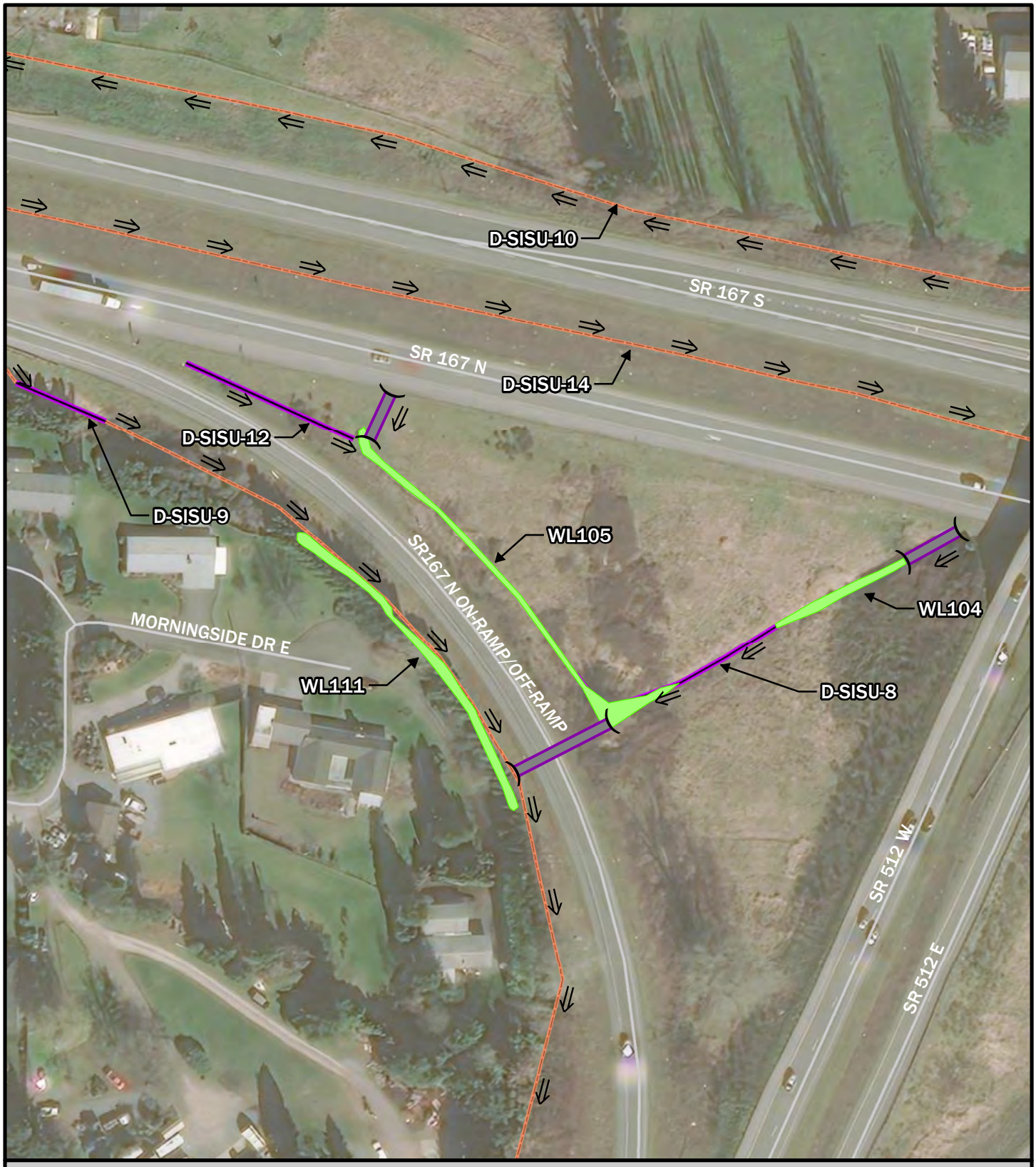

Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland

Figure D-72a.
Flow Directions and Features Associated with Wetland 104.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2020)

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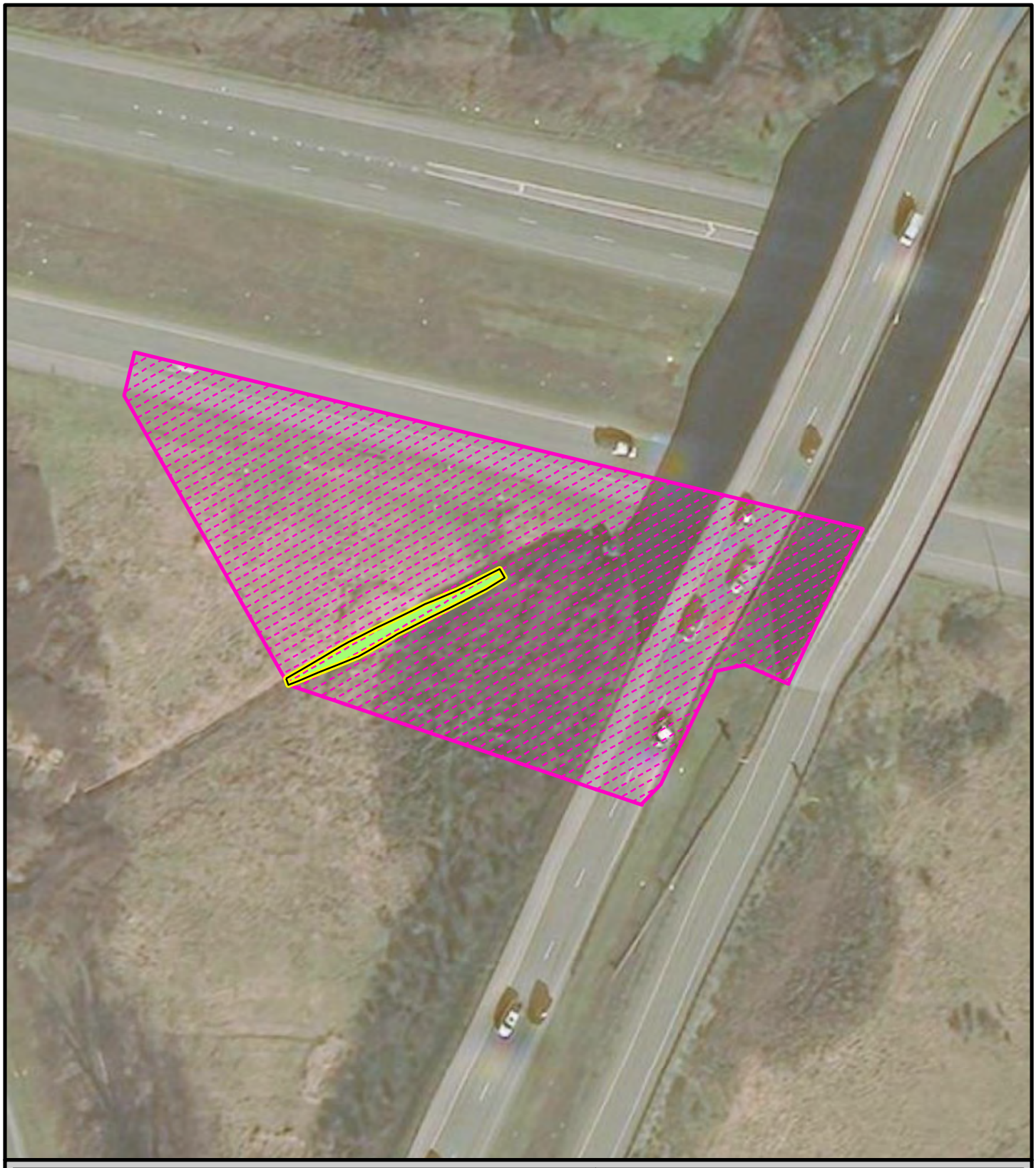

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-73.
Map of Contributing Basin for Wetland 104.

N

0 35 70 140 Feet

HERRERA

Esri, Aerial (2021)

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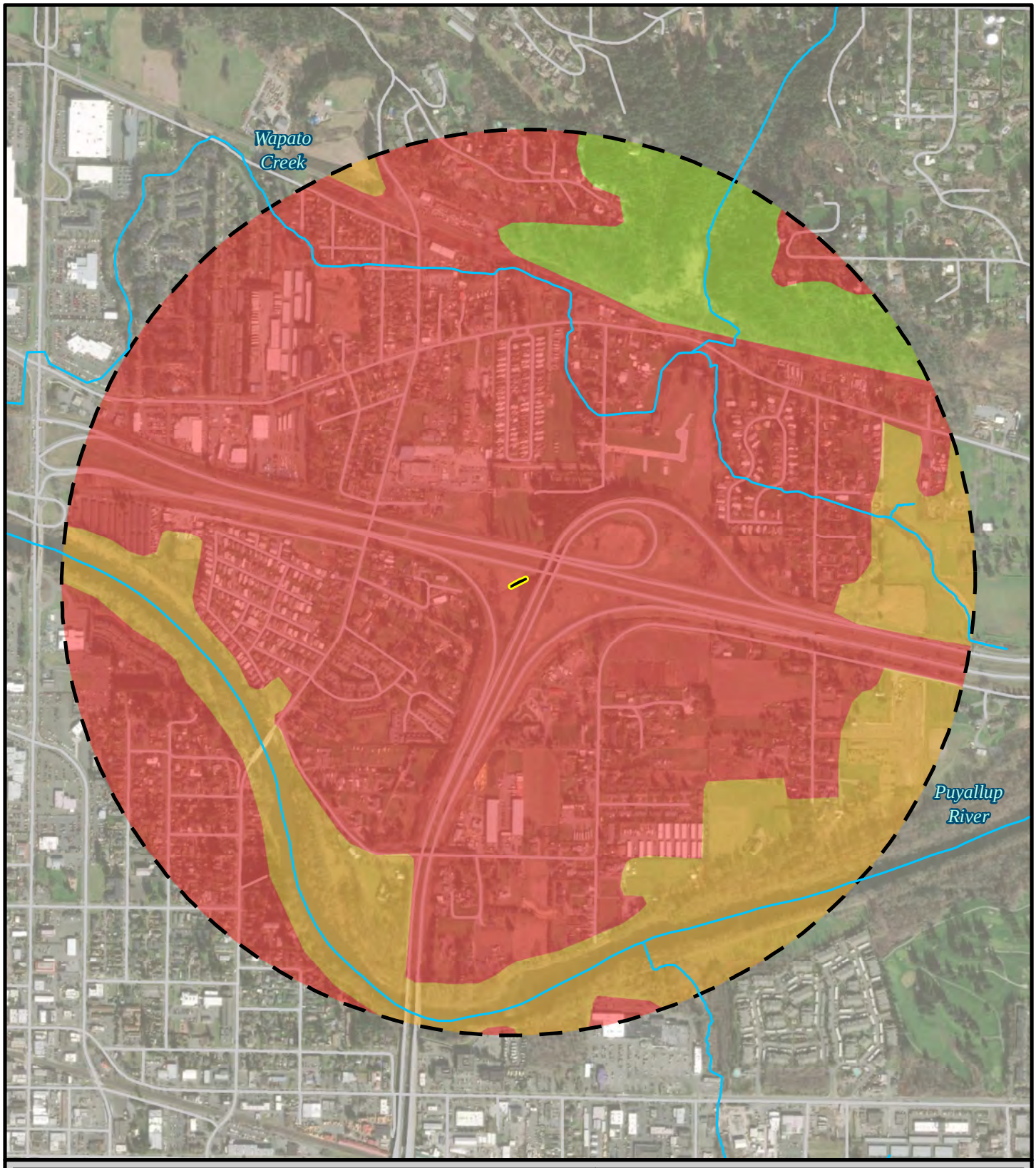

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-74.
Habitat Within a 1-km Boundary of Wetland 104.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 105

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 105 Date of site visit: 8/18/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training Sep. 2008

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-75
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-76
Flow directions and associated features	n/a	D-76a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-76
Map of the contributing basin	D 4.3, D 5.3	D-77
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	D-78
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 105

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Puyallup River is listed for temperature and mercury TMDL within 1 mile

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.* Wetland is flat but has small depressions on the surface that trap water | points = 1	1
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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	3

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 105

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

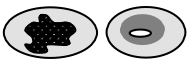
COMMENTS:

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 105

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 5.4**+** [(% moderate and low intensity land uses)18.2/2] 9.1 **= 14.5**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 76.4% >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 105

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

- Stream
- Delineated wetland boundary
- Estimated wetland boundary

Cowardin class

- PEM - Palustrine emergent

Figure D-75.
Cowardin Classes for Wetland 105.

N

0 20 40 80 Feet

HERRERA

ESRI, Aerial (2020)

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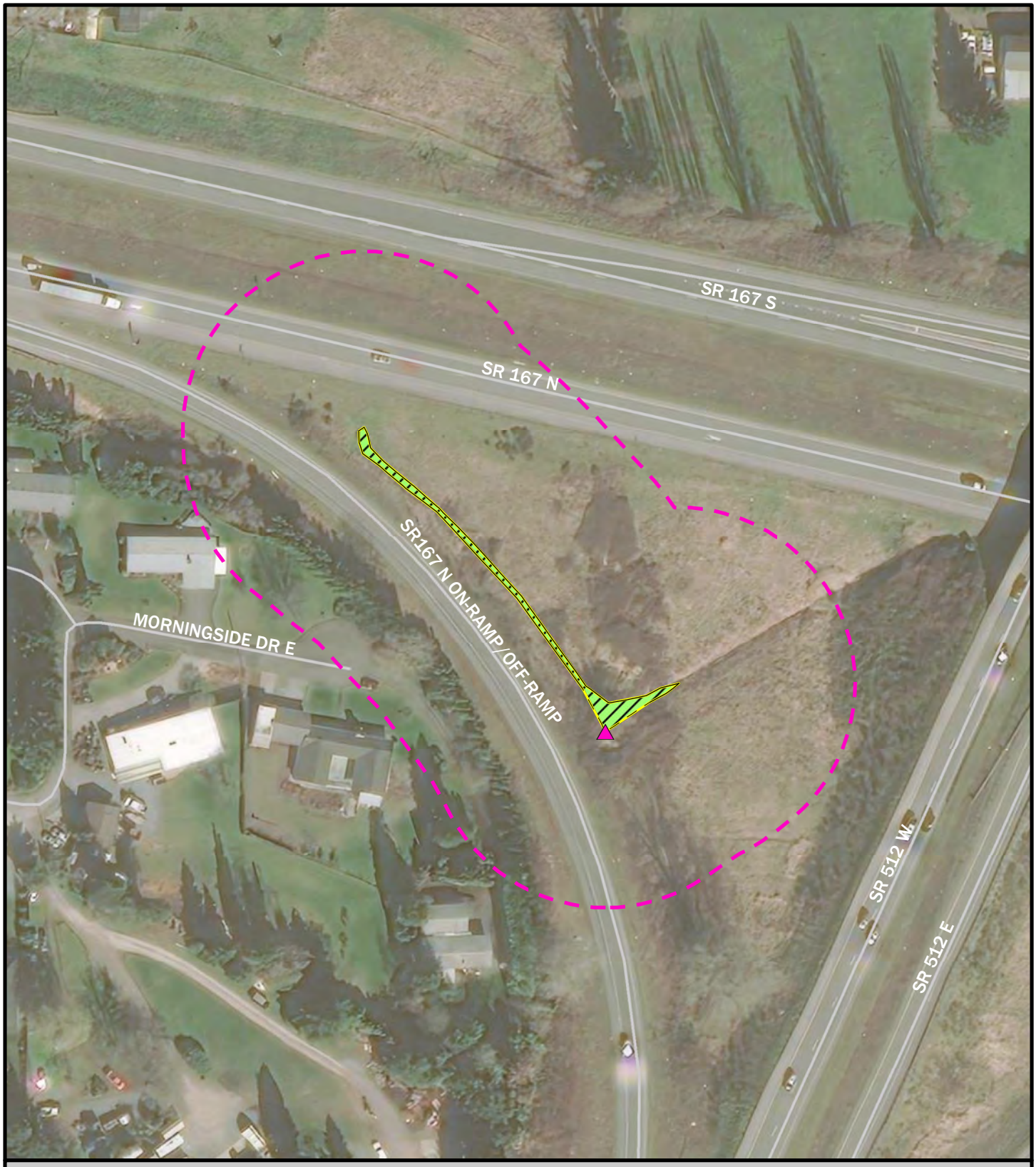

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-76.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 105.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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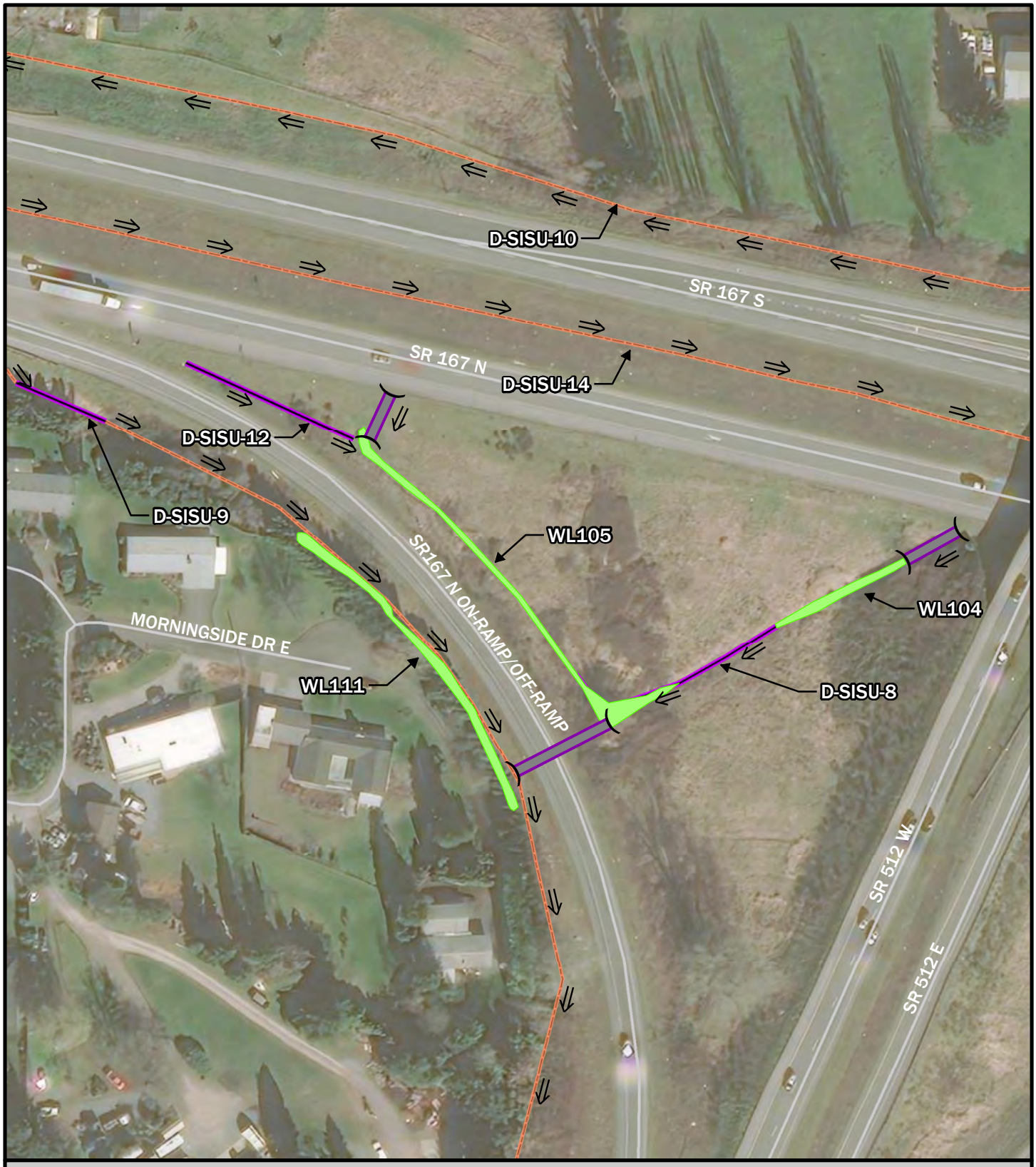

Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland

Figure D-76a.
Flow Directions and Features Associated with Wetland 105.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2020)

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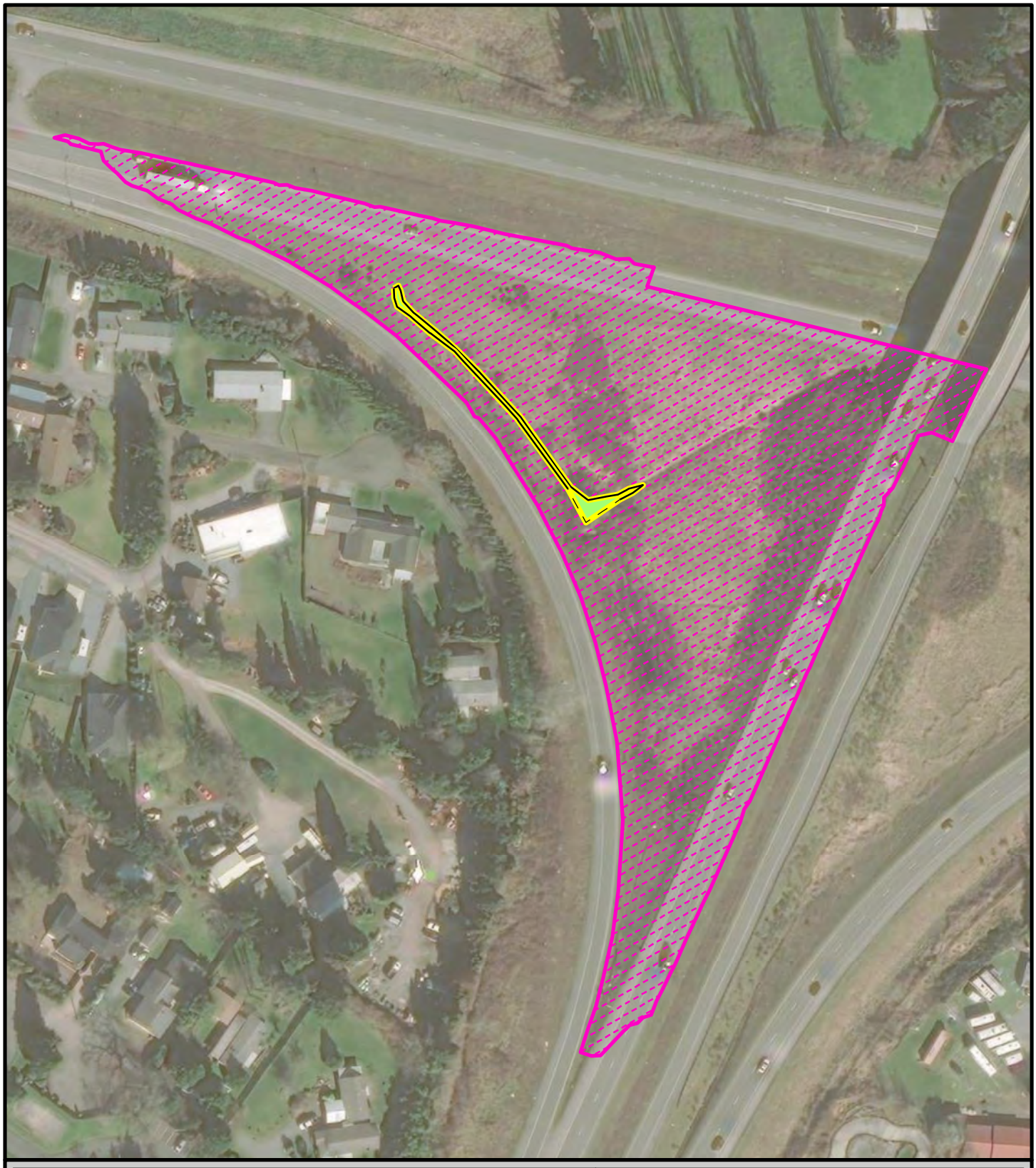

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-77.
Map of Contributing Basin for Wetland 105.

N

0 75 150 300 Feet

HERRERA

Esri, Aerial (2021)

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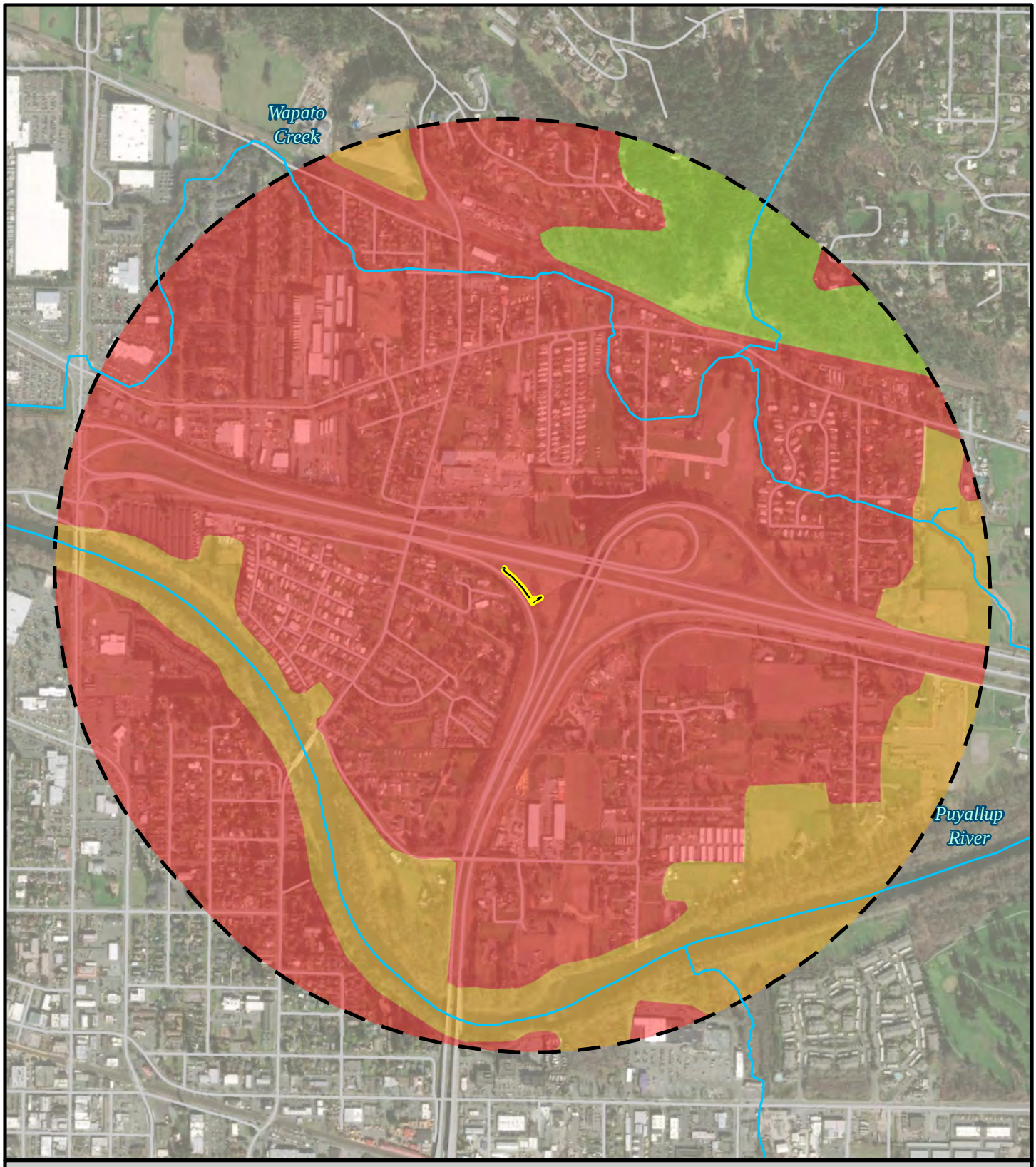

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-78.
Habitat Within a 1-km Boundary of Wetland 105.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 106

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 106 Date of site visit: 8/30/2021

Rated by G. Schulz Trained by Ecology? ☒ Yes ☐ No Date of Training May 2016

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, 2020

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	H	L	L	**TOTAL**
Score Based on Ratings	7	5	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	D-79
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-80
Flow directions and associated features	n/a	D-80a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-80
Map of the contributing basin	D 4.3, D 5.3	D-81
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	D-82
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 106

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Puyallup River is listed for temperature and mercury within 1 mile

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 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 more than 100 times the area of the unit | points = 0	0
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*

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*

Wetland name or number: Wetland 106

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:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above): Wetland flow dissipates into large field surrounded by roads.**	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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 106

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.* None | points = 0	0
None = 0 points  **Low** = 1 point  **Moderate** = 2 points 	
All three diagrams in this row are **HIGH** = 3 points 	
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *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	2

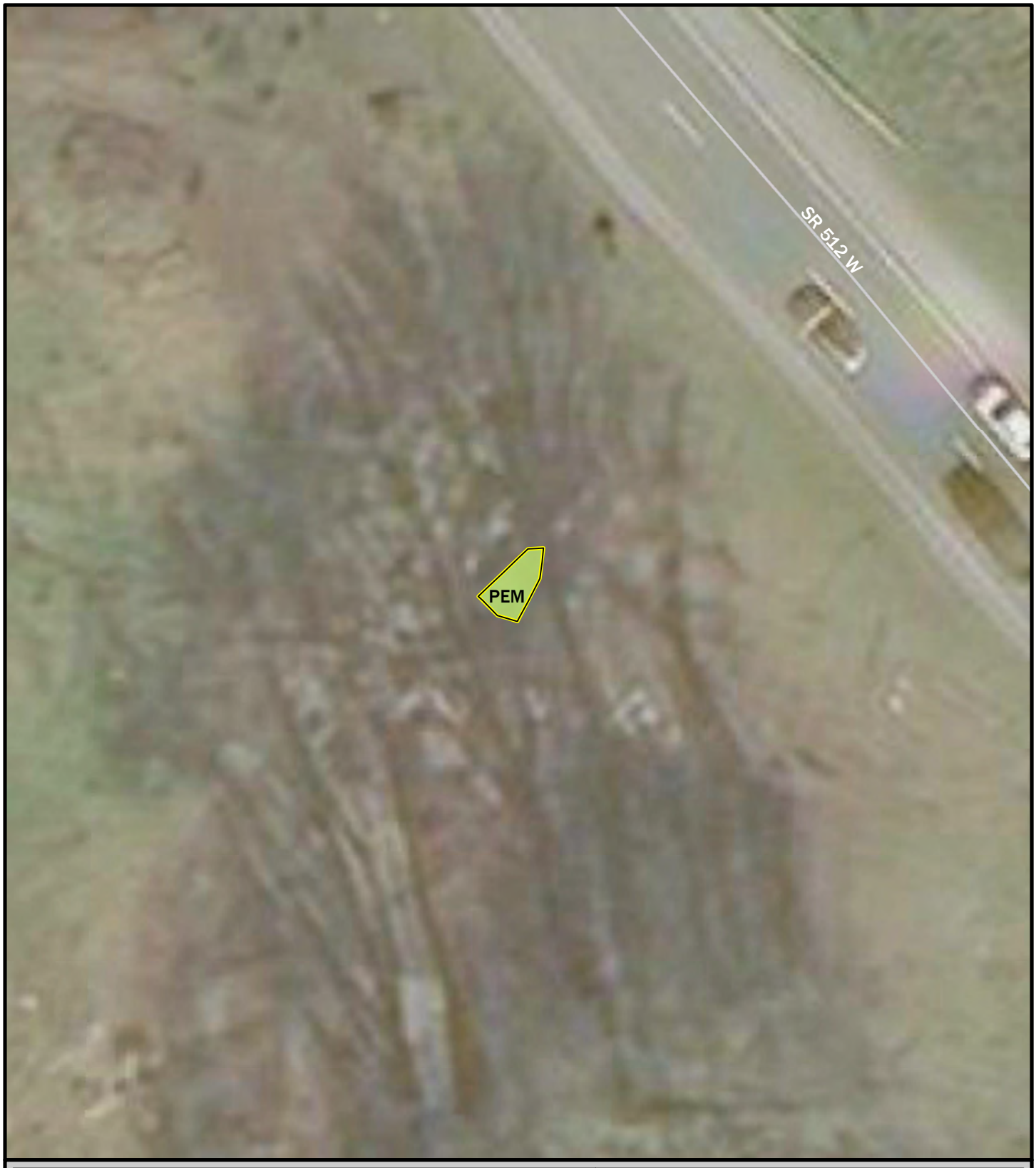
Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

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 12.0**+** [(% moderate and low intensity land uses)22.2/2] 11.1**= 23.1**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 106

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

- Stream
- Delineated wetland boundary

Cowardin class

- PEM - Palustrine emergent

Figure D-79.
Cowardin Classes for Wetland 106.

N

0 12.5 25 50 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-80.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 106.

N

0 20 40 80 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Wetland

Figure D-80a.
Flow Directions and Features Associated with Wetland 106.

N

0 30 60 120 Feet

HERRERA

ESRI, Aerial (2020)

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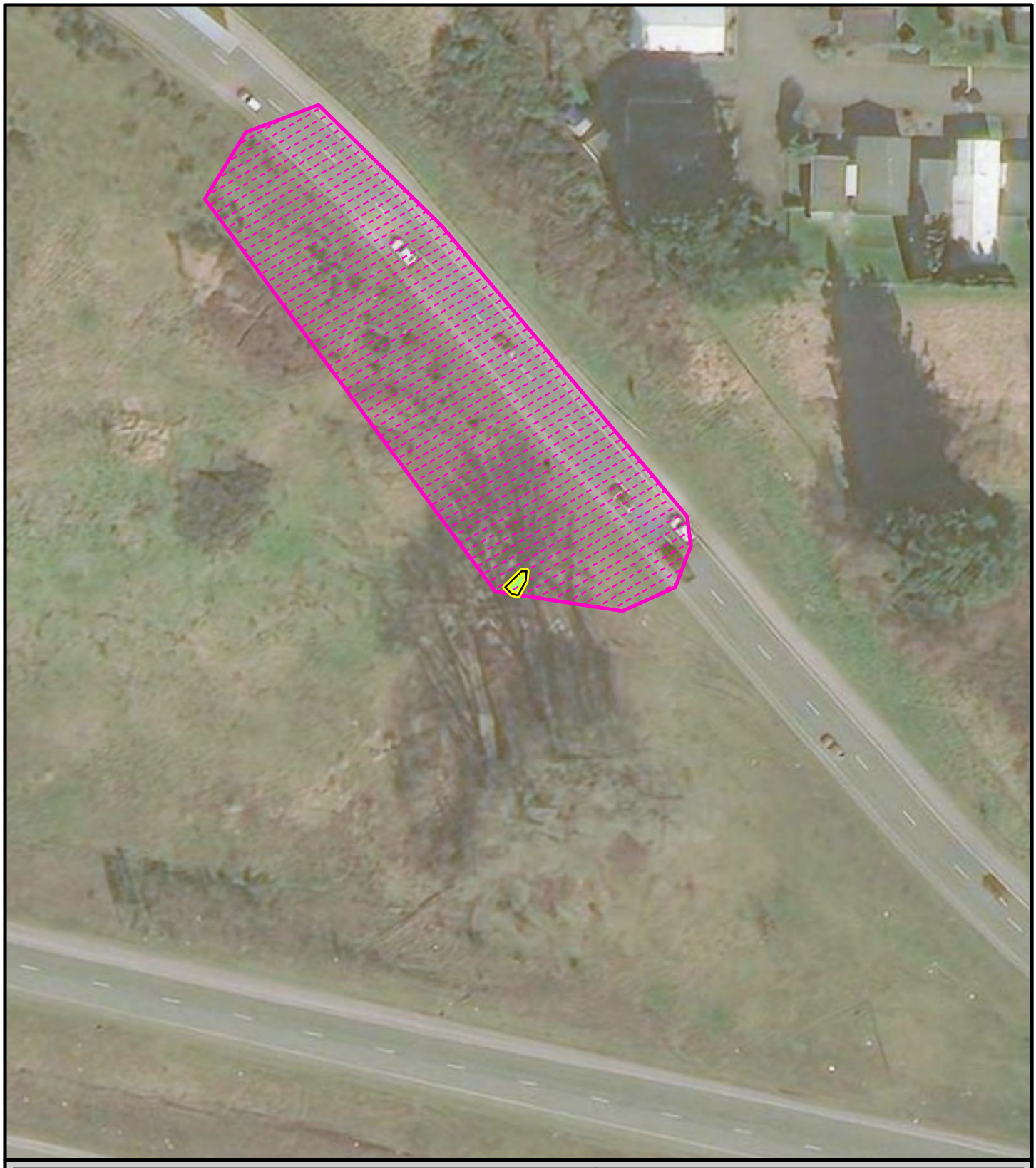

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-81.
Map of Contributing Basin for Wetland 106.

N

0 37.5 75 150 Feet

HERRERA

Esri, Aerial (2021)

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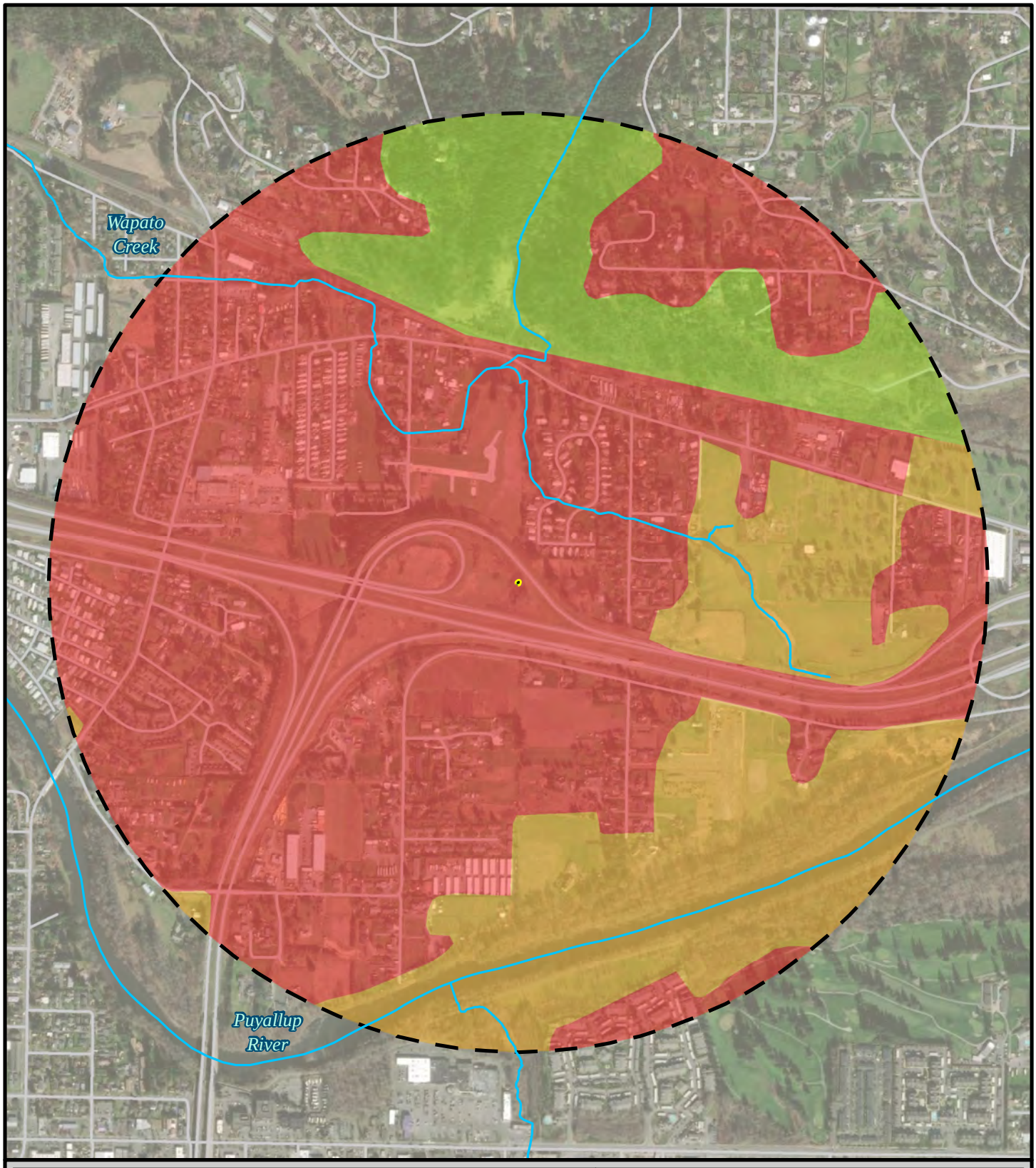

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-82.
Habitat Within a 1-km Boundary of Wetland 106.

N

0 485 970 1,940 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 107

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 107 Date of site visit: 8/30/2021

Rated by G. Schulz Trained by Ecology? ☒ Yes ☐ No Date of Training May 2016

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, 2020

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	M	L	
Value	H	L	L	**TOTAL**
Score Based on Ratings	7	4	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	D-83
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-84
Flow directions and associated features	n/a	D-84a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-84
Map of the contributing basin	D 4.3, D 5.3	D-85
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	D-86
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 107

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 < 1/4 total area of wetland | points = 0	0
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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

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 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.* Wetland is flat but has small depressions on the surface that trap water | points = 1	1
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 more than 100 times the area of the unit | points = 0	0
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 107

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.)?	No = 0	0
Total for D 5	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 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:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above): Wetland has no outlet and infiltrates in place and is significant distance from nearest watercourse**	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

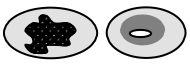
Rating of Value If score is: 0 = L *Record the rating on the first page*

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 2 structures | points = 1	1

Wetland name or number: Wetland 107

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 points** ☐ **Freshwater tidal wetland** **2 points** 2 types present | points = 1	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.* Low | points = 1 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	1
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	4

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

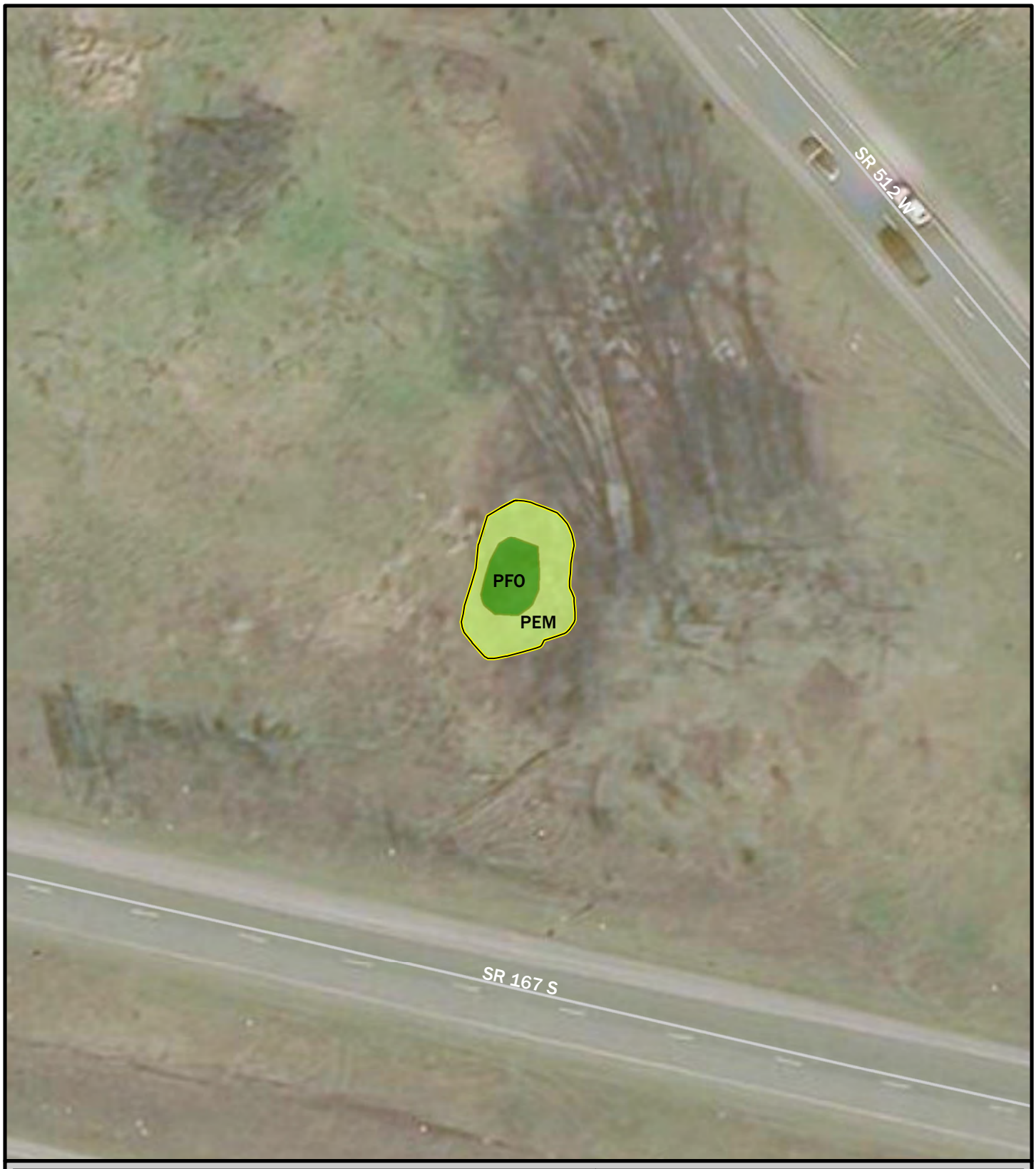
Wetland name or number: Wetland 107

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**+** [(% moderate and low intensity land uses)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 11.1**+** [(% moderate and low intensity land uses)22.9/2] 11.4 **= 22.5**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* 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

PFO - Palustrine forested

Figure D-83.
Cowardin Classes for Wetland 107.

0 25 50 100 Feet

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Hydroperiod
  - Saturated only
  - Seasonally flooded

Figure D-84.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 107.

N

0 40 80 160 Feet

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ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Wetland

Figure D-84a.
Flow Directions and Features Associated with Wetland 107.

N

0 40 80 160 Feet

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-85.
Map of Contributing Basin for Wetland 107.

N

0 65 130 260 Feet

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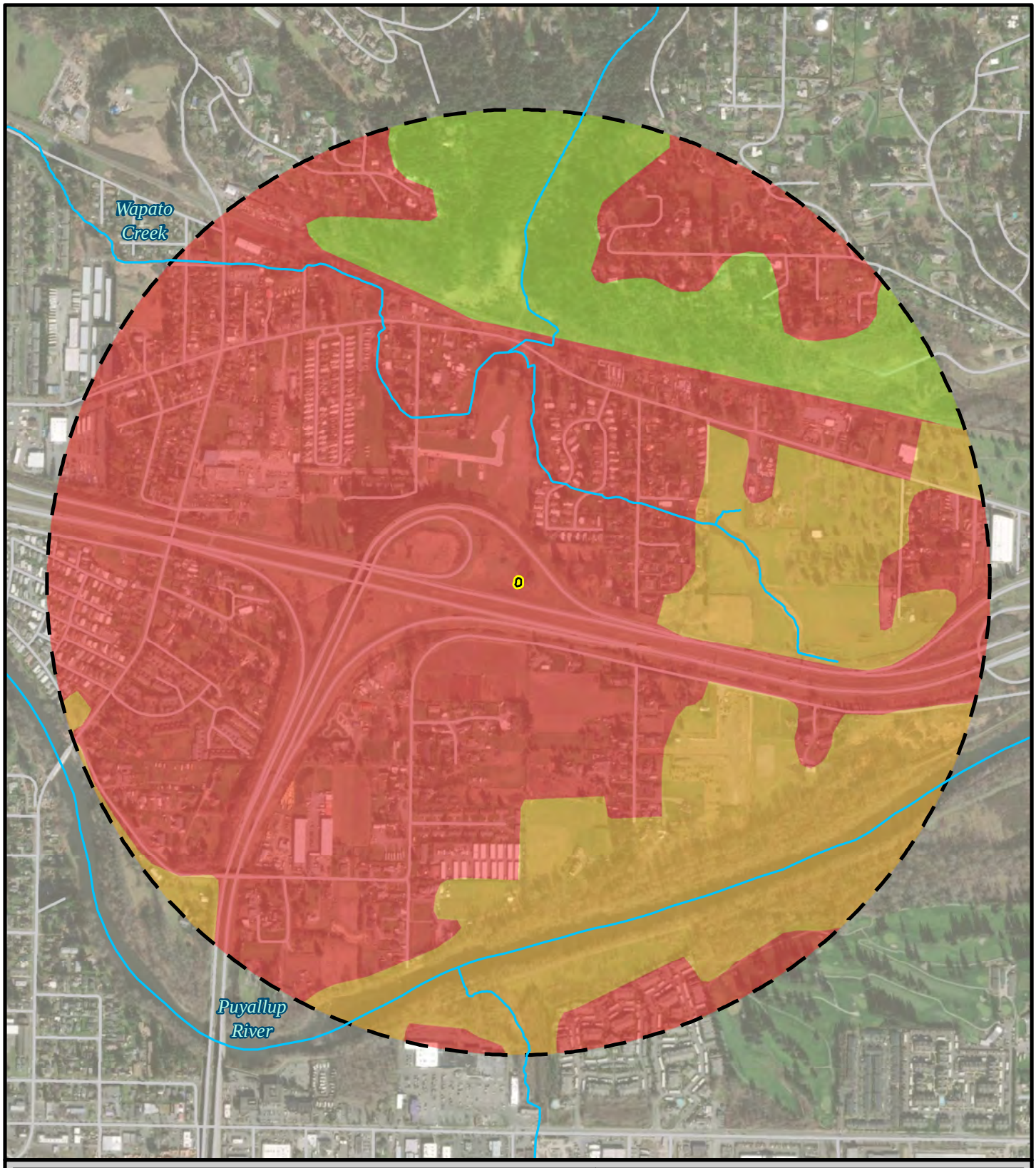

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-86.
Habitat Within a 1-km Boundary of Wetland 107.

