

WETLAND AND STREAM CRITICAL AREAS REPORT *including* MITIGATION PLAN

Gateway II Project
City of Ellensburg
Kittitas County, Washington

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GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

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Executive Summary

GG Environmental, LLC (Geoffrey Gray, MA, PWS) completed a wetland and stream investigation for the Gateway to the City of Ellensburg Stormwater LID Retrofit Project II (Gateway II Project or Project) whereby the City of Ellensburg (City) is proposing to construct drainage improvements along both sides of Vantage Highway from Vista Road to the eastern City limits. The collection and treatment of stormwater will reduce the amount of pollution that flows into Lyle Creek. The Project will also widen Vantage Highway between North Vista Road and vicinity of Cowboy Lane and add pedestrian and bicycle pathways to enhance community accessibility.

Two wetland units (WU) were delineated within the study area (WU-1, WU-2), both of which are associated with Lyle Creek. These wetlands, regulated as Critical Areas under the Ellensburg City Code, are assigned a 90-foot protective buffer.¹

Lyle Creek is rated as a Type F stream (fish-bearing) by the City of Ellensburg for which a regulatory buffer radius of 50 feet (ft)² is designated. According to the Washington State Department of Fish and Wildlife (WDFW), it is possible that fish are present in the creek, including steelhead listed as Threatened under the Endangered Species Act.

The Project is anticipated to result in both temporary and permanent impacts to wetlands and Lyle Creek. It is also expected to disturb vegetation within wetland and stream buffer radii, limited to existing vegetation managed (mowed, grubbed during underground utility maintenance) by the City within its right-of-way along Vantage Hwy.

Temporary wetland impacts (0.066 ac, 2,888 ft²) will be minimized onsite through vegetation trimming (not grubbing) and restorative planting of native plant species. This action is also proposed to concurrently compensate for impacts to Lyle Creek, both temporary (0.010 ac, 417 ft²) and permanent (0.003 ac, 127 ft²).

Permanent wetland impacts (0.015 ac) will be mitigated offsite within nearby Paul Rogers Wildlife Park (Park). The Park, owned and managed by the City, includes an existing Category III depressional, palustrine emergent wetland (“Mitigation Site #2,” (MS-2)) within the same watershed as the impacted wetlands. It is proposed to enlarge MS-2 from 0.10 acres (ac) to 0.125 ac (1.67 to 1 mitigation ratio) as well as enhance the wetland to elevate the existing Ecology rating habitat score. This mitigation strategy, consistent with a Department of Ecology Debit-Credit analysis, would ensure that the Project does not result in net loss of wetland functions and values.

Offsite MS-2 wetland mitigation at the Park and onsite vegetation restoration at the Lyle Creek crossing will be monitored and managed for 10 years and three (3) years, respectively, to ensure that mitigation objectives are met prior to permit closeout.

¹ If the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 130 ft per Table 15.620.030(E)(3). The Ecology rating form for each wetland includes five (5) habitat points.

² ECC 15.650.040(D)(2).

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Acronyms and Abbreviations

AgACIS	Agricultural Applied Climate Information System
Corps	United States Army Corps of Engineers
Cowardin	Cowardin Classification System
DNR	Washington State Department of Natural Resources
DPS	Distinct Population Segment
ECC	Ellensburg City Code
Ecology	Washington State Department of Ecology
GIS	Geographic Information System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HGM	Hydrogeomorphic (Wetland Classification)
HUC	Hydrologic Unit Code
LEDPA	Least Environmentally-damaging Practicable Alternative
LRR	Land Resource Region
MLRA	Major Land Resource Area
MS-2	Mitigation Site #2 (offsite)
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent
PSS	Palustrine Scrub-shrub
PHS	Priority Habits and Species
PWS	Professional Wetland Scientist
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDFW	Washington State Department of Fish and Wildlife
WETS	Climate Analysis for Wetlands Tables
WGS84	World Geodetic System 1984
WRIA	Water Resource Inventory Area
WU	Wetland Unit

1. Introduction

The City of Ellensburg (City) is proposing to construct drainage improvements along both sides of Vantage Highway from Vista Road to the eastern City limits. The collection and treatment of stormwater will reduce the amount of pollution that flows into Lyle Creek. The project will also widen Vantage Highway between North Vista Road and vicinity of Cowboy Lane and add pedestrian and bicycle pathways to enhance community accessibility. The proposal is referred to as the Gateway to the City of Ellensburg Stormwater LID Retrofit Project II (Gateway II Project or Project).

Lyle Creek flows through the Project limits. The vicinity also includes a network of open stormwater ditches, culverts, and catch basins all constructed and maintained in upland areas. In order to support environmental permitting for the Project, Aspect Consulting, LLC (Aspect) retained GG Environmental, LLC to complete a wetland and stream investigation within a 13.7-acre (ac) study area.

2. Location

The study area is located within existing City right-of-way along Vantage Highway, between North Vista Road and east of Cowboy Lane (**Figure 1**).

Located in Township 18 North - Range 18 East – Section 36, Township 18 North - Range 19 East – Section 31, Township 17 North - Range 18 East – Section 1, and Township 17 North - Range 19 East – Section 6, the approximate geospatial center of the study area is latitude 46°59'58.56"North, longitude 120°30'58.29"West (WGS84). Elevation ranges from approximately 1,600 – 1,620 feet (ft) (**Figure 2**).

The study area also occurs within USDA Land Resource Region (LRR) B and USDA Major Land Resource Area (MLRA) 8 (Columbia Plateau) (NRCS 2006), Water Resource Inventory Area (WRIA) 39 (Upper Yakima), and Naneum Creek-Wilson Creek subwatershed (12th Hydrologic Unit Code 170300010408).