N

0 485 970 1,940 Feet

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Wetland name or number: Wetland 108

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 108 Date of site visit: 8/30/2021

Rated by G. Schulz, L. Dominguez Trained by Ecology? ☒ Yes ☐ No Date of Training May 2016

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-87
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-88
Flow directions and associated features	n/a	D-88a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-88
Map of the contributing basin	D 4.3, D 5.3	D-89
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	D-90
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 108

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Puyallup River is listed for temperature and mercury

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 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 more than 100 times the area of the unit | points = 0	0
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 108

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*

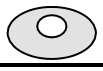
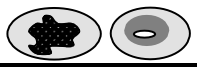
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *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

Wetland name or number: Wetland 108

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
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.* 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*

Wetland name or number: Wetland 108

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+ [(% moderate and low intensity land uses)/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 0+ [(% moderate and low intensity land uses)19.4/2] = **9.7**% 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*

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.*	0

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

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 D-87.
Cowardin Classes for Wetland 108.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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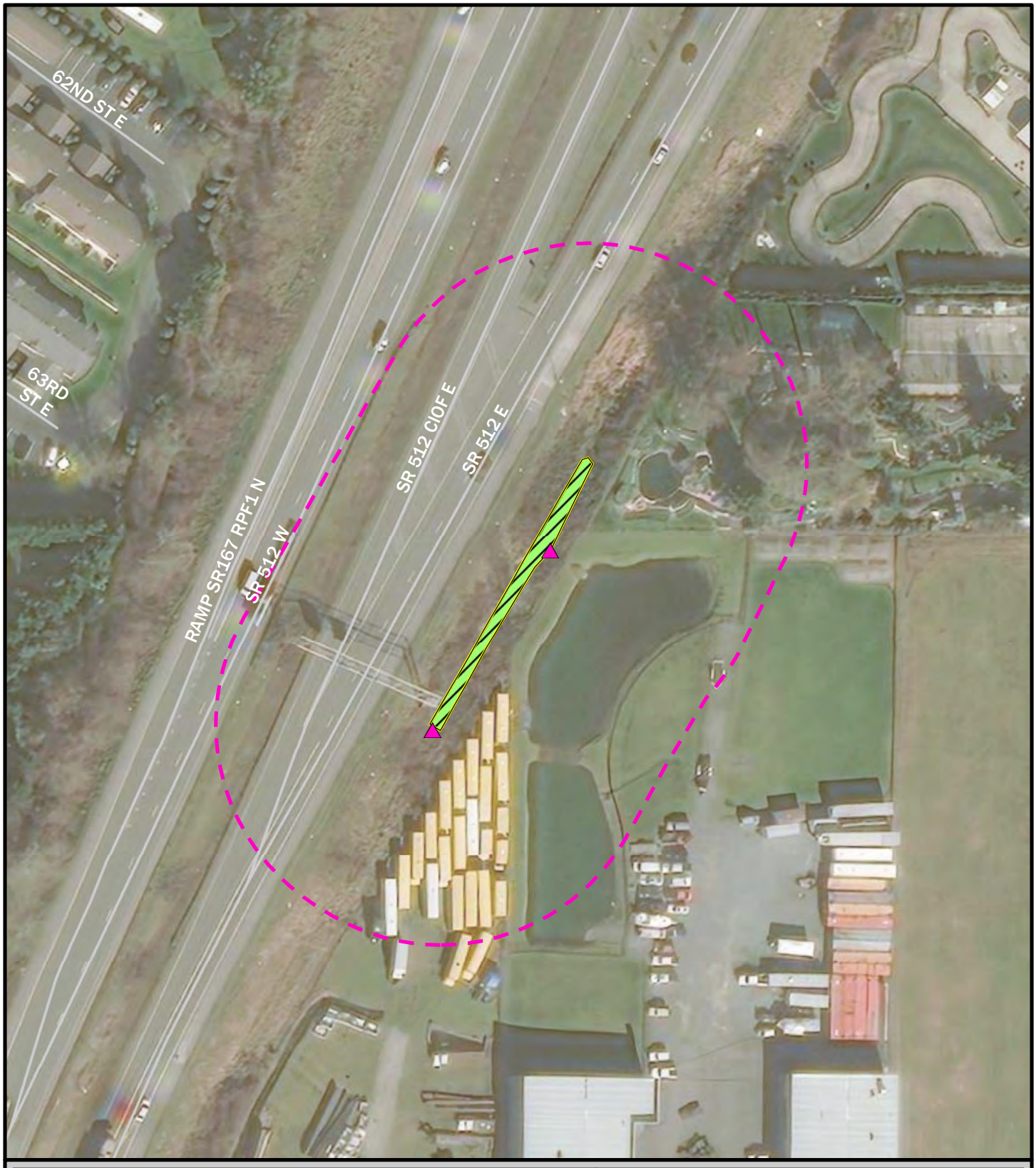

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet
- Hydroperiod
- Occasionally flooded

Figure D-88.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 108.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Wetland

Figure D-88a.
Flow Directions and Features Associated with Wetland 108.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2020)

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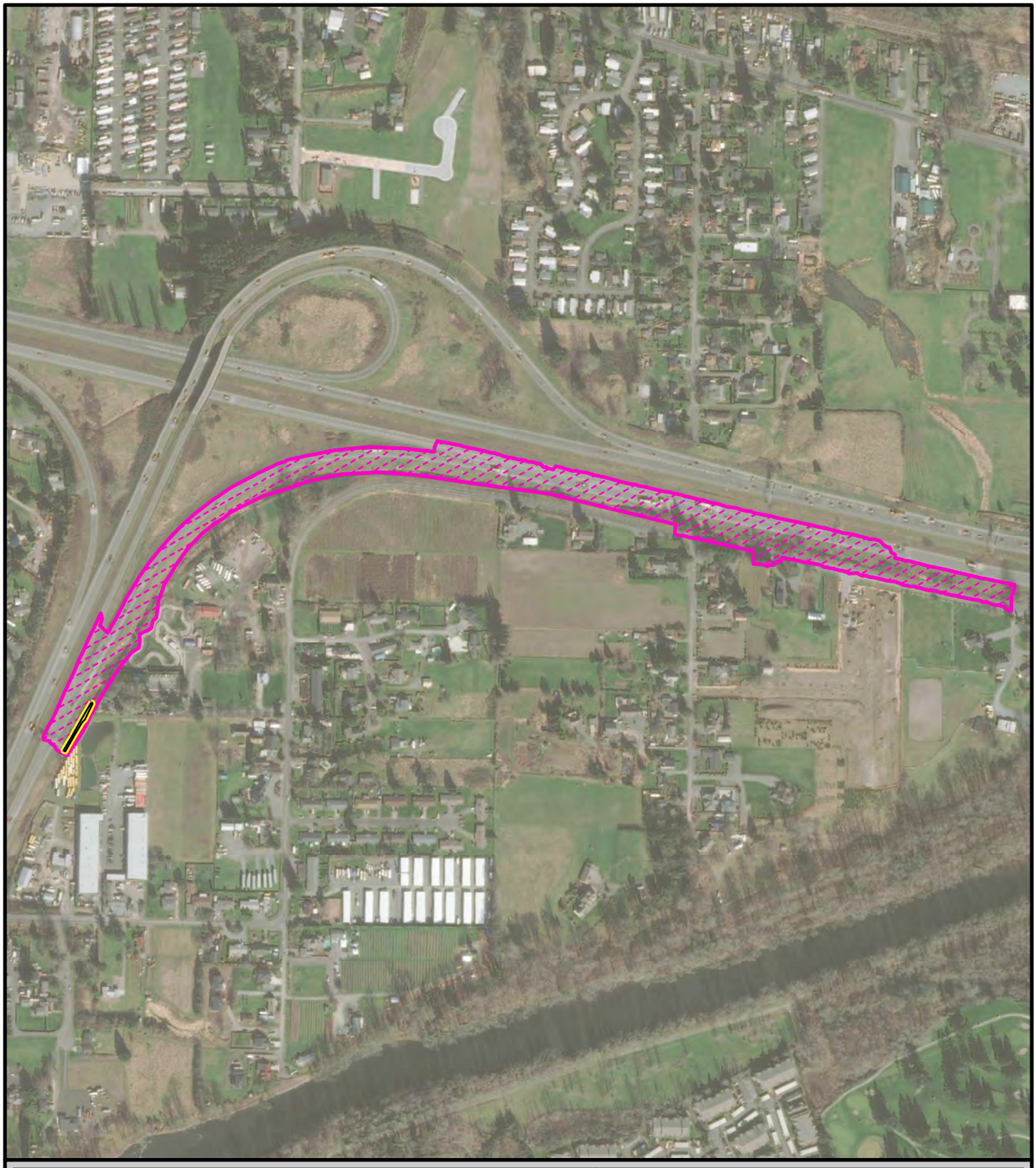

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-89.
Map of Contributing Basin for Wetland 108.

N

0 270 540 1,080 Feet

HERRERA

Esri, Aerial (2021)

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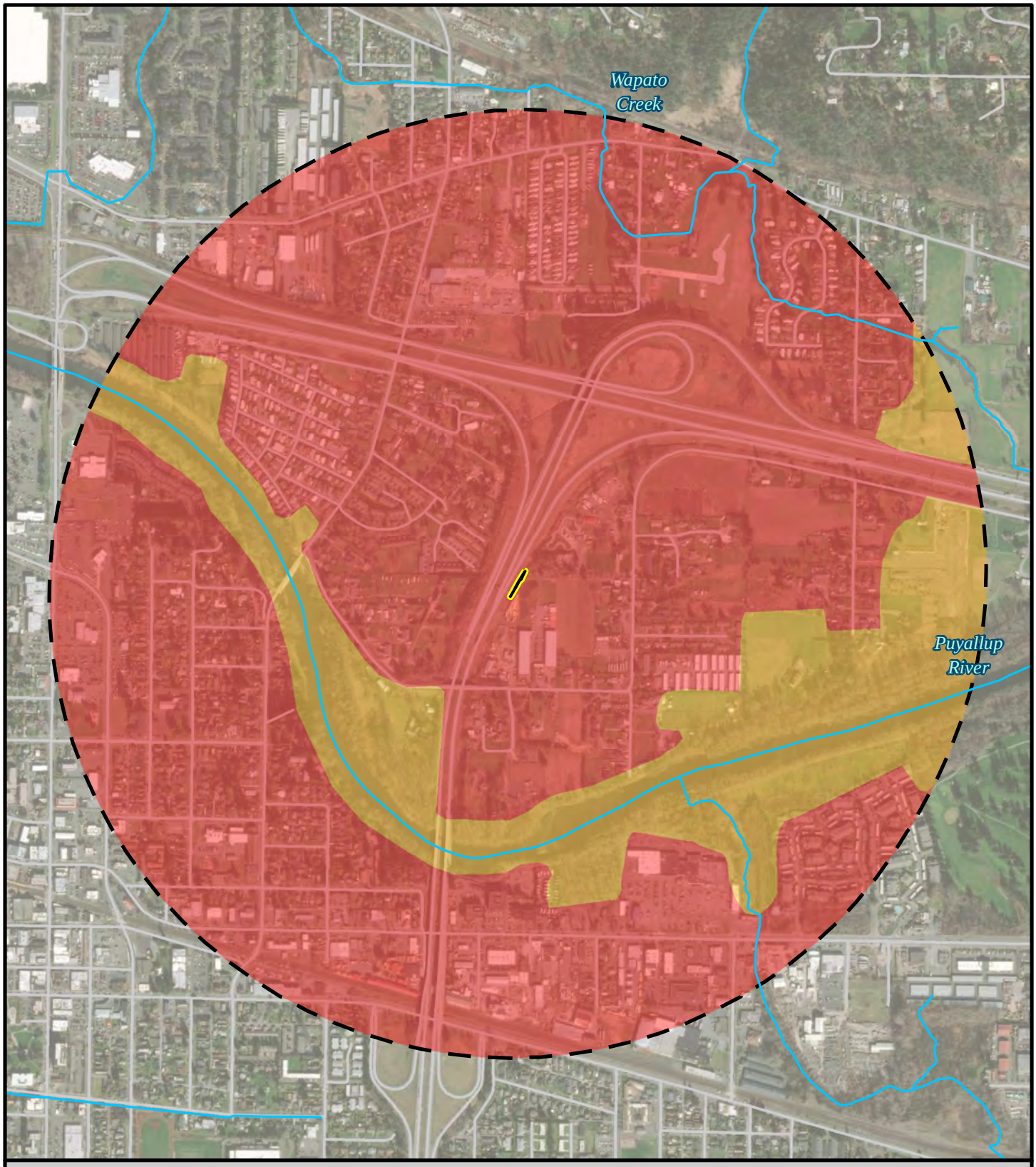

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-90.
Habitat Within a 1-km Boundary of Wetland 108.

N

0 495 990 1,980 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 109

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 109 Date of site visit: 9/15/2021

Rated by G. Schulz Trained by Ecology? ☒ Yes ☐ No Date of Training May 2016

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-91
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-92
Flow directions and associated features	n/a	D-92a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-92
Map of the contributing basin	D 4.3, D 5.3	D-93
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	D-94
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 109

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 > 1/2 total area of wetland | points = 4	4
Total for D 1 Add the points in the boxes above (F9 key)	11

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

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 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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 109

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*

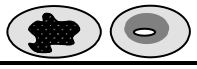
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: Wetland outlets to stormwater ditch system.

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 x 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

Wetland name or number: Wetland 109

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 x Seasonally flooded or inundated ☐ Occasionally flooded or inundated x 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**	2 types present | points = 1 **2 points** **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: <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.* Low | points = 1 **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*) X Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)		
Total for H 1	Add the points in the boxes above	1

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

Wetland name or number: Wetland 109

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+ [(% moderate and low intensity land uses)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 ___0+ [(% moderate and low intensity land uses)10.6/2] = ___**5.3**% Choose an item.	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*

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.* — 0

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>.)

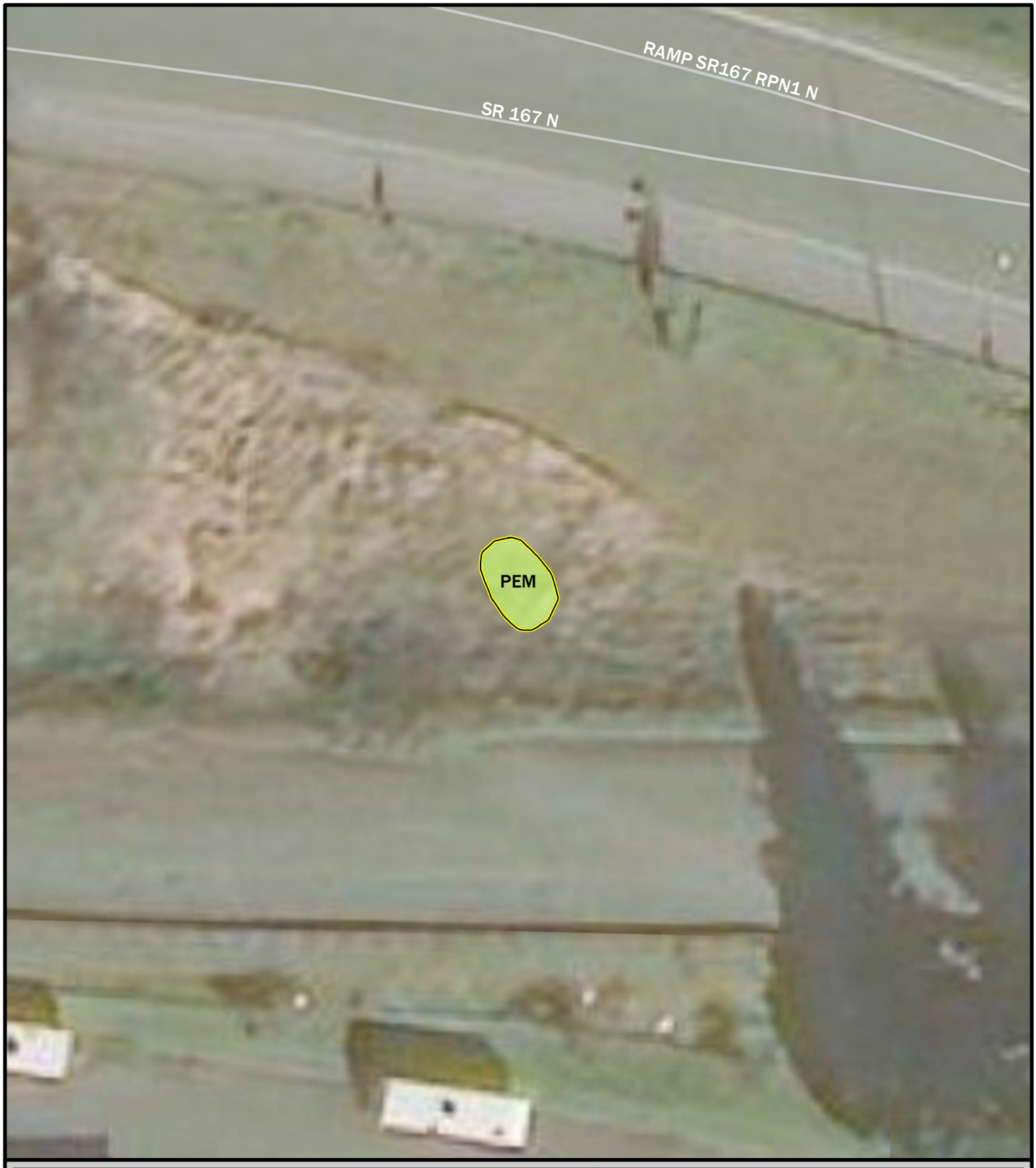
Site meets ANY of the following criteria: points = 2

- ☐ 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

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 D-91.
Cowardin Classes for Wetland 109.

N

0 12.5 25 50 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-92.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 109.

N

0 20 40 80 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Culverts
- Wetland

Figure D-92a.
Flow Directions and Features Associated with Wetland 109.

N

0 40 80 160 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-93.
Map of Contributing Basin for Wetland 109.

N

0 55 110 220 Feet

HERRERA

Esri, Aerial (2021)

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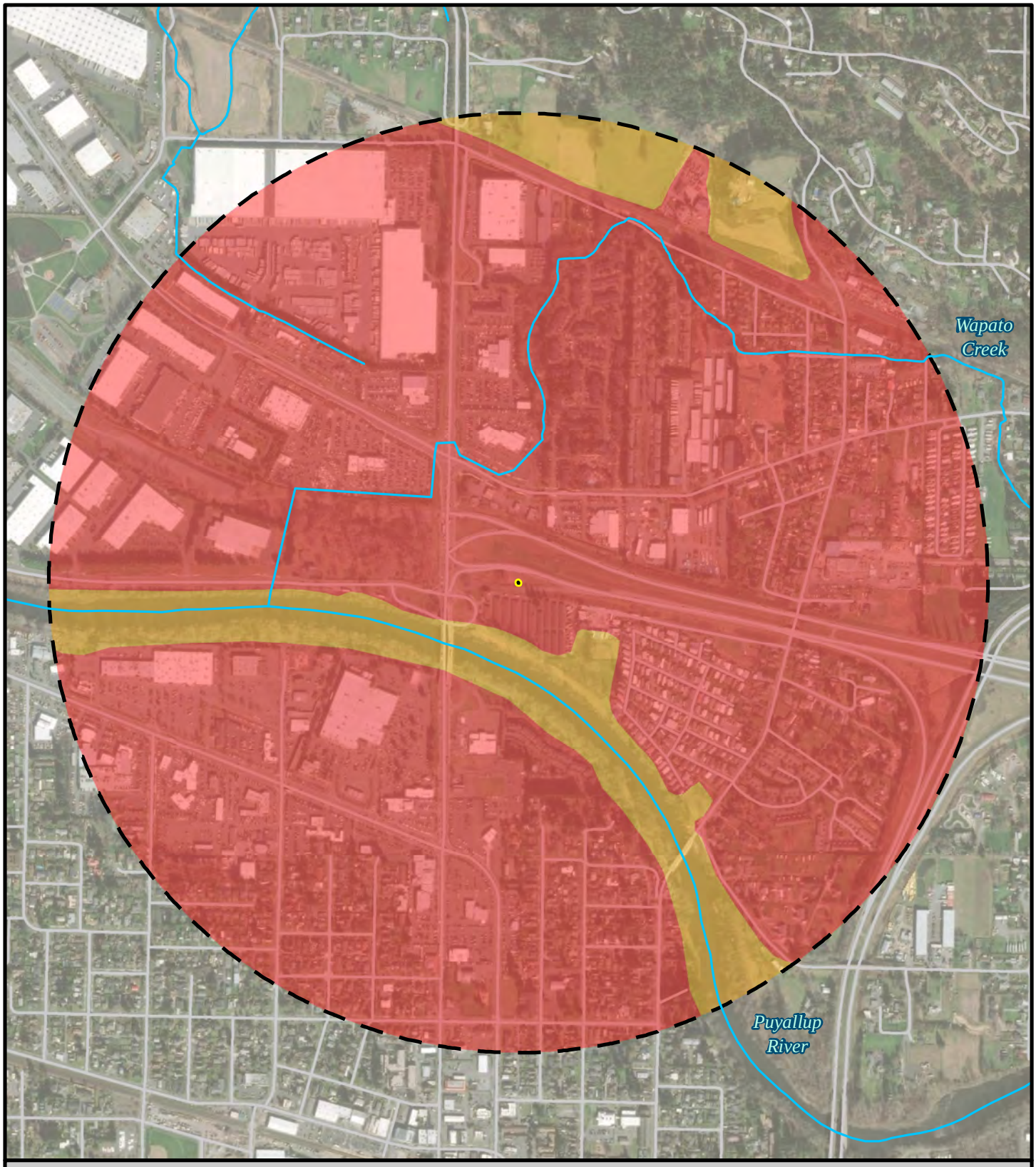

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-94.
Habitat Within a 1-km Boundary of Wetland 109.

N

0 485 970 1,940 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 111

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 111 Date of site visit: 8/30/21

Rated by G. Schulz Trained by Ecology? ☒ Yes ☐ No Date of Training 05/2016

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 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-95
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-96
Flow directions and associated features	n/a	D-96a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-96
Map of the contributing basin	D 4.3, D 5.3	D-97
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	D-98
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 111

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 = 2	2
Total for D 1 INFILTRATION FUNCTION Add the points in the boxes above (F9 key)	9

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	
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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS:. Puyallup River is listed for temperature and mercury within 1 mile

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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 111

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*

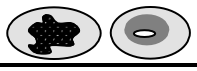
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition 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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *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

Wetland name or number: Wetland 111

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 x 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**	2 types present | points = 1 **2 points** **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle.*** If you counted: 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.* Low | points = 1 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 		1
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*

Wetland name or number: Wetland 111

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 **+** [(% moderate and low intensity land uses)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 4.7 **+** [(% moderate and low intensity land uses)17.5/2] 8.8 **=** **13.5**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* — 0

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

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 D-95.
Cowardin Classes for Wetland 111.

N

0 30 60 120 Feet

HERRERA

ESRI, Aerial (2021)

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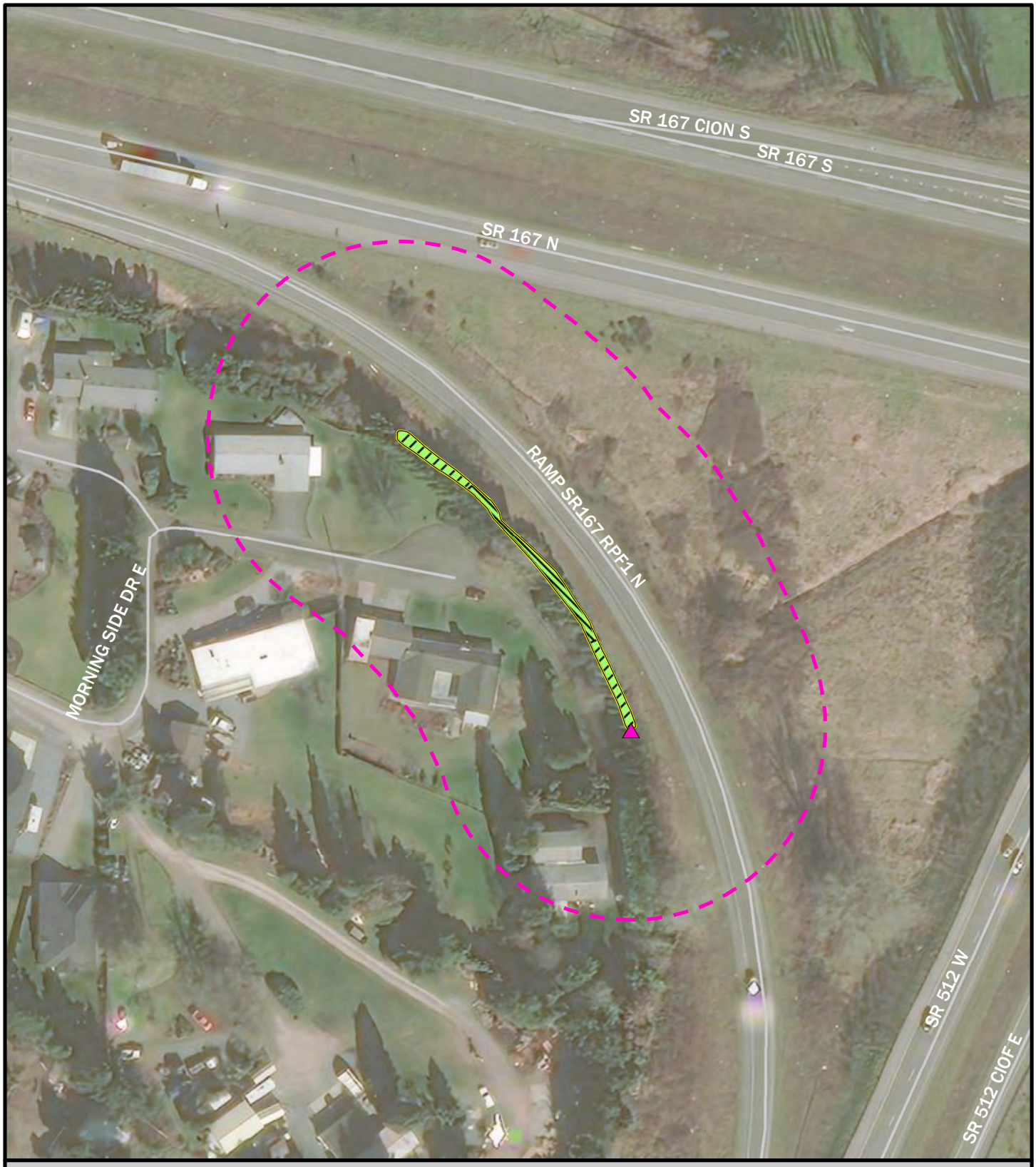

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded
- Seasonally flooded

Figure D-96.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 111.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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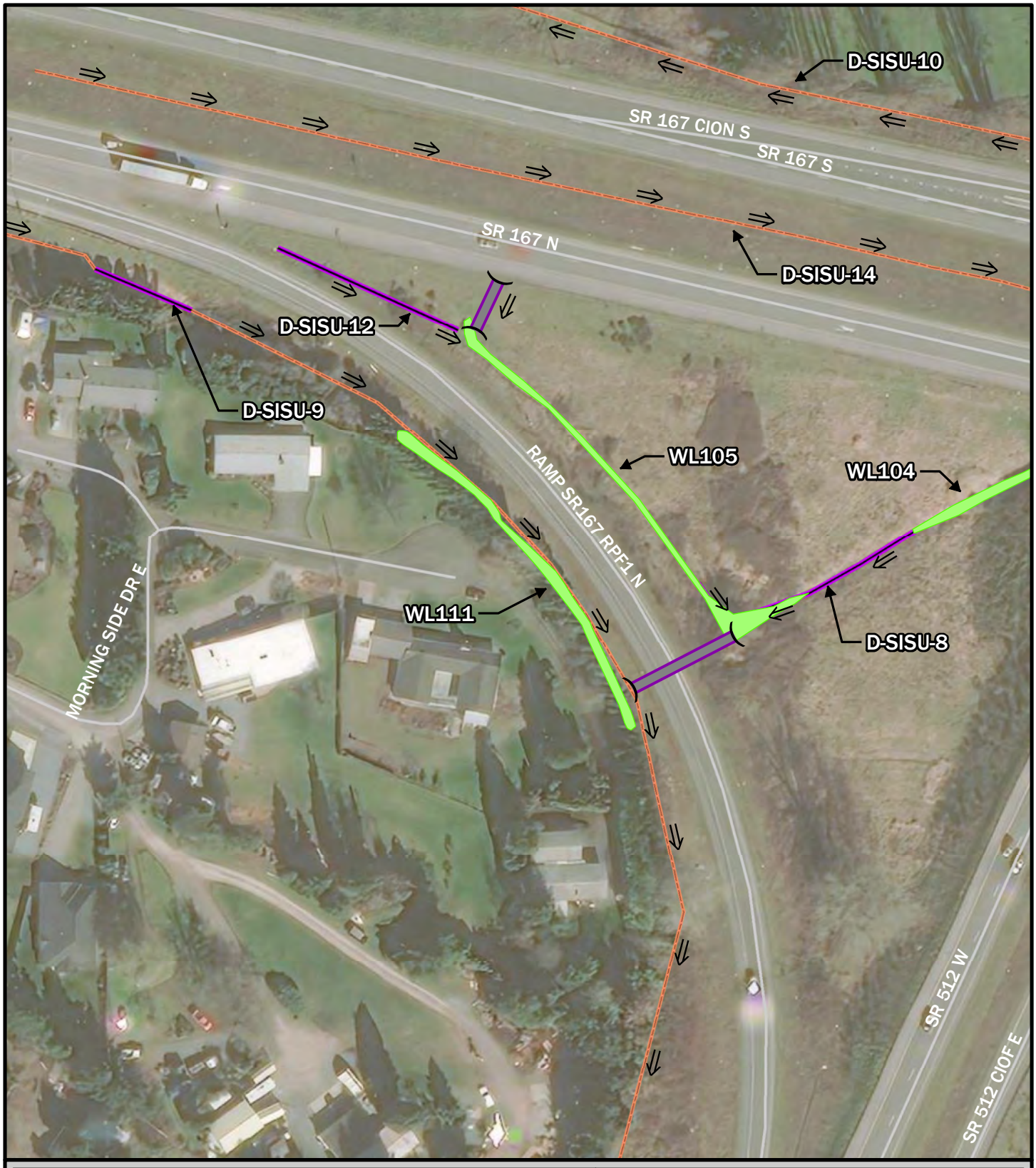

Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland

Figure D-96a.
Flow Directions and Features Associated with Wetland 111.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2020)

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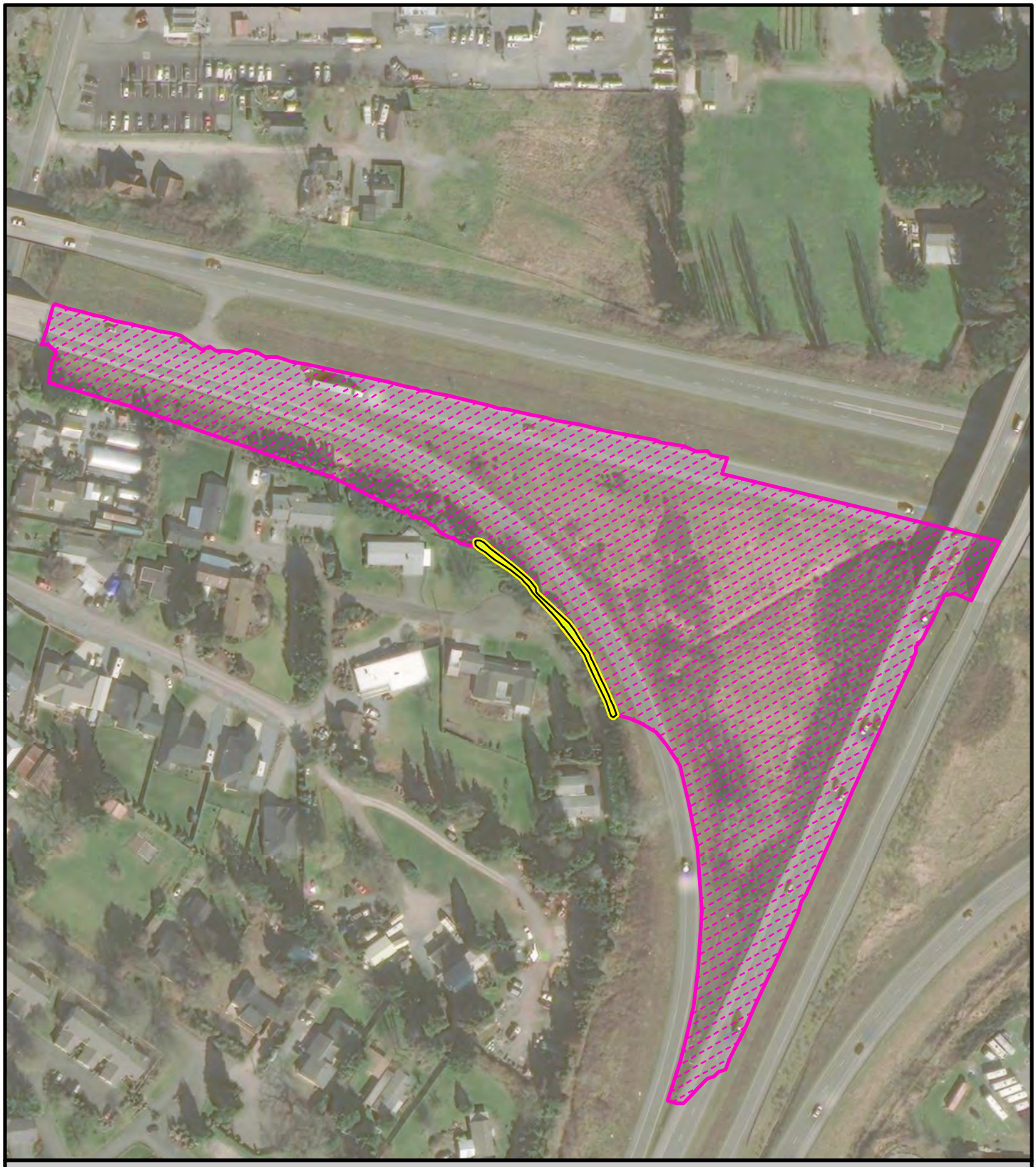

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-97.
Map of Contributing Basin for Wetland 111.

N

0 90 180 360 Feet

HERRERA

Esri, Aerial (2021)

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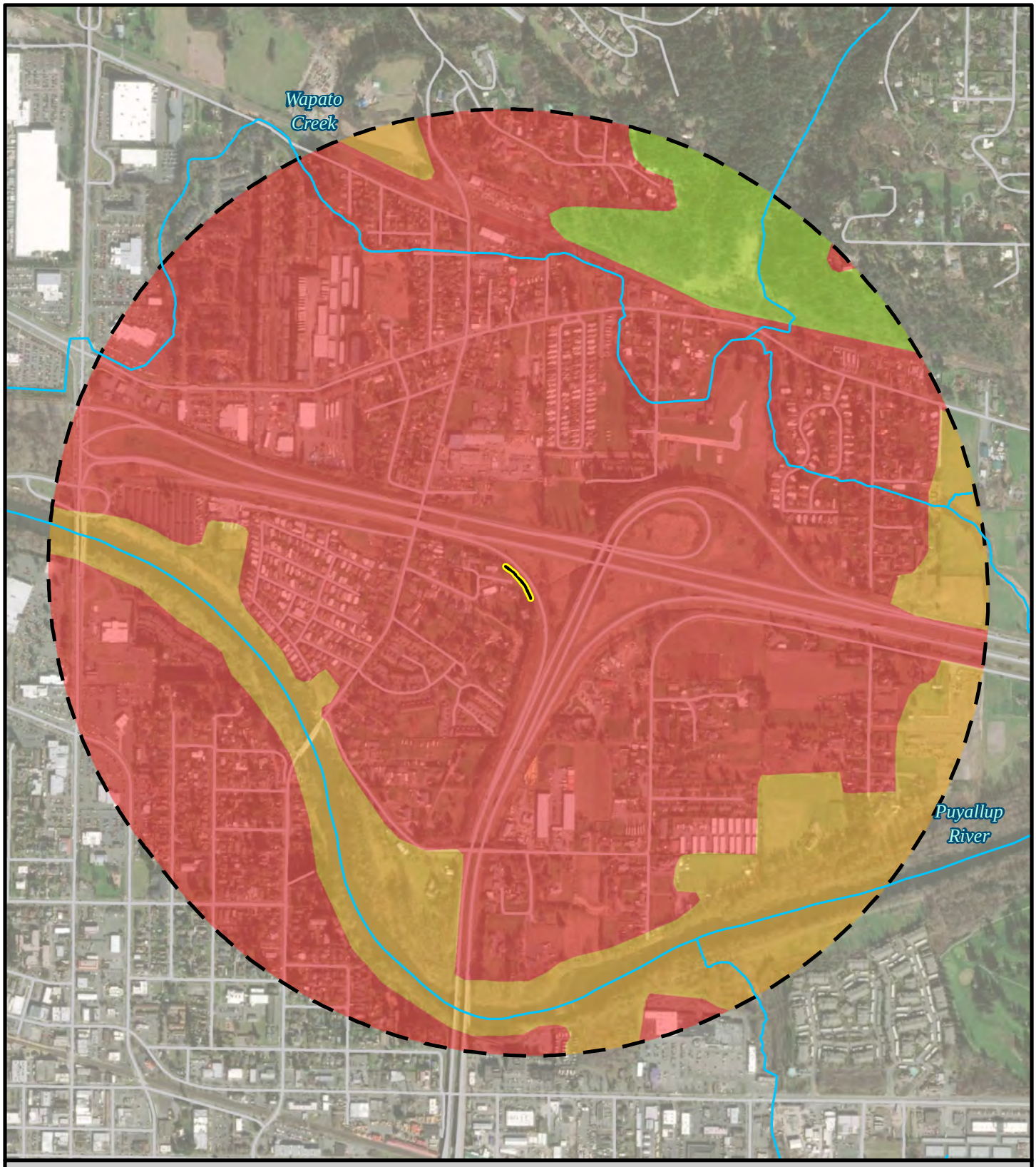


Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-98.
Habitat Within a 1-km Boundary of Wetland 111.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 112

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 112 Date of site visit: 9/15/21

Rated by G. Schulz, L. Dominguez Trained by Ecology? ☒ Yes ☐ No Date of Training 05/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Yes ☒ No

Additional HGM Classes(*if mult.*): n/a

Source of base aerial photo/map ESRI Aerial, 2020

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 approriate ratings				
Site Potential	M	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-99
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-100
Flow directions and associated features	n/a	D-100a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-100
Map of the contributing basin	D 4.3, D 5.3	D-101
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	D-102
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 112

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? Puyallup River is listed for temperature and mercury 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Receives input from median, discharges on grade SW towards Puyallup, no surface water connectivity to Puyallup

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 112

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

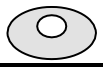
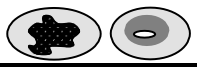
Rating of Value If score is: 1 = M *Record the rating on the first page*

COMMENTS: Although Puyallup system has altered hydrograph from development, these ditches are designed for infiltration primarily and not direct surface flow connectivity. Retention is also a design factor

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

Wetland name or number: Wetland 112

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
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*

Wetland name or number: Wetland 112

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+ [(% moderate and low intensity land uses)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 ___2.8+ [(% moderate and low intensity land uses)15.4/2] ___7.7 = ____**10.5**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*	0

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>.)

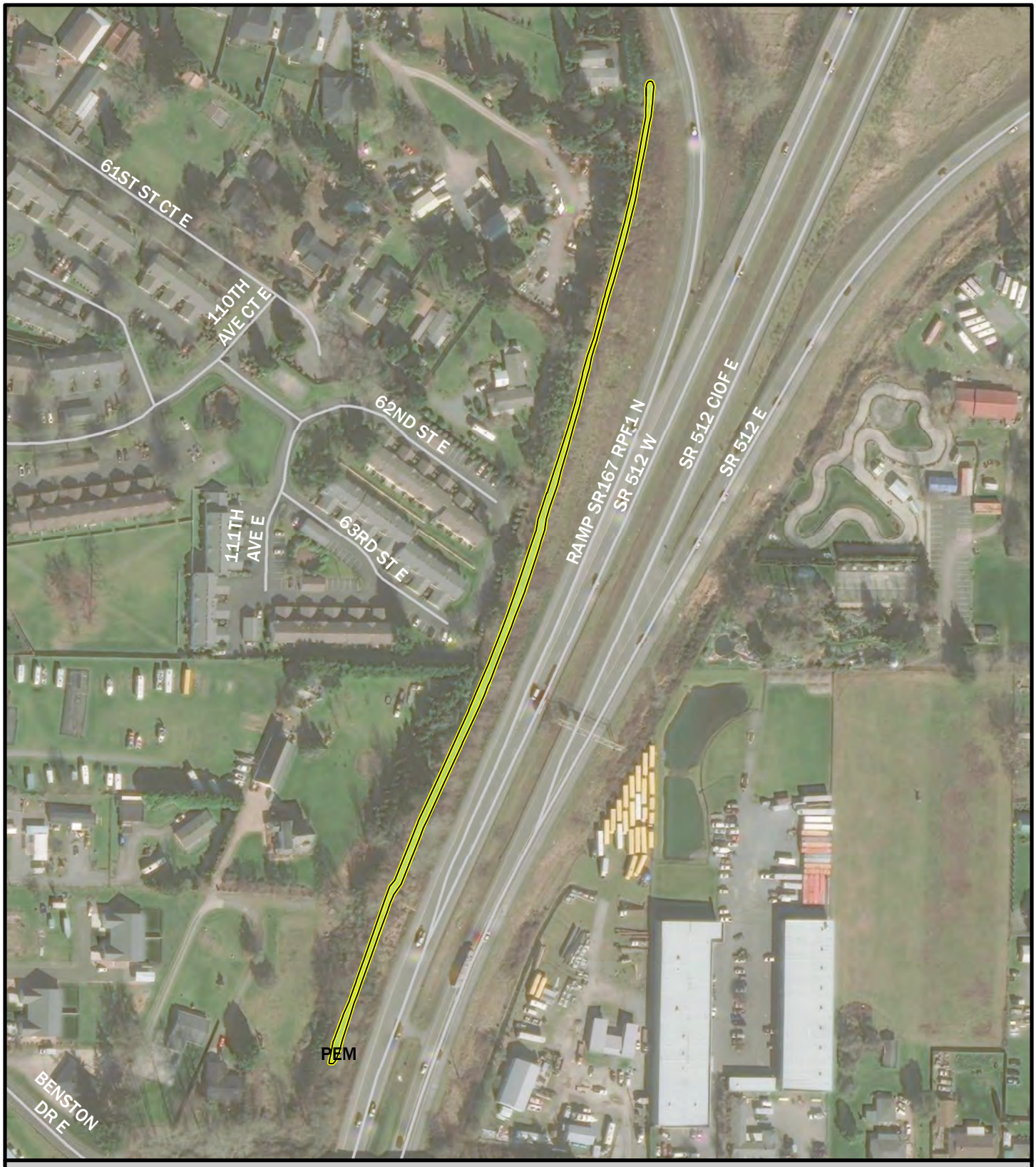
Site meets ANY of the following criteria: points = 2

- ☐ 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

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 D-99.
Cowardin Classes for Wetland 112.