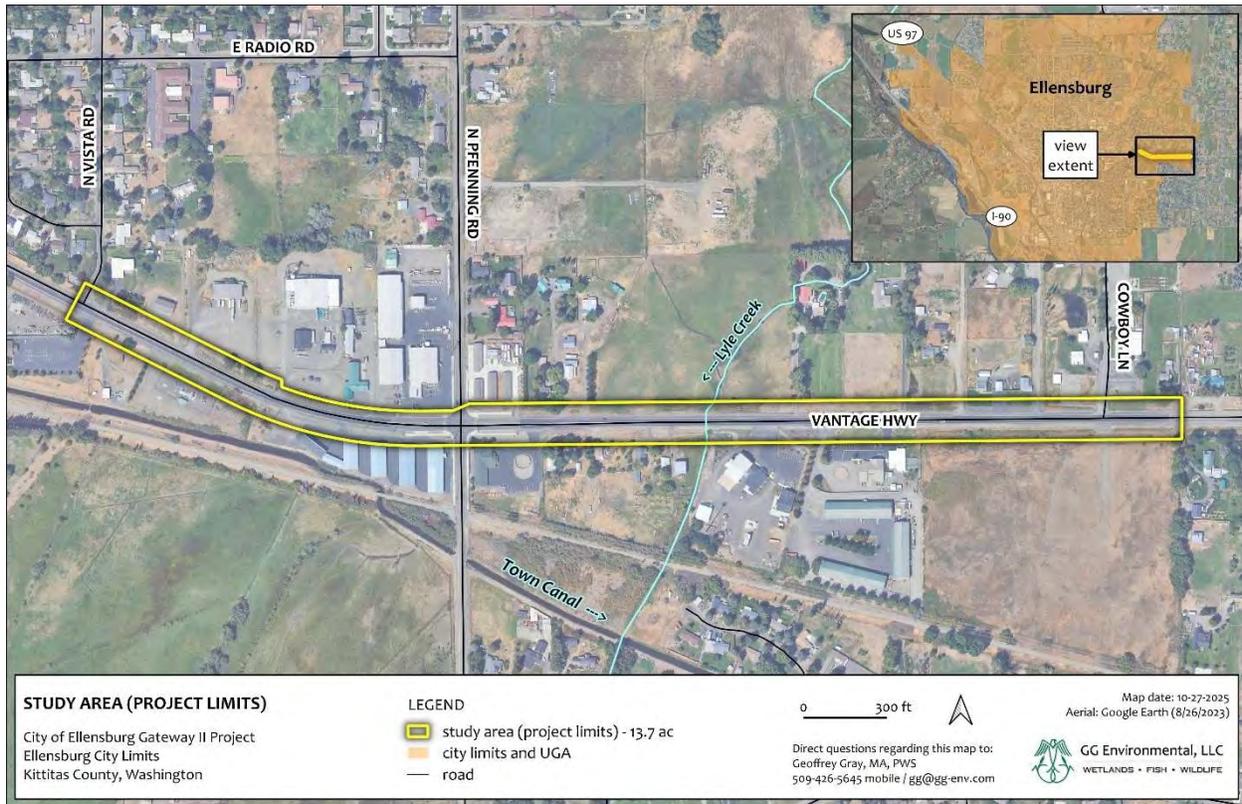
3. Methods

An overview of the methods employed to evaluate wetland and stream critical areas is presented in this section.

3.1. Field Investigation

A wetland and stream critical areas field investigation was completed by GG Environmental, LLC (Geoffrey Gray, MA, PWS) on April 1, 2022. The Project vicinity was subsequently observed during multiple site visits from 2023-2025, during which the 2022 data were reviewed and vetted in the field. The corporate data gathered over time were evaluated according to best available science in 2025, the conclusions of which are presented in this report.

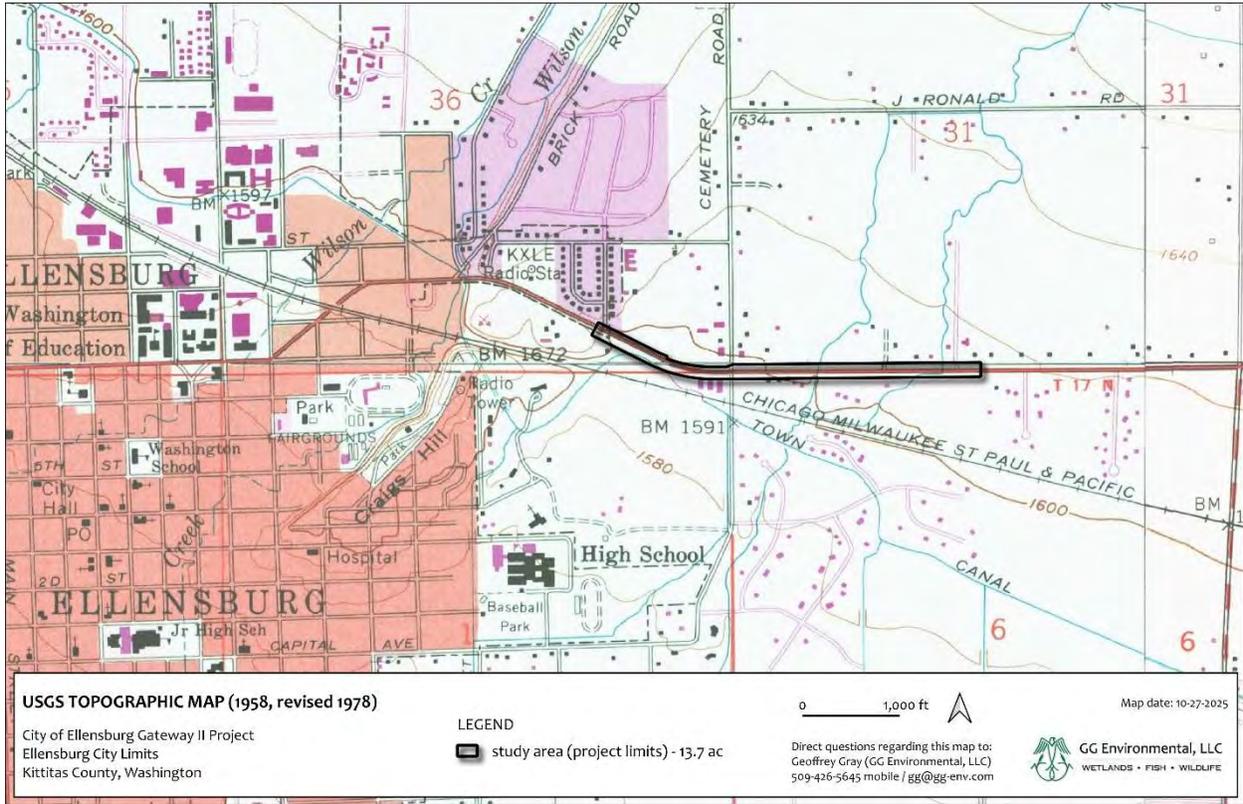
Figure 1. Study Area (Project Limits)



3.2. Geospatial Documentation

Key features were geospatially surveyed in the field with a Motorola G Stylus mobile phone, running the Mapit Spatial GIS application paired via Bluetooth® with a Juniper Systems Geode™ Multi-Global Navigation Satellite System (Multi-GNSS) receiver capable of sub-meter horizontal accuracy. Wetland and stream buffers, per the Ellensburg City Code (ECC), were mapped using Quantum GIS (QGIS) desktop software.

Figure 2. USGS Topographic Map



3.3. Background Data

The following data sources were referenced for existing information on soils, topography, vegetation, precipitation, wetlands, streams, sensitive species, and habitats:

- National Wetlands Inventory (NWI) (USFWS 2025a). (**Appendix A-1**).
- Wetlands and Plants of High Conservation Value (DNR 2025a).
- Natural Resources Conservation Service soil survey data (NRCS 2025a). (**Appendix A-2**).
- Agricultural Applied Climate Information System (AgACIS) climate data (NRCS 2025b). (**Appendix B**).
- City of Ellensburg streams and stream buffers (City of Ellensburg 2025a) (**Appendix A-3**).
- Historic aerial photography: 1954 (City of Ellensburg 2025a) (**Appendix A-4**) and 1985-2024 (Google 2025).
- Kittitas County stream type (Kittitas County 2025).
- DNR stream type (DNR 2025b).
- FEMA floodplain data (City of Ellensburg 2025a).
- Federal and state-listed threatened, endangered, or candidate species (USFWS 2025b).
- Designated critical habitats (USFWS 2025c, NOAA 2025).
- Priority Habitats and Species (PHS) (WDFW 2025a).

3.4. Wetland Delineation, Rating, and Regulatory Jurisdiction

Wetlands were delineated using routine methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008a). Plants were identified by scientific name and wetland indicator status per the National Wetland Plant List (Corps 2022).

Wetlands were rated per the *Washington State Wetland Rating System for Eastern Washington – 2014 Update* (Hruby 2014) and classified following the United States Fish and Wildlife Service (USFWS) *Cowardin Classification System* (Cowardin et al. 1979) and *Hydrogeomorphic Classification System* (HGM) (Brinson 1993).

Wetlands are regulated as Critical Areas³ under the Ellensburg City Code (City of Ellensburg 2025b). Depending on the wetland rating, habitat score, project impacts, and minimization measures, the ECC assigns a wetland buffer ranging from 40 ft to 200 ft.⁴

3.5. Stream Assessment and Regulatory Jurisdiction

Lyle Creek flows through the Project area. Regulated as a Type F (fish-bearing) stream, it is assigned a protective regulatory buffer radius of 50 ft⁵ by the City of Ellensburg. The ordinary high water mark (OHWM) of the creek was evaluated following guidance provided by the United States Army Corps of Engineers (Corps) (Corps 2008b) and Washington State Department of Ecology (Ecology) (Ecology 2016). Ordinary high water mark field indicators observed included a combination of (1) abrupt vegetation community change, (2) exposed roots/root scour, (3) flattened vegetation, and/or (4) wrack accumulation.

4. Existing Conditions

4.1. Surrounding Landscape

Land use within one kilometer (0.62 miles) of the study area includes the developed City limits (~70 percent) and rural residential and grazeland in adjacent unincorporated areas (~30 percent) (Google 2025). Aquatic resources within this radius include Lyle Creek and Wilson Creek. A constructed network of stormwater engineered facilities (see **Section 4.4**), the Cascade Canal, and the Town Canal intersect the landscape.

4.2. Topography and Soils

Topography in the study area is generally flat with slight rise near North Vista Road. The lowest elevation is found along Lyle Creek. Four soil units are mapped by the Natural Resources

³ ECC 15.620.010(A)

⁴ ECC Tables 15-620.030(E)(1-4)

⁵ ECC 15.650.040(D)(2)

Conservation Service (NRCS) within the study area (NRCS 2025a) (**Appendix A-2**), none of which are characterized as hydric soils:

Argixerolls, 15 to 30 percent slopes consists of alluvium and/or loess. Associated with escarpments and hillslopes, the typical profile includes silt loam in the upper 17 inches (in). The soil is well-drained, with more than 80 in to the water table, and does not flood or pond.

Nack-Opnish complex, 0 to 2 percent slopes: *Nack* consists of alluvium with a mantle of volcanic ash. Associated with alluvial fans, the typical profile includes gravelly ashy loam and clay loam in the upper 15 in. The soil is somewhat poorly drained, but does not flood or pond. *Opnish* consists of alluvium with an influence of volcanic ash in the upper part. Associated with alluvial fans, the typical profile includes ashy loam and ashy clay loam in the upper 13 in. The soil is moderately well drained and does not flood or pond.