N

0 105 210 420 Feet

HERRERA

ESRI, Aerial (2021)

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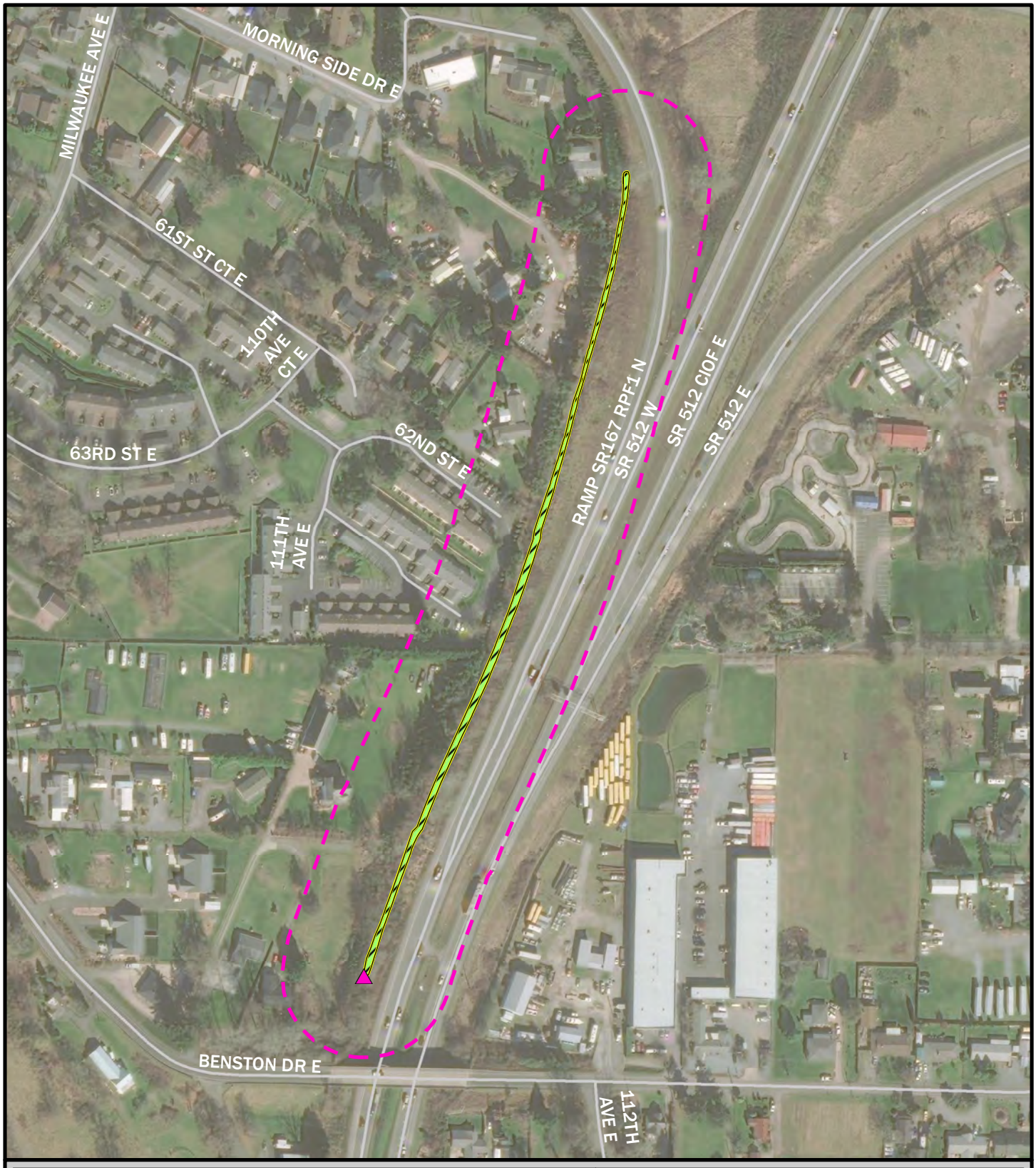

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-100.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 112.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2021)

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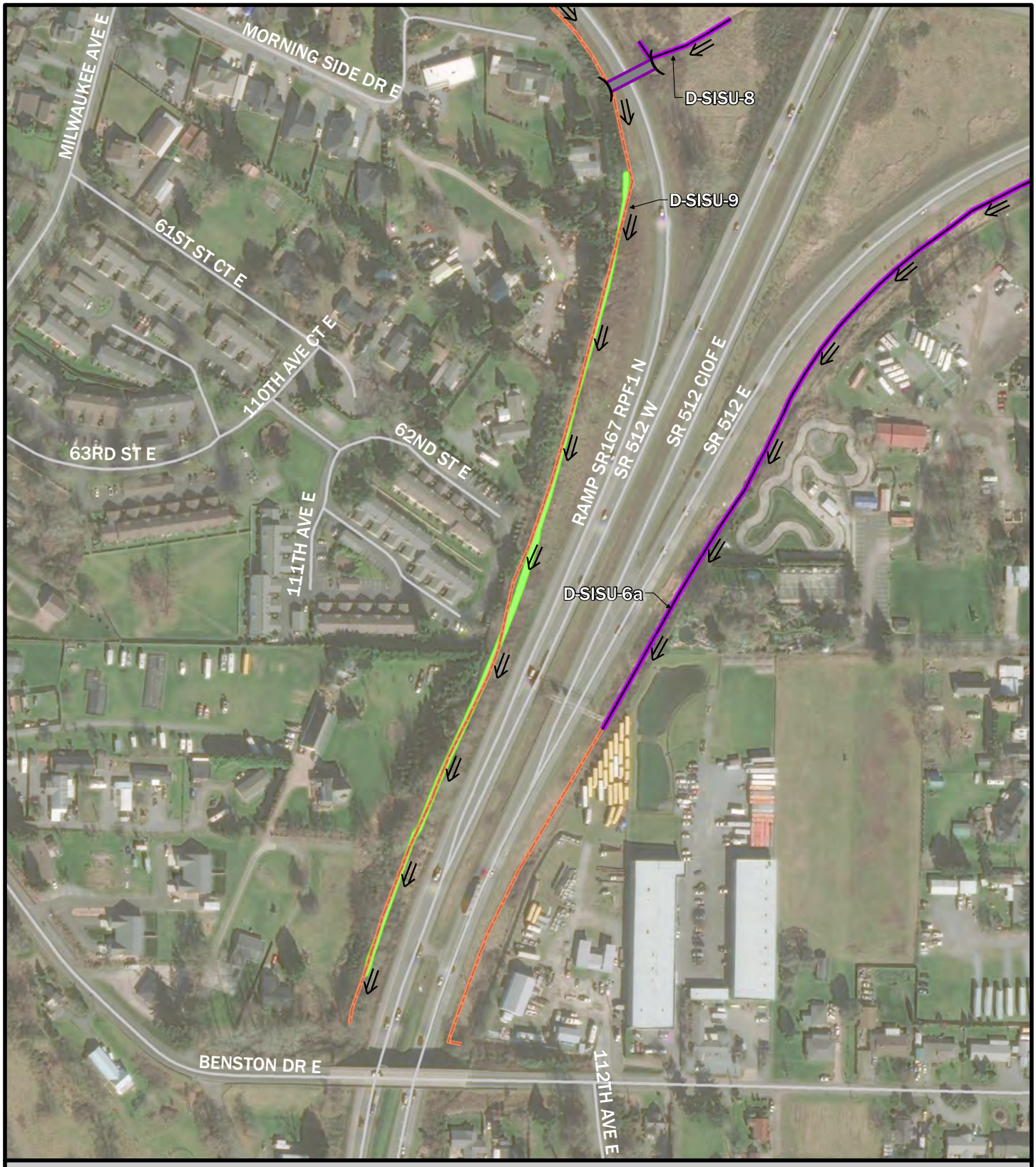

Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland

Figure D-100a.
Flow Directions and Features Associated with Wetland 112.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2020)

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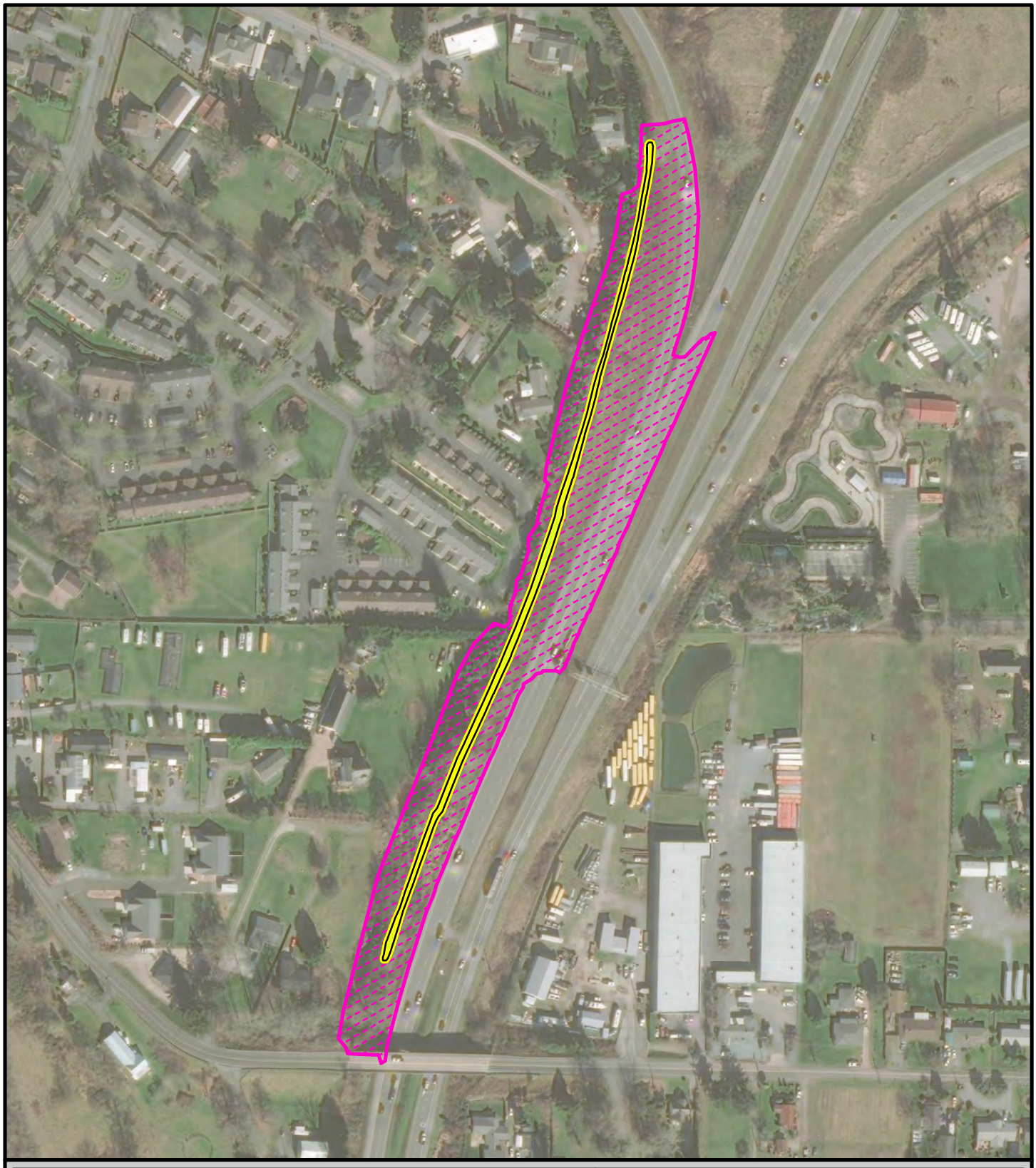

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-101.
Map of Contributing Basin for Wetland 112.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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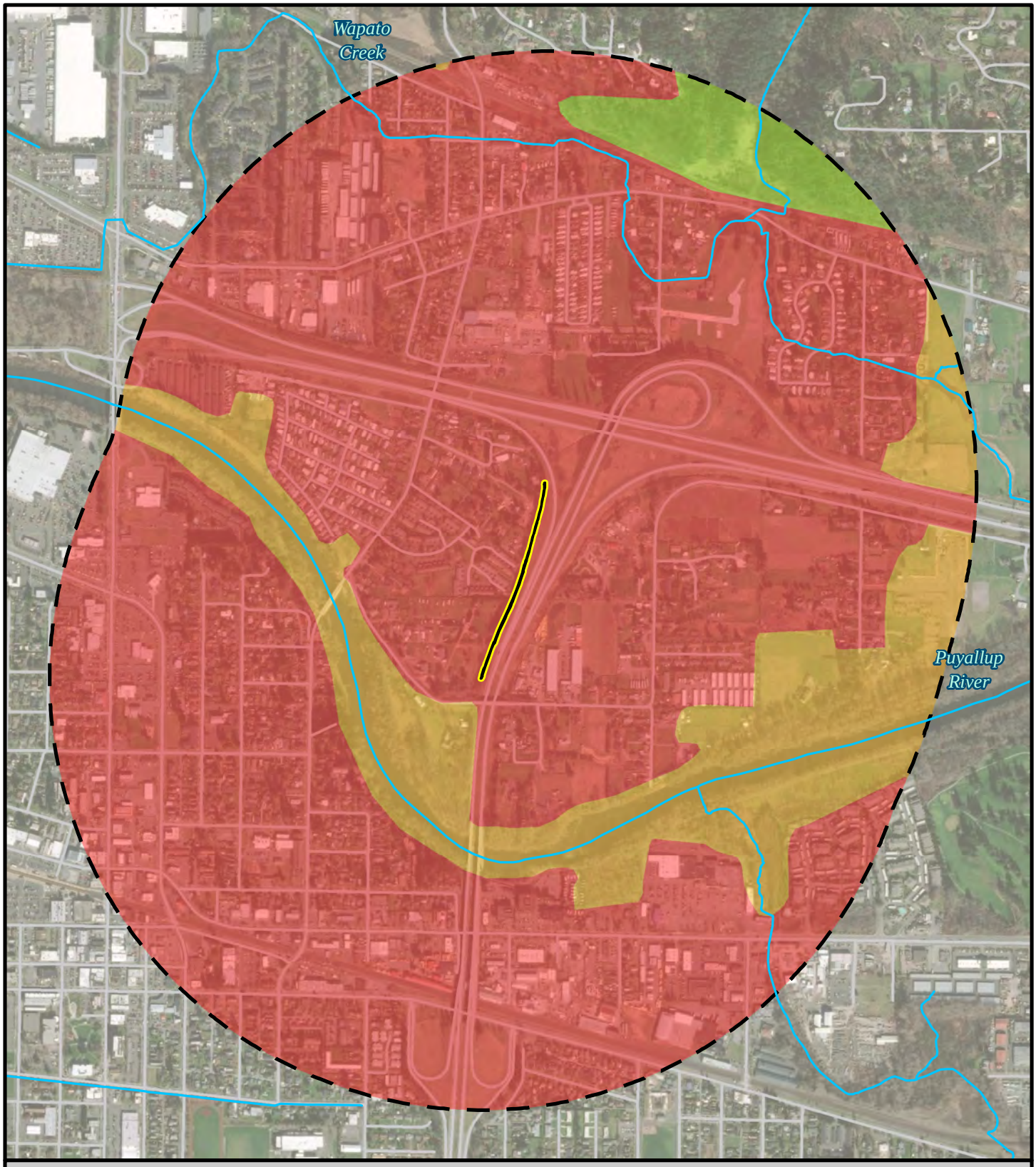

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-102.
Habitat Within a 1-km Boundary of Wetland 112.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 113

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 113 Date of site visit: 9/15/21

Rated by G. Schulz Trained by Ecology? ☒ Yes ☐ No Date of Training 05/2016

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, 2020

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	H	L	L	**TOTAL**
Score Based on Ratings	7	5	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	D-103
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-104
Flow directions and associated features	n/a	D-104a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-104
Map of the contributing basin	D 4.3, D 5.3	D-105
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	D-106
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 113

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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	3

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 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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 113

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:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above): Water enters stormwater system. WSDOT stormwater system does not show connection with Puyallup or downstream flood-prone areas.**	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

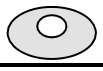
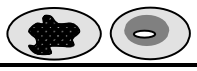
Rating of Value If score is: 0 = L *Record the rating on the first page*

COMMENTS: Designed for infiltration and detention within wetland/ditch system

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 x 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

Wetland name or number: Wetland 113

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
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.* Low | points = 1 **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*

Wetland name or number: Wetland 113

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+ [(% moderate and low intensity land uses)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 ___2.1+ [(% moderate and low intensity land uses)21.5/2] __10.8 = ____**12.9**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* — 0

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

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 D-103.
Cowardin Classes for Wetland 113.

N

0 20 40 80 Feet

HERRERA

ESRI, Aerial (2021)

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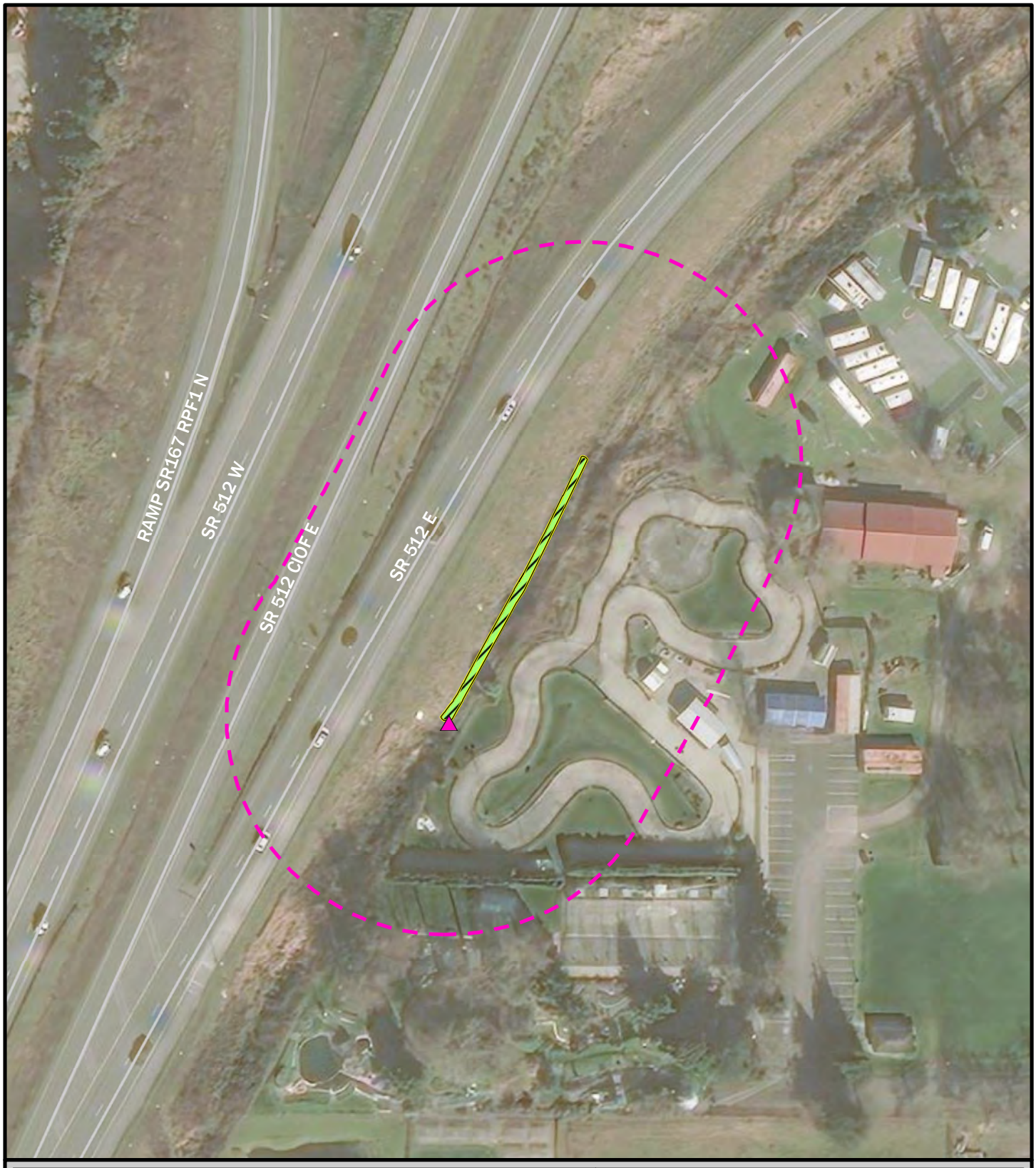

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-104.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 113.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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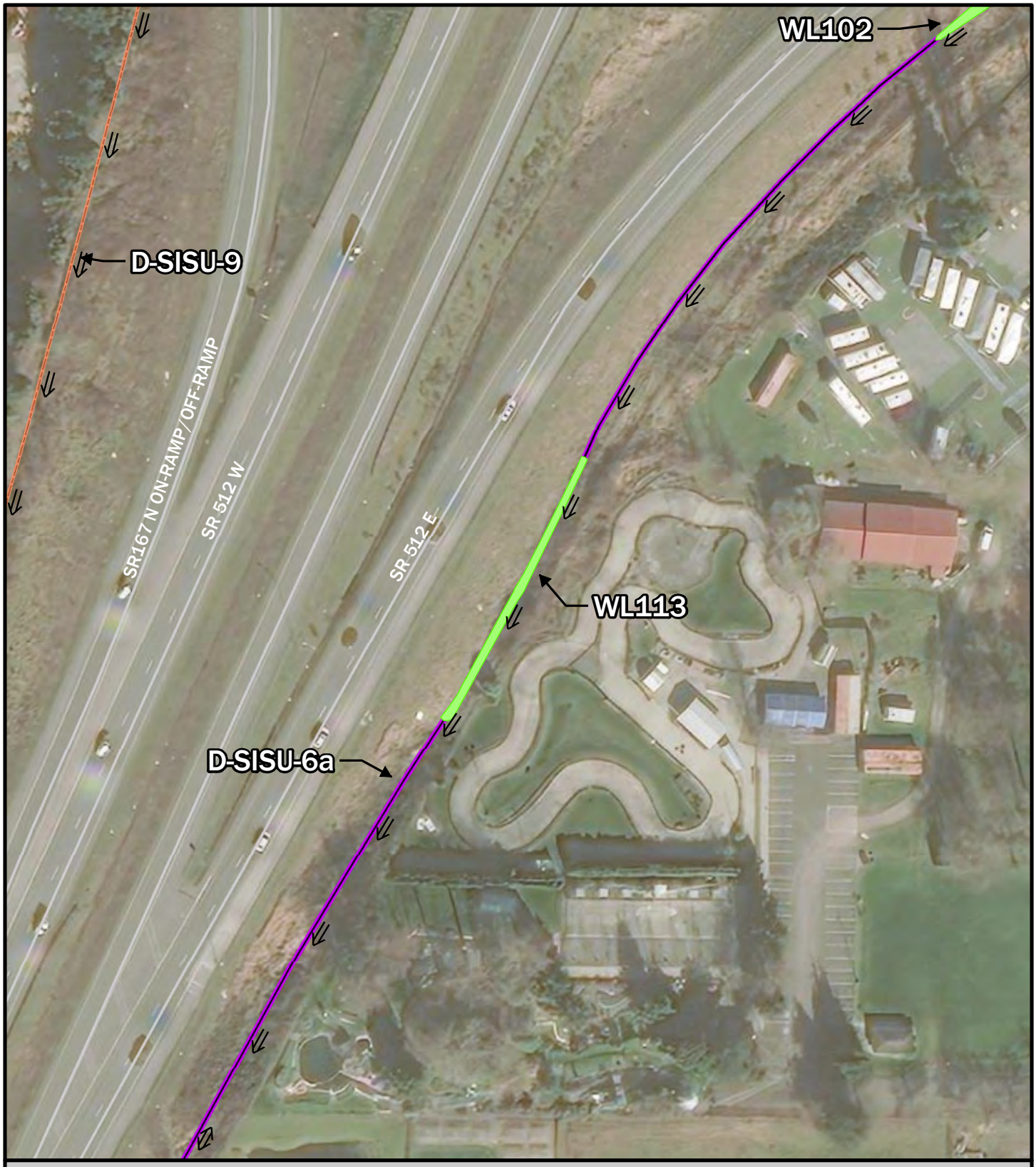

Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Wetland

Figure D-104a.
Flow Directions and Features Associated with Wetland 113.

N

0 45 90 180 Feet

HERRERA

Esri, Aerial (2021)

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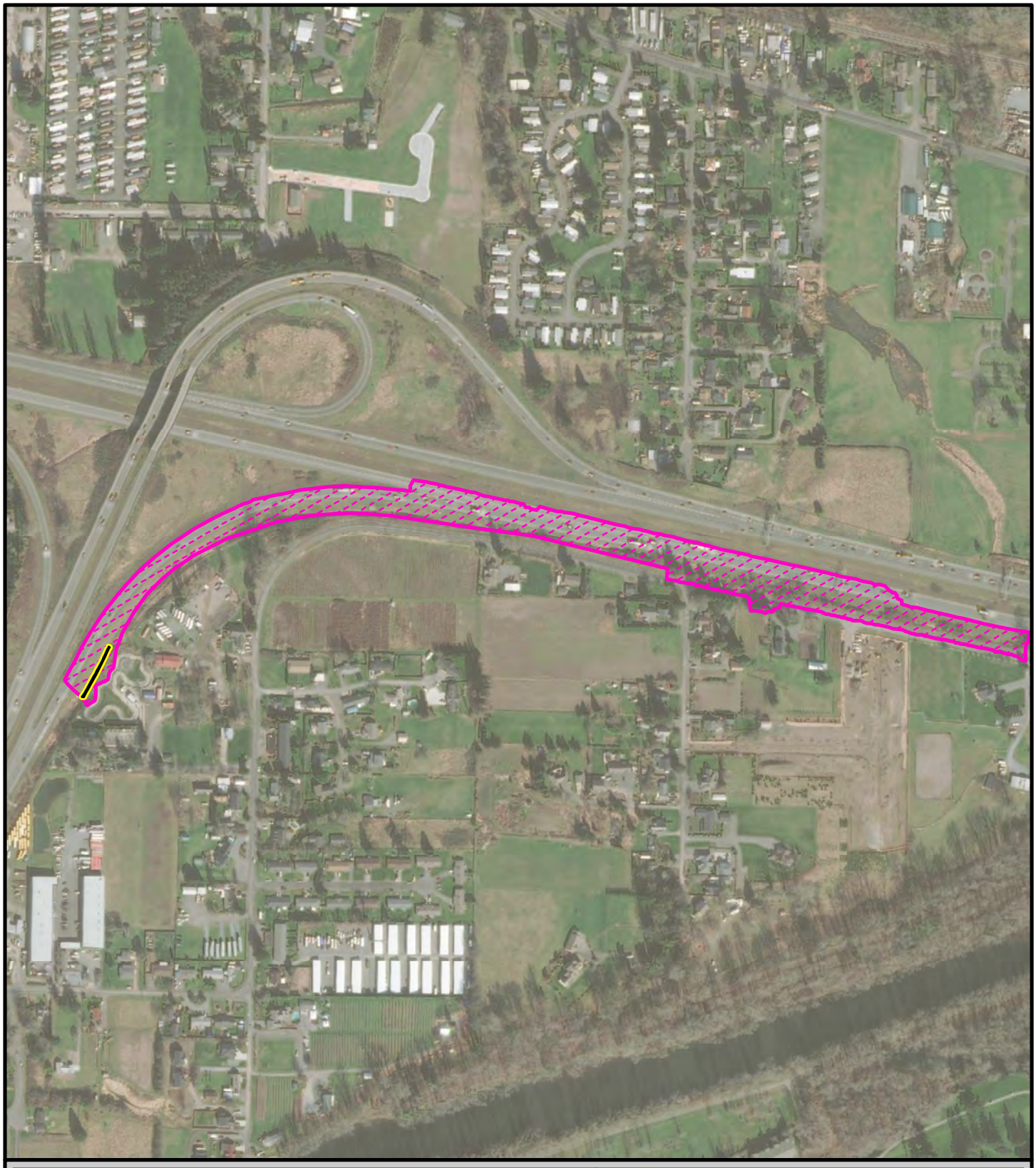

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-105.
Map of Contributing Basin for Wetland 113.

N

0 250 500 1,000 Feet

HERRERA

Esri, Aerial (2021)

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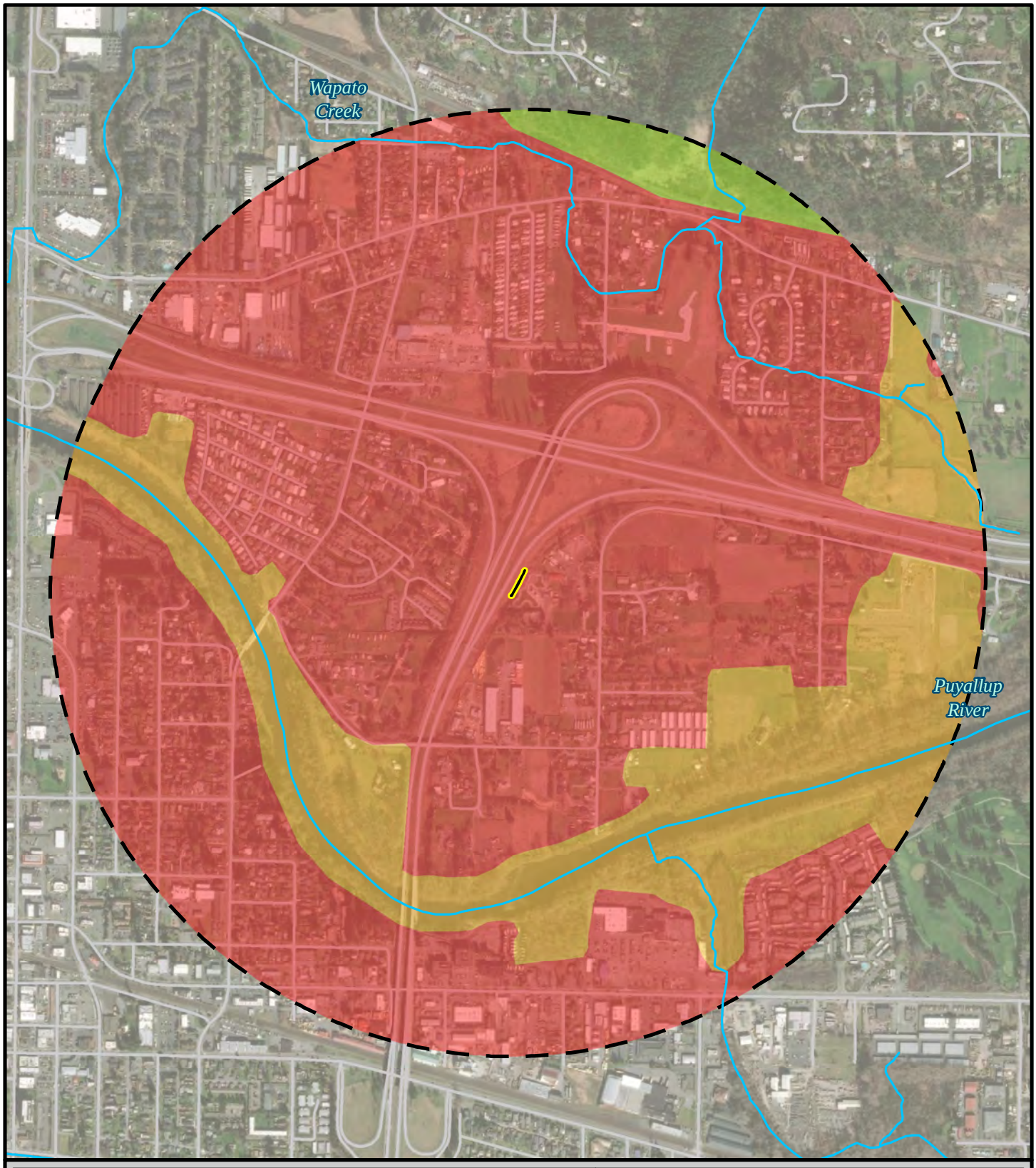

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-106.
Habitat Within a 1-km Boundary of Wetland 113.

N

0 495 990 1,980 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 114

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 114 Date of site visit: 11-3-2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training 9/2008

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, 2020

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	L	L	L	
Landscape Potential	M	H	L	
Value	H	M	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	D-107
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-108
Flow directions and associated features	n/a	D-108a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-108
Map of the contributing basin	D 4.3, D 5.3	D-109
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	D-110
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 114

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 > 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 = 4Area 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)	5

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1	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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland located in highway median, upgradient of Silver Creek with 303d in place. TMDLs in place for the Puyallup River sub-basin.

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 more than 100 times the area of the unit | points = 0	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

Wetland name or number: Wetland 114

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** **Explanation for 0 points (if required above):**	1
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	1

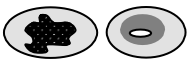
Rating of Value If score is: 1 = M *Record the rating on the first page*

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 114

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**+** [(% moderate and low intensity land uses)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 ___0**+** [(% moderate and low intensity land uses)8.4/2] __ **=** __**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)	0
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 114

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 D-107.
Cowardin Classes for Wetland 114.

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded

Figure D-108.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 114.

N

0 87.5 175 350 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Surveyed ditches
- Wetland

Figure D-108a.
Flow Directions and Features Associated with Wetland 114.

N

0 87.5 175 350 Feet

HERRERA

ESRI, Aerial (2020)

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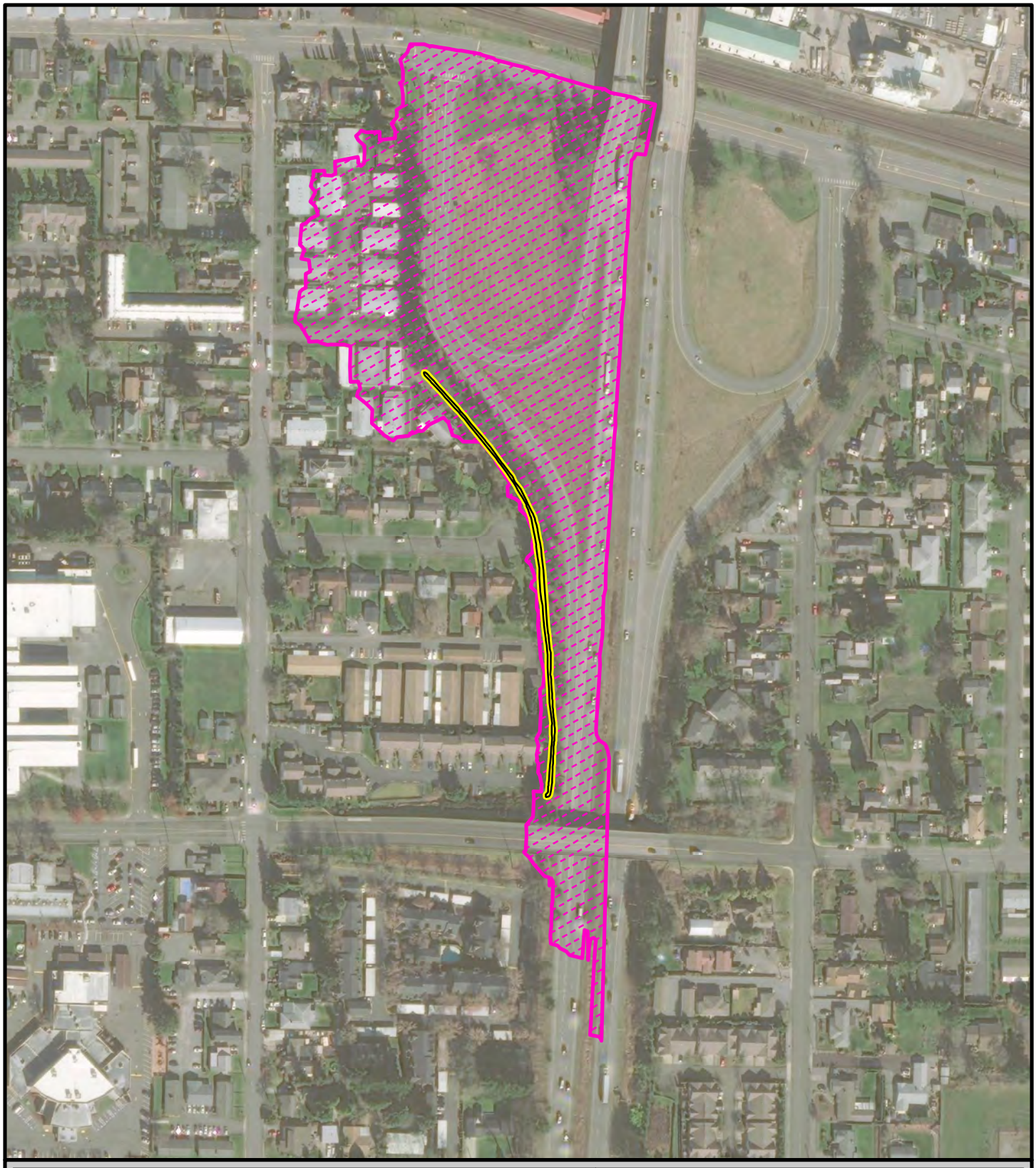

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-109.
Map of Contributing Basin for Wetland 114.

N

0 135 270 540 Feet

HERRERA

Esri, Aerial (2021)

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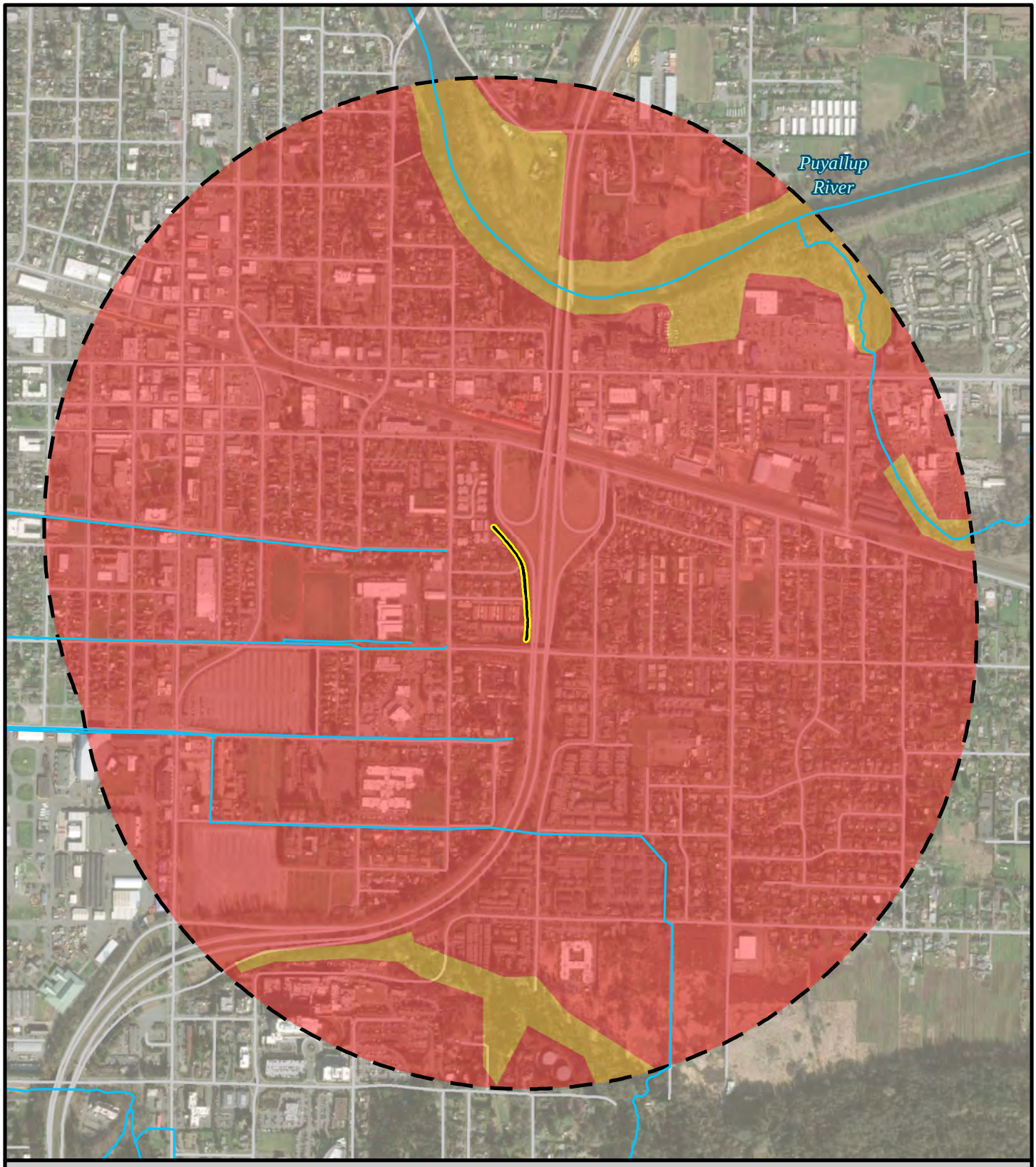

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-110.
Habitat Within a 1-km Boundary of Wetland 114.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 115

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 115 Date of site visit: 11/03/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training 9/2008

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-111
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-112
Flow directions and associated features	n/a	D-112a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-112
Map of the contributing basin	D 4.3, D 5.3	D-113
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	D-114
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 115

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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland located in highway median, upgradient of Silver Creek with 303d in place. TMDLs in place for the Puyallup River sub-basin.

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 115

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** **Explanation for 0 points (if required above):**	1
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	1

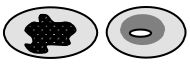
Rating of Value If score is: 1 = M *Record the rating on the first page*

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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 115

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.* Low | points = 1 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	1
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	2

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 **+** [(% moderate and low intensity land uses)10.4/2] 5.2 **= 5.2**% 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 115

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

PSS - Palustrine scrub-shrub

Figure D-111.
Cowardin Classes for Wetland 115.

N

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2021)

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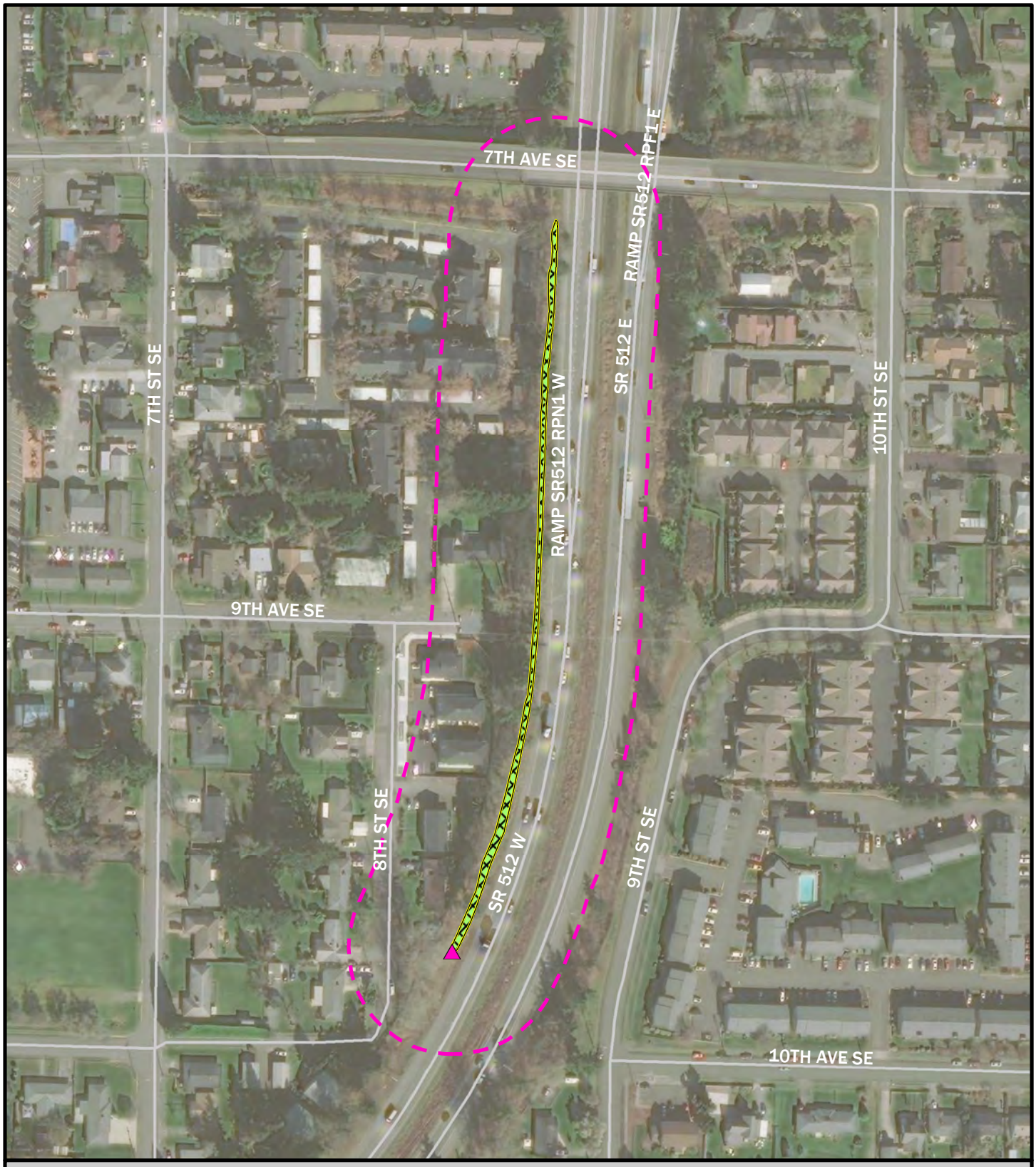

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet
- Hydroperiod
- Saturated only

Figure D-112.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 115.

N

0 100 200 400 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-112a.
Flow Directions and Features Associated with Wetland 115.

N

0 100 200 400 Feet

HERRERA

ESRI, Aerial (2020)

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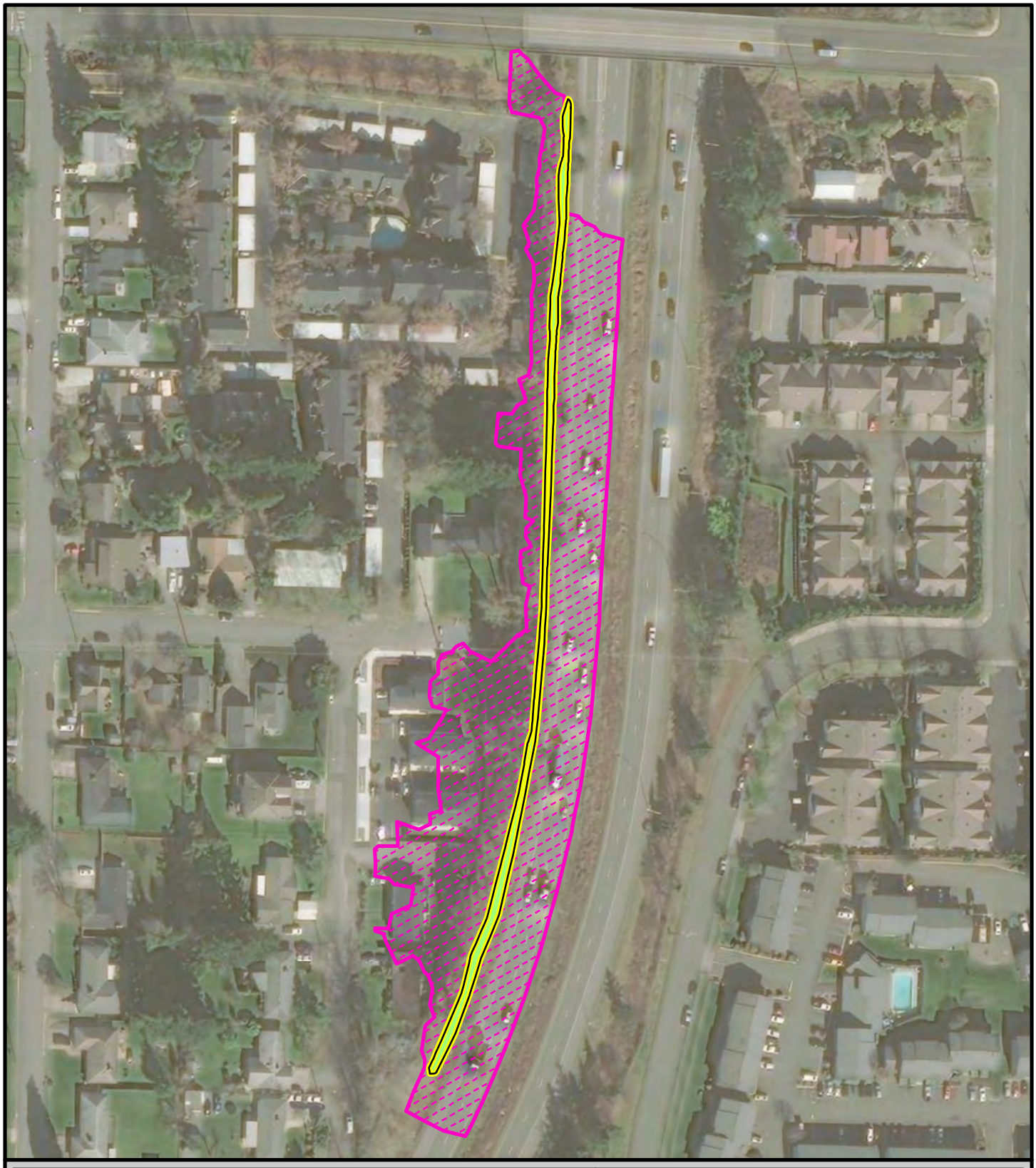

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-113.
Map of Contributing Basin for Wetland 115.

N

0 75 150 300 Feet

HERRERA

Esri, Aerial (2021)

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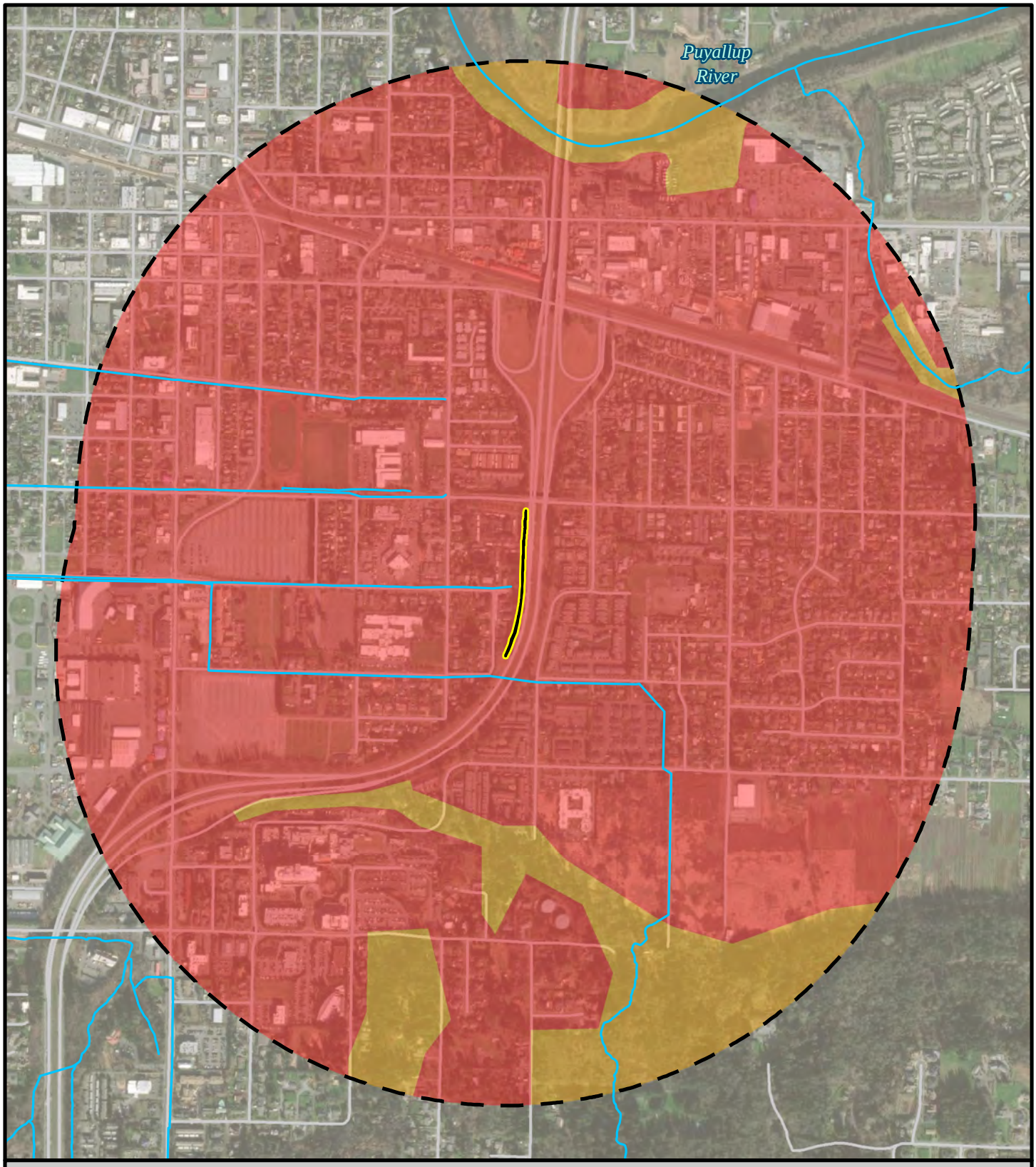

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-114.
Habitat Within a 1-km Boundary of Wetland 115.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 116

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 116 Date of site visit: 11/03/2021

Rated by R. Baker Trained by Ecology? ☒ Yes ☐ No Date of Training 9/2008

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, 2020

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	L	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-115
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-116
Flow directions and associated features	n/a	D-116a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-116
Map of the contributing basin	D 4.3, D 5.3	D-117
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	D-118
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 116

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:_____ Yes = 1	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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland adjacent to highway, upgradient of Silver Creek with 303d in place. TMDLs in place for the Puyallup River sub-basin.

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 116

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** **Explanation for 0 points (if required above):**	1
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	1

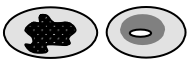
Rating of Value If score is: 1 = M *Record the rating on the first page*

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 116

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.* Low | points = 1 **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	1
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	4

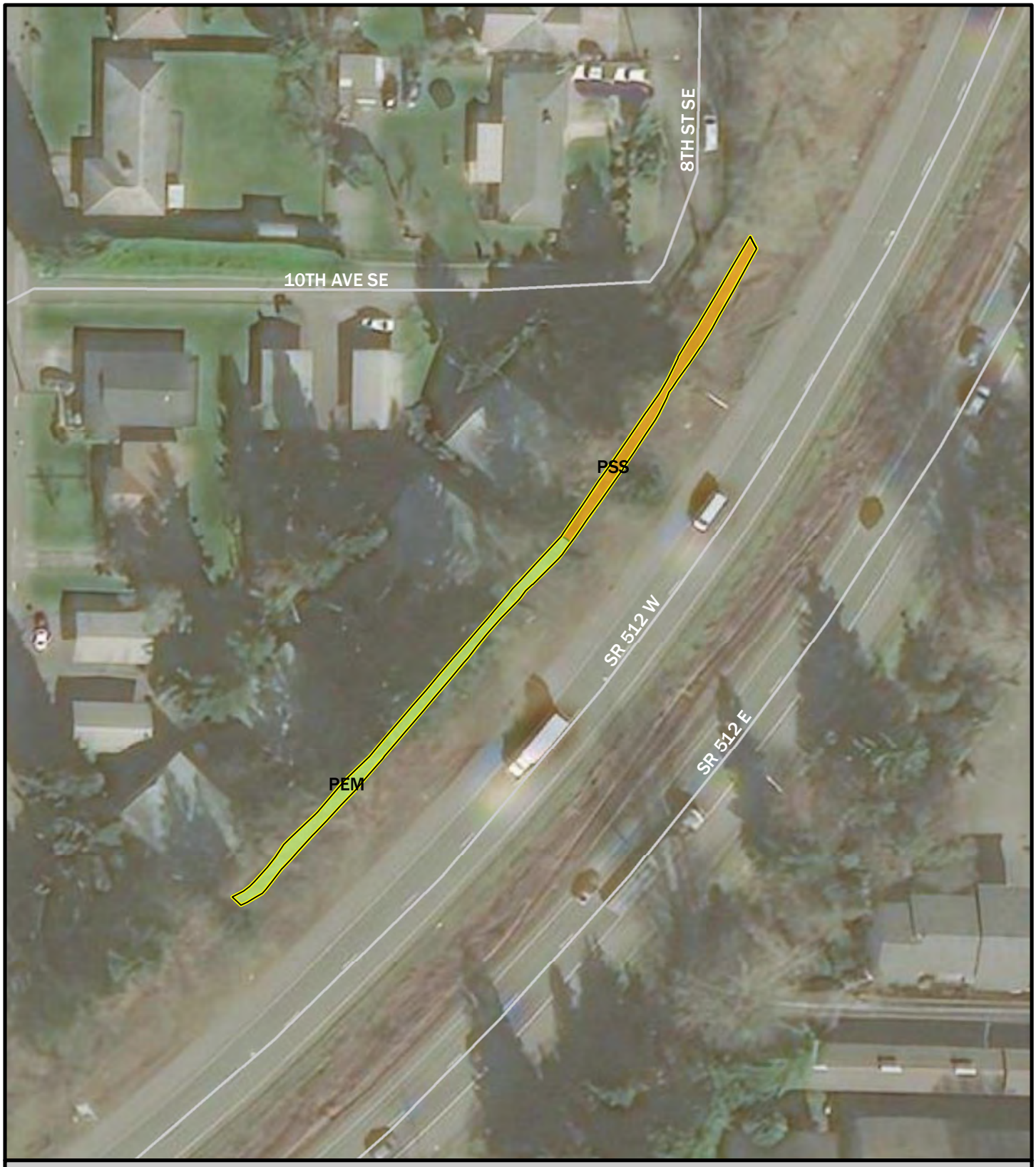
Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

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 0.0**+** [(% moderate and low intensity land uses)10.0/2] 5.5 **=** **5.5**% 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 116

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

PSS - Palustrine scrub-shrub

Figure D-115.
Cowardin Classes for Wetland 116.

N

0 30 60 120 Feet

HERRERA

ESRI, Aerial (2021)

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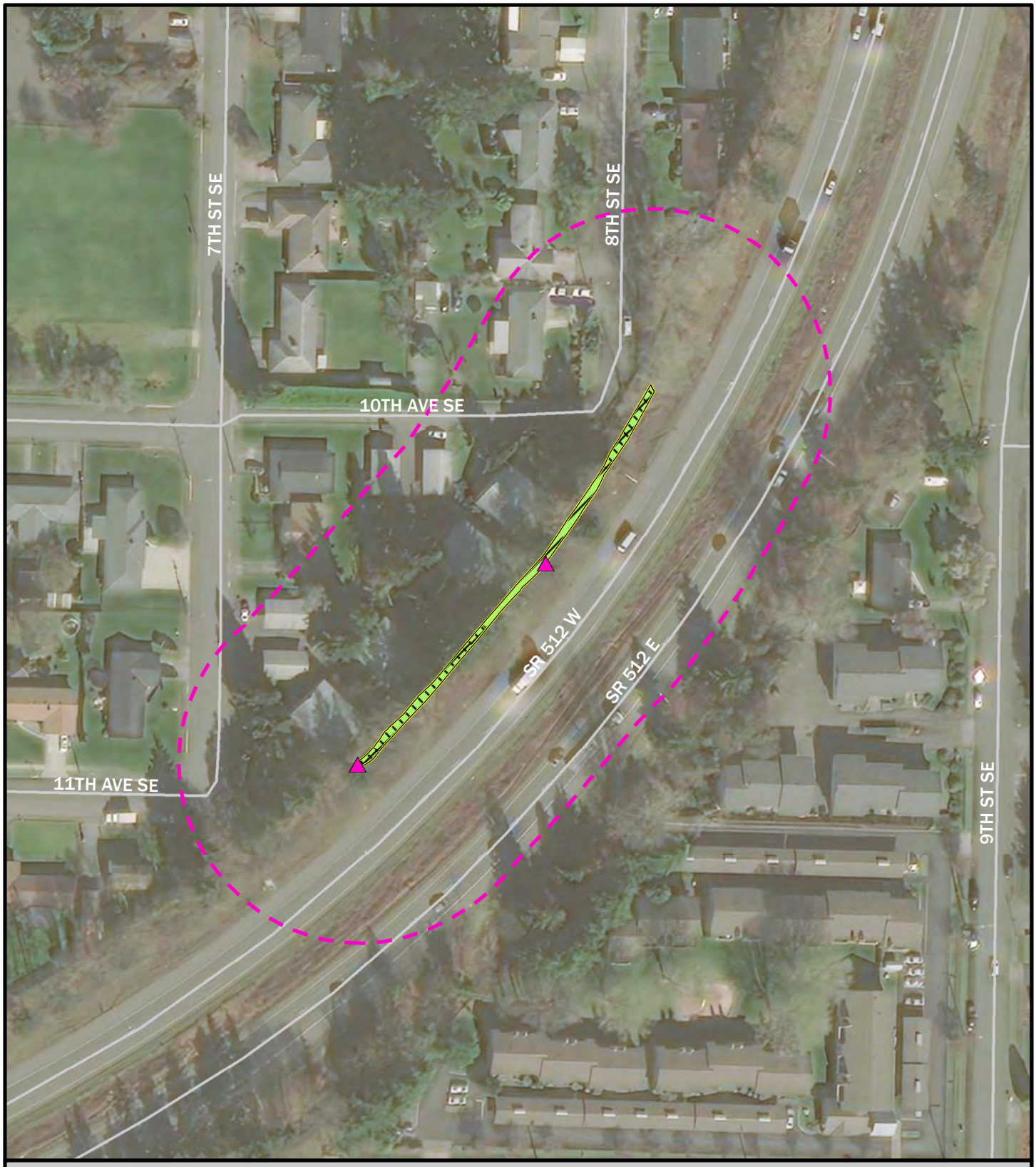

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded
- Saturated only

Figure D-116.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 116.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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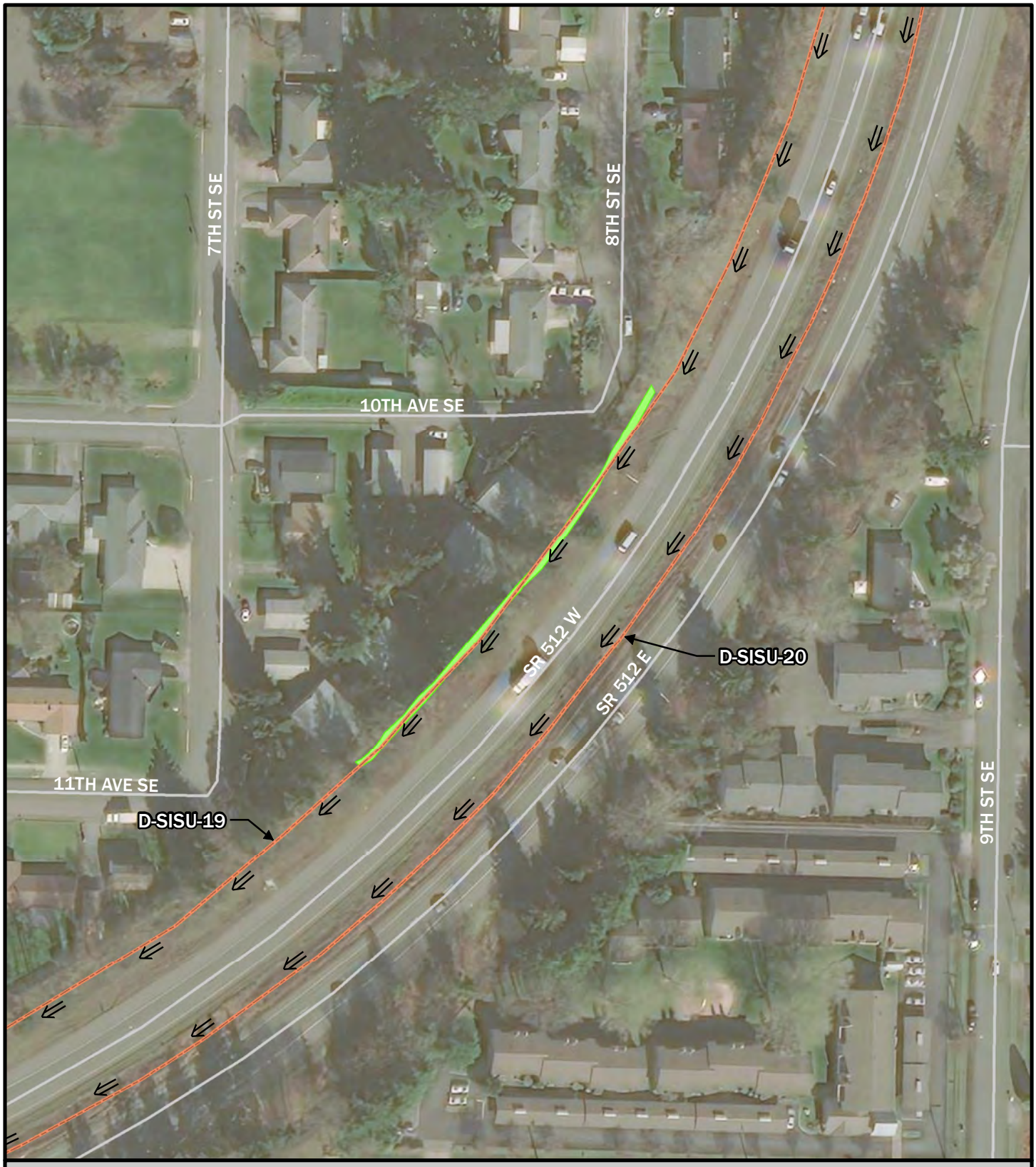

Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-116a.
Flow Directions and Features Associated with Wetland 116.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2020)

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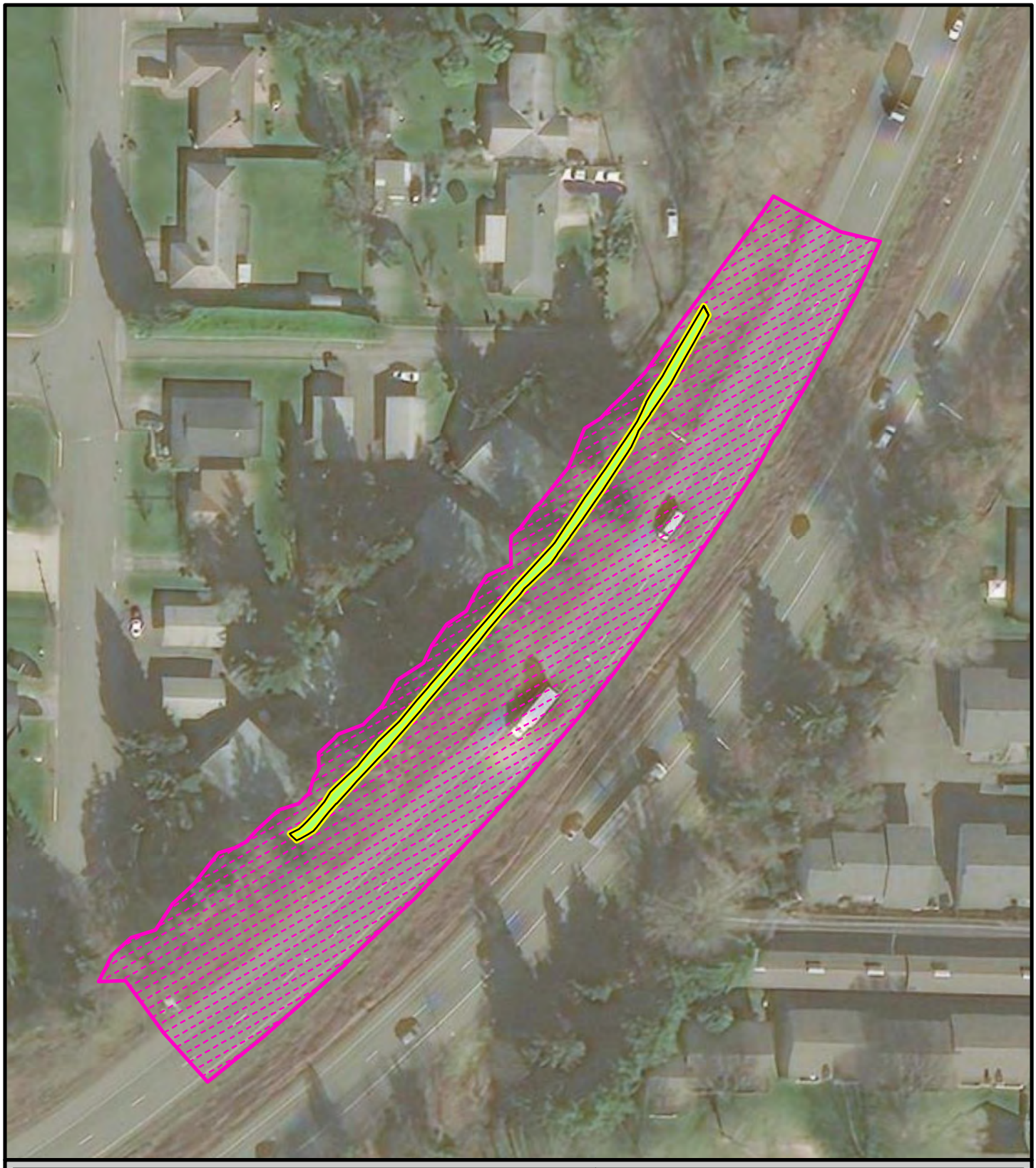

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-117.
Map of Contributing Basin for Wetland 116.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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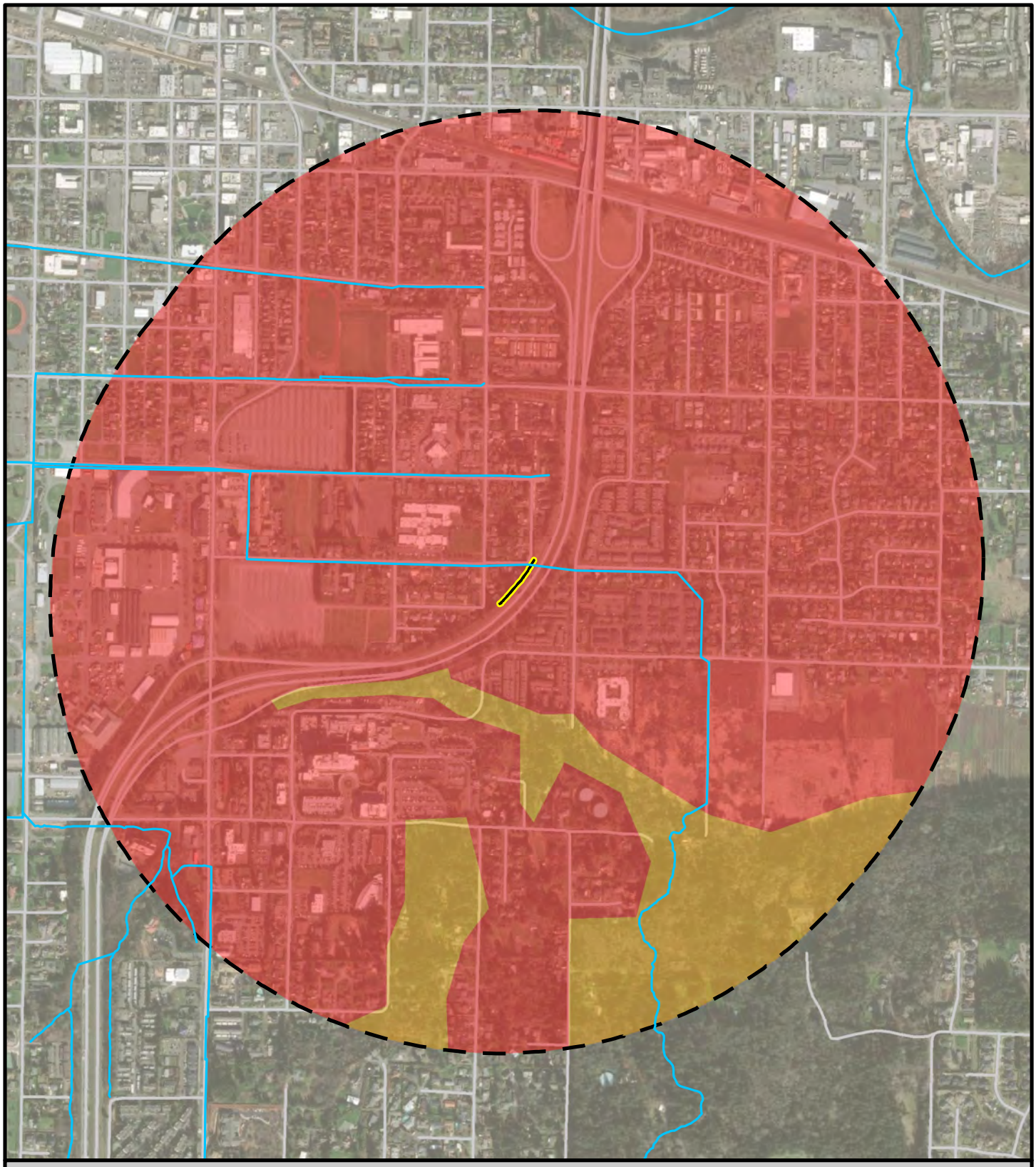

Figure D-118.
Habitat Within a 1-km Boundary of Wetland 116.

Wetland name or number: Wetland 119

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 119 Date of site visit: 10/15/2021

Rated by J. Hearsey Trained by Ecology? ☒ Yes ☐ No Date of Training 2016

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, 2020

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	L	L	L	
Landscape Potential	M	H	L	
Value	H	M	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	D-119
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-120
Flow directions and associated features	n/a	D-120a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-120
Map of the contributing basin	D 4.3, D 5.3	D-121
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	D-122
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 119

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 < 1/10 of area | points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1	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? Choose an item.	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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: Wetland located in highway median directly south of Puyallup River which has TMDLs in place. Wetland outlet connected to 15 inch concrete pipe that drains northwest to stormwater system per WSDOT stormwater layers.

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 119

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):**	1
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: 1 = M *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

Wetland name or number: Wetland 119

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 points** ☐ **Freshwater tidal wetland** **2 points** 1 type present | points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple 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.* Low | points = 1 **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 0.0 **+** [(% moderate and low intensity land uses)9.5/2] 4.8 **=** **4.8**% 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 119

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 D-119.
Cowardin Classes for Wetland 119.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet
- Hydroperiod
- Saturated only

Figure D-120.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 119.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-120a.
Flow Directions and Features Associated with Wetland 119.

N

0 45 90 180 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-121.
Map of Contributing Basin for Wetland 119.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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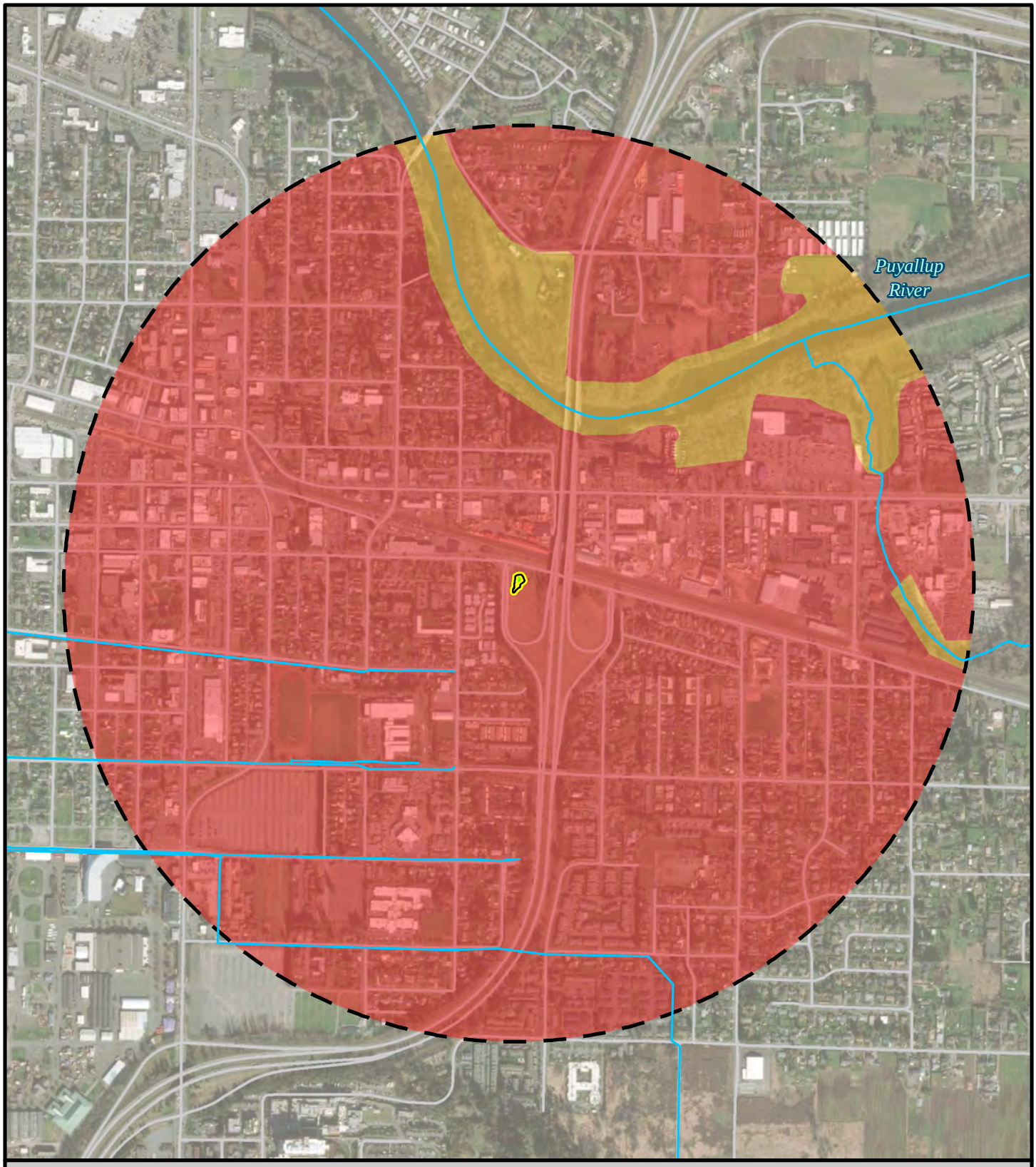

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-122.
Habitat Within a 1-km Boundary of Wetland 119.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 120

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 120 Date of site visit: 10/15/2021

Rated by J. Hearsey Trained by Ecology? ☒ Yes ☐ No Date of Training 2016

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, 2020

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	L	L	L	
Landscape Potential	M	H	L	
Value	H	M	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	D-123
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-124
Flow directions and associated features	n/a	D-124a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-124
Map of the contributing basin	D 4.3, D 5.3	D-125
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	D-126
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 120

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 < 1/10 of area | points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is < 1/4 total area of wetland | points = 0	0
Total for D 1 Add the points in the boxes above (F9 key)	2

Rating of Site Potential If score is: 0–5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1	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? 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*)? Yes = 2	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: The wetland is located in highway median directly south of Puyallup River which has TMDLs in place. Surface water outlets the wetland through a catch basin located at its northeast boundary. 303d in place for East Fork Silver Creek, approximately 0.66 mile south of the wetland.

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 120

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *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

Wetland name or number: Wetland 120

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 points** ☐ **Freshwater tidal wetland** **2 points** 1 type present | points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species*. ***Do not include Eurasian milfoil, reed canarygrass, purple 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.* Low | points = 1 **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 0.0 **+** [(% moderate and low intensity land uses)11.1/2] 5.6 **=** **5.6**% 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 120

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 D-123.
Cowardin Classes for Wetland 120.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2021)

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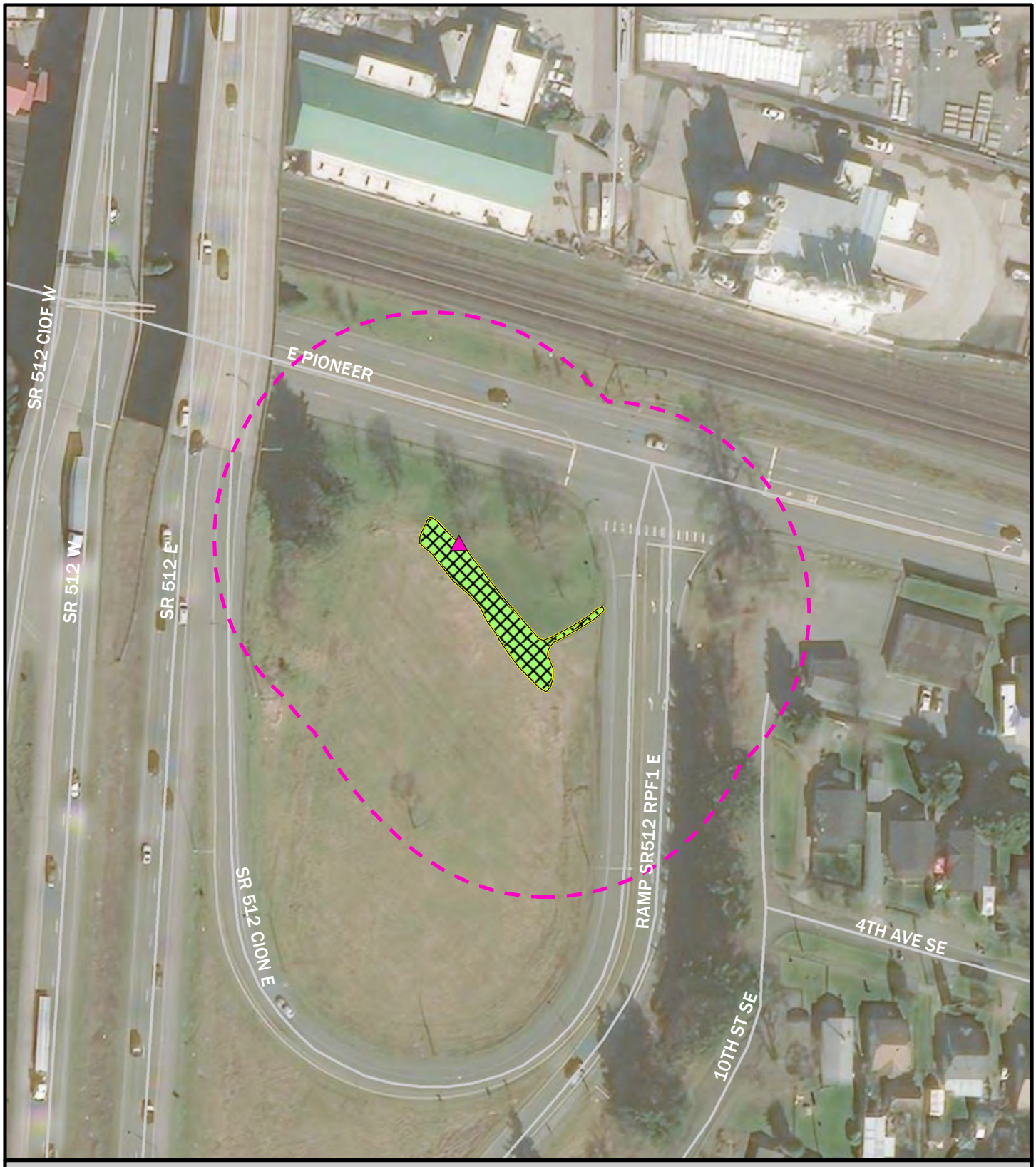

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet
- Hydroperiod
- Saturated only

Figure D-124.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 120.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-124a.
Flow Directions and Features Associated with Wetland 120.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-125.
Map of Contributing Basin for Wetland 120.

N

0 30 60 120 Feet

HERRERA

Esri, Aerial (2021)

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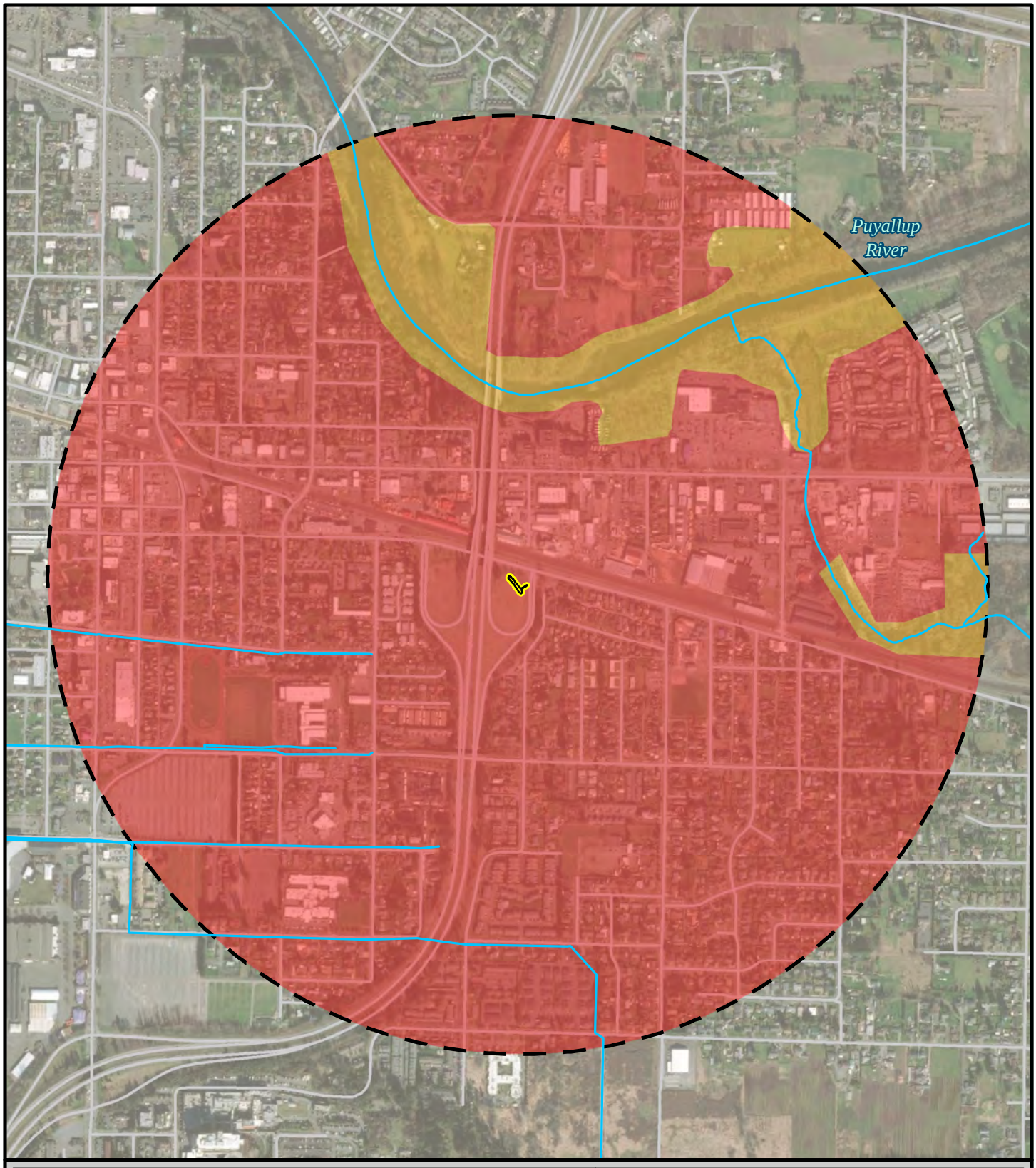

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-126.
Habitat Within a 1-km Boundary of Wetland 120.

N

0 495 990 1,980 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 122

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 122 Date of site visit: n/a (estimated)

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, 2020

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

1. Category of wetland based on FUNCTIONS

Category II – Total score = 20 – 22

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Enter the appropriate ratings				
Site Potential	H	H	L	
Landscape Potential	H	H	L	
Value	M	M	H	**TOTAL**
Score Based on Ratings	8	8	5	21

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	D-127
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-128
Flow directions and associated features	n/a	D-128a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-128
Map of the contributing basin	D 4.3, D 5.3	D-129
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	D-130
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 122

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: receives runoff from conventional ag fields 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? 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: Wetland receives stormwater runoff from Freeman Road and UPRR, and pollutants from agricultural fields. Wapato upstream of Meridian is diverted to discharge directly to Puyallup River, which has TMDLs in place. Wetland is in the Hylebos Creek-Frontal Commencement Bay subbasin which does not have TMDLs in place at site. Wetland has no outlet to the Wapato.

Wetland name or number: Wetland 122

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*	

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value — If score is: 1 = M — *Record the rating on the first page*	

COMMENTS: Wetland is adjacent to conventional ag fields and streams, but not connected to streams via surface flow.

Wetland name or number: Wetland 122

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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
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** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	Low | points = 1	1

Wetland name or number: Wetland 122

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*)	1
Total for H 1 Add the points in the boxes above	3

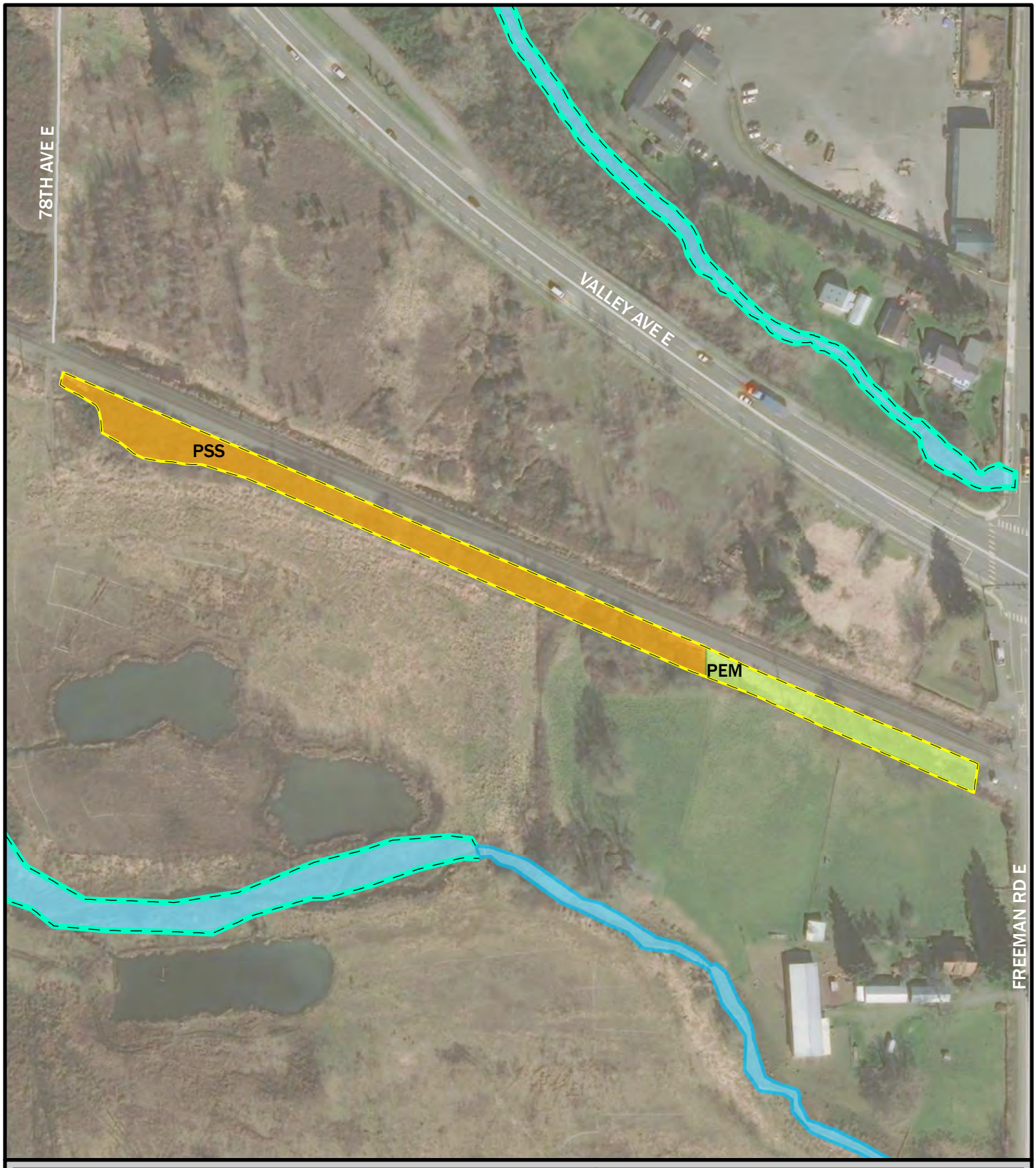
Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

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 7.7**+** [(% moderate and low intensity land uses)7.0/2] 3.5 **= 11.2**% 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 9.3**+** [(% moderate and low intensity land uses)22.8/2] 11.4 **= 20.7**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 67.9**%** >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*

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
- Estimated wetland boundary
- Estimated OHWM

Cowardin class

- PEM - Palustrine emergent
- PSS - Palustrine scrub-shrub

Figure D-127.
Cowardin Classes for Wetland 122.

N

0 90 180 360 Feet

HERRERA

ESRI, Aerial (2021)

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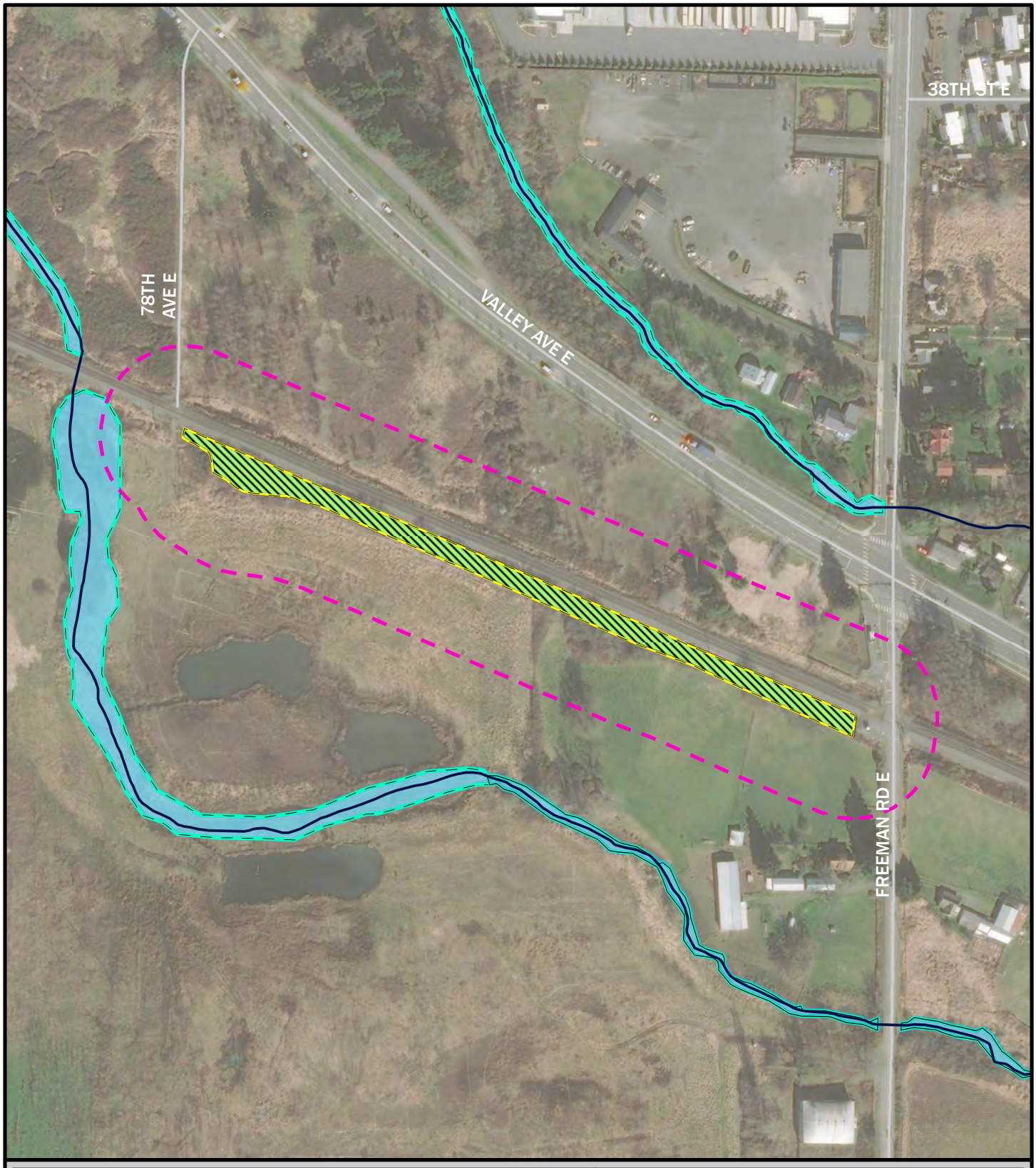

Legend

- Streams (Pierce County 2021)
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Hydroperiod
- Seasonally flooded

Figure D-128.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 122.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2021)

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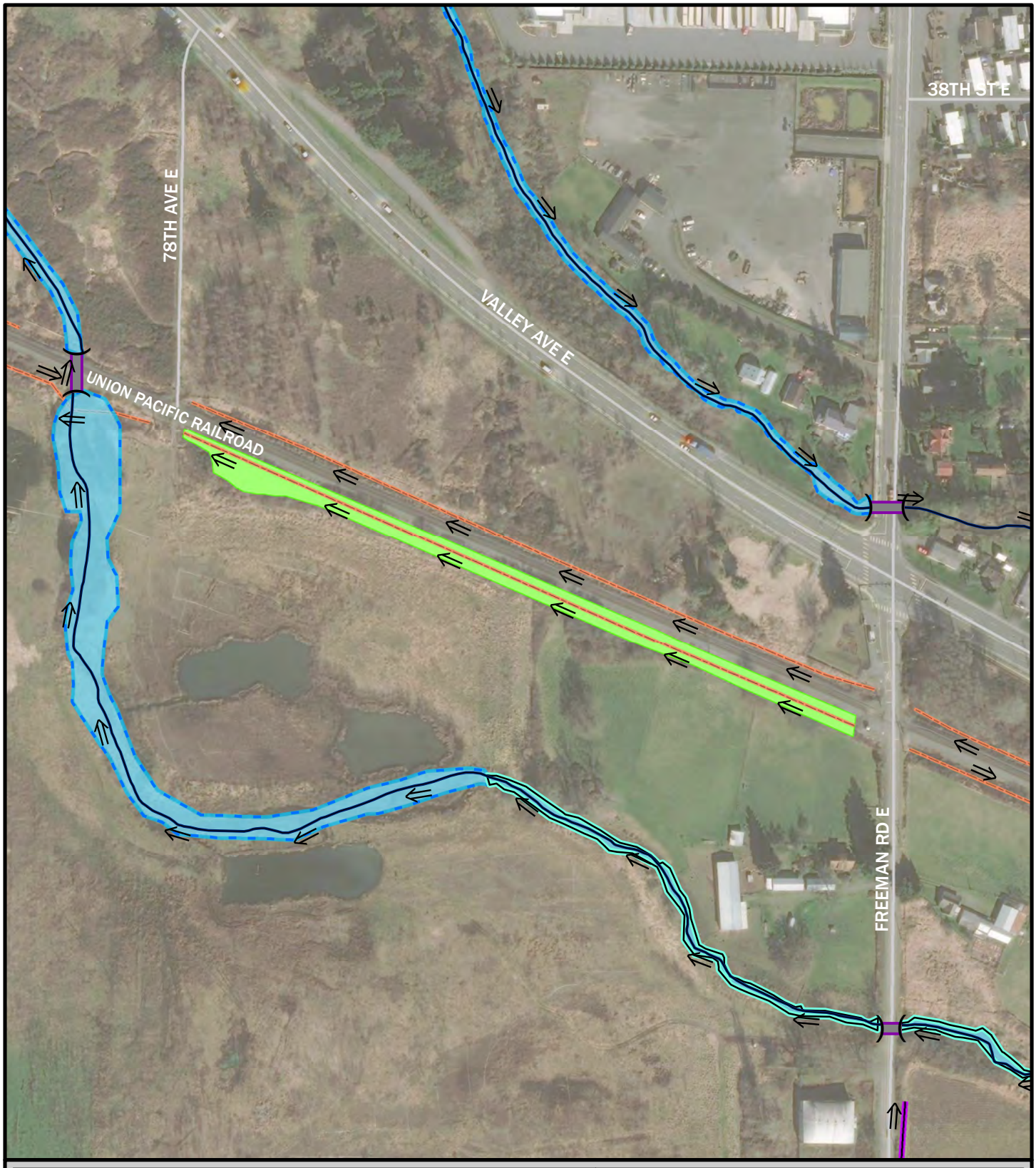

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-128a.
Flow Directions and Features Associated with Wetland 122.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2020)

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Legend

- Contributing basin
- Wetland
- Estimated wetland boundary

Figure D-129.
Map of Contributing Basin for Wetland 122.