Nosal ashy silt loam, 0 to 2 percent slopes consists of alluvium with an influence of volcanic ash in the upper part. Associated with floodplains, the typical profile includes ashy silt loam in the upper 15 in. The soil is somewhat poorly drained, does not pond, but occasionally floods.

Brickmill gravelly ashy loam, 0 to 2 percent slopes consists of alluvium with an influence of volcanic ash in the surface. Associated with alluvial fans, the typical profile includes gravelly ashy loam in the upper 12 in. The soil is somewhat poorly drained, but does not flood or pond.

4.3. Lyle Creek

Lyle Creek is managed and maintained to function largely as an irrigation conveyance ditch. It typically dries down at the end of the irrigation season and tends to remain dry throughout the winter.

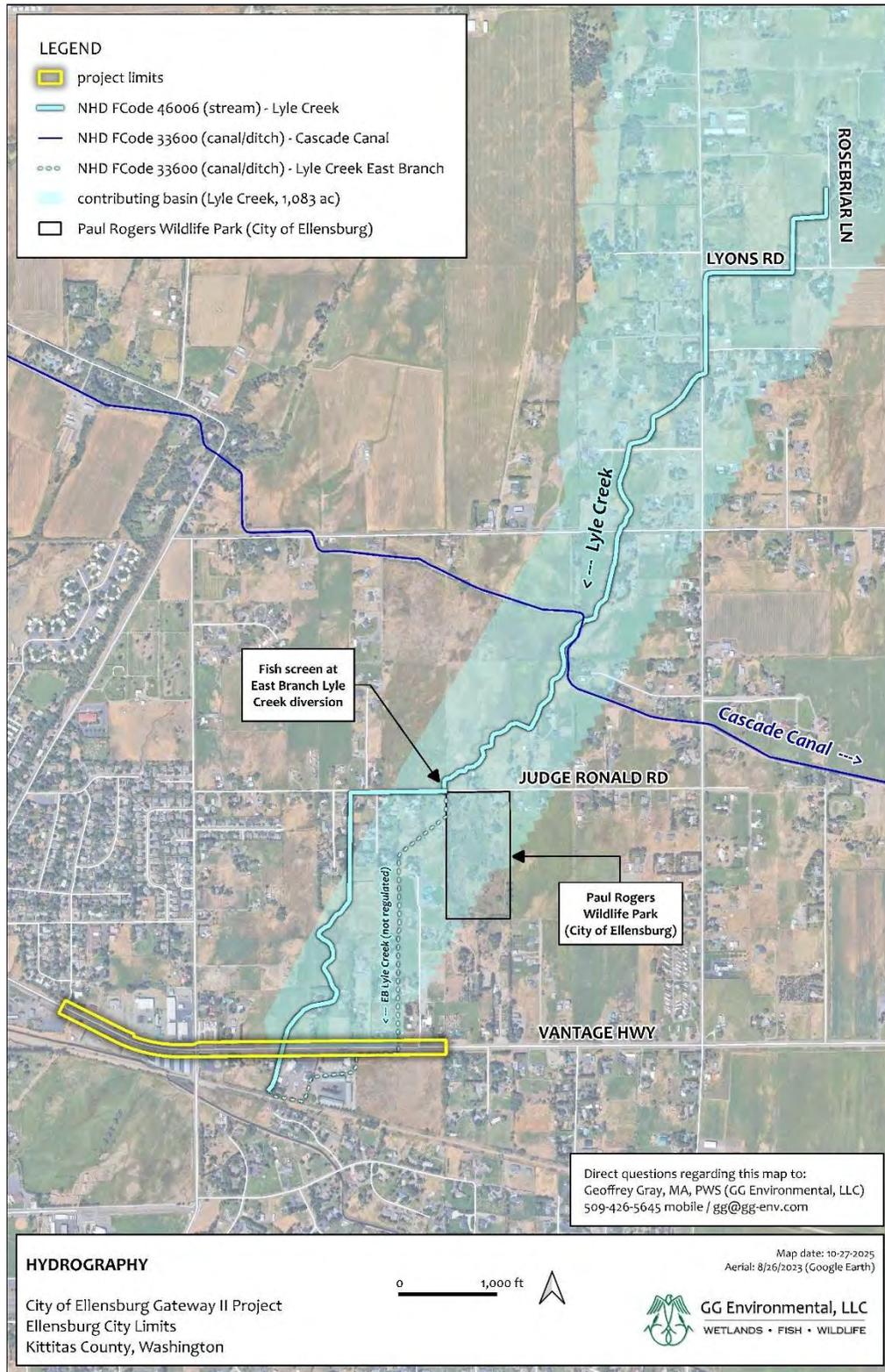
The creek was not illustrated on USGS topographic maps for 1897 and 1902 but was first included in the 1958 USGS topographic map as a perennial stream (USGS 2025a). The National Hydrography Dataset (NHD) also maps the creek as a perennial stream (FCode 46006) (USGS 2025b) (**Figure 3**).

With a contributing basin of 1,083 ac (USGS 2025c), the upstream extent of the creek is first mapped two miles north of the study area, at the intersection of Lyons Road and Rosebriar Lane. Aspect inspected the creek where it intersects the Cascade Canal and observed that there is no formal crossing structure or pipe (undershot or siphon). Rather, the creek discharges directly into the canal.

This blended water is then diverted out of the canal shortly downstream via a canal gate into the Lyle Creek channel where it continues flowing to the south. A portion of the Lyle Creek flow is diverted into the constructed (excavated through uplands) “East Branch Lyle Creek” at Judge Ronald Road by means of a concrete diversion structure recently (May 2025) fitted with a compliant fish screen⁶.

⁶ For this reason, the former East Branch Lyle Creek is not considered a fish-bearing stream (WDFW 2025). It is not regulated and serves as an irrigation ditch intentionally excavated through uplands.