N

0 100 200 400 Feet

HERRERA

Esri, Aerial (2021)

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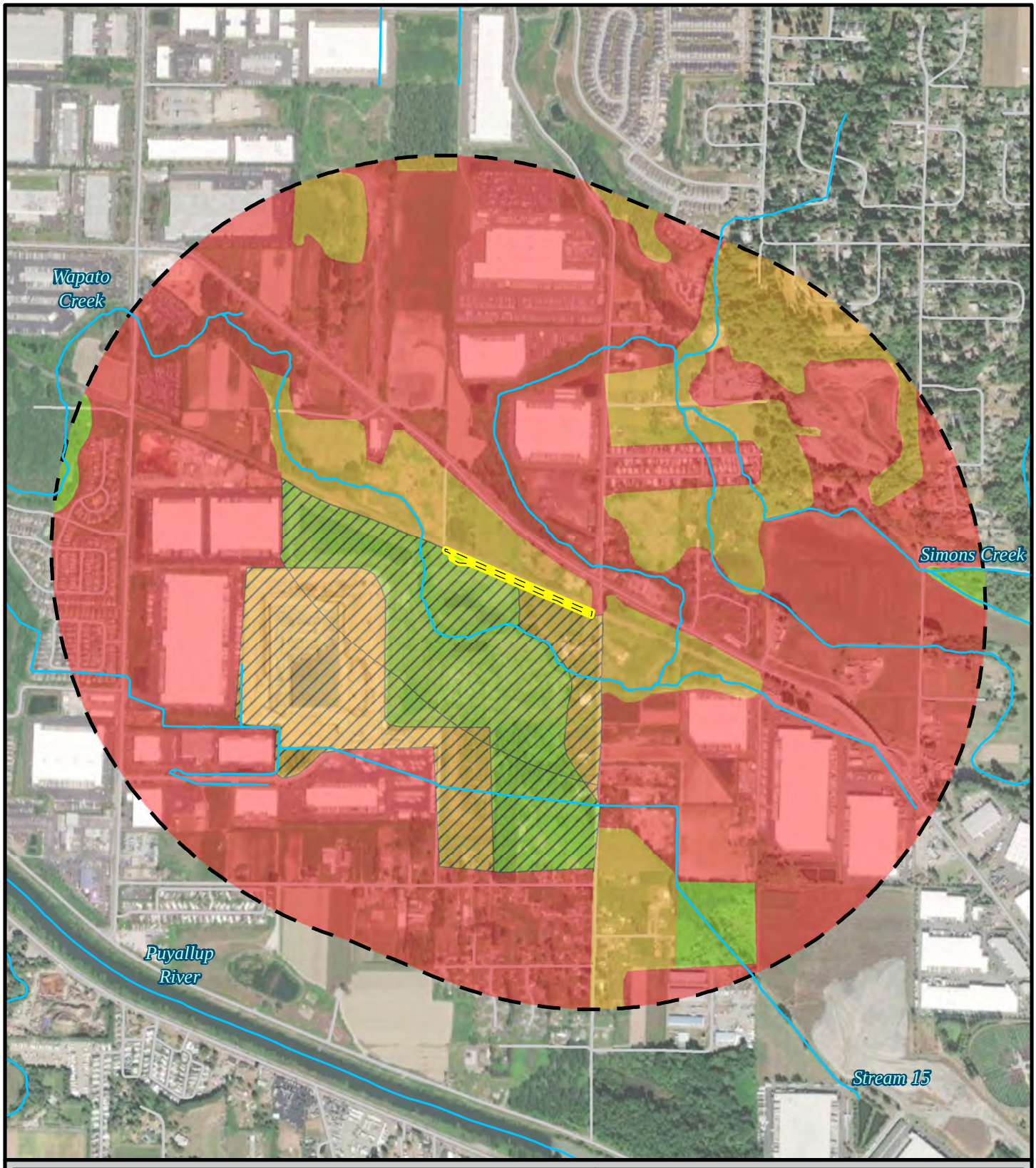

Legend

- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-130.
Habitat Within a 1-km Boundary of Wetland 122.

N

0 550 1,100 2,200 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 123

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 123 Date of site visit: n/a (estimated)

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, 2020

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	H	M	L	
Landscape Potential	H	H	L	
Value	M	L	H	**TOTAL**
Score Based on Ratings	8	6	5	19

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	D-131
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-132
Flow directions and associated features	n/a	D-132a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-132
Map of the contributing basin	D 4.3, D 5.3	D-133
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	D-134
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 123

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: trash/litter from encampments 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? 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: Wetland receives stormwater runoff from Freeman Road and UPRR. Wapato upstream of Meridian is diverted to discharge directly to Puyallup River, which has TMDLs in place. Wetland is in the Hylebos Creek-Frontal Commencement Bay subbasin which does not have TMDLs in place at site. Wetland has ditch feature, but no outlet. Standing water observed March 25, 2021 and in aerial photo review.

Wetland name or number: Wetland 123

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 10 to 100 times the area of the unit | points = 3	3
Total for D 4 — Add the points in the boxes above	10
Rating of Site Potential — If score is: 6–11 = M — *Record the rating on the first page*	

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):** Depressional wetland with no outlet and constrained by RR and Roads	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: Wetland is adjacent to conventional ag fields and streams, but not connected to streams via surface flow.

Wetland name or number: Wetland 123

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
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  All three diagrams in this row are **HIGH** = 3 points **Low** = 1 point   **Moderate** = 2 points 		0

Wetland name or number: Wetland 123

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*)	1
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)3.2/2] 1.6 **= 1.6**% 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 9.4**+** [(% moderate and low intensity land uses)23.2/2] 11.6 **= 21.0**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
H 2.3. Land use intensity in 1 km Polygon: 67.3**%** >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*

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.* — 2

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>.)

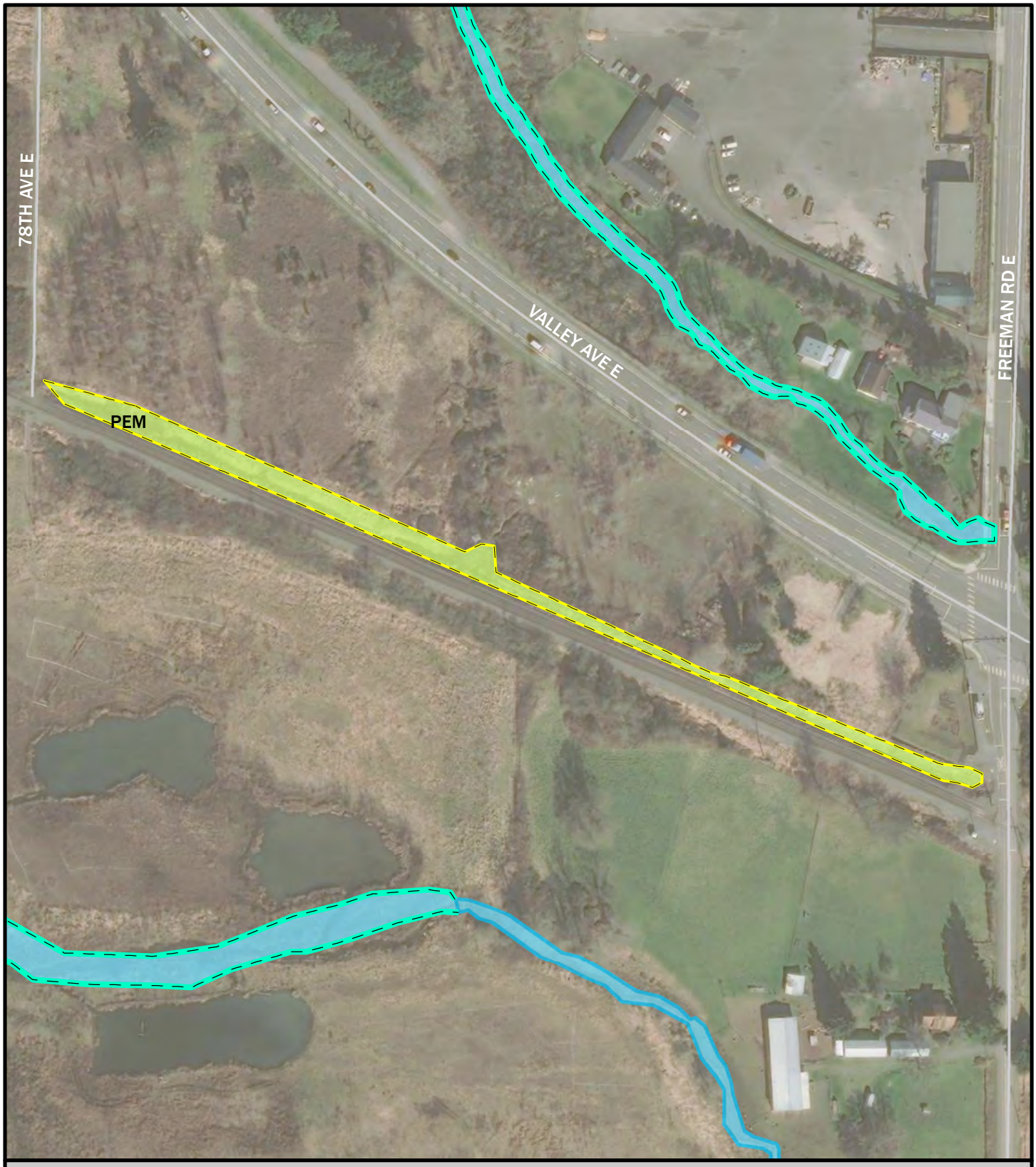
Site meets ANY of the following criteria: points = 2

- ☒ 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

Rating of Value If score is: 2 = H *Record the rating on the first page*



Legend

- Stream
- Estimated wetland boundary
- Estimated OHWM

Cowardin class

- PEM - Palustrine emergent

Figure D-131.
Cowardin Classes for Wetland 123.

N

0 90 180 360 Feet

HERRERA

ESRI, Aerial (2021)

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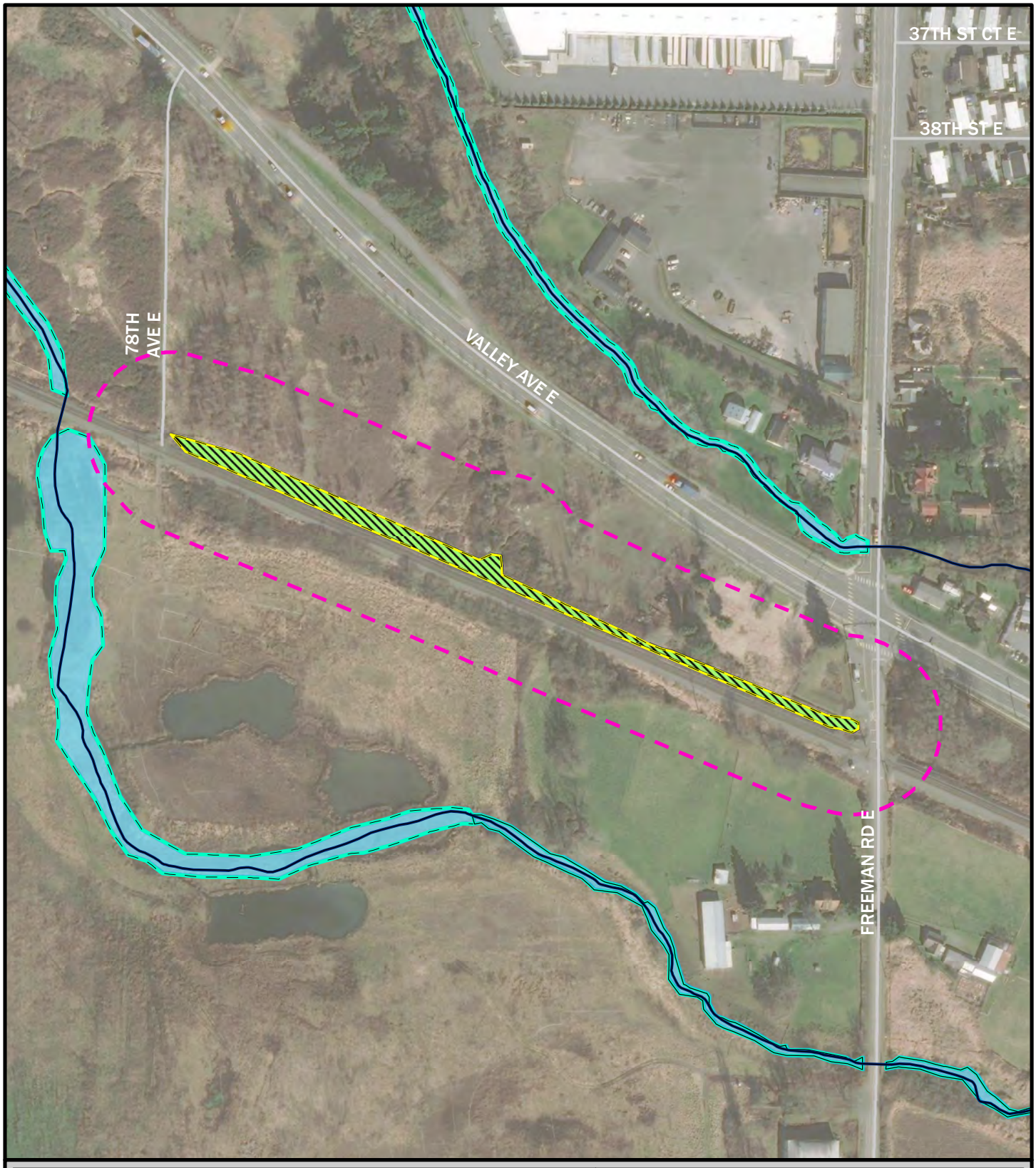

Legend

- Streams (Pierce County 2021)
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Hydroperiod
- Seasonally flooded

Figure D-132.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 123.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2021)

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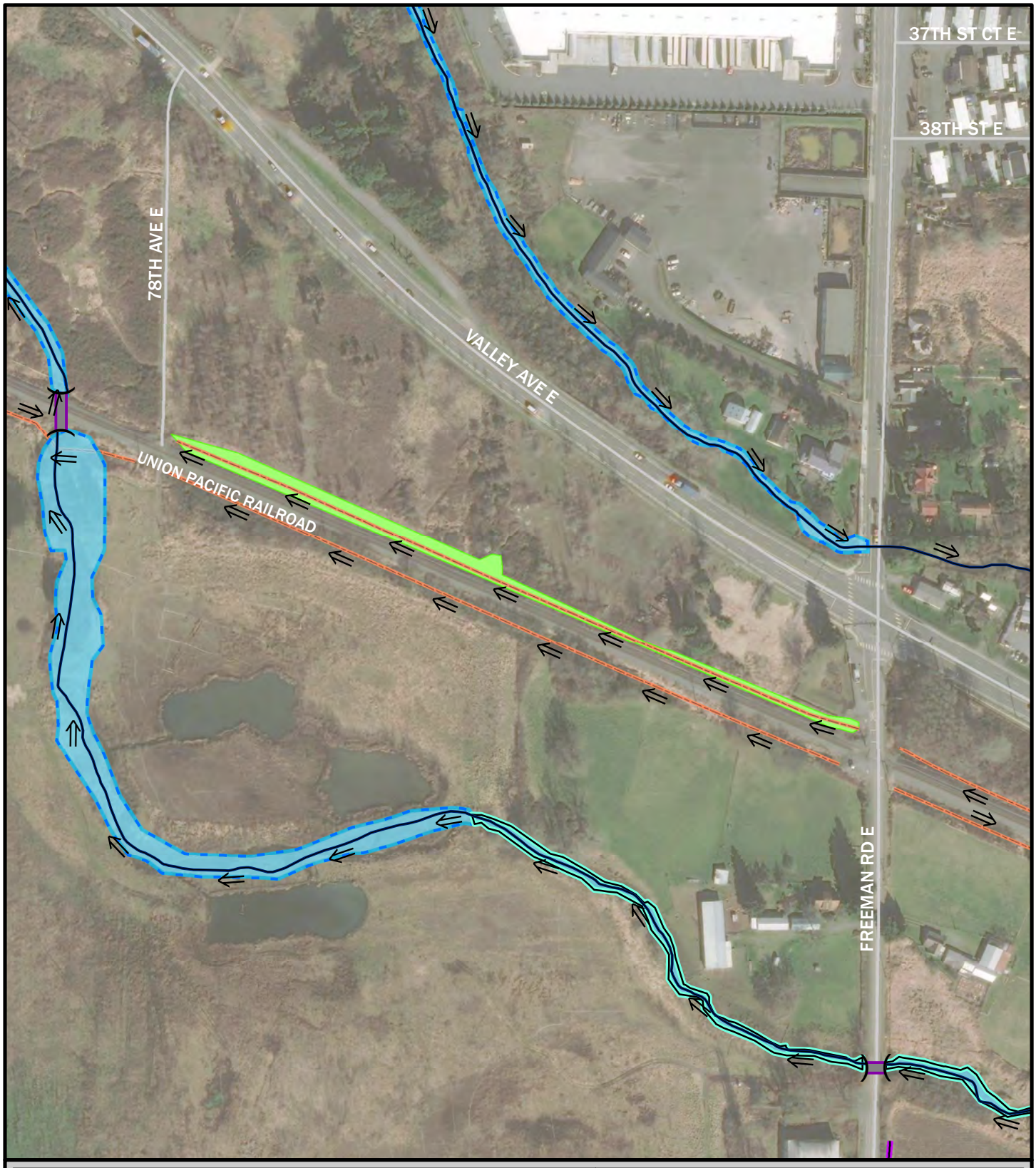

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Surveyed ditches
- Culverts
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-132a.
Flow Directions and Features Associated with Wetland 123.

N

0 125 250 500 Feet

HERRERA

ESRI, Aerial (2020)

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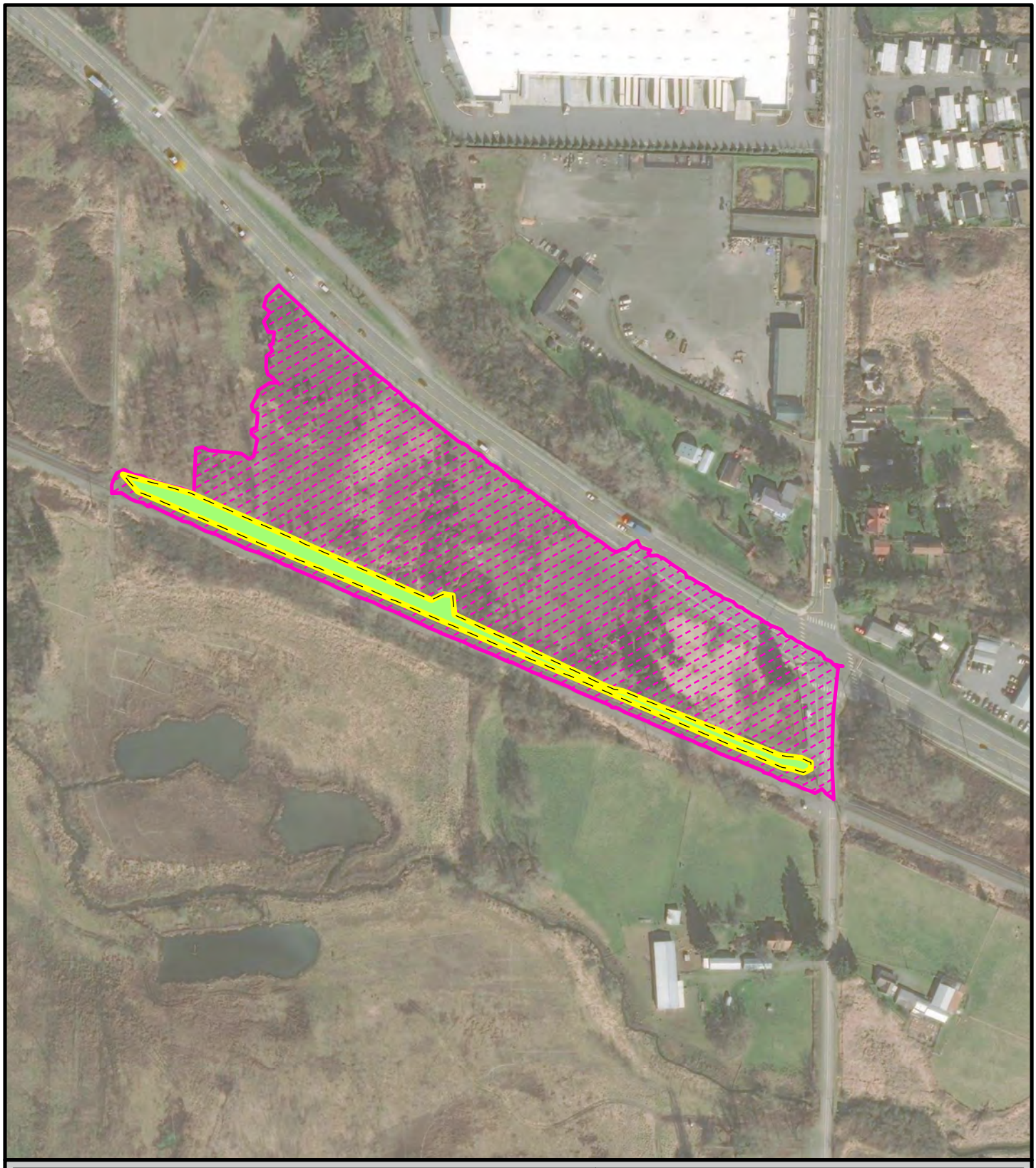

Legend

- Contributing basin
- Wetland
- Estimated wetland boundary

Figure D-133.
Map of Contributing Basin for Wetland 123.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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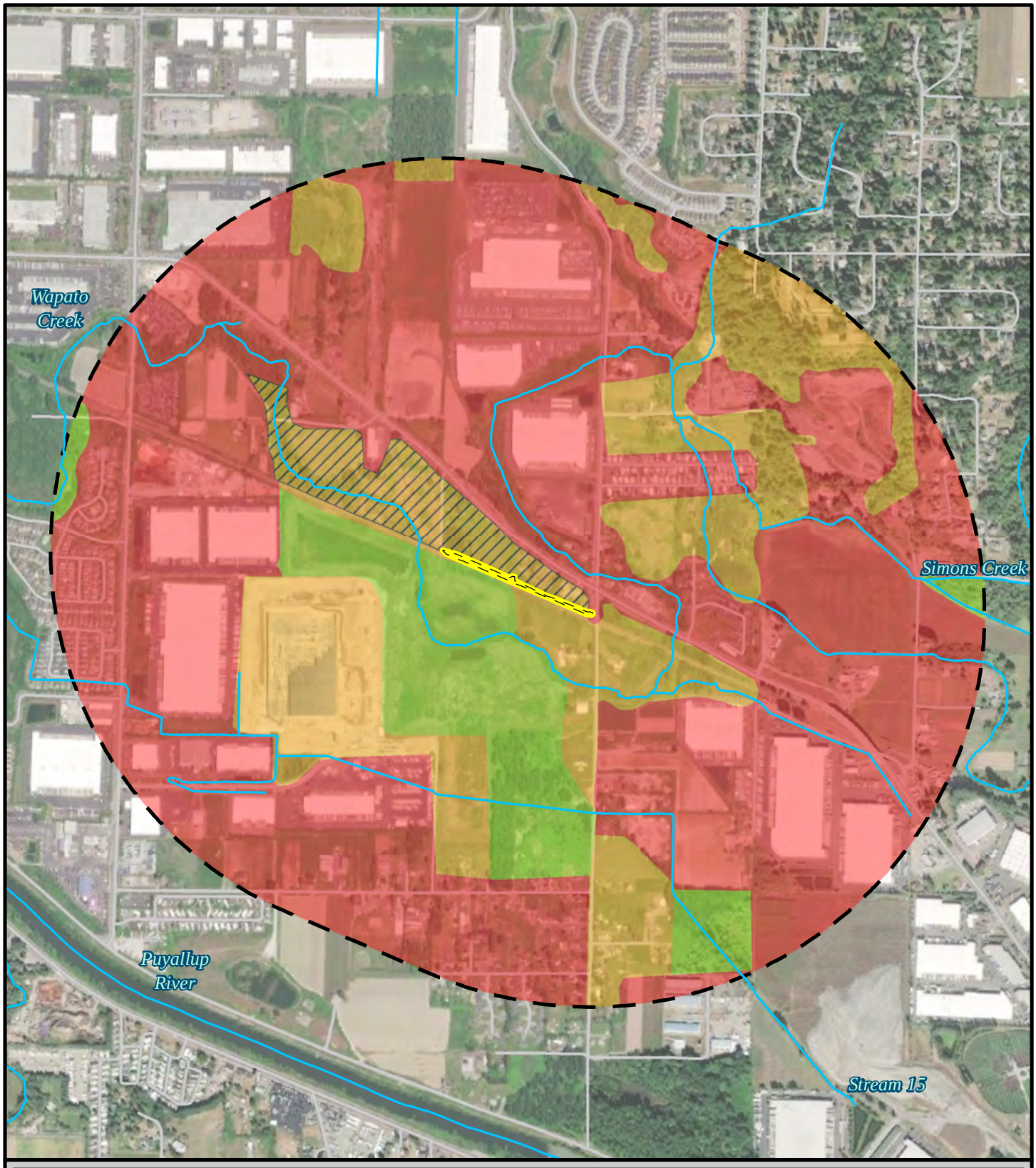

Legend

- 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 D-134.
Habitat Within a 1-km Boundary of Wetland 123.

N

0 550 1,100 2,200 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 124

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 124 Date of site visit: n/a (estimated)

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, 2020

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	M	H	**TOTAL**
Score Based on Ratings	6	7	5	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	D-135
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-136
Flow directions and associated features	n/a	D-136a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-136
Map of the contributing basin	D 4.3, D 5.3	D-137
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	D-138
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 124

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 > 1/2 total area of wetland | points = 4		4
Total for D 1	Add the points in the boxes above (F9 key)	11

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: Wetland receives stormwater runoff from Freeman Road and UPRR, and pollutants from alpaca pasture. Wapato upstream of Meridian is diverted to discharge directly to Puyallup River, which has TMDLs in place. Wetland is in the Hylebos Creek-Frontal Commencement Bay subbasin which does not have TMDLs in place at site.

Wetland name or number: Wetland 124

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 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	8
Rating of Site Potential — If score is: 6–11 = M — *Record the rating on the first page*	

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1
Rating of Value — If score is: 1 = M — *Record the rating on the first page*	

COMMENTS: Wetland is adjacent to conventional ag fields and streams, but not connected to streams via surface flow.

Wetland name or number: Wetland 124

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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
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** = 0 points  **Low** = 1 point  **Moderate** = 2 points  All three diagrams in this row are **HIGH** = 3 points 	Low | points = 1	1

Wetland name or number: Wetland 124

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*)	1
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)1.3/2] 0.7 **= 0.7**% 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 11.5**+** [(% moderate and low intensity land uses)25.9/2] 13.0 **= 24.5**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
H 2.3. Land use intensity in 1 km Polygon: 62.5**%** >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* — 2

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

Rating of Value If score is: 2 = H *Record the rating on the first page*

Legend

Estimated wetland boundary

Cowardin class

PEM - Palustrine emergent

PSS - Palustrine scrub-shrub

Figure D-135.
Cowardin Classes for Wetland 124.

N

0 37.5 75 150 Feet

HERRERA

ESRI, Aerial (2021)

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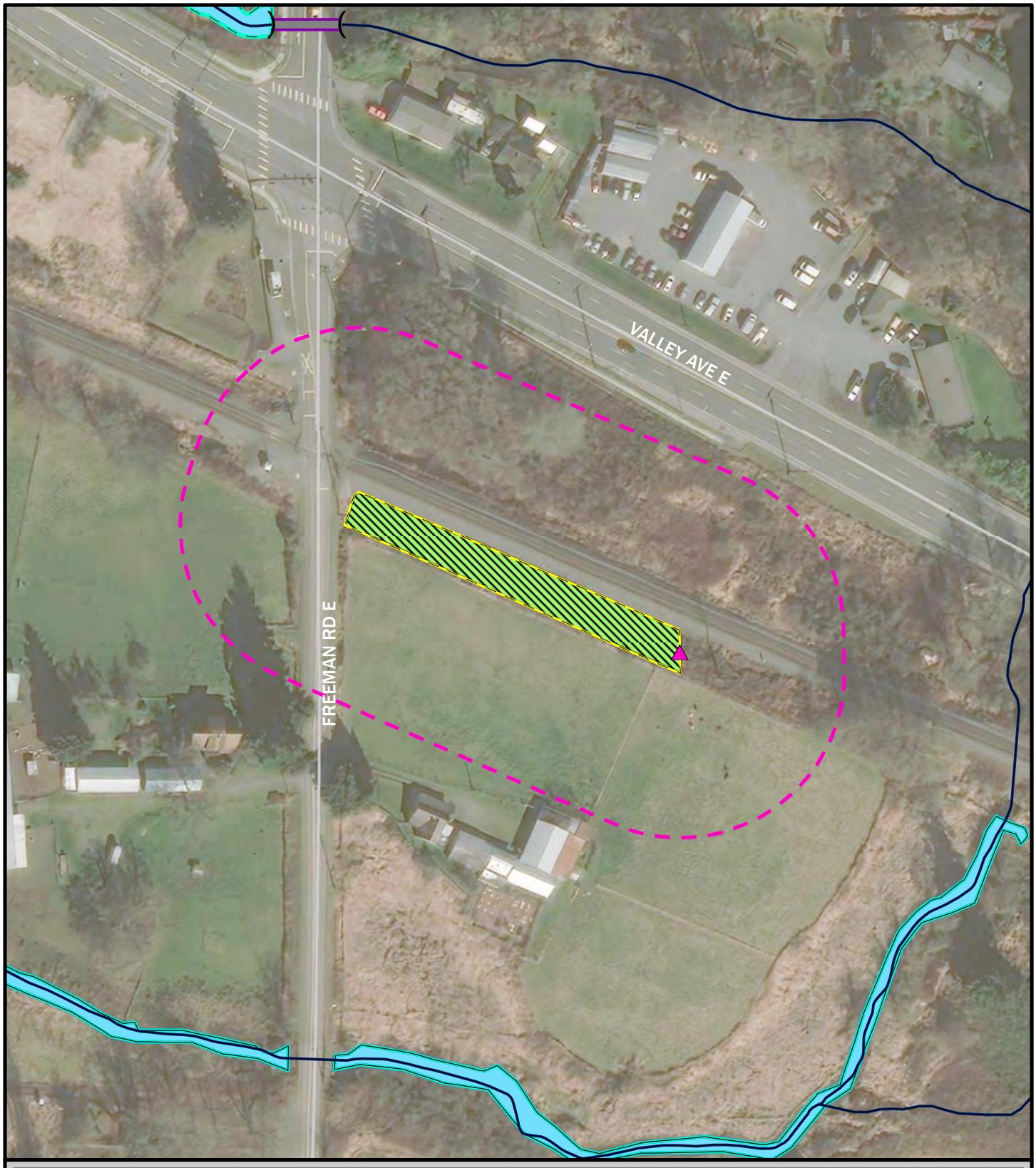

Legend

- Streams (Pierce County 2021)
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Outlet
- Culverts

Hydroperiod

- Seasonally flooded

Figure D-136.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 124.

N

0 62.5 125 250 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 D-136a.
Flow Directions and Features Associated with Wetland 124.

N

0 62.5 125 250 Feet

HERRERA

ESRI, Aerial (2020)

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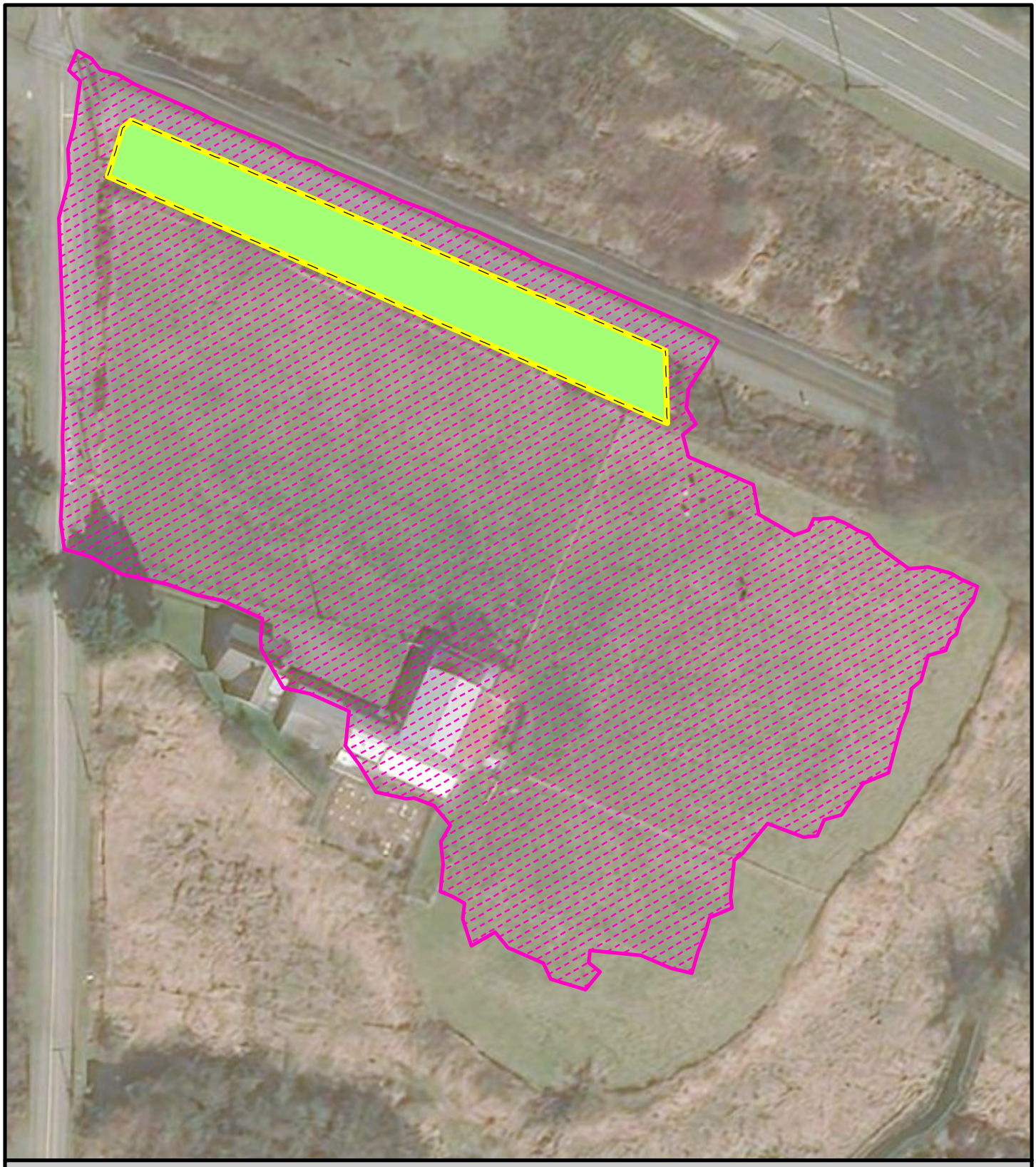

Legend

- Contributing basin
- Wetland
- Estimated wetland boundary

Figure D-137.
Map of Contributing Basin for Wetland 124.

N

0 37.5 75 150 Feet

HERRERA

Esri, Aerial (2021)

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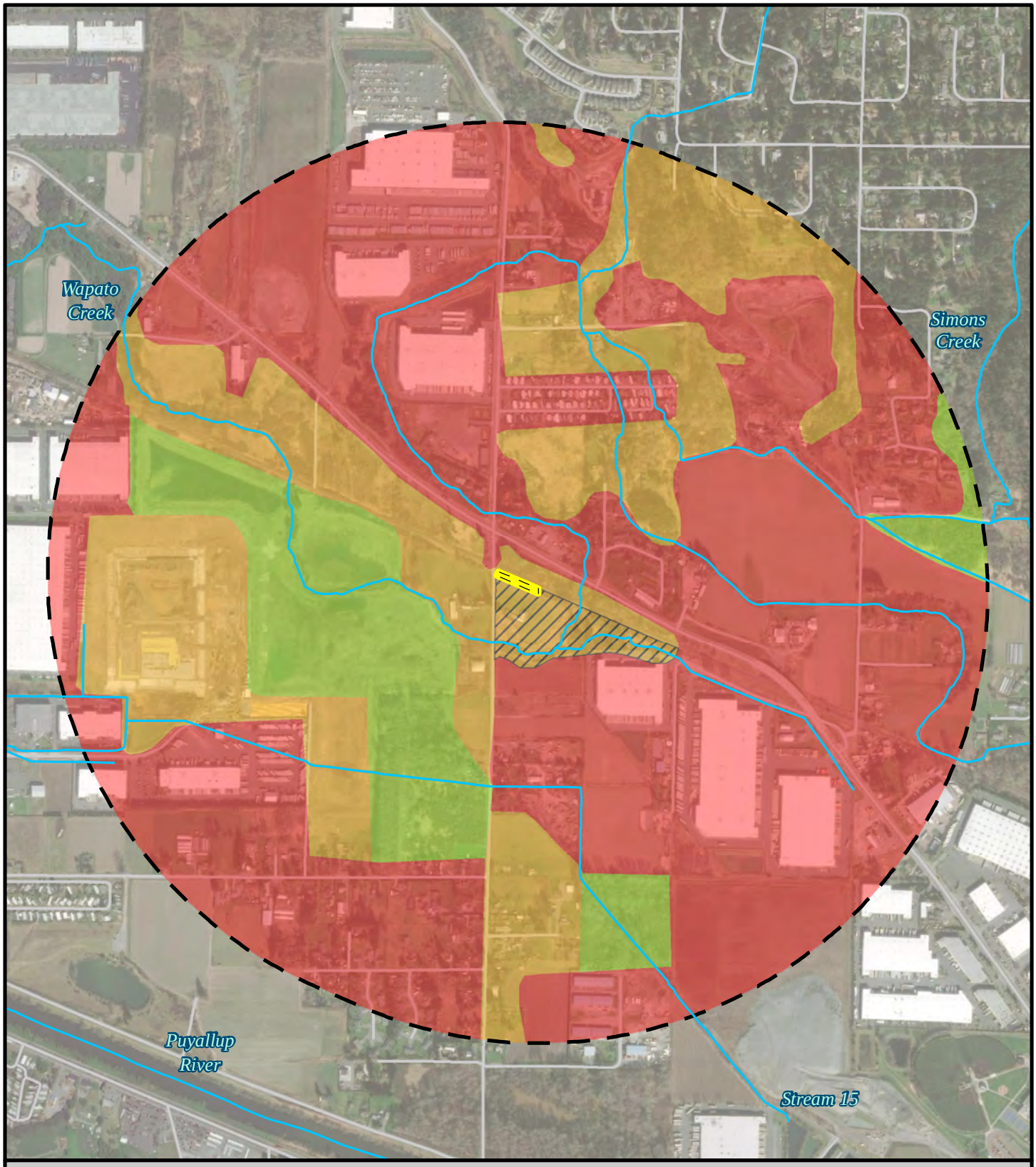

Legend

- 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 D-138.
Habitat Within a 1-km Boundary of Wetland 124.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 125

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 125 Date of site visit: n/a (estimated)

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, 2020

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	H	M	L	
Landscape Potential	M	H	L	
Value	M	L	M	**TOTAL**
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	D-139
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-140
Flow directions and associated features	n/a	D-140a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-140
Map of the contributing basin	D 4.3, D 5.3	D-141
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	D-142
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 125

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: Wetland receives stormwater runoff from Freeman Road and UPRR, and pollutants from agricultural fields. Wapato upstream of Meridian is diverted to discharge directly to Puyallup River, which has TMDLs in place. Wetland is in the Hylebos Creek-Frontal Commencement Bay subbasin which does not have TMDLs in place at site. Wetland has ditch feature entering, but no outlet. Ponding observed in adjacent W123 in March 2021, assumed similar hydrology in this wetland.

Wetland name or number: Wetland 125

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 10 to 100 times the area of the unit | points = 3	3
Total for D 4 — Add the points in the boxes above	10
Rating of Site Potential — If score is: 6–11 = M — *Record the rating on the first page*	

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:** The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why. | points = 0 **Explanation for 0 points (if required above):** Depressional wetland with no outlet and constrained by RR and Roads	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: Wetland is adjacent to conventional ag fields and streams, but not connected to streams via surface flow.

Wetland name or number: Wetland 125

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
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  All three diagrams in this row are **HIGH** = 3 points **Low** = 1 point   **Moderate** = 2 points 		0

Wetland name or number: Wetland 125

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*)	1
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)0.4/2] 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 11.5**+** [(% moderate and low intensity land uses)26.7/2] 13.4 **= 24.9**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
H 2.3. Land use intensity in 1 km Polygon: 61.8**%** >50% of 1 km Polygon is high intensity land use | points = (-2)	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* — 1

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>.)

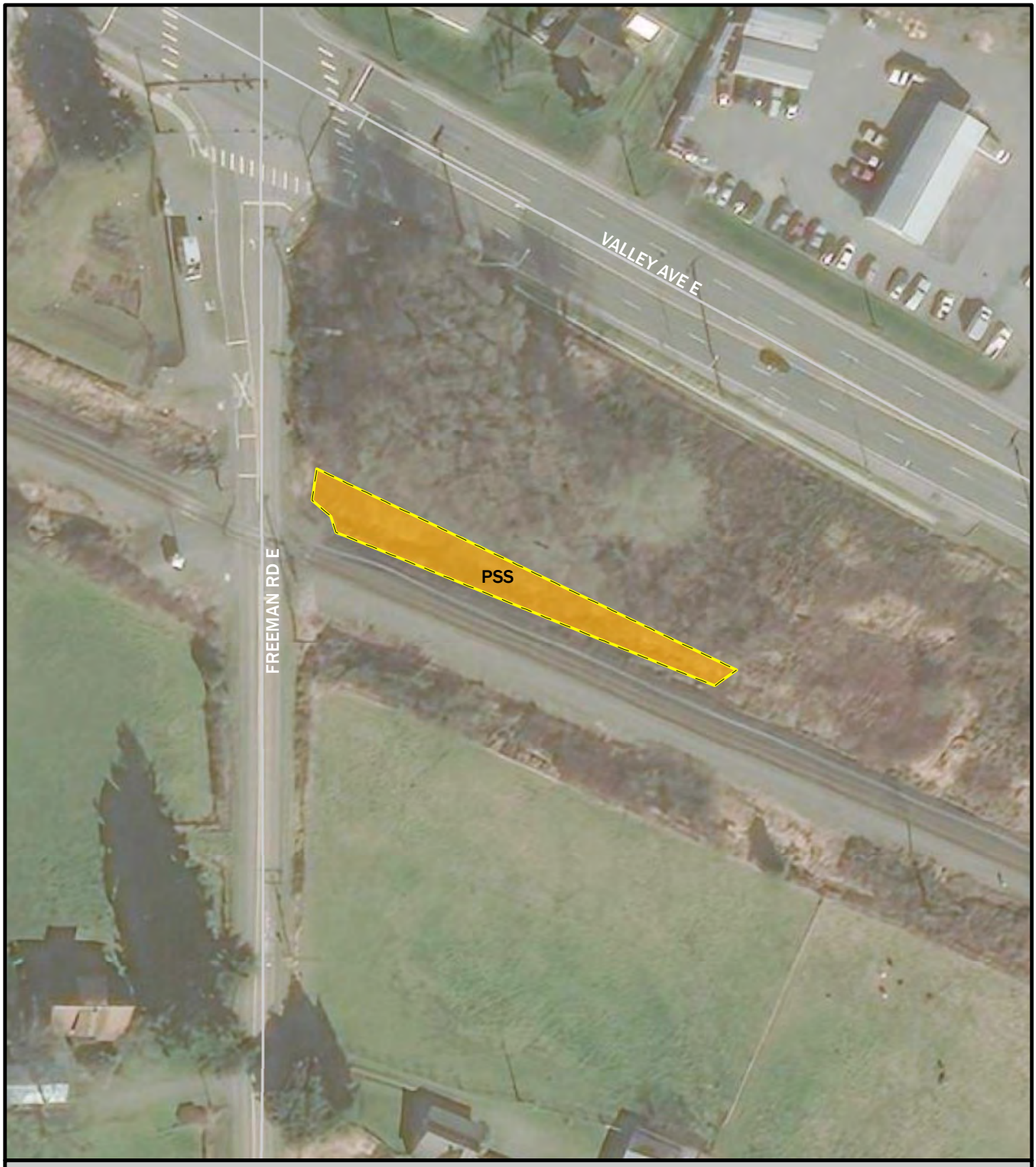
Site meets ANY of the following criteria: points = 2

- ☐ 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

Rating of Value If score is: 1 = M *Record the rating on the first page*



Legend

Estimated wetland boundary

Cowardin class

PSS - Palustrine scrub-shrub

Figure D-139.
Cowardin Classes for Wetland 125.

N

0 37.5 75 150 Feet

HERRERA

ESRI, Aerial (2021)

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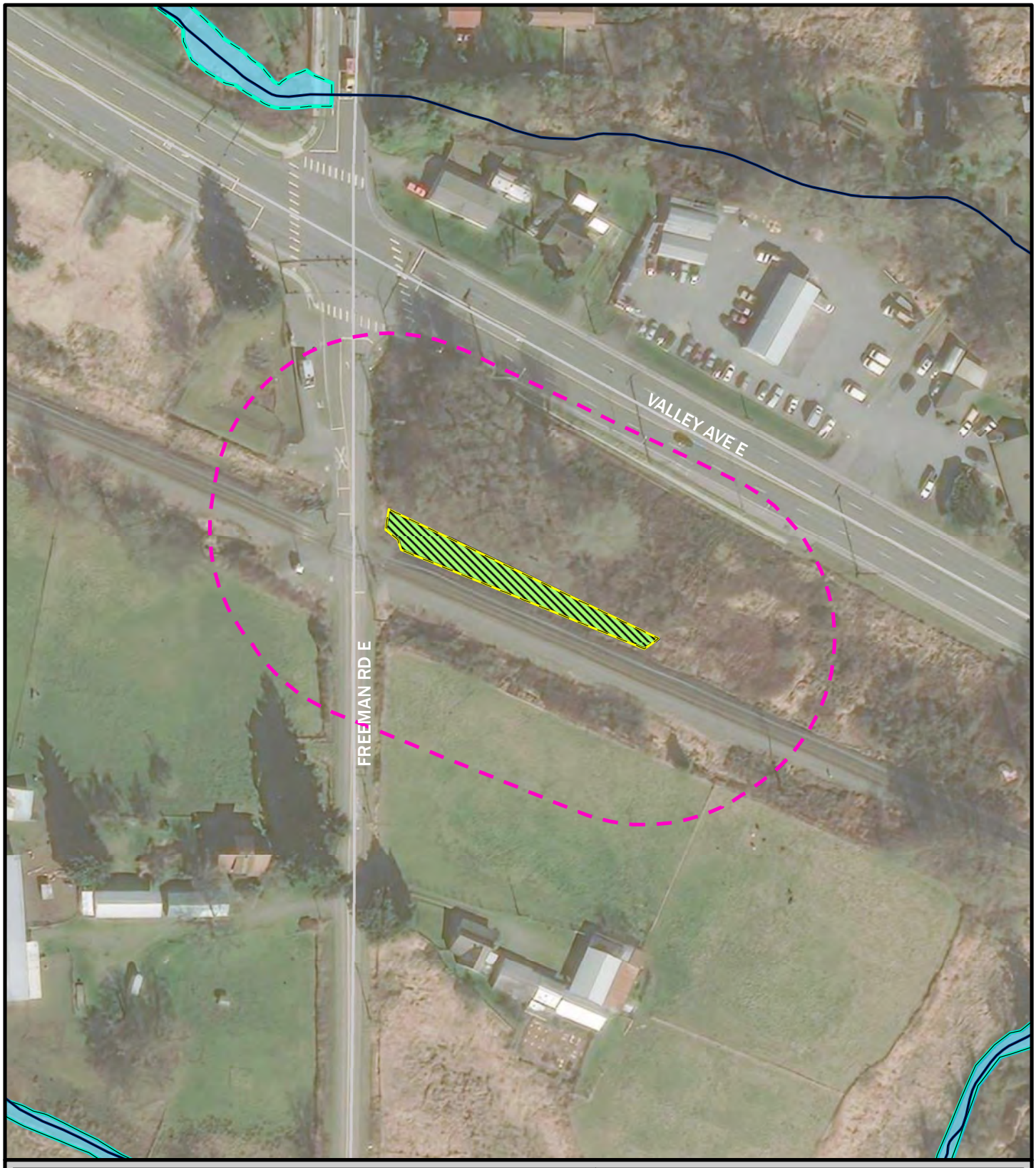

Legend

- Streams (Pierce County 2021)
- Estimated wetland boundary
- Delineated OHWM
- Estimated OHWM
- Wetland
- Stream
- 150ft boundary
- Hydroperiod
- Seasonally flooded

Figure D-140.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 125.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Wetland
- Stream
- Estimated OHWM
- Delineated OHWM

Figure D-140a.
Flow Directions and Features Associated with Wetland 125.

N

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2020)

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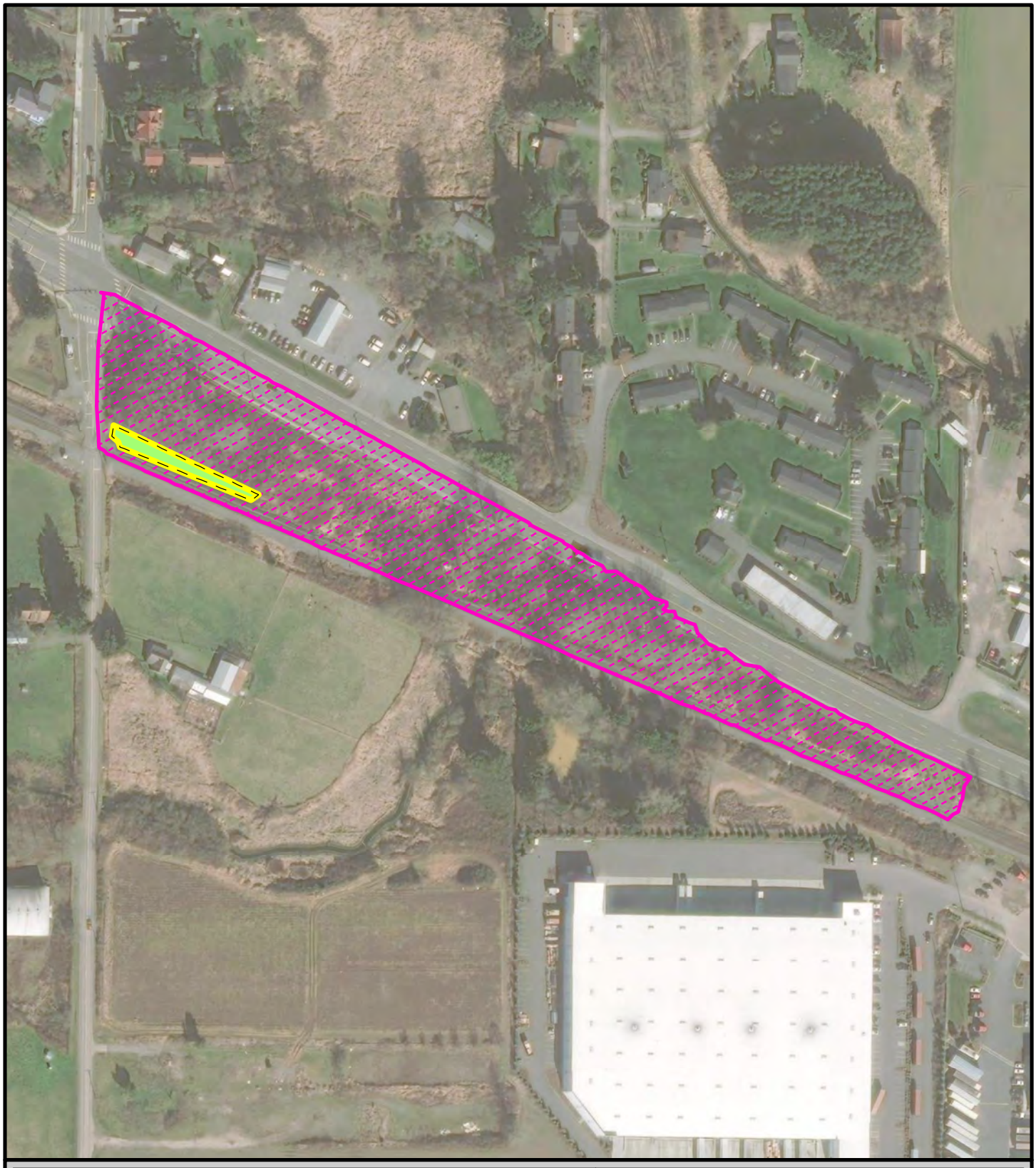

Legend

- Contributing basin
- Wetland
- Estimated wetland boundary

Figure D-141.
Map of Contributing Basin for Wetland 125.

N

0 110 220 440 Feet

HERRERA

Esri, Aerial (2021)

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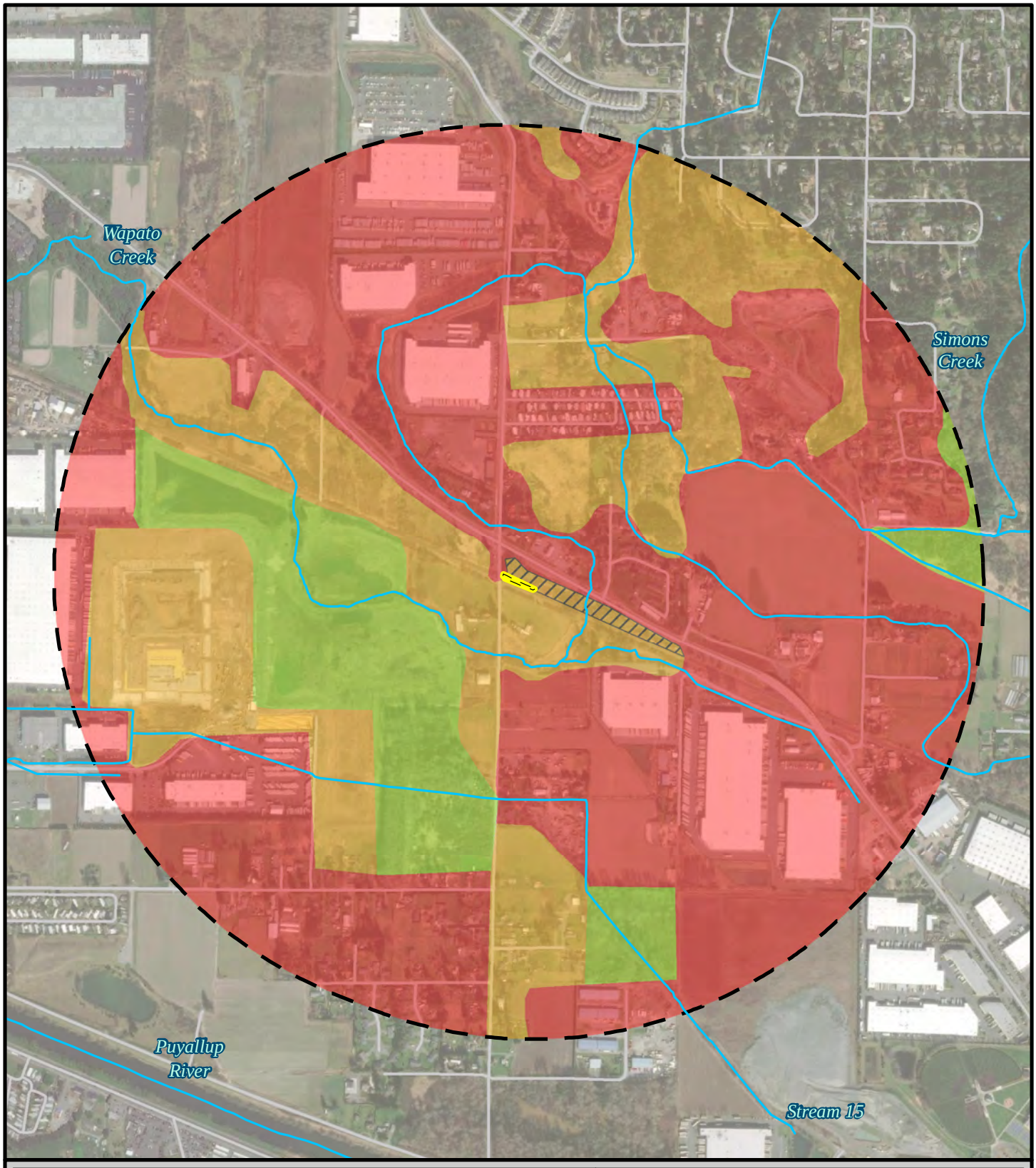


Legend

- 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 D-142.
Habitat Within a 1-km Boundary of Wetland 125.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 127

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 127 Date of site visit: 1/21/2022

Rated by R. Plumb 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, 2020

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	L	L	L	
Value	H	M	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	D-143
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-144
Flow directions and associated features	n/a	D-144a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-144
Map of the contributing basin	D 4.3, D 5.3	D-145
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	D-146
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 127

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 < 1/4 total area of wetland | points = 0	0
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? No = 0	0
D 2.2. Is >10% of the area within 150 ft of the wetland in land uses that generate pollutants? No = 0	0
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	0

Rating of Landscape Potential If score is: 0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? 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*)? Choose an item.	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: The wetland is in the Puyallup River basin (HUC 12) with aquatic resources on the 303(d) list and TMDL's in place.

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.* Wetland is flat but has small depressions on the surface that trap water | points = 1	1
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	10

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 127

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?	No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

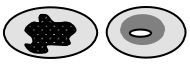
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 127

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.* 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	2

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 9.7 **+** [(% moderate and low intensity land uses)14.4/2] 7.2 **=** **16.9** % If total accessible habitat is: 10–19% of 1 km Polygon | points = 1	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate*: % undisturbed habitat 5.3 **+** [(% moderate and low intensity land uses)11.3/2] 5.6 **=** **10.9**% Undisturbed habitat 10–50% and >3 patches | points = 1	1
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 127

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 D-143.
Cowardin Classes for Wetland 127.

N

0 37.5 75 150

Feet

HERRERA

ESRI, Aerial (2021)

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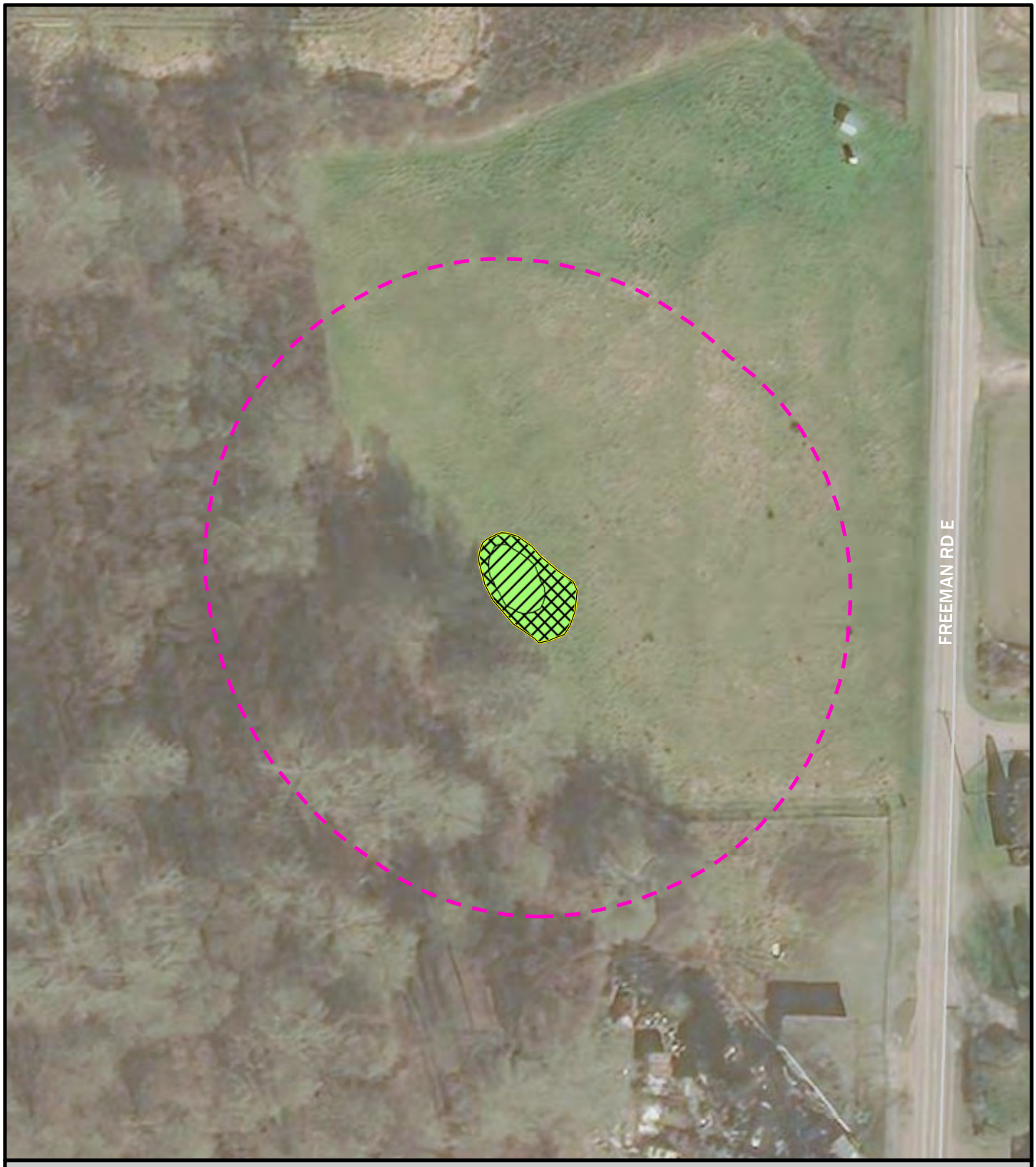

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Hydroperiod
- Occasionally flooded
- Saturated only

Figure D-144.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 127.

N

0 37.5 75 150 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Streams (Pierce County 2021)
- Surveyed ditches
- Wetland

Figure D-144a.
Flow Directions and Features Associated with Wetland 127.

N

0 50 100 200 Feet

HERRERA

Esri, Aerial (2021)

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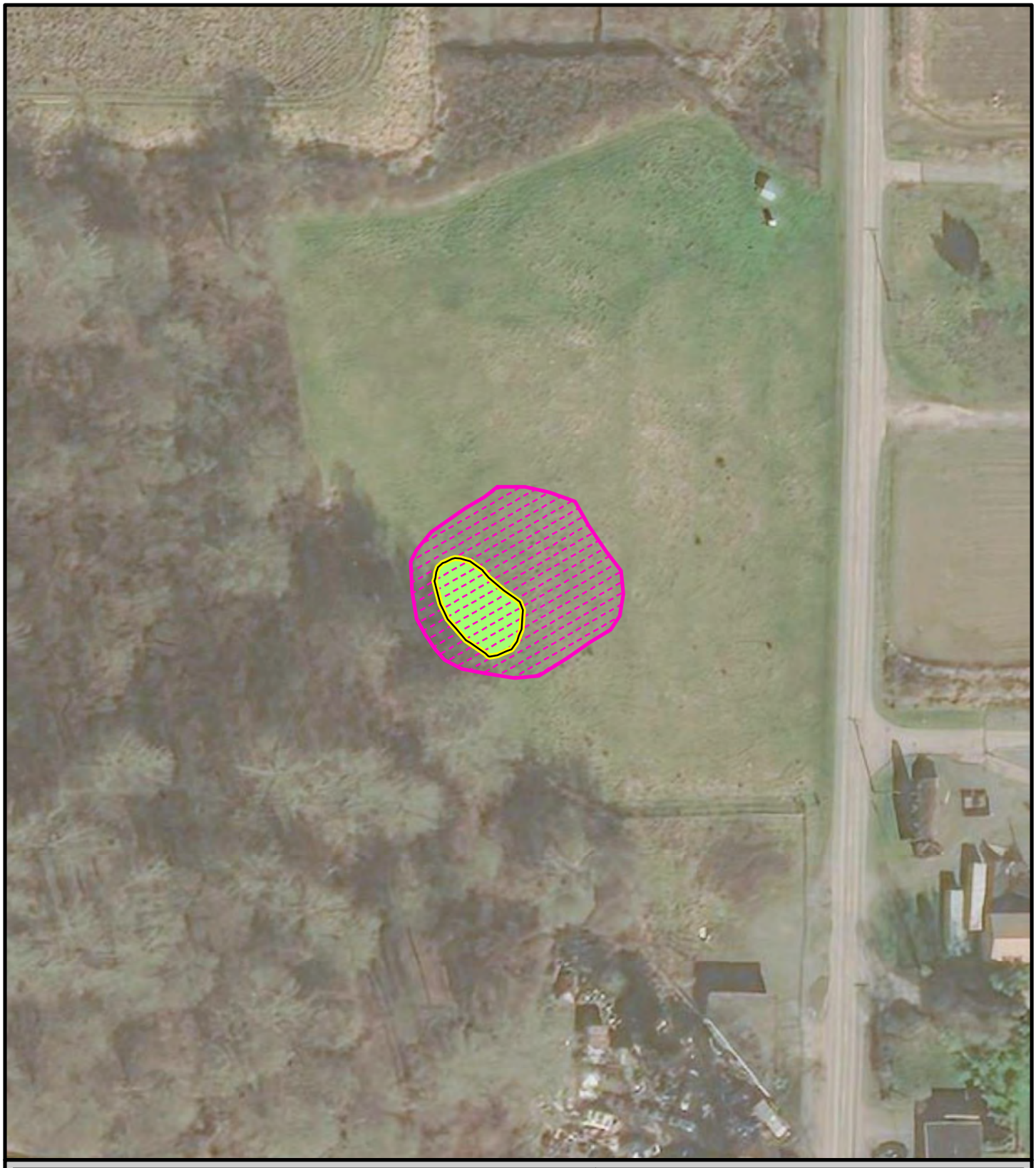

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-145.
Map of Contributing Basin for Wetland 127.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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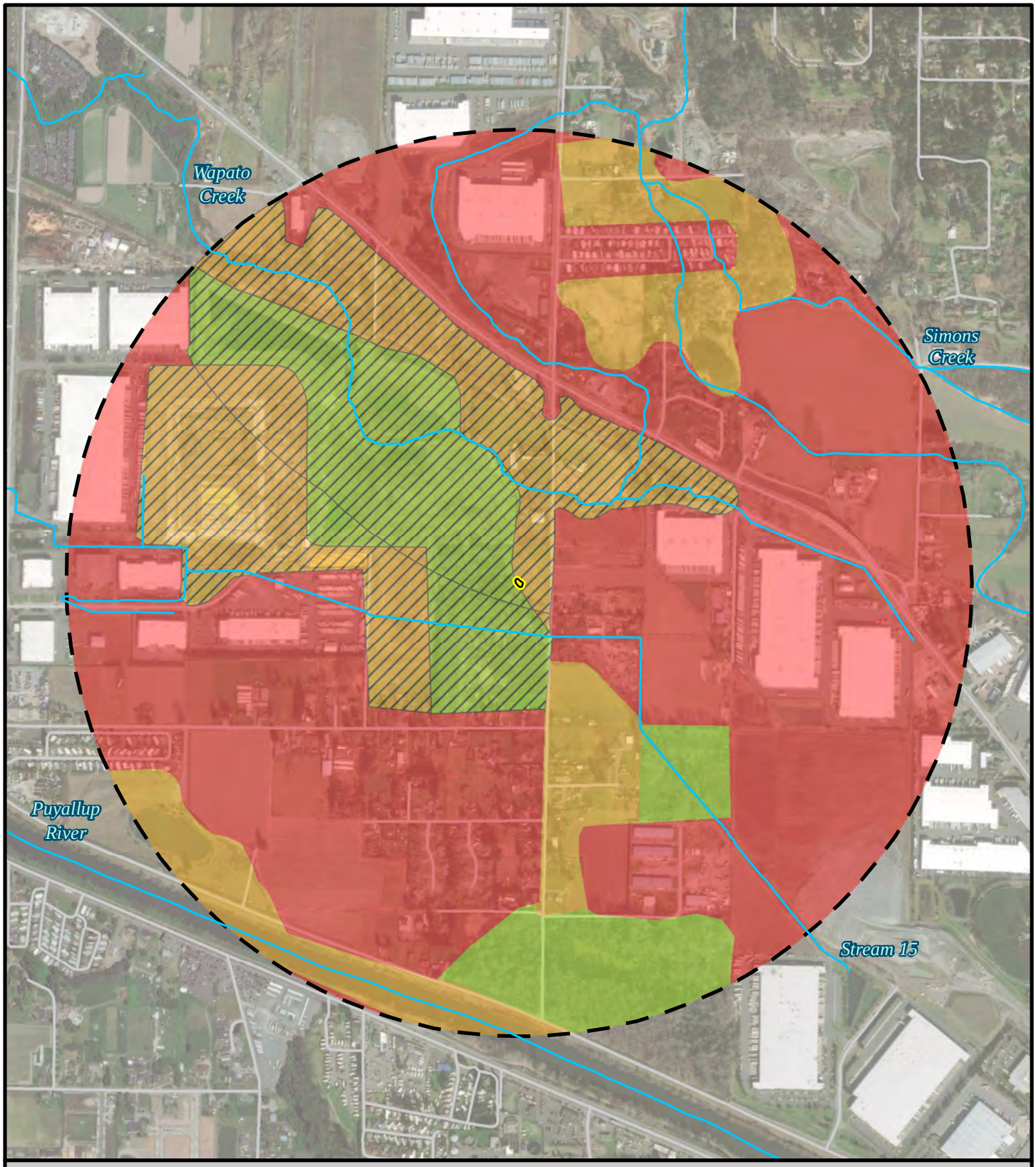


Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity and accessible
- Low/Moderate Intensity
- Relatively undisturbed
- Relatively undisturbed and accessible

Figure D-146.
Habitat Within a 1-km Boundary of Wetland 127.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 130

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 130 Date of site visit: 3/5/2022

Rated by Jim 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 Google Earth 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	M	M	L	
Landscape Potential	M	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	7	7	3	17

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	D-147
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-148
Flow directions and associated features	n/a	D-148a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-148
Map of the contributing basin	D 4.3, D 5.3	D-149
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	D-150
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 130

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 > 1/4 total area of wetland | points = 2	2
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: _____ 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*)? Yes = 1	1
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: The wetland is in the Puyallup River basin (HUC 12) with aquatic resources on the 303(d) list and TMDL's in place.

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 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	7

Rating of Site Potential If score is: 6–11 = M *Record the rating on the first page*

Wetland name or number: Wetland 130

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

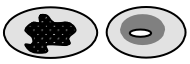
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 130

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.* 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	2

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**+** [(% moderate and low intensity land uses)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 0**+** [(% moderate and low intensity land uses)15.7/2] ___ **=** 7.9__% 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 130

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	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 D-147.
Cowardin Classes for Wetland 130.

N

0 25 50 100 Feet

HERRERA

ESRI, Aerial (2021)

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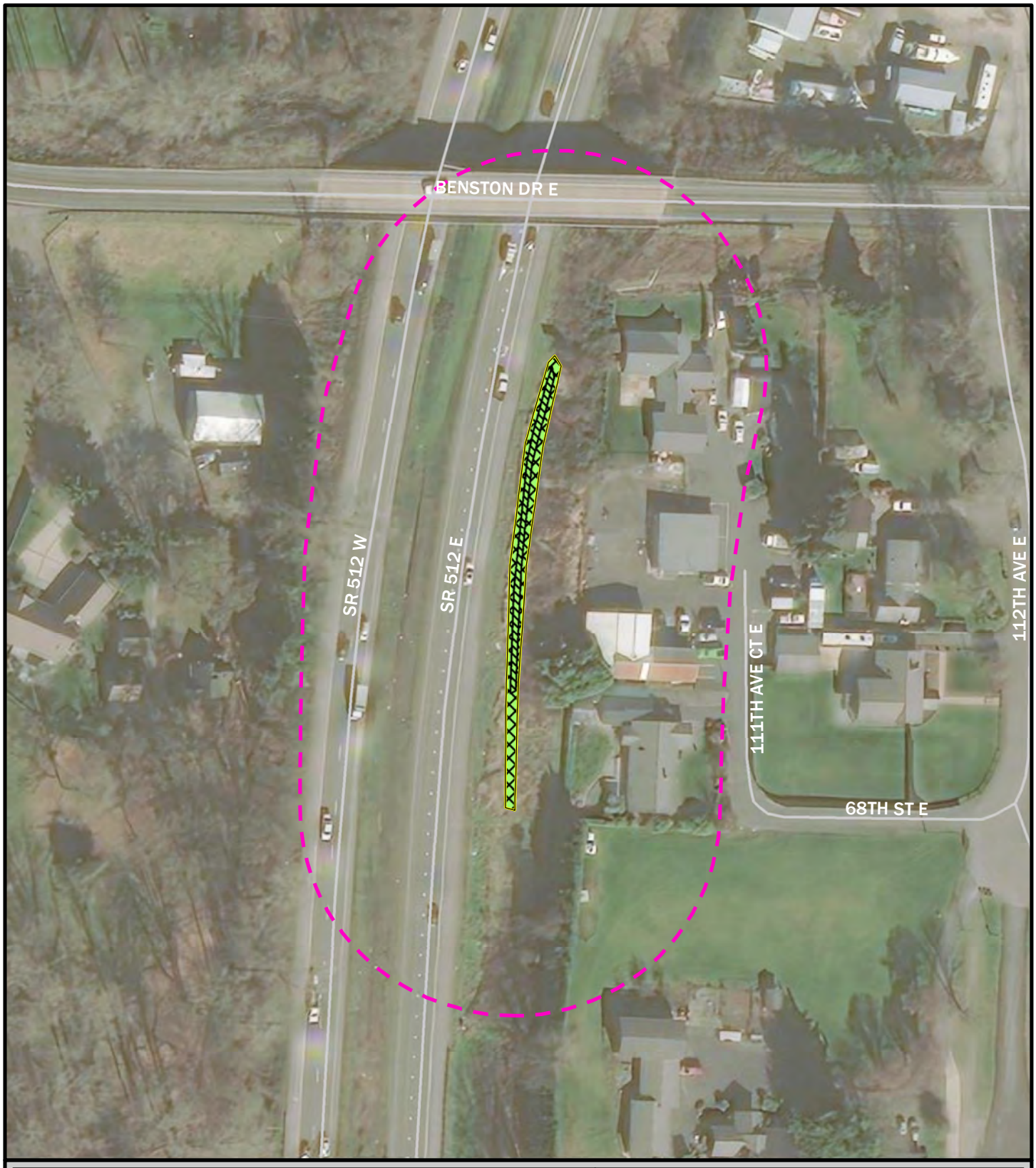

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Hydroperiod
- Saturated only
- Seasonally flooded

Figure D-148.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 130.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-148a.
Flow Directions and Features Associated with Wetland 130.

N

0 55 110 220 Feet

HERRERA

Esri, Aerial (2021)

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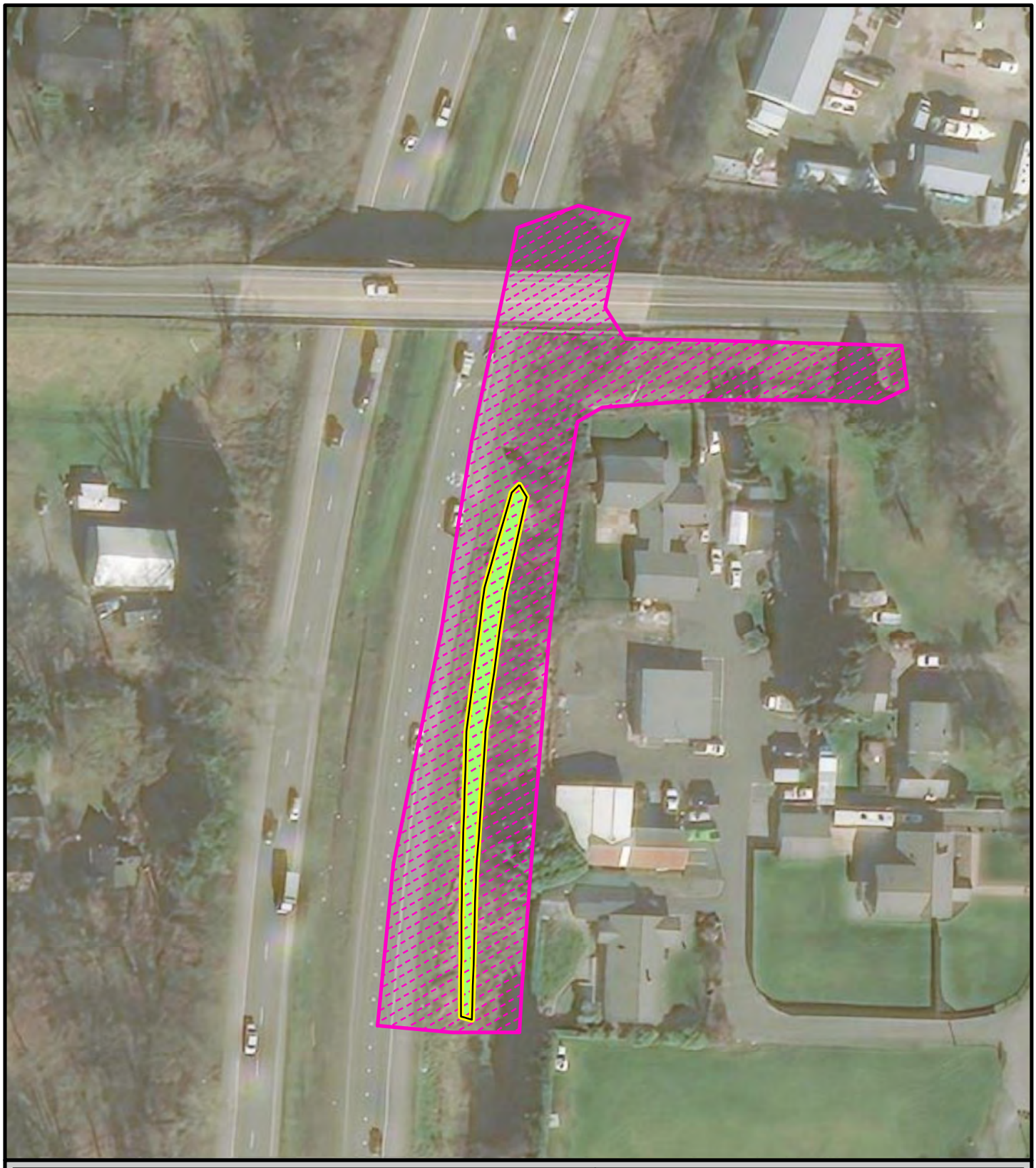

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-149.
Map of Contributing Basin for Wetland 130.

N

0 40 80 160 Feet

HERRERA

Esri, Aerial (2021)

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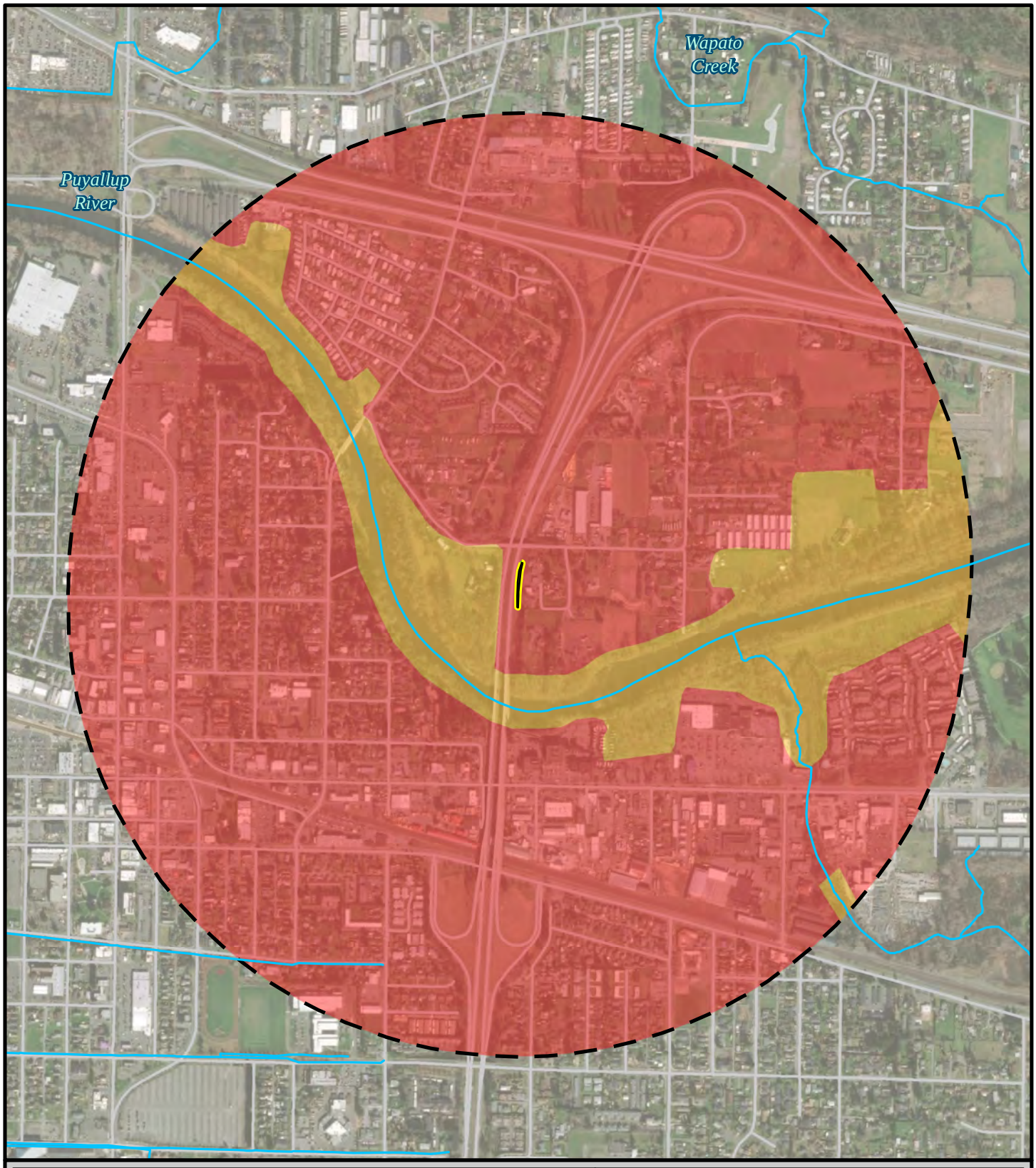

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity

Figure D-150.
Habitat Within a 1-km Boundary of Wetland 130.

N

0 500 1,000 2,000 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 131

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 131 Date of site visit: 3/5/2022

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 Google Earth 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	M	L	L	
Landscape Potential	M	H	L	
Value	H	M	M	**TOTAL**
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings
(*order of ratings is not important*)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	D-151
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-152
Flow directions and associated features	n/a	D-152a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-152
Map of the contributing basin	D 4.3, D 5.3	D-153
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	D-154
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 131

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? 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*)? Yes = 1	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: 2–4 = H *Record the rating on the first page*

COMMENTS: The wetland is in the Puyallup River basin (HUC 12) with aquatic resources on the 303(d) list and TMDL's in place.

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 131

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): Surface flooding problems are in a subbasin farther down-gradient | points = 1 **If not applicable chosen above:** Choose an item. **Explanation for 0 points (if required above):**	1
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	1

Rating of Value If score is: 1 = M *Record the rating on the first page*

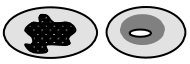
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 131

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*)	2
Total for H 1 Add the points in the boxes above	4

Rating of Site Potential If score is: 0–6 = L *Record the rating on the first page*

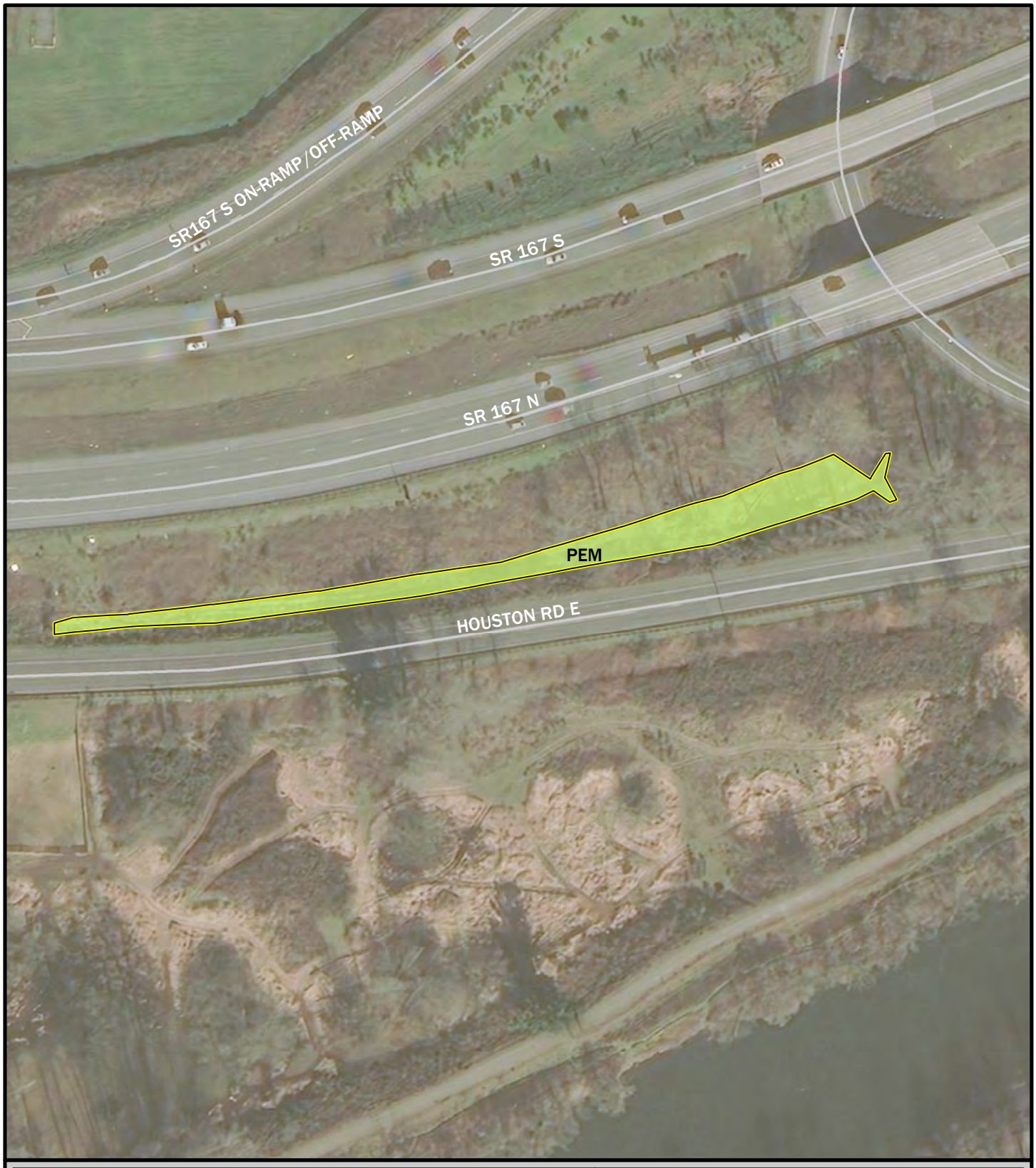
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate*: % undisturbed habitat 0**+** [(% moderate and low intensity land uses)0/2] 0_____ = ____**0**% If total accessible 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 7**+** [(% moderate and low intensity land uses)26.7/2] ____ = _**20.4**% Undisturbed habitat 10–50% and in 1–3 patches | points = 2	2
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	0

Rating of Landscape Potential If score is: < 1 = L *Record the rating on the first page*

Wetland name or number: Wetland 131

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

Cowardin class

PEM - Palustrine emergent

Figure D-151.
Cowardin Classes for Wetland 131.

0 55 110 220 Feet

HERRERA

ESRI, Aerial (2021)

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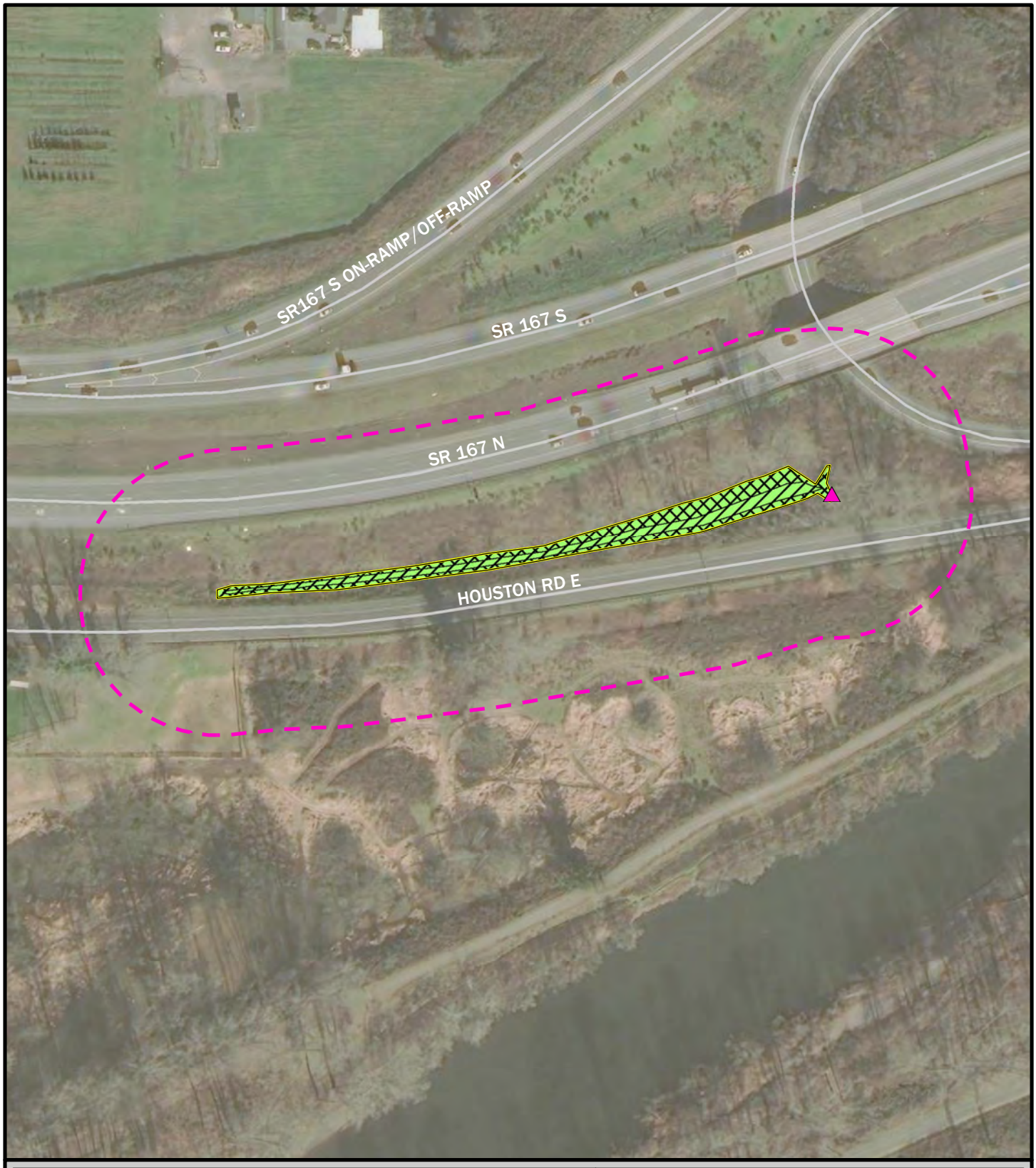

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Occasionally flooded
- Saturated only

Figure D-152.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 131.

N

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Flow Direction
- Estimated ditch centerline
- Wetland

Figure D-152a.
Flow Directions and Features Associated with Wetland 131.

N

0 90 180 360 Feet

HERRERA

Esri, Aerial (2021)

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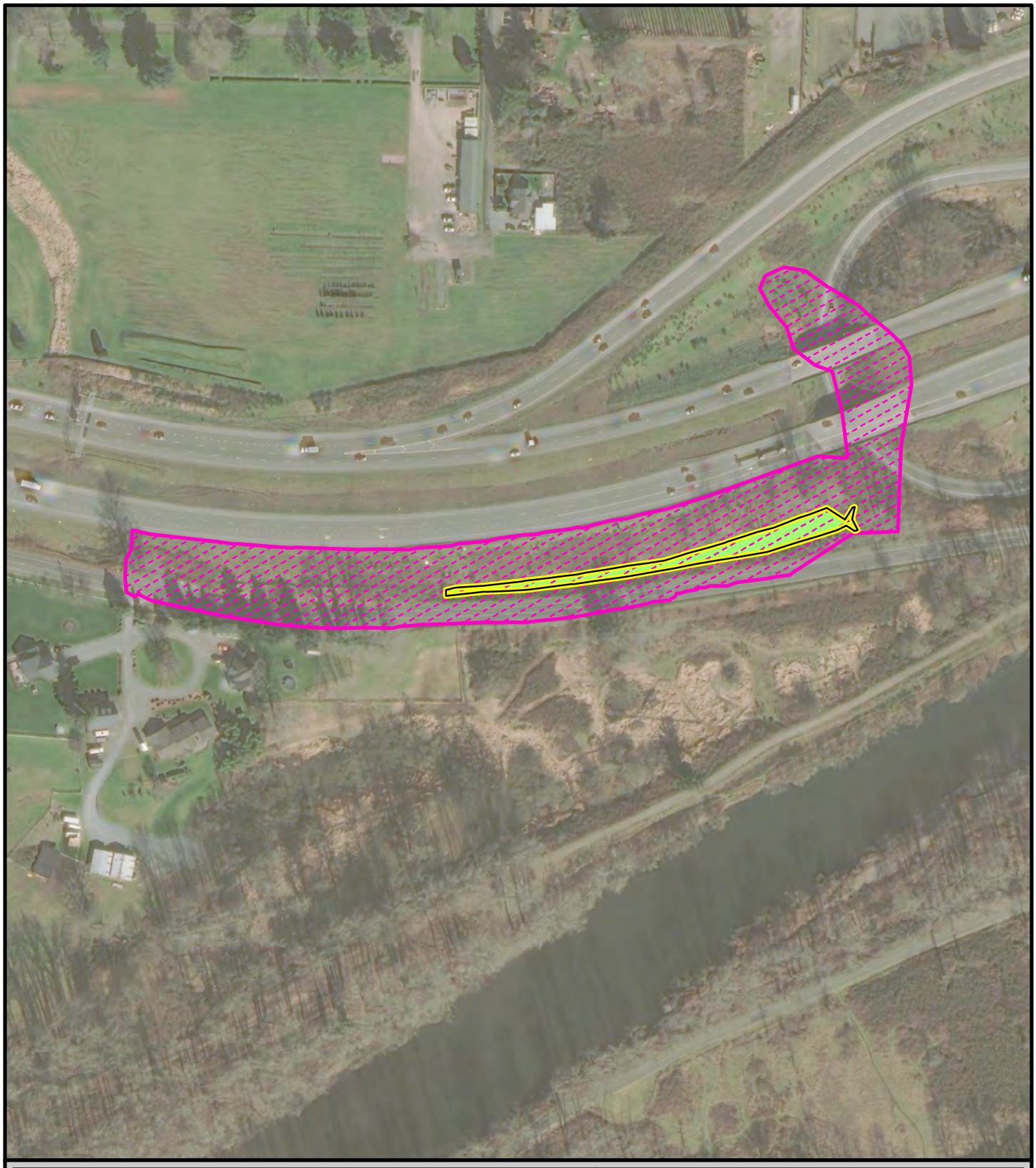

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-153.
Map of Contributing Basin for Wetland 131.