Figure 3. Hydrography Overview



The Department of Natural Resources classifies the Lyle Creek as “Unknown” (DNR 2025b). Neither SalmonScape (WDFW 2025b) nor StreamNet (PSMFC 2025) show fish presence in the creek, nor is the creek documented as critical habitat by the United States Fish and Wildlife Service (USFWS 2025c) or National Marine Fisheries Service (NMFS) (NOAA 2025). However, WDFW considers it possible for fish to access Lyle Creek (WDFW 2022), including Mid-Columbia Distinct Population Segment (DPS) steelhead – listed as Threatened by NMFS. For this reason, the City regulates the creek as a Type F (fish-bearing) stream with a 50-ft regulatory buffer.

4.4. Stormwater Engineered Facilities

Stormwater engineered facilities (SEFs) are constructed and managed throughout the study area, including, but not limited to, engineered swales, catch basins, ditches and culverts. Given the intended function of SEFs to collect, move, and/or infiltrate stormwater, hydrophytic vegetation is dominant in wetter SEFs, including reed canarygrass, cattails, sedge, and willows. Several soil samples were investigated in the bottom of SEFs, showing hydric soil indicators.

Routine maintenance of SEF, including removal of vegetation and accumulated sediment, helps to maintain hydraulic design capacity, prevent flooding, and improve water quality treatment. In order to comply with the Eastern Washington Phase II Stormwater General Permit, the city exempts SEFs from the Critical Areas Ordinance (CAO). Furthermore, best available science suggests that the SEFs are intentionally constructed, and maintained in uplands, which would exempt SEFs from state wetland jurisdiction per Ecology (2010). For this reason, SEFs are not addressed further in this report.

4.5. Precipitation and Hydrology

Chapter 19 of the Engineering Field Handbook (NRCS 2015) was referenced in determining that precipitation that fell within three months of the 2022 wetland delineation fieldwork was within the normal range (30-year average) (**Appendix B**). From 2023-2025, the spatial morphology of the wetlands and creek did not significantly change across subsequent precipitation years.

4.6. Growing Season

According to Climate Analysis for Wetlands Tables (WETS) (NRCS 2025b), the growing season (28 °F or greater) at the nearest AgACIS station (Ellensburg) demonstrates a 70 percent probability of occurring between April 16 and October 14 (181 days) and 50 percent between April 20 and October 10 (173 days). The wetland delineation was completed prior to the growing season. However, despite the early timing of fieldwork, soil was workable and plant species were identifiable to genus, and in most cases, species. These vegetation data were verified as accurate during subsequent site visits from 2023-2025.

4.7. Vegetation

Vegetation communities observed along Lyle Creek are categorized according to Cowardin classifications, including Palustrine Emergent (PEM) and Palustrine Scrub-shrub (PSS). The character of each Cowardin classification is described in **Table 1**.

Table 1. Cowardin Plant Communities Observed

Cowardin Classification	Dominant Wetland Plants Observed
Palustrine Emergent (PEM)	Present in association with Lyle Creek (north of Vantage Hwy). Dominated by reed canarygrass (<i>Phalaris arundinaceae</i>) (FACW), <i>Carex</i> sp. (likely <i>pellita</i>) (OBL), yellow-flag iris (<i>Iris pseudacorus</i>) (OBL), and broadleaf cattail (<i>Typha latifolia</i>) (OBL).
Palustrine Scrub-shrub (PSS)	Present in association with Lyle Creek (south of Vantage Hwy). The dominant species is coyote willow (<i>Salix exigua</i>) (FACW), with an understory of reed canarygrass and cattail.
<p>KEY TO WETLAND PLANT LIST INDICATOR RATINGS</p> <p>OBL (Obligate Wetland Plants) – Almost always occur in wetlands.</p> <p>FACW (Facultative Wetland Plants) – Usually occur in wetlands, but may occur in non-wetlands.</p> <p>FAC (Facultative Wetland Plants) – Occur in wetlands and non-wetlands.</p> <p>FACU (Facultative Upland Plants) – Usually occur in non-wetlands, but may occur in wetlands.</p> <p>UPL (Upland Plants) – Almost never occur in wetlands.</p>	

5. Findings

5.1. Wetland Delineation Results

Two wetland units (WU) were delineated in the study area in association with Lyle Creek. A tabular summary of wetland specifications is presented in **Table 2**.

Table 2. Wetland Delineation Results

Wetland Unit	Area ^a	Cowardin ^b	HGM ^c	Rating	Buffer ^d	Notes
^a Delineated wetland areas adjusted to match extent of existing public road right of way; ^b Cowardin class: (PEM) Palustrine Scrub-Shrub; (PSS); ^c Hydrogeomorphic class: (RIV) Riverine; ^d ECC Tables 15-620.030(E)(1-4).						
WU-1	0.068 ac 2,962 ft ²	PEM	RIV	III	90 ft	Periodically disturbed by City maintenance, including vegetation mowing, accumulated sediment removal, and/or underground utility maintenance.
WU-2	0.019 ac 828 ft ²	PSS	RIV	II	90 ft	

Individual wetlands are summarized in **Tables 3-4**. Delineation maps are presented in **Figures 4-6**. Site photos are included in **Appendix C**. Wetland delineation data forms and Ecology rating forms are included in **Appendix D**.

Table 3. Wetland WU-1 (Lyle Creek north of Vantage Hwy)

WETLAND UNIT WU-1																			
	<table border="1"> <tr> <td>Latitude</td> <td>46°59'59.16" N</td> </tr> <tr> <td>Longitude</td> <td>120°30'53.19" W</td> </tr> <tr> <td>Elevation</td> <td>1,606 ft</td> </tr> <tr> <td>Lead Agency</td> <td>City of Ellensburg</td> </tr> <tr> <td>Ecology Rating</td> <td>III</td> </tr> <tr> <td>Area</td> <td>0.068 ac (2,962 ft²)</td> </tr> <tr> <td>City Buffer</td> <td>90 ft⁷</td> </tr> <tr> <td colspan="2">Wetland Data Sheet(s): Appendix D; Delineation Forms 1, 3, 4</td> </tr> <tr> <td colspan="2">Upland Data Sheet(s): Appendix D; Delineation Forms 2, 5</td> </tr> </table>	Latitude	46°59'59.16" N	Longitude	120°30'53.19" W	Elevation	1,606 ft	Lead Agency	City of Ellensburg	Ecology Rating	III	Area	0.068 ac (2,962 ft ²)	City Buffer	90 ft ⁷	Wetland Data Sheet(s): Appendix D; Delineation Forms 1, 3, 4		Upland Data Sheet(s): Appendix D; Delineation Forms 2, 5	
	Latitude	46°59'59.16" N																	
	Longitude	120°30'53.19" W																	
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	City Buffer	90 ft ⁷																	
Wetland Data Sheet(s): Appendix D; Delineation Forms 1, 3, 4																			
Upland Data Sheet(s): Appendix D; Delineation Forms 2, 5																			
Description																			
HGM (Riverine); Cowardin (PEM).																			
Hydrology: Surface flow in Lyle Creek, lateral seepage, seasonally-elevated groundwater.																			
Vegetation Dominants: Reed canarygrass (FACW), cattail (OBL), yellow-flag iris (OBL), <i>Carex</i> sp (likely <i>pellita</i>) (OBL)																			
Soils																			
Hydric soil indicator:	F6 (Redox Dark Surface), A11 (Depleted Below Dark Surface), F3 (Depleted Matrix)																		
Functions Provided (Ecology Rating Form)																			
Water Quality:	7 points (high) – sediment removal, nutrient and toxicant removal																		
Hydrology:	4 points (low) – erosion control and shoreline stabilization																		
Habitat:	5 points – (moderate to low) – disturbance regime, connectivity, ESA-listed species habitat																		
Buffer Condition																			
The wetland occurs within the City limits of Ellensburg and within the maintained City right-of-way along Vantage Highway. The wetland buffer lacks woody vegetation in the adjacent grazed pasture to the north, and the right-of-way is subject to vegetation maintenance (trimming, mowing), accumulated sediment removal, and periodic underground utility maintenance. As such, the existing buffer condition is poor, with little to no function.																			

⁷ Per ECC Table 15-620.030(E)(1) if the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 130 ft per Table 15.620.030(E)(3).

Table 4. Wetland WU-2 (Lyle Creek south of Vantage Hwy)

WETLAND UNIT WU-2		
	Latitude Longitude Elevation	46°59'58.18" N 120°30'53.36" W 1,604 ft
	Lead Agency	City of Ellensburg
	Ecology Rating	II
	Size (ac)	0.019 ac (828 ft ²)
	City Buffer	90 ft ⁸
	Wetland Data Sheet(s):	
	Appendix D; Delineation Form 6	
Upland Data Sheet(s):		
Appendix D; Delineation Form 7		
Description		
HGM (Riverine); Cowardin (PSS).		
Hydrology: Surface flow in Lyle Creek, lateral seepage.		
Vegetation Dominants: Reed canarygrass (FACW), coyote willow (FACW), cattail (OBL).		
Soils		
Hydric Soil Indicator:	F6 (Redox Dark Surface)	
Functions Provided (Ecology Rating Form)		
Water Quality:	8 points (high) – sediment removal, nutrient and toxicant removal	
Hydrology:	7 points (moderate) – erosion control and shoreline stabilization	
Habitat:	5 points – (low) – disturbance regime, connectivity, ESA-listed species habitat	
Buffer Condition		
<p>The wetland occurs within the Ellensburg City limits and within the maintained City right-of-way along Vantage Highway. The right-of-way is subject to periodic vegetation maintenance (trimming, mowing) and accumulated sediment removal. It is encroached upon by the highway to the north, commercial parking area to the east, and manicured residential lawn to the west. Given surrounding development, the buffer condition is poor with little to no function.</p>		

⁸ Per ECC Table 15-620.030(E)(1) if the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 130 ft per Table 15.620.030(E)(3).

Figure 4. Wetlands and Stream Delineation Map (West)



Figure 5. Wetlands and Stream Delineation Map (Central)