N

0 112.5 225 450 Feet

HERRERA

Esri, Aerial (2021)

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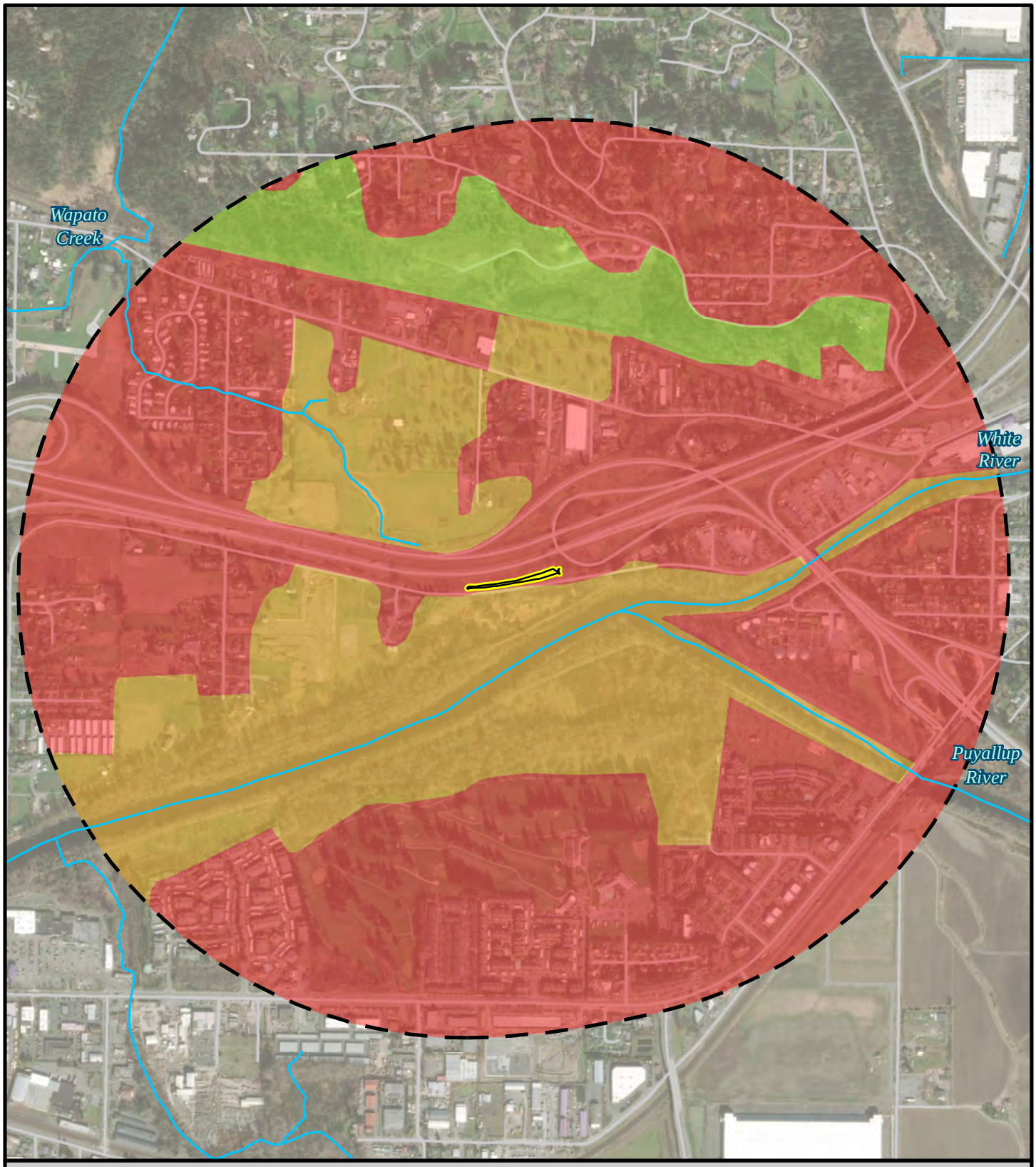

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-154.
Habitat Within a 1-km Boundary of Wetland 131.

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	D-155
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-156
Flow directions and associated features	n/a	D-156a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-156
Map of the contributing basin	D 4.3, D 5.3	D-157
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	D-158
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 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*

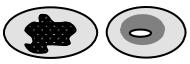
COMMENTS:

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 D-155.
Cowardin Classes for Wetland 136.

0 270 540 1,080 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Streams (Pierce County 2021)
- Delineated wetland boundary
- Estimated wetland boundary
- Wetland
- 150ft boundary
- Hydroperiod
- Seasonally flooded

Figure D-156.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 136.

N

0 295 590 1,180 Feet

HERRERA

ESRI, Aerial (2021)

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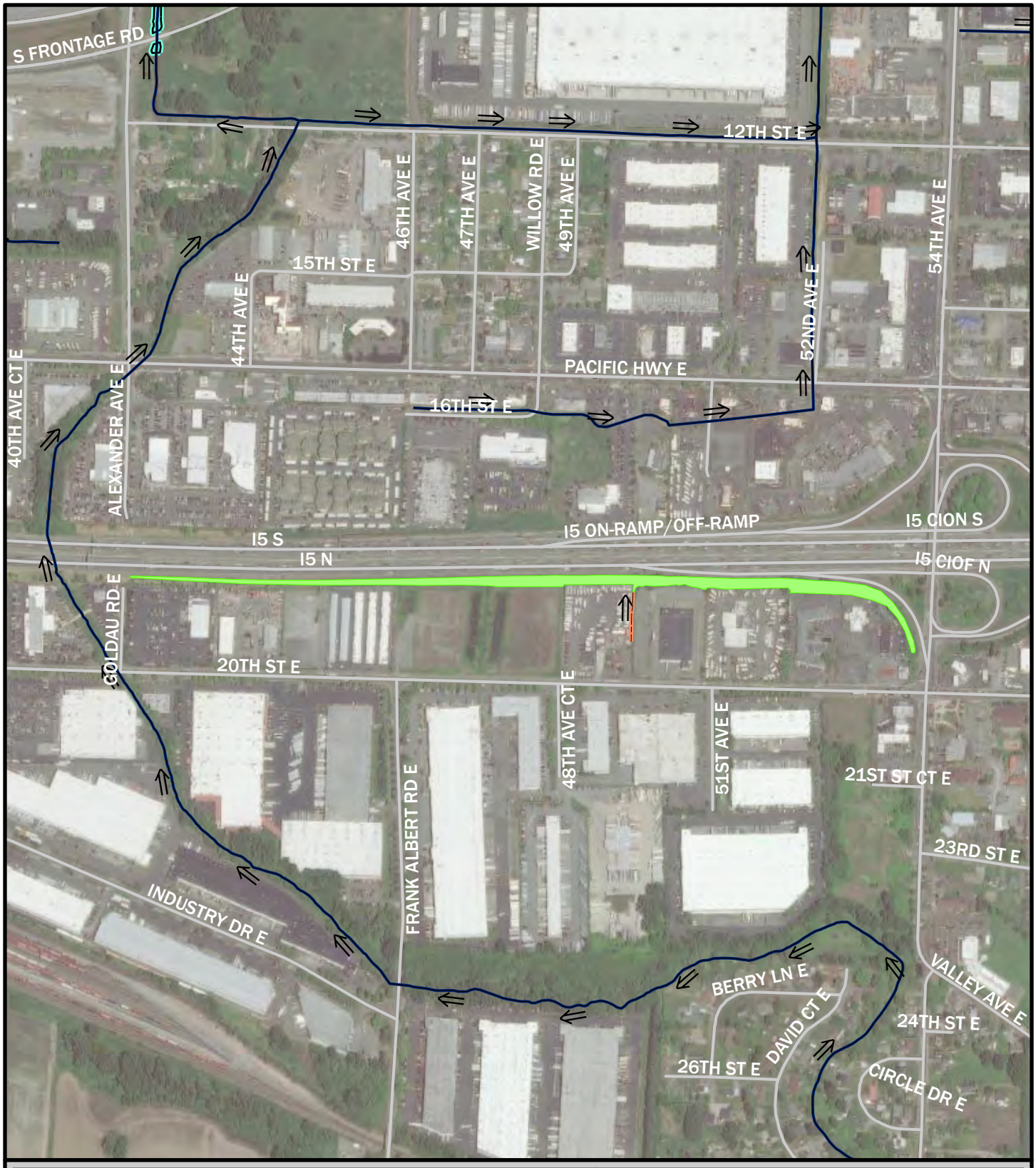

Legend

- Flow Direction
- Streams (Pierce County 2021)
- Estimated ditch centerline
- Wetland
- Stream
- Delineated OHWM

Figure D-156a.
Flow Directions and Features Associated with Wetland 136.

N

0 330 660 1,320 Feet

HERRERA

Esri, Aerial (2021)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary
- Estimated wetland boundary

Figure D-157.
Map of Contributing Basin for Wetland 136.

N

0 290 580 1,160 Feet

HERRERA

Esri, Aerial (2021)

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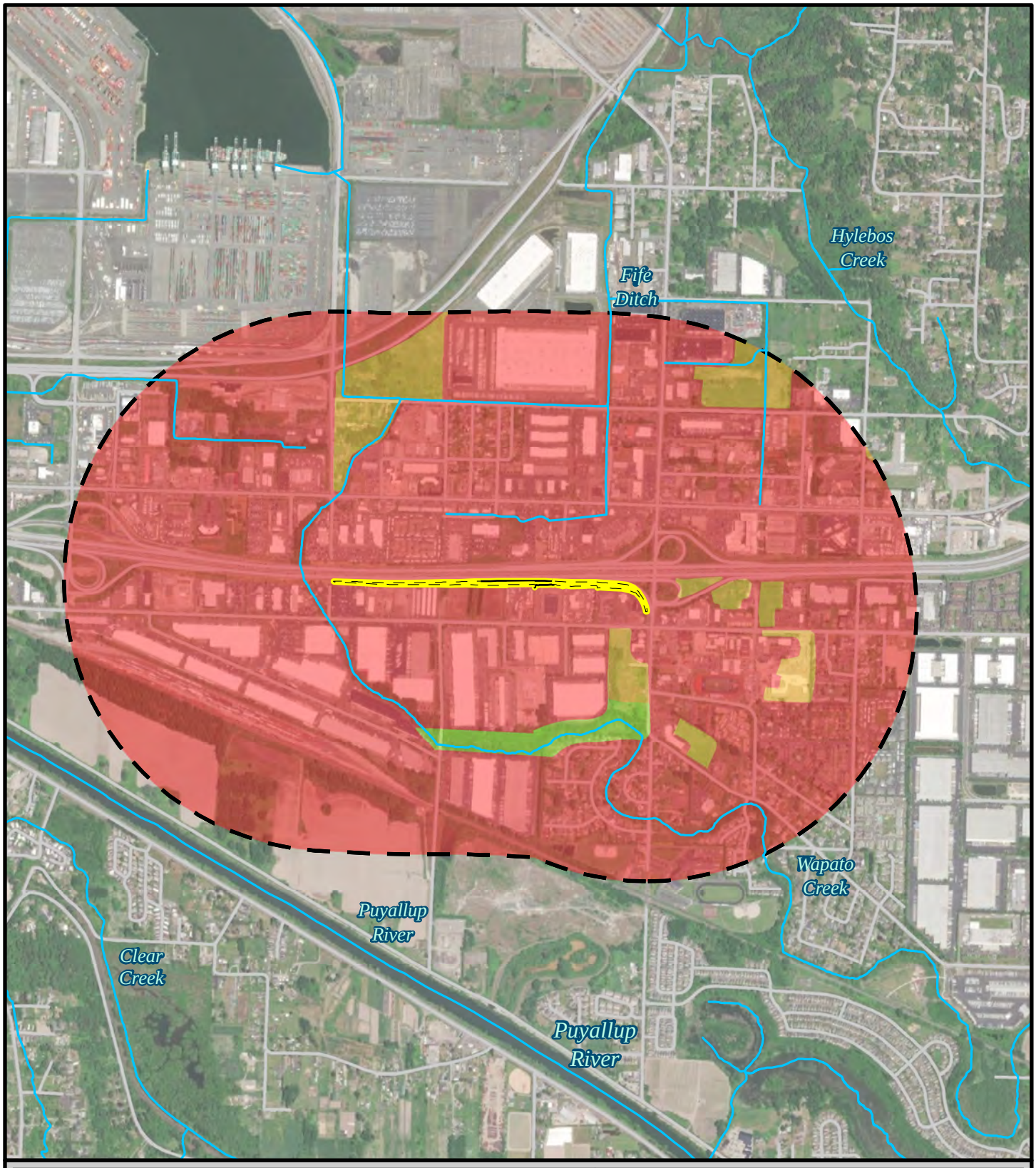

Legend

- Delineated wetland boundary
- Estimated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-158.
Habitat Within a 1-km Boundary of Wetland 136.

N

0 800 1,600 3,200 Feet

HERRERA

Esri, Aerial (2021)

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Wetland name or number: Wetland 137

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 137 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	M	M	L	
Landscape Potential	H	H	L	
Value	M	L	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	D-159
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-160
Flow directions and associated features	n/a	D-160a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-160
Map of the contributing basin	D 4.3, D 5.3	D-161
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	D-162
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 137

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 > 1/4 total area of wetland | points = 2	2
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: homeless camp 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? 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 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 137

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*

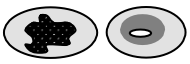
COMMENTS:

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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 137

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	2

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 2.1 **+** [(% moderate and low intensity land uses)9.2/2] 4.6 **=** 6.7 % 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 137

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	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 D-159.
Cowardin Classes for Wetland 137.

N

0 50 100 200 Feet

HERRERA

ESRI, Aerial (2021)

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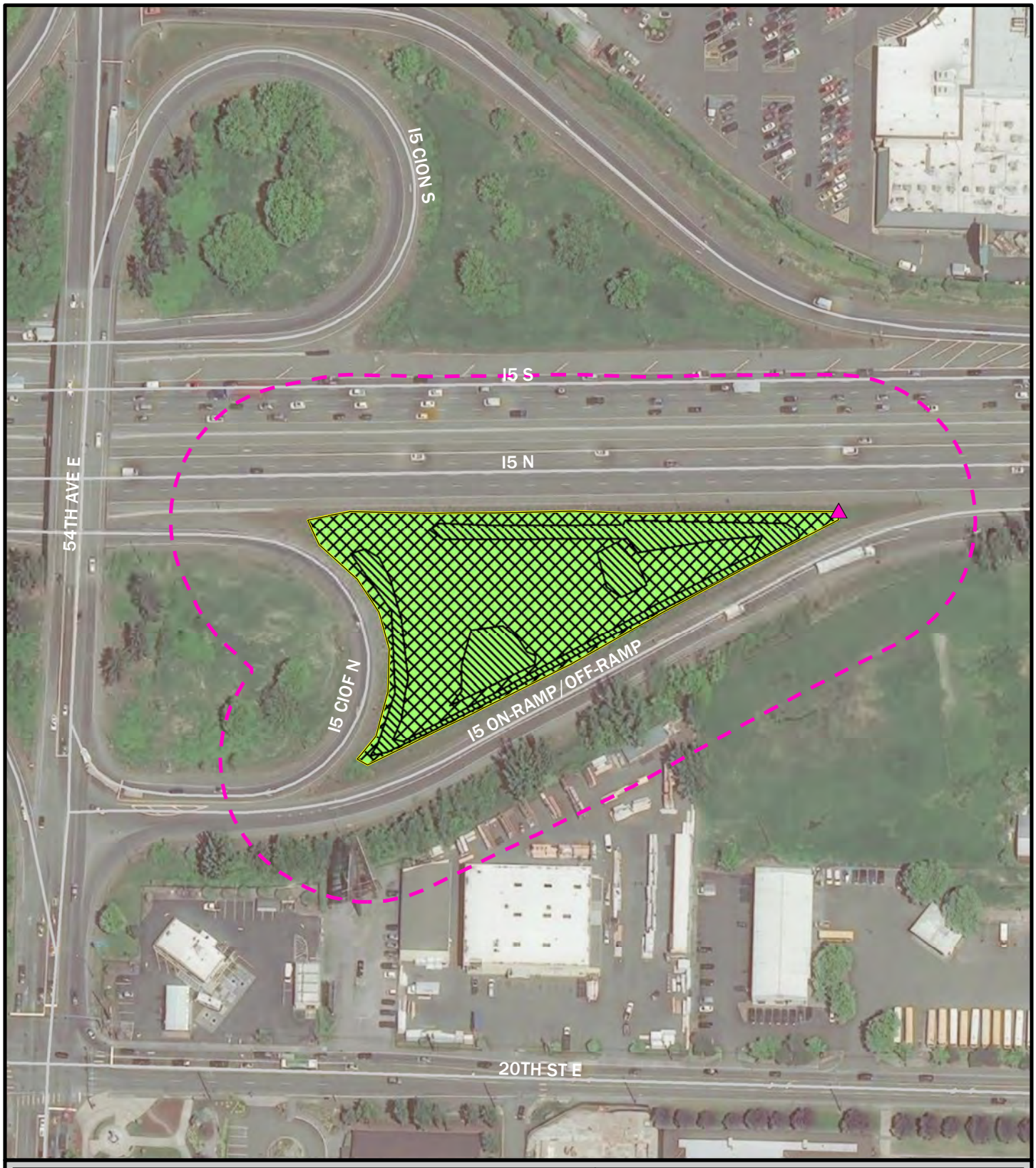

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-160.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 137.

N

0 75 150 300 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Streams (Pierce County 2021)
- Wetland

Figure D-160a.
Flow Directions and Features Associated with Wetland 137.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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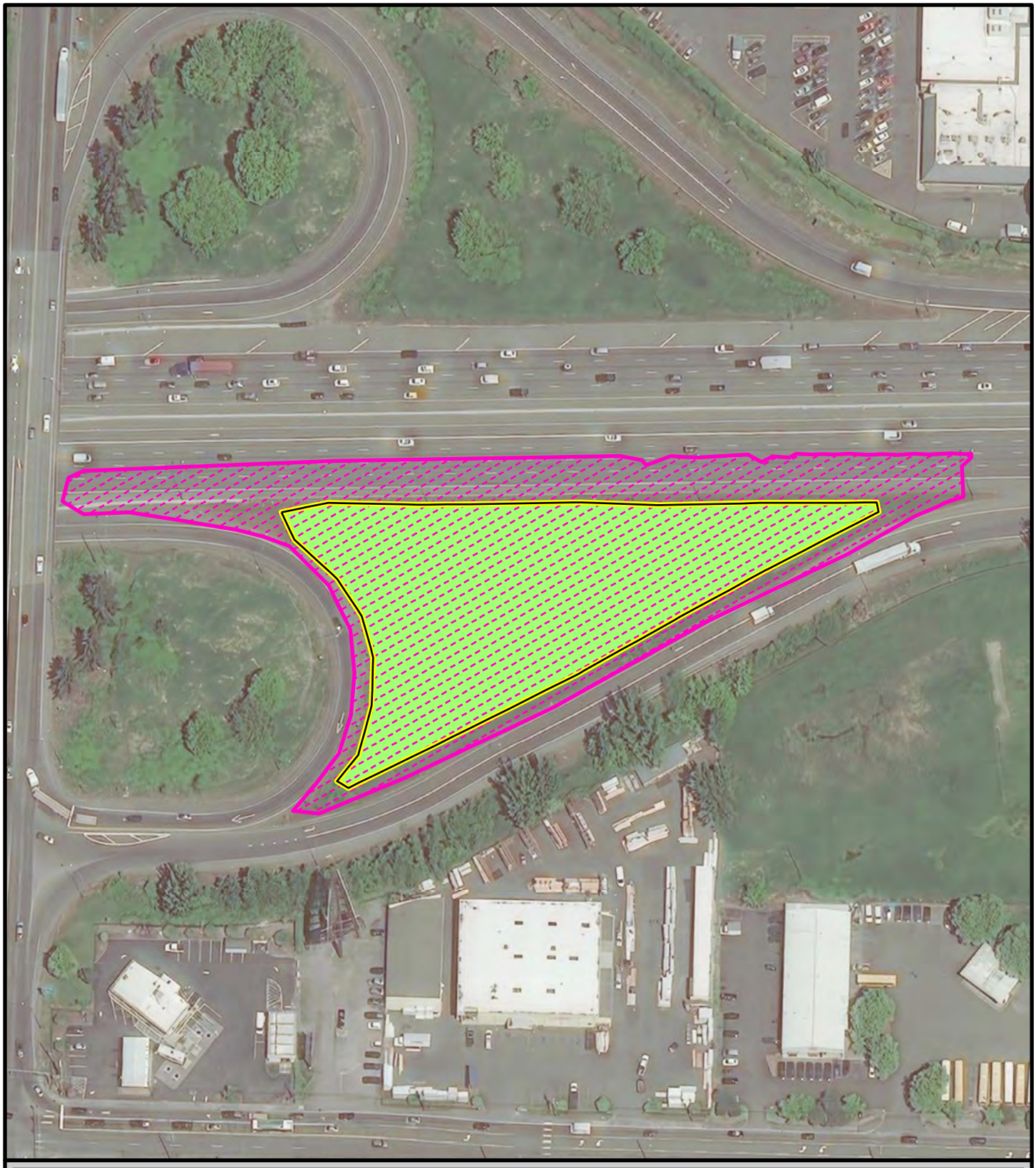

Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-161.
Map of Contributing Basin for Wetland 137.

N

0 65 130 260 Feet

HERRERA

Esri, Aerial (2021)

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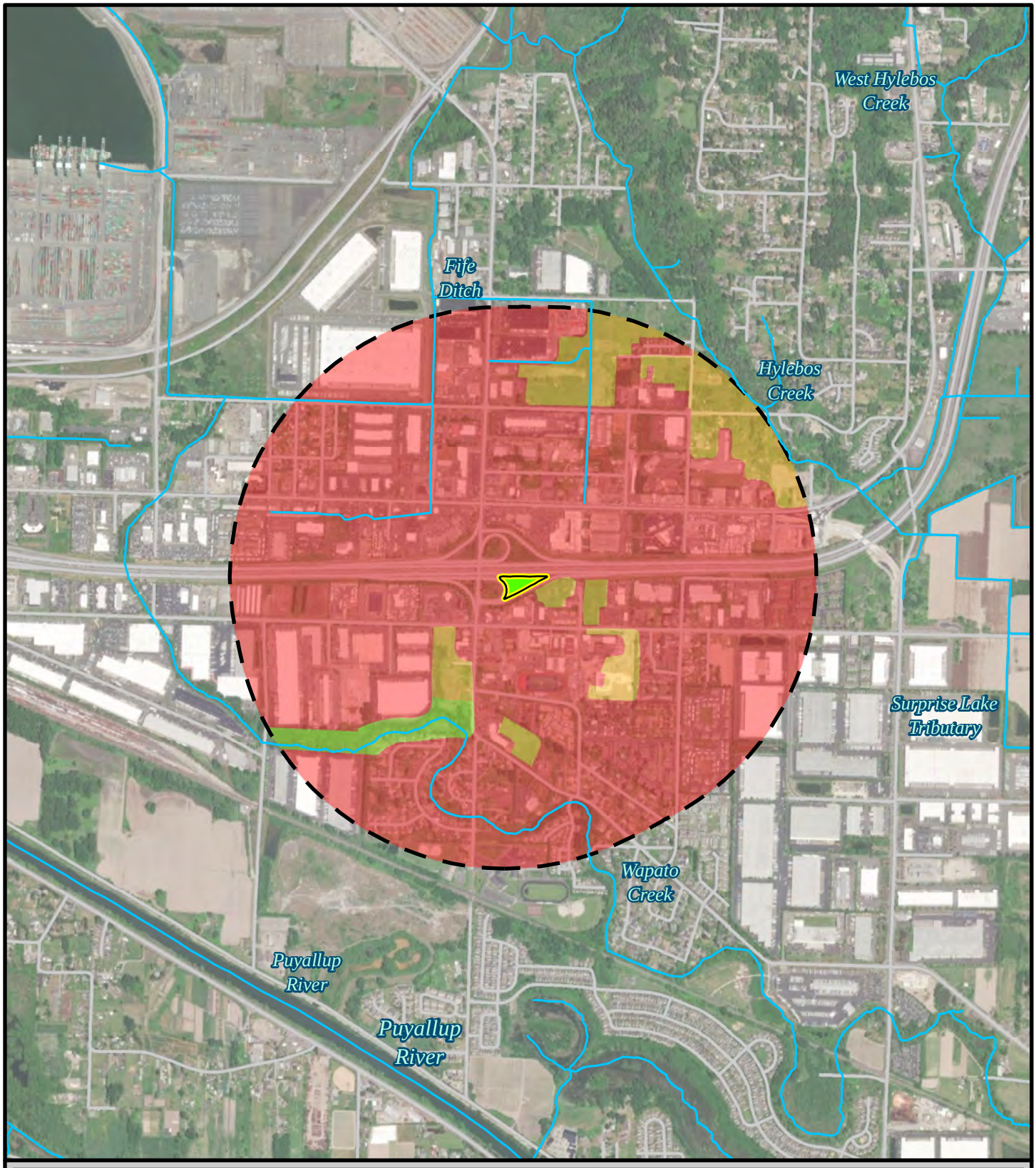


Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-162.
Habitat Within a 1-km Boundary of Wetland 137.

N

0 800 1,600 3,200 Feet

HERRERA

Esri, Aerial (2021)

K:\Projects\Y2016\16-06277-000\Project\GISWorking\Wetland_Delineation2021\Ratings_Figures\FigX_Habitat1KM_WLX_letter.mxd

Wetland name or number: Wetland 138

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SR 167 Completion Project – Wetland 138 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	M	M	L	
Landscape Potential	H	H	L	
Value	M	L	L	**TOTAL**
Score Based on Ratings	7	6	3	16

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	**I**
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	D-163
Hydroperiods and location of outlets	D 1.4, H 1.2, D 1.1, D 4.1	D-164
Flow directions and associated features	n/a	D-164a
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	D-164
Map of the contributing basin	D 4.3, D 5.3	D-165
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	D-166
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 138

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 > 1/4 total area of wetland | points = 2	2
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: homeless camp 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? 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	11

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 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 138

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*

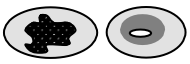
COMMENTS:

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	2 structures | points = 1	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 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**	2 types present | points = 1 **2 points** **2 points**	1

Wetland name or number: Wetland 138

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 	1
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	4

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 1.9**+** [(% moderate and low intensity land uses)11/2] 5.5 **=** 7.4% 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 138

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	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

PFO - Palustrine forested

Figure D-163.
Cowardin Classes for Wetland 138.

N

0 40 80 160 Feet

HERRERA

ESRI, Aerial (2021)

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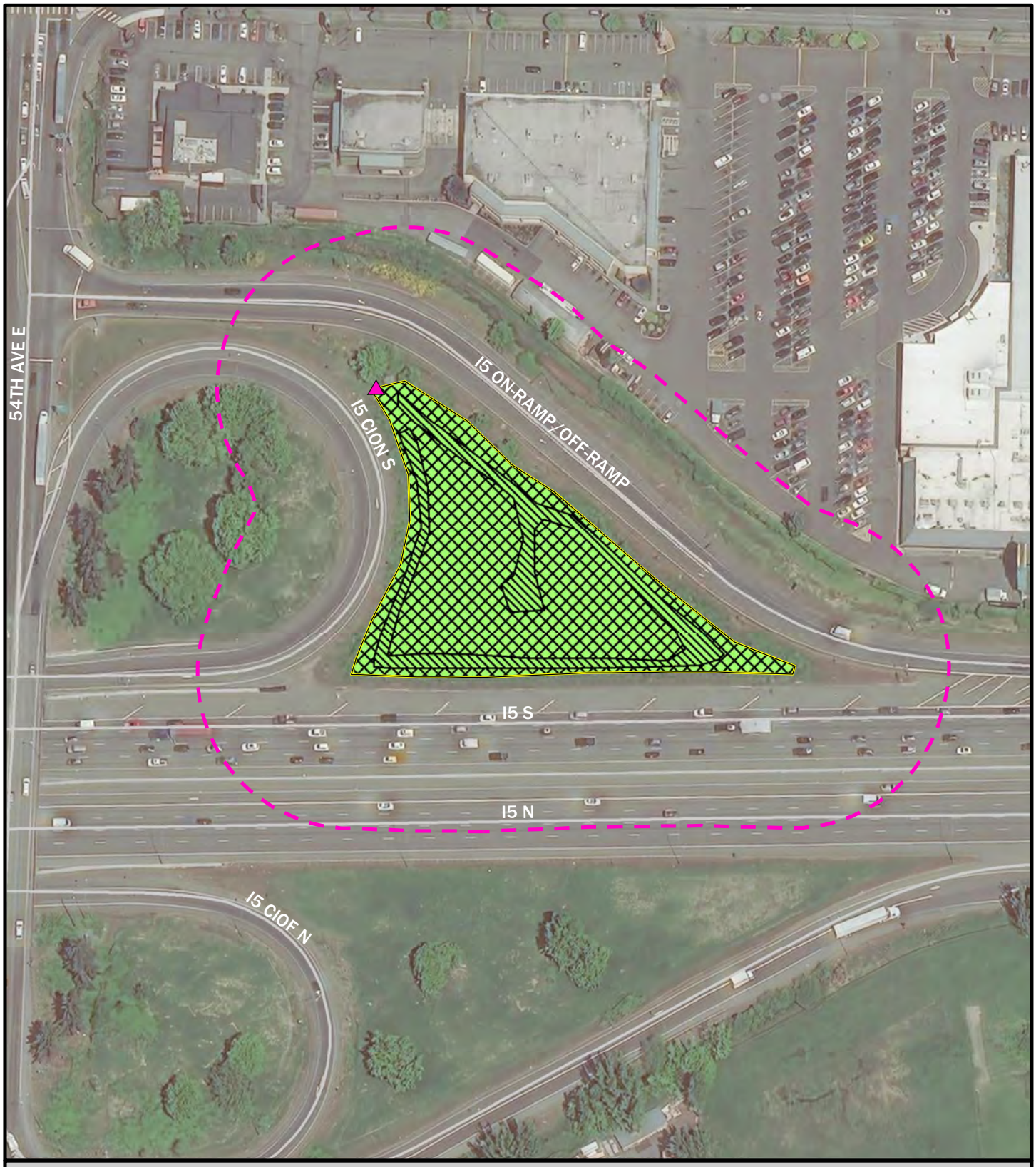

Legend

- Delineated wetland boundary
- Wetland
- 150ft boundary
- Outlet

Hydroperiod

- Saturated only
- Seasonally flooded

Figure D-164.
Hydroperiod, 150-Foot Boundary, and Location of Outlets for Wetland 138.

N

0 65 130 260 Feet

HERRERA

ESRI, Aerial (2021)

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Legend

- Streams (Pierce County 2021)
- Wetland

Figure D-164a.
Flow Directions and Features Associated with Wetland 138.

N

0 125 250 500 Feet

HERRERA

Esri, Aerial (2021)

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Legend

- Contributing basin
- Wetland
- Delineated wetland boundary

Figure D-165.
Map of Contributing Basin for Wetland 138.

N

0 65 130 260 Feet

HERRERA

Esri, Aerial (2021)

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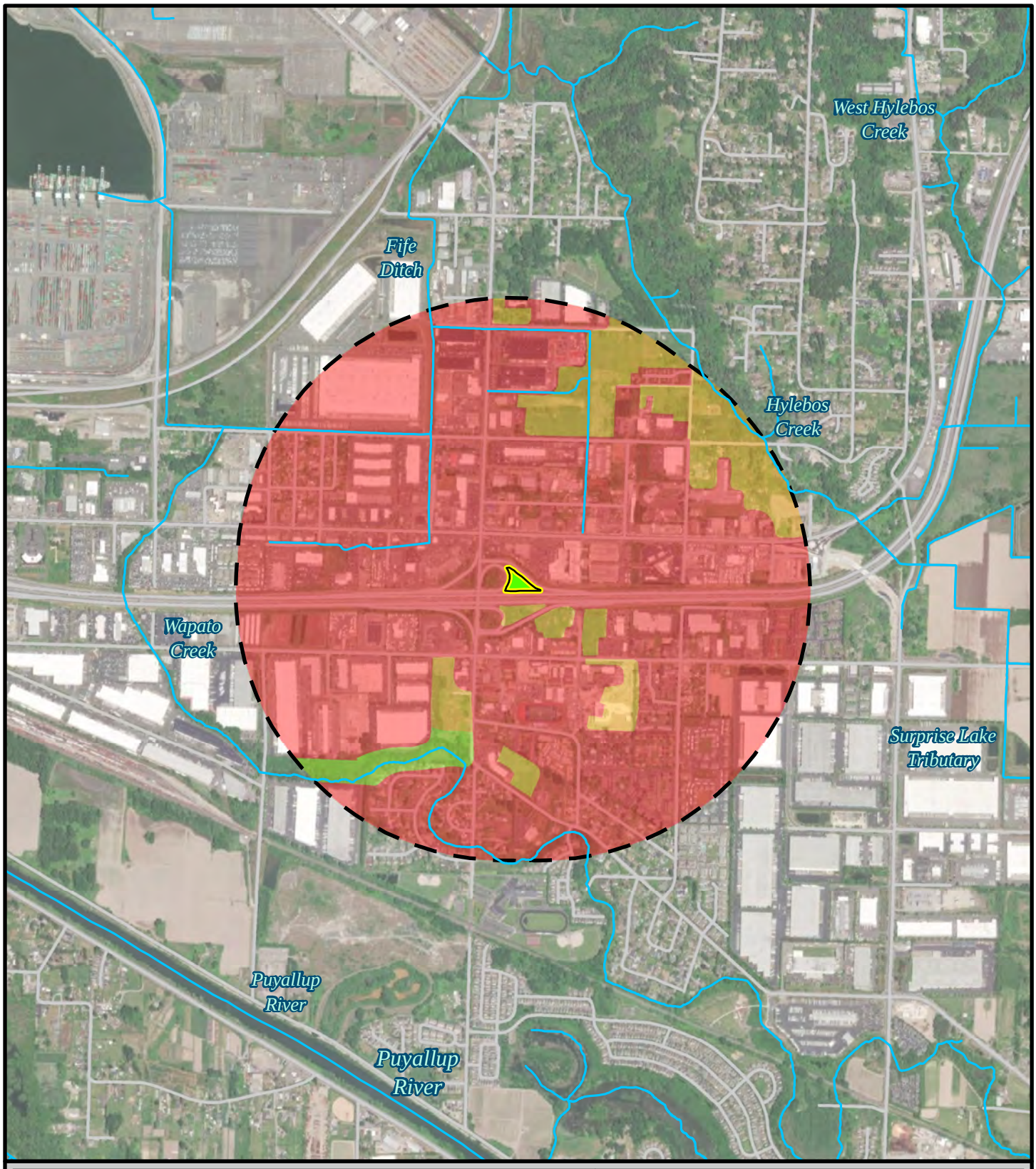

Legend

- Delineated wetland boundary
- 1-km boundary
- Wetland
- Stream (Pierce County)

Habitat type

- High intensity
- Low/Moderate Intensity
- Relatively undisturbed

Figure D-166.
Habitat Within a 1-km Boundary of Wetland 138.

N

0 800 1,600 3,200 Feet

HERRERA

Esri, Aerial (2021)

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Appendix E. Wetland Functional Assessment Summaries

Wetland ID: Wetland 1 **Project:** SR 167 Completion Project **Assessed By:** DM, EH, MH

Date: 7/19/18 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 7		Wetland is depressional flow-through and may retain high volumes of water during storms. Receives surface flow but lacks woody vegetation and does not receive floodwater from adjacent watercourse.
Sediment removal	X		2, 3, 5, 6	X	Depressional, has slow-moving water, vegetated by dense reed canarygrass, seasonal ponding evident. Sediment deposits present during field visit but wetland lacks sources of excess sediment.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Depressional, has sources of excess toxicants (highway runoff), is densely vegetated by grasses, and detains stormwater. Silty clay soil and dense vegetation are present.
Erosion control & shoreline stabilization		X			Not associated with a shoreline.
Production of organic matter and its export		X	1, 5		Dominated by herbaceous vegetation and has permanent and seasonal flooding. However, lacks plant community structure and diversity, and outlet is a pipe.
General habitat suitability	X		1, 3, 7		Not fragmented, connects to other habitat (Wetland 3), and signs of wildlife present but located in highly developed area. One Cowardin class and low plant diversity.
Habitat for aquatic invertebrates	X		1, 2, 4, 6		Seasonally- and permanently-inundated with emergent vegetation and varying water depths. Near stream but lacks aquatic vegetation and cover.
Habitat for amphibians	X		1, 2, 6		Seasonally- and permanently-inundated areas with emergent vegetation that may provide some suitable habitat. Other habitat nearby, but surrounding area highly-developed.
Habitat for wetland-associated mammals	X		1, 2, 7		Areas of permanent water and emergent vegetation present. Some evidence of wildlife use, but area highly developed.

Habitat for wetland-associated birds	X		2, 3		Small area of open water present within this wetland. Surrounding area is highly developed, with a few trees in buffer. Several ducks observed during field visit.
General fish habitat		X			Insufficient surface water connection to fish-bearing waterbody.
Native plant richness		X			The wetland has one Cowardin class (emergent) and is dominated by non-native plant species.
Educational or scientific use		X			Site is publicly-owned but lacks parking and does not offer education or scientific value.
Uniqueness & heritage		X			No unique or sensitive species or habitat present.

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 17/65 **Project:** SR 167 Completion Project **Assessed By:** G. Ritchotte, J. LeClerc

Date: 10/8/2019 **Cowardin Class:** PEM, PFO, PSS **Ecology Category:** I **Local Rating:** I

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 5, 6	X	Wetland is adjacent to Hylebos Creek in the upper portion of the watershed. The wetland is flat, contains dense woody vegetation, and regularly receives floodwater from the creek.
Sediment removal	X		1, 2, 3, 4, 5, 6	X	Roads and development are prevalent around wetland. Wetland contains dense herbaceous vegetation. Interspersion of vegetation and water is high, and water ponds in wetland after high flows. Sediment deposits evident during site visits.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Roads and development are prevalent around wetland. Wetlands contains high cover of live dense herbaceous vegetation. Wetland is regularly inundated during heavy rains and contains numerous depressions that provide water detention. Sediment deposits evident during site visits.
Erosion control & shoreline stabilization	X		1, 2, 3	X	Wetland borders Hylebos Creek, which experiences regular overbank flooding. Herbaceous and woody vegetation are prevalent throughout wetland.
Production of organic matter and its export	X		1, 2, 5, 6	X	Herbaceous cover throughout wetland; woody plants consist primarily of willows and cottonwoods. Flooding occurs regularly during heavy rains, flushing organic matter into Hylebos Creek.
General habitat suitability	X		1, 3, 4, 5, 6, 7	X	This is a large wetland with high plant species diversity and interspersed Cowardin classes. Several bird and mammal species were observed during site visits.
Habitat for aquatic invertebrates	X		1, 2, 4, 5, 6		Wetland is regularly inundated with overbank flows. Numerous depressions provide ponded areas well into dry season. Hylebos Creek flows through the wetland.
Habitat for amphibians	X		1, 2		Wetland contains areas of seasonal standing water and thin-stemmed emergent vegetation in those areas. Woody debris is present in wetland, and there are several other wetlands within 1 km. Bullfrog tadpoles observed during site visits.

Habitat for wetland-associated mammals	X		1, 2, 3, 4, 5, 6, 7		Hylebos Creek flows through the wetland. High levels of interspersion between various vegetation classes. Creek banks are suitable for denning, and wildlife tracks (likely nutria) observed during site visits.
Habitat for wetland-associated birds	X		2, 3, 4, 6		Emergent, scrub-shrub, forested vegetation, and snags present in wetland. Wetland provides habitat for prey species. Great blue heron observed during site visits.
General fish habitat	X		1, 2		Hylebos Creek provides fish habitat. Salmonids and stickleback observed during site visits.
Native plant richness	X		2, 3, 4		Wetland is dominated by reed canarygrass but contains several Cowardin classes, vegetation strata, and mature trees.
Educational or scientific use	X		2, 3		Wetland is in public ownership, adjacent to Interurban Trail, and near the trail parking lot.
Uniqueness & heritage	X		1		Chinook salmon, federally listed as threatened, have been documented in Hylebos Creek.

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 47 **Project:** SR 167 Completion Project, Stage 1B **Assessed By:** S. Wall

Date: 5/1/2019 **Cowardin Class:** PFO/PSS/PEM **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 5		Flat area with dense woody and shrub vegetation.
Sediment removal	X		1, 2, 3, 4, 5, 6		Sediment sources present, slow moving water, and dense vegetation.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5		Agriculture and roads are sources, wetland provides detention, and has dense herbaceous vegetation.
Erosion control & shoreline stabilization		X			No signs of erosion on Surprise Lake tributary; it is very slow moving.
Production of organic matter and its export	X		1, 2, 3, 4, 5, 6		Dense herbaceous and deciduous vegetation and wetland has outlets.
General habitat suitability	X		3, 4, 5, 6, 7		Multiple Cowardin classes and interspersion, wildlife evidence (beaver dam, bird nests).
Habitat for aquatic invertebrates	X		1, 2, 3, 4, 5, 6		Seasonal inundation, emergent vegetation and woody debris in ponded areas.
Habitat for amphibians	X		1, 2, 4		Thin-stemmed vegetation in inundated areas.
Habitat for wetland-associated mammals	X		1, 2, 3, 4, 6		Permanent water and dense shrubs and trees, evidence of wildlife use.
Habitat for wetland-associated birds	X		2, 3, 4, 6		Emergent vegetation and dense shrubs and trees; snags present.
General fish habitat	X		1, 3, 4		Fish observed in Surprise Lake tributary.
Native plant richness	X		2, 3		Trees and shrubs are primarily native species.
Educational or scientific use		X			No parking, no documented educational or scientific use.
Uniqueness & heritage		X			No unique characteristics.

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 83 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 7/2/2021 **Cowardin Class:** PFO, PSS, PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 4, 5, 7	X	Receives water from Stream 13 and adjacent stormwater pond. Outlet is highly constricted at culvert under 26th Street East.
Sediment removal	X		1, 3, 5		Wetland is adjacent to construction stockpile site and agricultural fields. Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 5	X	Wetland receives stormwater and runoff from agricultural fields. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization	X		1, 2, 3		Dense vegetation reduces erosive effects of floods in wetland.
Production of organic matter and its export	X		2, 5, 6		Deciduous trees present in seasonally flooded areas.
General habitat suitability	X		1, 5		Wetland is not fragmented and has multiple Cowardin classes, but surrounding development limits habitat suitability.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding in emergent and forested areas, and wetland is adjacent to Stream 13.
Habitat for amphibians	X		1, 2, 4, 6	X	Seasonal flooding in emergent and forested areas, and wetland is within 1 km of other wetlands and streams.
Habitat for wetland-associated mammals	X		1, 2, 3, 4		Permanently flowing stream adjacent to wetland, and dense shrubs and trees are present within wetland.
Habitat for wetland-associated birds	X		2, 3, 4, 6		Emergent, scrub-shrub, and forested class with snags present. Amphibians (frogs) observed in Stream 13 on opposite side of 26th Street East.
General fish habitat	X		1, 4		Adjacent Stream 13 is mapped by WDFW as potentially fish-bearing.
Native plant richness	X		1, 2, 4		Forested area dominated by black cottonwood with mature trees.

Educational or scientific use		X	2		Wetland is in public ownership but lacks parking.
Uniqueness & heritage		X			Not designated for habitat or species.

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 86 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 7/6/2021 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3, 6		Wetland is depressional with no outlet.
Sediment removal	X		1, 3, 5	X	Wetland is adjacent to construction stockpile site. Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from construction stockpile site. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			Wetland is not associated with watercourse or shoreline.
Production of organic matter and its export		X	1, 5		Wetland has cover of emergent vegetation, but no outlet.
General habitat suitability		X	1		Wetland is not fragmented by development, but lacks structural complexity and connectivity to other habitats.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding in emergent vegetation, with adjacent deciduous trees providing leaf litter. Wetland is adjacent to Wetland 83.
Habitat for amphibians	X		1, 2, 6		Seasonal flooding in emergent area, and wetland is within 1 km of Wetland 83.
Habitat for wetland-associated mammals		X	3		No permanent water is present.
Habitat for wetland-associated birds	X		2, 3, 6		Emergent vegetation within wetland, and scrub-shrub in buffer. Amphibians and invertebrates are potentially present.
General fish habitat		X			Wetland not associated with fish-bearing water.
Native plant richness		X			Qualifying features not present.
Educational or scientific use		X	2		Wetland is in public ownership but lacks parking.
Uniqueness & heritage		X			Not designated for habitat or species.

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 87 **Project:** SR 167 Completion Project, Stage 2 **Assessed By:** Rosemary Baker

Date: 6/10/21 **Cowardin Class:** PFO/PSS **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 5, 6, 7	X	Wetland is a depression located within the upper portion of its sub-basin adjacent to a permanently flowing ditched stream (Stream 14); however, it appears to receive only overbank (sheet flow) flood during high flows, not channelized flow, as well as high water table saturation and surface inundation during winter and storms.
Sediment removal	X		1, 2, 5		Some amount of seasonal overbank flood from Stream 14 appears to occur. Actively ploughed agricultural fields are located just north of Stream 14/Wetland 87. Once high water table and surface waters enter Wetland 87, water slowly infiltrates in place.
Nutrient and toxicant removal	X		1, 2, 3, 5	X	Actively ploughed and sprayed agricultural field north and upstream of Wetland 87; seasonal flooding is apparent due to sparsely vegetated concave surface (B8), water-stained leaves (B9). Surface flooding is frequent with enough duration to prevent herbaceous plant growth/clear flood line excluding ground ivy at the upland edge. Soils are silt loam 0 to 10 inches below surface.
Erosion control & shoreline stabilization	X		1, 3		Wetland has dense tree and shrub cover that easily absorbs and slows overbank flood water during high flows/high water table.
Production of organic matter and its export	X		2, 5		All woody plants within the wetland are deciduous.
General habitat suitability	X		2, 3, 5		Majority of upland surrounding wetland is undeveloped; wetland is connected to several other upland and riparian habitats; wetland has two Cowardin plant classes.
Habitat for aquatic invertebrates	X		5, 6		High amounts of leaf litter in seasonally flooded portion of wetland; wetland located adjacent to two streams (Stream 14 and Stream 15) and several other wetlands nearby.

Habitat for amphibians	X		1, 3, 4, 5, 6	X	All function indicators present except thin-stemmed emergent within wetland; Numerous Pacific tree frogs observed and heard in forested parcel and surrounding agricultural fields during site visits.
Habitat for wetland-associated mammals	X		3		Dense shrubs/trees are present within the wetland and buffer.
Habitat for wetland-associated birds	X		3, 4, 6, 7, 8	X	Forest and shrub classes as well as snags are present within the wetland and its buffer; Tree frogs observed within the forested parcel and ag field to the north; majority of the buffer is relatively undisturbed forest; 1 km surrounding wetland is 40% or more undeveloped.
General fish habitat		X			
Native plant richness	X		1, 2, 4		Vegetation within the wetland is native; two Cowardin classes are present; trees within the wetland are mature for their species.
Educational or scientific use		X	2		Property is in public ownership but inaccessible for educational purposes.
Uniqueness & heritage		X			

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 88/90/91 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 12/27/2021 **Cowardin Class:** PSS, PEM **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration		X	1, 2, 7		The wetland is in the upper portion of watershed and can retain higher volumes of water during storm events, but has an open outlet and receives floodwaters as channel flow rather than sheet flow.
Sediment removal	X		1, 2, 3, 5	X	The wetland is in a ditch that receives runoff from surrounding impervious surfaces and adjacent WSDOT stockpile area. Dense vegetation growing in occasionally slow-moving water.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from construction stockpile site. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			The wetland is associated with a stream that flows to the Puyallup River, but evidence of erosion observed. Wetland lacks trees and shrubs able to withstand erosive flood events.
Production of organic matter and its export	X		1, 5, 6		The wetland has herbaceous vegetation, is seasonally inundated, and has an unconstructed outlet.
General habitat suitability		X	3, 5		The wetland is fragmented by development, lacks structural complexity and plant species diversity.
Habitat for aquatic invertebrates	X		1, 4, 5, 6	X	The wetland is seasonally inundated and contains emergent vegetation and cover within standing water.
Habitat for amphibians	X		1, 2, 6	X	The wetland is seasonally inundated and has thin-stemmed emergent vegetation. Amphibians observed at wetland
Habitat for wetland-associated mammals		X	1, 2, 6		The wetland lacks structural complexity and interspersion between open water and vegetated areas.
Habitat for wetland-associated birds		X			The wetland does not have 30 to 50% shallow open water and/or aquatic bed class
General fish habitat		X	1, 4		The wetland lacks spawning areas for fish and sufficient size and depth of open water.

Native plant richness		X	2		The wetland lacks native species, and mature trees.
Educational or scientific use		X	2		The wetland does not have documented scientific or educational use.
Uniqueness & heritage		X			The wetland is not designated for habitats or species.

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 89 **Project:** SR 167 Completion Project, Stage 2 **Assessed By:** Rosemary Baker

Date: 6/10/21 **Cowardin Class:** PSS **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		1, 2, 3, 5, 6	X	Wetland is within the upper portion of its sub-basin; is relatively flat with 0 to 1% slope, is a closed depression (no outlet), is densely vegetated by shrubs, and receives sheet flow drainage from its surrounding uplands.
Sediment removal		X			
Nutrient and toxicant removal	X		1, 5	X	Property upgradient from wetland is used for industrial uses and road/parking lot; soils in wetland are silt loam.
Erosion control & shoreline stabilization		X			
Production of organic matter and its export	X		2		Wetland is dominated by woody plants.
General habitat suitability	X		2, 3	X	Majority of upland surrounding Wetland 89 is undeveloped forest and wetland has connectivity to more and diverse uplands, streams, and other wetlands to the north and east.
Habitat for aquatic invertebrates		X			
Habitat for amphibians		X			
Habitat for wetland-associated mammals		X			
Habitat for wetland-associated birds		X			
General fish habitat		X			
Native plant richness	X		1		Dominant tree and shrub species within the wetland are native.
Educational or scientific use		X	2		Wetland is on public property but is, inaccessible and not valuable for education.
Uniqueness & heritage		X			

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 92 **Project:** SR 167 Completion Project, Stage 2 **Assessed By:** Rosemary Baker

Date: 6/10/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 7	X	Wetland occurs within the upper portion of its sub-basin and is a relatively flat agricultural field and depressional wetland that seasonally floods in its lowest SW portion during storm events/winter and high water table. The wetland receives overbank flood from Stream 14.
Sediment removal	X		1, 2, 5, 6	X	Wetland occurs within a regularly tilled agricultural field; surface water and groundwater move slowly across the site and infiltrate within the wetland. Ponding occurs within the SW corner of the wetland and sediment deposits are visible.
Nutrient and toxicant removal	X		1, 2, 5	X	Ag field is regularly sprayed with pesticides/herbicides. Wetland appears to flood seasonally (in winter/early growing season). Soils in the wetland are silty clay.
Erosion control & shoreline stabilization		X			
Production of organic matter and its export	X		6		Minor amounts of organic matter from ag field crops may enter adjacent stream from low drainage break in berm on west side.
General habitat suitability	X		3, 7	X	Wetland is connected to other instream, riparian, wetland, and upland habitats on three sides; Pacific tree frogs, Canada goose, and killdeer all observed using ag field wetland.
Habitat for aquatic invertebrates	X		1, 2, 5, 6	X	Seasonally ponded portion of wetland contains leaf litter; slight variation in ponding depth present within wetland; Wetland 92 is immediately adjacent to Streams 14 and 15.
Habitat for amphibians	X		1, 5, 6	X	Immediate buffer is relatively impacted/developed; however, juvenile and adult tree frogs observed/heard within ag field wetland and to the south within the undeveloped forested parcel.
Habitat for wetland-associated mammals		X			

Habitat for wetland-associated birds	X		1, 2, 3, 4, 5, 6, 7, 8	X	Wetland has significant area that is seasonally flooded with shallow open water; emergent vegetation is present; a forested buffer occurs to the immediate south that contains snags and is relatively undisturbed; the ag field is regularly tilled and exposed during spring and between crops functioning much like "mud flats"; nesting killdeer and grazing/resting waterfowl observed in wetland. Lands within 1-km radius are 40% or less undeveloped.
General fish habitat		X			
Native plant richness		X			
Educational or scientific use		X	2		Wetland is currently owned by WSDOT; but still leased or rented by private farmer.
Uniqueness & heritage		X			

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 93 **Project:** SR 167 Completion Project, Stage 2 **Assessed By:** Rosemary Baker

Date: 6/10/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 6	X	Wetland occurs within the upper portion of its subbasin and is a relatively flat agricultural field and depressional wetland that seasonally floods in its lowest southern portion during storm events/winter and high water table.
Sediment removal	X		1, 2, 5, 6	X	Wetland occurs within a regularly tilled agricultural field; surface water and groundwater move slowly across the site and either infiltrate within the wetland or are slowly drained by ditch to south. Ponding occurs within central and southern portions of the wetland and sediment deposits are visible particularly in SE corner.
Nutrient and toxicant removal	X		1, 2, 5	X	Ag field is regularly sprayed with pesticides/herbicides. Wetland appears to flood seasonally (in winter/early growing season). Soils in the wetland are silt loam.
Erosion control & shoreline stabilization		X			
Production of organic matter and its export	X		6		Minor amounts of organic matter from ag field crops may enter adjacent ditch and Stream 15 further down-gradient during high flows.
General habitat suitability	X		3, 7	X	Wetland is connected to instream/riparian, wetland, and primarily degraded but some undeveloped upland habitats to the west and south; Canada goose observed using ag field wetland.
Habitat for aquatic invertebrates	X		1, 6		Seasonally ponded portion of wetland present; Wetland 93 is immediately adjacent to a ditch connected to Stream 15.

Habitat for amphibians	X		1, 5, 6	X	Immediate buffer is relatively impacted/developed; however, juvenile and adult tree frogs observed/heard within ag field wetland to the south (Wetland 92) and to the south within the undeveloped forested parcel. Lands within 1-km radius area are 40% or less developed and other wetlands and streams are located within less than 1 km of Wetland 93.
Habitat for wetland-associated mammals		X			
Habitat for wetland-associated birds	X		1, 2, 3, 4, 5, 6, 7, 8	X	Wetland has significant area that is seasonally flooded with shallow open water; emergent vegetation is present; shrub class present in buffers to the west and south; the ag field is regularly tilled and exposed during spring and between crops functioning much like "mud flats"; grazing/resting waterfowl observed in wetland. Lands within 1-km radius are 40% or less undeveloped.
General fish habitat		X			
Native plant richness		X			
Educational or scientific use		X	2		Wetland is currently owned by WSDOT; but still leased or rented by private farmer.
Uniqueness & heritage		X			

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 94 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 8/16/2021 **Cowardin Class:** PEM, PSS, PFO **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 5, 7	X	The wetland receives overbank flooding from Wapato Creek and is capable of retaining higher volumes of water during storm events.
Sediment removal	X		1, 2, 3, 5	X	The wetland is located downgradient of agricultural fields that receive annual tillage. Dense herbaceous vegetation and areas of ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 5	X	Sources of fertilizers and heavy metals are present upgradient of the wetland. The wetland provides long duration for water detention.
Erosion control & shoreline stabilization		X	2, 3		The wetland borders Wapato Creek but the channel is downcut and eroding.
Production of organic matter and its export	X		2, 5, 6		The wetland is seasonally inundated and contains organic matter that is flushed via Wapato Creek.
General habitat suitability	X		1, 3, 5		The wetland has multiple Cowardin Classes and connectivity to riverine and riparian habitat types.
Habitat for aquatic invertebrates	X		1, 2, 3, 6	X	Aquatic bed vegetation and areas of permanent and seasonal ponding are present. Wapato Creek flows through the wetland.
Habitat for amphibians	X		1, 3, 4, 6	X	The wetland contains woody debris and areas of seasonal and permanent standing water. The buffer is less than 40% developed.
Habitat for wetland-associated mammals		X	1, 2, 4		The wetland has moderate interspersion between different strata of vegetation and areas of open water. No evidence of wildlife present.
Habitat for wetland-associated birds	X		2, 3, 6		Areas of shallow open water make up less than 30% of the wetland, but several Cowardin classes are present, and the wetland contains invertebrates, amphibians, and fish.

General fish habitat	X		1, 4, 5	X	The wetland has a perennial surface-water connection to a fish-bearing stream and woody vegetation that provides cover and detrital matter.
Native plant richness		X	2, 3		Dominant plants are non-native
Educational or scientific use		X	2		The wetland does not have documented scientific or education use and lacks parking for a school bus.
Uniqueness & heritage	X		1		The wetland contains Wapato Creek which has documented occurrence of federally listed endangered and/or threatened fish species.

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 95 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 8/16/2021 **Cowardin Class:** PEM, PSS, PFO **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 5, 7	X	The wetland receives overbank flooding from Wapato Creek and is capable of retaining higher volumes of water during storm events.
Sediment removal	X		1, 2, 3, 5	X	The wetland is adjacent to agricultural fields that receive annual tillage. Dense herbaceous vegetation and areas of ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Sources of fertilizers and heavy metals are present upgradient of the wetland. The wetland provides long duration for water detention.
Erosion control & shoreline stabilization		X	2, 3		The wetland borders Wapato Creek but the channel is downcut and eroding.
Production of organic matter and its export	X		1, 2, 5, 6		The wetland is seasonally inundated and contains organic matter that is flushed via Wapato Creek.
General habitat suitability	X		1, 3, 5		The wetland has multiple Cowardin Classes and connectivity to riverine and riparian habitat types.
Habitat for aquatic invertebrates	X		1, 2, 4, 6	X	The wetland contains areas of seasonal and permanent standing water with emergent vegetation. Wapato Creek flows through the wetland and a wetland is located within 1.2 miles.
Habitat for amphibians	X		1, 2, 3, 6	X	The wetland contains areas of seasonal and permanent inundation with thin-stemmed emergent vegetation (only in seasonally inundated).
Habitat for wetland-associated mammals		X	1, 3, 4		Areas of permanent inundation are present, but they lack emergent vegetation. No evidence of wildlife present.
Habitat for wetland-associated birds	X		2, 3, 6		Areas of shallow open water make up less than 30% of the wetland, but several Cowardin classes are present, and the wetland contains invertebrates, amphibians, and fish.

General fish habitat	X		1, 4, 5	X	The wetland has a perennial surface-water connection to a fish-bearing stream and woody vegetation that provides cover and detrital matter.
Native plant richness		X	2, 3		Dominant plants are nonnative
Educational or scientific use		X	2		The wetland does not have documented scientific or education use and lacks parking for a school bus.
Uniqueness & heritage	X		1		The wetland contains Wapato Creek which has documented occurrence of federally listed endangered and/or threatened fish species.

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 98 **Project:** SR 167 Completion Project **Assessed By:** R. Baker

Date: 8/3/21 **Cowardin Class:** PEM, PSS, PFO **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 7	X	Wetland occurs along a tributary to Wapato Creek and is located mid-basin in the watershed.
Sediment removal	X		1, 2, 5	X	Wetland occurs within a regularly tilled agricultural field; surface water and groundwater move slowly across the site and infiltrate within the wetland. Ponding occurs within the SW corner of the wetland and sediment deposits are visible.
Nutrient and toxicant removal	X		1, 2, 4, 5	X	Ag field is regularly sprayed with pesticides/herbicides. Wetland appears to flood seasonally (in winter/early growing season). Soils in the wetland are silty clay.
Erosion control & shoreline stabilization	X		1, 2, 3	X	Thick reed canary grass and other emergents dominate the wetland edge along the stream; some shrubs are present as well.
Production of organic matter and its export	X		1, 2, 5, 6		Wetland 98 has a number of hydroperiods; depressions/undulating topography which likely floods seasonally and occasionally; however, plant diversity, although there are shrub (Himalayan blackberry/bamboo) and tree (red alder) classes are present amongst the herbaceous, complexity is low to moderate.
General habitat suitability	X		3, 5		Wetland is connected to other instream, riparian, wetland, and upland habitats upstream and downstream of the site.
Habitat for aquatic invertebrates	X		1, 2, 4, 5, 6	X	Seasonally ponded portion of wetland contributes leaf litter and grass thatch; slight variation in ponding depth present within wetland; Wetland 98 is immediately adjacent to Wapato Creek tributary.
Habitat for amphibians	X		1, 3, 6		W98 does not contain suitable breeding habitat for amphibians; the adjacent stream is fish bearing; however, adult Pacific tree frog calls were heard within the riparian corridor on site.
Habitat for wetland-associated mammals		X	3		Not suitable habitat for wetland-associated mammals.

Habitat for wetland-associated birds	X		2, 3, 4, 6	X	Wetland 98 contains habitat and food sources that would host the presence of wetland-associated birds; however, this wetland is currently being used as a latrine and travel corridor by the inhabitants of the adjacent homeless encampment—it is not relatively undisturbed.
General fish habitat		X	4		Fish-bearing stream (Wapato Creek) adjacent to wetland; however, any fish entering wetland during floods are likely to become trapped – no channels that would allow easy return.
Native plant richness		X	2		Dominant plants are nonnative.
Educational or scientific use		X	2		Wetland is currently owned by WSDOT; but not accessible nor suitable for educational use.
Uniqueness & heritage		X	1, 2		Documented T/E/S fish species in Wapato Creek at this site; however, this wetland is severely disturbed/degraded and would not be considered unique, rare, or significant.

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 101 **Project:** SR 167 Completion Project **Assessed By:** JH, LD, RLB

Date: 7/15/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		3, 6		No outlet, W101 infiltrates.
Sediment removal	X		2, 3, 5	X	2 to 2½-foot depth of ponding; pond lily, thick common rush and reed canary grass present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Located in cemetery and surrounded by lawn and landscaping; still retaining surface ponding during summer drought, 100% herbaceous cover, fine silts present (ancient river flooding silt).
Erosion control & shoreline stabilization		X			Not associated with water course.
Production of organic matter and its export	X		1, 5		No outlet.
General habitat suitability		X	3		Not a significant habitat feature; surrounded by cemetery and maintained open area.
Habitat for aquatic invertebrates	X		1, 2, 3, 4, 6	X	Wetland contains various water depths, aquatic bed and emergent vegetation and has connectivity to stream and ditch features which drain to the Puyallup River.
Habitat for amphibians	X		1, 2, 3, 6	X	Areas of permanent standing water; thin-stemmed emergents present; wetland buffer primarily landscaping; other water features located within 1 km.
Habitat for wetland-associated mammals		X	1		Not suitable wetland-associated mammal habitat.
Habitat for wetland-associated birds	X		2, 6		Wetland has emergent vegetation, seasonal ponding, and presence of aquatic invertebrates and amphibians.
General fish habitat		X			Not associated with waterbody; no fish.
Native plant richness		X			Not all dominant or codominant plants are native; high presence of reed canarygrass.

Educational or scientific use		X			This is a cemetery site and unsuitable for these purposes.
Uniqueness & heritage		X			Not a unique or heritage 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 102 **Project:** SR 167 Completion Project **Assessed By:** JH, LD, RLB

Date: 7/27/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 4, 6	X	Depressional system with an intermittently flowing ditch outlet. The wetland is capable of retaining higher volumes of water during storm events.
Sediment removal		X	3		Dense herbaceous vegetation covers entire wetland.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from SR 167 contain heavy metals and other pollutants. Silts present in wetland within swale.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1		No significant outlet; low to no function.
General habitat suitability		X	1		Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding; no connectivity to water courses.
Habitat for amphibians		X			No suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Not all dominant and co-dominant plants in wetland are native.
Educational or scientific use		X			Publicly owned ROW stormwater wetland but not suitable 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 103 **Project:** SR 167 Completion Project **Assessed By:** JH, LD, RLB

Date: 7/27/21 **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		3, 6	X	Wetland is a closed depression along SR 167 ROW and overpass. Wetland receives regular roadway stormwater inputs.
Sediment removal		X	3		Dense herbaceous vegetation covers entire wetland; however, no bare soils, agriculture, or construction are located upgradient.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from SR 167 overpass contain heavy metals and other pollutants. Silty soils present in wetland within.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1		No significant outlet; low to no function.
General habitat suitability		X	1		Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding; no connectivity to water courses.
Habitat for amphibians		X			No suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Dominant plants are non-native weeds.
Educational or scientific use		X			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 104 **Project:** SR 167 Completion Project **Assessed By:** JH, LD, RLB

Date: 7/27/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		3, 6	X	Wetland is a very deep ditch depression within SR 167 ROW and beneath overpass. Wetland receives regular roadway stormwater inputs.
Sediment removal		X	3		Dense herbaceous vegetation covers entire wetland; however, no bare soils, agriculture, or construction are located upgradient.
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from SR 167 overpass contain heavy metals and other pollutants. Silty soils present in wetland within.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1		Low to no function.
General habitat suitability		X	1		Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding; no connectivity to water courses.
Habitat for amphibians		X			No suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Dominant plants are nonnative weeds.
Educational or scientific use		X			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 105 **Project:** SR 167 Completion Project **Assessed By:** LD, GS

Date: 8/18/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		3, 6	X	Wetland is a very deep ditch depression within SR 167 ROW and beneath overpass. Primarily infiltrates.
Sediment removal	X		3, 5	X	Dense herbaceous vegetation covers entire wetland; some ponding may occur in deepest part of ditch—functioning as infiltration (infiltration area <4 sq. meters)
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from SR 167 overpass and NB 512 on-ramp contain heavy metals and other pollutants. Silty soils present in wetland within. High infiltration within ditch
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1		Low to no function.
General habitat suitability		X	1		Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No connectivity to water courses. Well-drained
Habitat for amphibians		X			Not suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Low diversity, Weeds and invasive blackberry dominate adjacent
Educational or scientific use		X			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 106 **Project:** SR 167 Completion Project **Assessed By:** L. Dominguez

Date: 11/7/21 **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			Minimal discharge, median is infiltration area
Sediment removal	X		3, 6	X	Road silt settling at culvert outfall
Nutrient and toxicant removal	X		1, 3 ,4, 5	X	Runoff direct from road and infiltrates. Dense herbaceous vegetation covers entire wetland; however no bare soils, agriculture, or construction are located up-gradient.
Erosion control & shoreline stabilization		X			No active channel. Not associated with any waterbody.
Production of organic matter and its export		X	1		No significant output of organic matter; low to no function. Ends in ditch that dissipates
General habitat suitability		X			Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No connectivity to water courses.
Habitat for amphibians		X			No suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Dominant plants are nonnative weeds.
Educational or scientific use		X			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 107 **Project:** SR 167 Completion Project **Assessed By:** L. Dominguez

Date: 10/7/21 **Cowardin Class:** PEM, PFO **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration		X			Minimal discharge, median is infiltration area.
Sediment removal		X	3		Road silt settling mainly at nearby Wetland 106 culvert outfall and ditch.
Nutrient and toxicant removal	X		1, 3 ,4, 5	X	Runoff direct from road and infiltrates. Dense herbaceous vegetation covers entire wetland; however no bare soils, agriculture, or construction are located up-gradient.
Erosion control & shoreline stabilization		X			No active channel. Not associated with any waterbody.
Production of organic matter and its export		X	1		No significant outlet; low to no function. Ends in ditch that dissipates.
General habitat suitability	X		4, 5	X	Diversity of plant species is high.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding; no connectivity to water courses.
Habitat for amphibians		X			No suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds	X		2, 7		Diverse and dense vegetation within wetland and dense tree canopy in buffer
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness	X		2		Wetland contains two or more Cowardin classes.
Educational or scientific use		X			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 108 **Project:** SR 167 Completion Project **Assessed By:** JH/LD

Date: 9-22-2021 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 3	X	Wetland is associated with a constructed stormwater (SW) ditch for infiltration and can hold higher flood volumes during storm events.
Sediment removal	X		3, 5		Dense herbaceous plants present 100%; ponding occurs during storms.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	See above; receives SW from highway, fine-grained mineral soils present likely from ancient river floodplain.
Erosion control & shoreline stabilization		X			Not associated with water course or shoreline.
Production of organic matter and its export	X		1, 5		See above.
General habitat suitability	X		7		Evidence of small animal tracks.
Habitat for aquatic invertebrates	X		4, 6		Seasonal ponding and major river within 2 km.
Habitat for amphibians	X		1, 2, 6		Seasonal ponding, thin-stemmed emergent vegetation present throughout wetland, major river within 1 km.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals, no permanent water.
Habitat for wetland-associated birds		X	2		See above, forested and/or scrub class within wetland and/or buffer, but surrounding development limits habitat functions.
General fish habitat		X			Not associated with a waterbody.
Native plant richness	X		2		Wetland has shrub and forest components but is a single emergent Cowardin class
Educational or scientific use		X	2, 3		Although Wetland 100 is on public ROW, it is an urban stormwater swale adjacent to busy arterial roads and highway; needs WSDOT escort to access, and is unsuitable for these purposes.
Uniqueness & heritage		X			Not a unique or heritage 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 109 **Project:** SR 167 Completion Project **Assessed By:** G. Schulz, L. Dominguez

Date: 11/12/21 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration		X			Criteria not met.
Sediment removal		X			Not providing significant volume of water that would carry sediment.
Nutrient and toxicant removal	X		1, 3	X	Runoff direct from road and infiltrates., toxicants (road runoff) are located up-gradient.
Erosion control & shoreline stabilization		X			No active channel. Not associated with any waterbody.
Production of organic matter and its export		X			No significant output of organic matter; low to no function.
General habitat suitability		X			Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X	1		Evidence of seasonal inundation.
Habitat for amphibians		X	1		Evidence of seasonal inundation.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	1, 8		Emergent vegetation class present within the wetland, nearby greenbelt.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Dominant plants are nonnative weeds.
Educational or scientific use		X			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 111 **Project:** SR 167 Completion Project **Assessed By:** JH/LD

Date: 9-22-2021 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2	X	Wetland associated with constructed stormwater (SW) ditch for infiltration and can hold higher flood volumes during storm events.
Sediment removal	X		3, 5		Dense herbaceous plants present 100%; ponding occurs during storms.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	See above; receives SW from highway, fine-grained mineral soils present likely from ancient river floodplain.
Erosion control & shoreline stabilization		X			Not associated with water course or shoreline.
Production of organic matter and its export	X		1, 5		See above.
General habitat suitability	X		7		Evidence of small animal tracks.
Habitat for aquatic invertebrates	X		4, 6		Seasonal ponding and major river within 2 km.
Habitat for amphibians	X		1, 2, 6		Seasonal ponding, thin-stemmed emergent vegetation present throughout wetland, major river within 1 km.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals; no permanent water.
Habitat for wetland-associated birds	X		2, 8		See above, forested and/or scrub class within wetland and/or buffer. Less than 40% developed within 1 km (lots of agriculture and low housing/commercial density).
General fish habitat		X			Not associated with a waterbody.
Native plant richness	X				Wetland has single emergent Cowardin class.
Educational or scientific use		X	2, 3		Although Wetland 100 is on public ROW, it is an urban stormwater swale adjacent to busy arterial roads; and needs WSDOT escort to access, unsuitable for these purposes.
Uniqueness & heritage		X			Not a unique or heritage 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 112 **Project:** SR 167 Completion Project **Assessed By:** JH/LD

Date: 9-22-2021 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2	X	Area is a manmade ditch for infiltration and can hold higher flood volumes during storm events due to an intermittently flowing ditched outlet.
Sediment removal	X		3, 5		Dense herbaceous plants present 100%; ponding occurs during storms.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	See above; receives SW from highway, fine-grained mineral soils present likely from ancient river floodplain.
Erosion control & shoreline stabilization		X			Not associated with water course or shoreline.
Production of organic matter and its export	X		1, 5		See above.
General habitat suitability	X		7		Evidence of small animals tracks.
Habitat for aquatic invertebrates	X		4, 6		Seasonal ponding and major river within 2 km.
Habitat for amphibians	X		1, 2, 6		Seasonal ponding, thin-stemmed emergent vegetation present throughout wetland, major river within 1 km.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals, no permanent water.
Habitat for wetland-associated birds	X		2, 8		See above, forested and/or scrub class within wetland and/or buffer. Less than 40% developed within 1 km (lots of agriculture and low housing/commercial density).
General fish habitat		X			Not associated with a waterbody.
Native plant richness	X		2		Wetland has single emergent Cowardin class.
Educational or scientific use		X	2, 3		Although Wetland 100 is on public ROW, it is an urban stormwater swale adjacent to busy arterial roads; and needs WSDOT escort to access, unsuitable for these purposes.
Uniqueness & heritage		X			Not a unique or heritage 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 113 **Project:** SR 167 Completion Project **Assessed By:** JH/LD

Date: 9-22-2021 **Cowardin Class:** PEM/PSS **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2	X	Area is a manmade ditch for infiltration and can hold higher flood volumes during storm events.
Sediment removal	X		3, 5		Dense herbaceous plants present 100%; ponding occurs during storms.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	See above; receives SW from highway, fine-grained mineral soils present, likely from ancient river floodplain.
Erosion control & shoreline stabilization		X			Not associated with water course or shoreline.
Production of organic matter and its export	X		1, 5		See above.
General habitat suitability	X		7		Evidence of small animal tracks.
Habitat for aquatic invertebrates	X		4, 6		Seasonal ponding and major river within 2 km.
Habitat for amphibians	X		1, 2, 6		Seasonal ponding, thin-stemmed emergent vegetation present throughout wetland, major river within 1 km.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals, no permanent water.
Habitat for wetland-associated birds		X	2		The wetland is functioning as a stormwater ditch within a high-level traffic corridor surrounded on the east, west, and south sides by urban development and high traffic roads; not optimal bird habitat.
General fish habitat		X			Not associated with a waterbody.
Native plant richness	X		2		Wetland has emergent and shrub classes; however, nonnatives dominate.
Educational or scientific use		X	2, 3		Although Wetland 100 is on public ROW, it is an urban stormwater swale adjacent to busy arterial roads; and needs WSDOT escort to access, unsuitable for these purposes.
Uniqueness & heritage		X			Not a unique or heritage 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 114 **Project:** SR 167 Completion Project **Assessed By:** RLB

Date: 11/8/2021 **Cowardin Class:** PEM, PSS **Ecology Category:** IV **Local Rating:** IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3, 6	X	Wetland is depressional and collects stormwater as sheet flow from southbound SR 512 lanes.
Sediment removal	X		3, 5	X	Dense herbaceous vegetation covers portions of the wetland.
Nutrient and toxicant removal	X		1, 2, 4	X	Portions of wetland seasonally inundates.
Erosion control & shoreline stabilization		X			Not associated with any waterbody or stream.
Production of organic matter and its export	X		1, 5, 6	X	Majority of this wetland inundates seasonally and >30% of wetland has persistent emergent vegetation. Outlets are present and drain the wetland during high flood events.
General habitat suitability		X			Wetland is highly fragmented by SR 167 and urban development.
Habitat for aquatic invertebrates	X		1, 4, 6		Portions of wetland seasonally inundate and contain persistent emergent vegetation; Puyallup River is less than 2 km to the north.
Habitat for amphibians	X		1, 2, 6		Puyallup River is less than 2 km to the north.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland associated birds.
General fish habitat		X			Not suitable or accessible habitat for fish.
Native plant richness		X			Dominant plants are nonnative.
Educational or scientific use		X			Publicly owned ROW but inappropriate for educational uses; public safety hazard area.
Uniqueness & heritage		X			Not a unique or heritage wetland.

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 115 **Project:** SR 167 Completion Project **Assessed By:** RLB

Date: 11/8/21 **Cowardin Class:** PEM, PSS **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3	X	Wetland is depressional and collects stormwater as sheet flow from southbound SR 512 lanes; wetland does not appear to inundate; saturated only.
Sediment removal	X		3		Dense herbaceous vegetation covers portions of the wetland.
Nutrient and toxicant removal	X		1, 4	X	Wetland receives runoff directly from high-traffic highway. Thick herbaceous plants dominate the wetland.
Erosion control & shoreline stabilization		X			Not associated with any waterbody or stream.
Production of organic matter and its export	X		1, 5, 6	X	Majority of this wetland inundates seasonally and >30% of wetland has persistent emergent vegetation. Outlets are present and drain the wetland during high flood events.
General habitat suitability		X			Wetland is highly fragmented by SR 167 and urban development.
Habitat for aquatic invertebrates		X	6		This wetland does not appear to inundate. Puyallup River is less than 2 km to the north.
Habitat for amphibians		X	6		Puyallup River is less than 2 km to the north.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland associated mammals
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland associated birds.
General fish habitat		X			Not suitable or accessible habitat for fish.
Native plant richness		X			Dominant plants are nonnative.
Educational or scientific use		X			Publicly owned ROW but inappropriate for educational uses; public safety hazard area.
Uniqueness & heritage		X			Not a unique or heritage wetland.

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 116 **Project:** SR 167 Completion Project **Assessed By:** RLB

Date: 11/8/21 **Cowardin Class:** PEM/PSS **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 3, 6	X	Wetland is depressional and collects stormwater as sheet flow from southbound SR 512 lanes.
Sediment removal	X		3, 5	X	Dense herbaceous vegetation covers portions of the wetland.
Nutrient and toxicant removal	X		1, 2, 4	X	Portions of wetland seasonally inundates.
Erosion control & shoreline stabilization		X			Not associated with any waterbody or stream.
Production of organic matter and its export	X		1, 5, 6	X	Majority of this wetland inundates seasonally and >30% of wetland has persistent emergent vegetation. Outlets are present and drain the wetland during high flood events.
General habitat suitability		X			Wetland is highly fragmented by SR 167 and urban development.
Habitat for aquatic invertebrates		X	6		This wetland does not appear to inundate. Puyallup River is less than 2 km to the north.
Habitat for amphibians		X	6		Puyallup River is less than 2 km to the north.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland associated birds.
General fish habitat		X			Not suitable or accessible habitat for fish.
Native plant richness		X			Dominant plants are nonnative.
Educational or scientific use		X			Publicly owned ROW but inappropriate for educational uses; public safety hazard area.
Uniqueness & heritage		X			Not a unique or heritage wetland.

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 119 **Project:** SR 167 Completion Project **Assessed By:** Jim Hearsey

Date: 10/15/21 **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		1, 2, 4, 6	X	Wetland occurs in the upper portion of its watershed and is capable of retaining higher volumes of water during storm events due to an intermittently flowing outlet.
Sediment removal		X	5		Minimal areas of ponding present but sources of excess sediment are not present upgradient of the wetland.
Nutrient and toxicant removal	X		1, 2, 5		Sources of excess nutrients (heavy metals) are present upgradient of the wetland. some flooding occurs during the growing season.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	5, 6		The wetland has an outlet but lacks dense vegetation, plant community structure and species richness.
General habitat suitability		X			The wetland is located in a highway median surrounded by development and impervious surfaces; not suitable wildlife habitat.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding.
Habitat for amphibians		X			No permanent or seasonal water ponding.
Habitat for wetland-associated mammals		X			No permanent or seasonal water ponding.
Habitat for wetland-associated birds		X	2		The wetland is located in a highway median surrounded by development and impervious surfaces; not optimal bird habitat.
General fish habitat		X			Not associated with a fish-bearing stream.
Native plant richness		X	1		Dominant plants mixed native and invasive species, but wetland has one Cowardin class and lacks mature trees.

Educational or scientific use		X	2		Wetland is in public ownership, but lacks parking and documented scientific or educational use.
Uniqueness & heritage		X			No documented features

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 120 **Project:** SR 167 Completion Project **Assessed By:** Jim Hearsey

Date: 10/15/21 **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		1, 2, 6	X	Wetland is a depressional system that occurs in the upper portion of its watershed. The wetland is capable or retaining slightly higher levels of water during storm events due to an intermittently flowing outlet (catch basin).
Sediment removal		X	5		Minimal areas of ponding present but sources of excess sediment are not present upgradient of the wetland.
Nutrient and toxicant removal	X		1, 2, 5	X	Sources of excess nutrients (heavy metals) are present upgradient of the wetland. Some flooding occurs during the growing season.
Erosion control & shoreline stabilization		X			Not associated with a water course or shoreline.
Production of organic matter and its export		X	5, 6		The wetland has an outlet but lacks dense vegetation, plant community structure and species richness.
General habitat suitability		X			The wetland is located in a highway median surrounded by development and impervious surfaces; lacks plant species diversity and has one Cowardin class habitat.
Habitat for aquatic invertebrates		X			No permanent or seasonal water ponding.
Habitat for amphibians		X			No permanent or seasonal water ponding.
Habitat for wetland-associated mammals		X			No permanent water ponding.
Habitat for wetland-associated birds		X	2		The wetland is located in a highway median surrounded by development and impervious surfaces; not optimal bird habitat.
General fish habitat		X			Not associated with a fish-bearing stream.
Native plant richness		X	1		Dominant plants mixed native and invasive species, but wetland has one Cowardin class and lacks mature trees.

Educational or scientific use		X	2		The wetland is in public ownership but does not have documented educational use and lacks suitable parking.
Uniqueness & heritage		X			No documented features.

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 122 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 12/23/2021 **Cowardin Class:** PSS/PEM **Ecology Category:** II **Local Rating:** II

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 3, 5, 6	X	Wetland is depressional with no outlet and seasonal ponding.
Sediment removal	X		3, 5		Wetland is adjacent to sheep pasture. Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from railroad and pasture. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			Wetland is not associated with watercourse or shoreline.
Production of organic matter and its export		X	1, 2, 5		Wetland has cover of vegetation, but no outlet.
General habitat suitability		X	1, 5		Wetland is not fragmented by development, but lacks structural complexity and connectivity to other habitats.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding in emergent vegetation and scrub-shrub. Wetland within 2 km of Wapato Creek.
Habitat for amphibians	X		1, 2, 6		Seasonal flooding in emergent area, and wetland is within 1 km of Wapato Creek.
Habitat for wetland-associated mammals		X	3		No permanent water is present.
Habitat for wetland-associated birds	X		2, 3, 6		Emergent and scrub-shrub vegetation within wetland. Amphibians and invertebrates are potentially present.
General fish habitat		X			Wetland not associated with fish-bearing water.
Native plant richness		X	2		Invasive plants are dominant.
Educational or scientific use		X			Wetland is in right-of-way of Union Pacific Railroad.
Uniqueness & heritage		X			Not designated for habitat or species.

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 123 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 12/23/2021 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 3, 6	X	Wetland is depressional with no outlet and seasonal ponding.
Sediment removal	X		3, 5		Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from railroad and area of homeless encampments. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			Wetland is not associated with watercourse or shoreline.
Production of organic matter and its export		X	1, 5		Wetland has cover of vegetation, but no outlet.
General habitat suitability		X	1		Wetland is not fragmented by development, but lacks structural complexity and connectivity to other habitats.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding in emergent vegetation with leaf litter present. Wetland within 2 km of Wapato Creek.
Habitat for amphibians	X		1, 2, 6		Seasonal flooding in emergent vegetation, and wetland is within 1 km of Wapato Creek.
Habitat for wetland-associated mammals		X	3		No permanent water is present.
Habitat for wetland-associated birds	X		2, 3, 6		Emergent vegetation within wetland, and scrub-shrub in buffer. Amphibians and invertebrates are potentially present.
General fish habitat		X			Wetland not associated with fish-bearing water.
Native plant richness		X			Invasive plants are dominant.
Educational or scientific use		X			Wetland is in right-of-way of Union Pacific Railroad.
Uniqueness & heritage		X			Not designated for habitat or species.

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 124 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 12/23/2021 **Cowardin Class:** PSS/PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3, 5, 6	X	Wetland is depressional and has seasonal ponding.
Sediment removal	X		3, 5		Wetland is adjacent to alpaca pasture. Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from railroad and pasture. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			Wetland is not associated with watercourse or shoreline.
Production of organic matter and its export	X		1, 2, 5, 6		Wetland has cover of vegetation and connects via ditch to Wapato Creek.
General habitat suitability		X	1, 5		Wetland is not fragmented by development, but lacks structural complexity and connectivity to other habitats.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding in emergent vegetation and scrub-shrub. Wetland within 2 km of Wapato Creek.
Habitat for amphibians	X		1, 2, 6		Seasonal flooding in emergent area, and wetland is within 1 km of Wapato Creek.
Habitat for wetland-associated mammals		X	3		No permanent water is present.
Habitat for wetland-associated birds	X		2, 3, 6		Emergent and scrub-shrub vegetation within wetland. Amphibians and invertebrates are potentially present.
General fish habitat	X		1, 4		Intermittent connection to Wapato Creek via ditch, with vegetative cover in wetland.
Native plant richness		X	2		Invasive plants are dominant.
Educational or scientific use		X			Wetland is in right-of-way of Union Pacific Railroad.
Uniqueness & heritage		X			Not designated for habitat or species.

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 125 **Project:** SR 167 Completion Project **Assessed By:** J. LeClerc

Date: 12/23/2021 **Cowardin Class:** PSS **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence Y	Occurrence N	Rationale (qualifiers and attributes present)	Principal Function	Comments
Flood flow alteration	X		2, 3, 6	X	Wetland is depressional with no outlet and seasonal ponding.
Sediment removal	X		3, 5		Dense vegetation and ponding are present.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Wetland receives runoff from railroad. Seasonal flooding occurs, and wetland has dense vegetation and fine-grained mineral soils.
Erosion control & shoreline stabilization		X			Wetland is not associated with watercourse or shoreline.
Production of organic matter and its export		X	1, 5		Wetland has cover of vegetation, but no outlet.
General habitat suitability		X	1, 3		Wetland is not fragmented by development and is adjacent to wooded upland, but lacks Cowardin class diversity.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonal flooding with leaf litter present. Wetland within 2 km of Wapato Creek.
Habitat for amphibians	X		1, 2, 6		Seasonal flooding in emergent vegetation, and wetland is within 1 km of Wapato Creek.
Habitat for wetland-associated mammals		X	3		No permanent water is present.
Habitat for wetland-associated birds	X		3, 6		Scrub-shrub vegetation within wetland, and forested upland in buffer. Amphibians and invertebrates are potentially present.
General fish habitat		X			Wetland not associated with fish-bearing water.
Native plant richness		X			Invasive plants are dominant.
Educational or scientific use		X			Wetland is in right-of-way of Union Pacific Railroad.
Uniqueness & heritage		X			Not designated for habitat or species.

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 127 **Project:** SR 167 Completion Project **Assessed By:** R. Plumb

Date: 1/21/2022 **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, 3, 6	X	The wetland is in a relatively flat area and is capable of retaining higher volumes of water during storm events. The wetland is closed depressional system.
Sediment removal		X	3, 5		The wetland contains dense herbaceous vegetation and occasional surface ponding, but sources of sediment are not present upgradient of the wetland.
Nutrient and toxicant removal	X		1, 2, 4, 5	X	Sources of nutrients are upgradient of the wetland. The wetland provides long duration of water detention and has at least 30% aerial cover of live dense vegetation.
Erosion control & shoreline stabilization		X			The wetland Is not associated with a watercourse or shoreline.
Production of organic matter and its export		X	1, 5		The wetland lacks an outlet and interspersion of vegetation.
General habitat suitability		X	1, 3		The wetland lacks diversity of plant species, does not have habitat interspersion and has only one Cowardin class. Evidence of wildlife use not present.
Habitat for aquatic invertebrates		X	2, 4, 6		The wetland is occasionally inundated but lacks seasonal inundation. No cover of woody debris, rocks, or leaf litter present within standing water area.
Habitat for amphibians		X	3, 6		The wetland does not contain areas of seasonal inundation.
Habitat for wetland-associated mammals		X			Permanent water is not present within the wetland.
Habitat for wetland-associated birds		X	2, 7		Wetland does not have 30 to 50% shallow open water and/or aquatic bed classes.
General fish habitat		X			Not associated with a fish-bearing water.
Native plant richness		X			Wetland has one Cowardin class and lacks mature trees and three or more strata of vegetation.

Educational or scientific use		X	2		The site is in public ownership but does not have documented scientific or educational use.
Uniqueness & heritage		X			The wetland lacks documented critical habitat and occurrences of state or federally listed threatened or endangered species.

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 130 **Project:** SR 167 Completion Project **Assessed By:** LD, JH

Date: 3/5/2022 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		1, 2, 3, 7		Wetland is a deep, closed-ditch depression within SR 512 ROW that receives sheet flows from the road surfaces and primarily infiltrates. It is capable of retaining higher volume of water during storm events.
Sediment removal	X		3, 5		Dense herbaceous vegetation covers entire wetland; some ponding occurs in deepest part of ditch—functioning as infiltration.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Stormwater inputs from NB 512 contain heavy metals and other pollutants. Wetland contains silty soils. Ponding occurs and can remain for extended periods. Dense herbaceous vegetation covers entire wetland.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export	X		1, 5		Dense herbaceous vegetation covers entire wetland. Inundation occurs during the growing season.
General habitat suitability	X		1		Wetland occurs within a highly degraded urban area but is not fragmented.
Habitat for aquatic invertebrates	X		1, 4, 5, 6		Seasonally inundated wetland with emergent vegetation and leaf litter within ponded areas. Within 2 km of Puyallup River.
Habitat for amphibians	X		1, 5, 6		Seasonally ponded. Agriculture, grassland, or green belt lands comprise >40% of land within 1 km. Numerous other wetlands are located within 1 km.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds	X		2, 8		Emergent vegetation within seasonally ponded areas. Agriculture, grassland, or green belt lands comprise >40% of land within 1 km.
General fish habitat		X			No fish; not suitable fish habitat.

Native plant richness		X			Low diversity, Reed canarygrass and invasive blackberry dominate.
Educational or scientific use		X			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 131 **Project:** SR 167 Completion Project **Assessed By:** LD, JH

Date: 3/6/22 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		7	X	Wetland is a very deep ditch depression within SR 167 ROW and beneath overpass that receives sheet flows from the road surfaces and secondarily from stormwater inputs from upslope ROW.
Sediment removal	X		3, 5	X	Dense herbaceous vegetation covers entire wetland; some ponding may occur in deepest part of ditch—functioning as infiltration (infiltration area <4 sq. meters).
Nutrient and toxicant removal	X		1, 4, 5	X	Stormwater inputs from SR 167 overpass and NB 512 on-ramp contain heavy metals and other pollutants. Silty soils present in wetland within. High infiltration within ditch.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1		Low to no function.
General habitat suitability		X	1		Wetland occurs within highly urban and fragmented freeway corridor; unsuitable wildlife habitat.
Habitat for aquatic invertebrates		X			No connectivity to water courses. Well-drained.
Habitat for amphibians		X			Not suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2		Not suitable habitat for wetland-associated birds.
General fish habitat		X			No fish; not suitable fish habitat.
Native plant richness		X			Low diversity, Weeds and invasive blackberry dominate adjacent.

Educational or scientific use		X			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 136 **Project:** SR 167 Completion Project **Assessed By:** LD, JH

Date: 3/23/2022 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3, 6		Wetland is a closed, ditched depression along I-5 ROW that receives surface flows from the freeway and is capable of retaining higher volumes of water during storm events.
Sediment removal		X	3, 5		Dense herbaceous vegetation covers wetland; seasonal ponding occurs in deepest part of ditch but excess sediment not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils and dense herbaceous vegetation are present in wetland. Seasonal ponding occurs within the wetland.
Erosion control & shoreline stabilization		X	2		Not associated with any waterbody.
Production of organic matter and its export		X	1, 2, 5		Dense herbaceous vegetation and seasonal ponding present, but the wetland does not have an outlet.
General habitat suitability		X	1, 3		Wetland occurs within highly urban area adjacent to I-5 and lacks plant species diversity and interspersion of habitats.
Habitat for aquatic invertebrates	X		1, 2, 4, 6		The wetland is seasonally inundated and has various water depths. Emergent vegetation and leaf litter within ponded areas. Within 2 km of other wetlands.
Habitat for amphibians	X		1, 2, 6		Seasonally ponded with thin-stemmed vegetation in ponded areas. Other wetlands and Wapato Creek within 1 km.
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, 8		Emergent vegetation within ponded areas. Other wetlands within 1 km, but the wetland is located adjacent to I-5 and does not provide suitable habitat for wetland associated birds.
General fish habitat		X	1		No fish; not suitable fish habitat.

Native plant richness		X	4		Low plant species diversity. Reed canarygrass and invasive blackberry dominate. A few mature trees along southern edge.
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 137 **Project:** SR 167 Completion Project **Assessed By:** LD, JH

Date: 3/23/2022 **Cowardin Class:** PEM **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2, 3, 6		Wetland is a closed depression adjacent to I-5. The wetland receives sheet flow from the freeway and can retain higher volumes during storms.
Sediment removal		X	3,5		Dense herbaceous vegetation and seasonal ponding are present, but excess sediment is not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils present in wetland. Seasonal ponding and dense herbaceous vegetation are present.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export		X	1, 2, 5		See above. The wetland lacks an outlet and has a low degree of plant community structure and species richness.
General habitat suitability		X	1		The wetland unit is not fragmented, but it occurs within highly urban area adjacent to I-5 and lacks connectivity with other wetland types.
Habitat for aquatic invertebrates	X		1, 2, 4, 6		Seasonally inundated at various depths. Emergent vegetation within ponded areas. Other wetlands and Wapato Creek are located within 1.2 miles of the wetland.
Habitat for amphibians		X	1, 2, 6		Seasonally ponded with thin-stemmed vegetation in ponded areas. However, the wetland is located in a freeway median and is not suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			See above. Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2, 8		See above. Wetland located adjacent to freeway and lacks suitable habitat for wetland-associated birds.
General fish habitat		X			Wetland not associated with a fish-bearing water.

Native plant richness		X			Low plant species diversity. Wetland is dominated by reed canarygrass and invasive Himalayan blackberry.
Educational or scientific use		X	2		Publicly owned ROW cloverleaf 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 138 **Project:** SR 167 Completion Project **Assessed By:** LD, JH

Date: 3/23/2022 **Cowardin Class:** PEM, PFO **Ecology Category:** III **Local Rating:** III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration		X	2, 6		Wetland is a depression adjacent to I-5. The wetland receives sheet flow from the freeway but has an intermittently flowing outlet and lacks dense woody vegetation.
Sediment removal		X	3, 5		Dense herbaceous vegetation and seasonal ponding are present, but excess sediment is not present upgradient of wetland.
Nutrient and toxicant removal	X		1, 2, 3, 4, 5	X	Stormwater inputs from I-5 contain heavy metals and other pollutants. Silty soils present in wetland. Seasonal ponding and dense herbaceous vegetation are present.
Erosion control & shoreline stabilization		X			Not associated with any waterbody.
Production of organic matter and its export	X		1, 2, 5, 6		The wetland has at least 30% cover of herbaceous vegetation but lacks high interspersion of plant community structure and interspersion of vegetation and water.
General habitat suitability		X	1		The wetland unit is not fragmented, but it occurs within a highly urban area adjacent to I-5 and lacks connectivity with other habitat types.
Habitat for aquatic invertebrates	X		1, 2, 4, 6		Seasonally inundated at various depths. Emergent vegetation within ponded areas. Other wetlands and Wapato Creek are located within 1.2 miles of the wetland.
Habitat for amphibians		X	1, 2, 6		Seasonally ponded with thin-stemmed vegetation in ponded areas. However, the wetland is located in a freeway median and is not suitable habitat for amphibians.
Habitat for wetland-associated mammals		X			See above. Not suitable habitat for wetland-associated mammals.
Habitat for wetland-associated birds		X	2, 3		See above. Wetland located adjacent to freeway and lacks suitable habitat for wetland-associated birds.
General fish habitat		X			Wetland not associated with a fish-bearing water.

Native plant richness		X	4		Low plant species diversity. Wetland is dominated by reed canarygrass and invasive Himalayan blackberry.
Educational or scientific use		X	2		Publicly owned ROW 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.