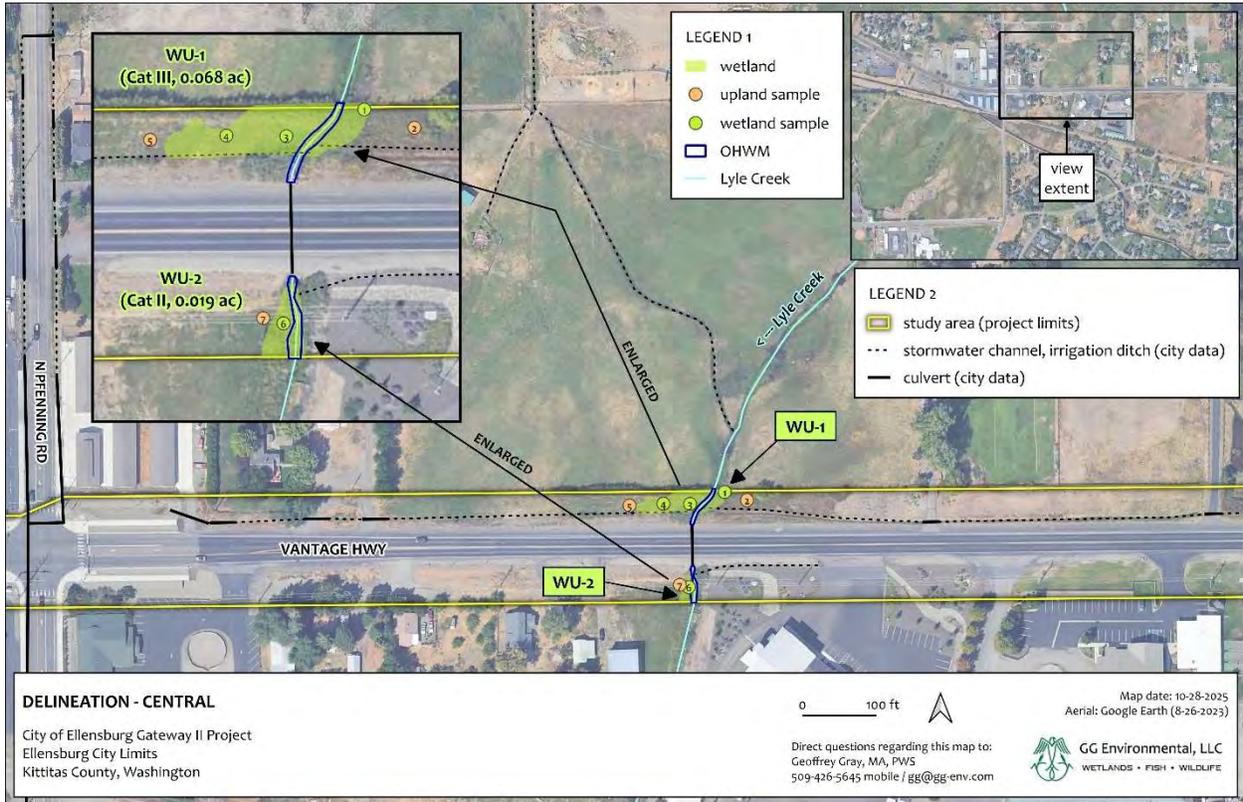
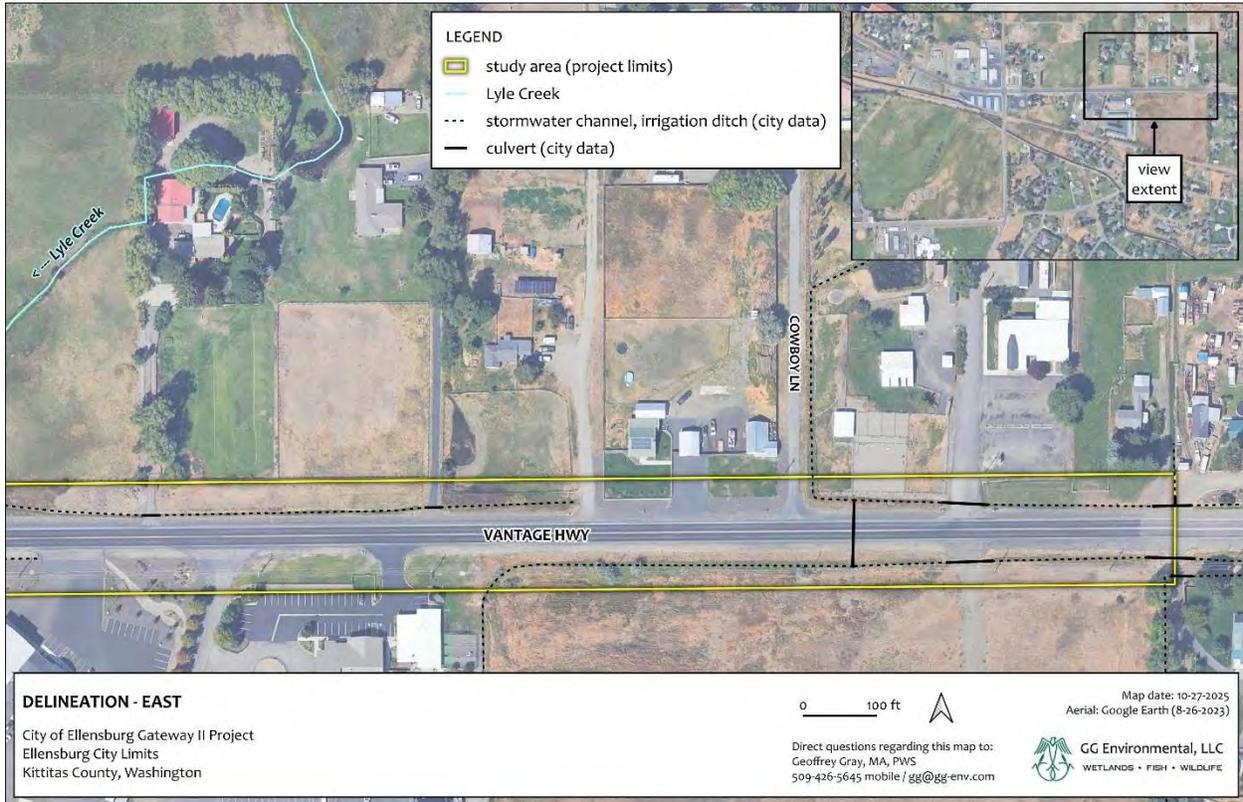


Figure 6. Wetlands and Stream Delineation Map (East)



5.2. Stream Delineation Results

Lyle Creek is regulated as a Type F stream (fish-bearing) by the City of Ellensburg and is assigned a protective regulatory buffer radius of 50 ft.⁹ A data summary for the creek is presented in **Table 5**.

Table 5. Lyle Creek

STREAM INFORMATION SUMMARY – Lyle Creek		
	Name	Lyle Creek
	WRIA	39 (Upper Yakima)
	12th-field HUC	170300010408
	Flow type	Mapped perennial; observed intermittent (irrigation flow)
	Upstream Watershed Area	1,083 ac
	Local Jurisdiction	City of Ellensburg
	City Type	Type F (see Notes)
	City Buffer Width	50 ft
	Fish Use	Possible per WDFW
Notes	The creek is managed and maintained to function primarily as an irrigation conveyance ditch. It is mapped by the USGS (2025b) as a perennial stream. DNR (2025b) listed the creek as an “Unknown” stream type. However, WDFW (2022) has determined that it is possible for fish to access this creek reach. Therefore, the City regulates it as fish-bearing.	
Designated Critical Habitat	None	
Riparian/Buffer Condition	Within the City right-of-way along Vantage Hwy, the creek is excavated/channelized. Periodic maintenance includes vegetation management (mowing, trimming), accumulated sediment removal, and periodic underground utility maintenance. As such, the riparian buffer condition within the right-of-way is rated as poor, with little to no function.	

⁹ ECC 15.650.040(D)(2)

5.3. Wetland and Stream Buffers – Baseline Condition

Given that Lyle Creek and Wetland Units 1-2 occur within the City limits and in close proximity to Vantage Highway, all areas within their overlapping regulatory buffer radii (90 ft for wetlands, 50 ft for Lyle Creek), are highly disturbed by roadside maintenance, underground utility maintenance, high-intensity grazing, and landscape maintenance. As such, the existing buffer condition is poor and protective functions are few to none.

6. Wetland and Stream Impacts

6.1. Wetland Impacts

Both wetland units would be impacted by the Project resulting in temporary disturbance and permanent loss of wetland area. A tabular summary for wetland impacts is presented in **Table 6**.

Table 6. Wetland Impacts

Wetland ID	Area	Wetland Impacts	
		Permanent	Temporary
WU-1	0.068 ac (2,962 ft ²)	0.014 ac (615 ft ²)	0.051 ac (2,205 ft ²)
WU-2	0.019 ac (828 ft ²)	0.001 ac (59 ft ²)	0.016 ac (683 ft ²)
Total	0.087 ac (3,790 ft²)	0.015 ac (674 ft²)	0.066 ac (2,888 ft²)

6.2. Stream Impacts

Project impacts below the ordinary high water mark (OHWM) of Lyle Creek would result in temporary disturbance and permanent loss of 0.003 ac (127 ft²) of streambed¹⁰ (**Table 7**).

Table 7. Impacts to Lyle Creek

Stream ID	Stream Impacts below the OHWM	
	Permanent	Temporary
Lyle Creek	0.003 ac (127 ft ²)	0.010 ac (417 ft ²)

¹⁰ Measured as the total creek bed area below the OHWM to be culverted. No reduction in creek length would occur.

7. Proposed Wetland Mitigation

7.1. Avoidance and minimization measures

Given the Project scope, the narrow road right-of-way within which it must be constructed, and budgetary constraints, no other practicable alternative exists that would entirely avoid Lyle Creek and its associated wetlands. As such, the Project is designed to minimize impacts to wetlands and the creek to the greatest extent practicable. As such, it is the Least Environmentally-damaging Practicable Alternative (LEDPA). Mitigation is proposed for unavoidable impacts.

7.2. Mitigation for unavoidable impacts

Refer to **Appendix E** for Project design plans, including wetland and stream impacts and onsite planting plans.

7.2.1. Onsite compensation for temporary wetland impacts

Temporary impacts to wetlands (0.066 ac, 2,888 ft²) would be minimized by trimming existing vegetation (rather than grubbing) for construction access and compensated by restorative planting with native plant species. This proposed action concurrently serves as a minimization measure and concurrent compensation for impacts to Lyle Creek (see **Section 9.1**, Task 1).

7.2.2. Offsite mitigation for permanent wetland impacts

Permanent impacts to wetlands (0.015 ac) will be mitigated offsite by enlarging and enhancing an existing depressional (Category III) palustrine emergent (PEM) wetland (WU-3) at *Mitigation Site #2* (MS-2) within the northwest corner of Paul Rogers Wildlife Park, which is owned and managed by the City (**Figure 3**). Enlarging WU-3 at MS-2 by 0.025 ac (from 0.10 ac to 0.125 ac) would produce a mitigation ratio of 1.67 to 1, derived in reference to the Ecology Debit-Credit Method (Ecology 2012). Supported by seasonally-elevated groundwater, MS-2 is a preferred mitigation site because it: [1] is a verified wetland delineated on November 1, 2023, [2] occurs nearby, approximately 3,000 ft northwest of the impacted wetlands, [3] lies within the same hydrologic subdrainage basin,¹¹ (**Figure 3**) consistent with City code per ECC 15.620.040(D) and mitigation guidance issued by Ecology (2006), [4] receives consistent hydrology, dominated by seasonally-elevated groundwater, [5] occurs within an established wildlife park, owned by the City, which would protect the mitigation wetland in perpetuity, [6] would be protected by an existing functional buffer of native vegetation within the Park, [7] exhibits baseline functions and values that allow it to provide equal or improved wetland functions than offered by the impacted wetlands per ECC 15.620.040(D)(2), and [8] would offer an outreach opportunity to the local community, demonstrating how wetland mitigation is accomplished, within an existing public park.

¹¹ The impacted wetlands and mitigation wetland fall within the contributing basin of Lyle Creek. The nearby irrigation ditch that influences groundwater in the vicinity of the mitigation wetland is the recently-deregulated East Branch of Lyle Creek (**Figure 3**).

Appendix F includes a wetland delineation report for WU-3 at MS-2, a post-mitigation Ecology rating form for MS-2, as well as a Credit-Debit worksheet which quantifiably justifies the mitigation design. A mitigation plan for permanent wetland impacts follows in **Section 8** below.

8. Wetland Mitigation Plan

This section outlines the offsite mitigation proposal to address permanent impacts incurred to WU-1 and WU-2 (total impact: 0.015 ac) by enlarging the offsite wetland (WU-3) at MS-2 by 0.025 ac (from 0.10 ac to 0.125 ac) and adding habitat enhancements. This action would result in a wetland creation mitigation ratio of 1.67 to 1, consistent with an Ecology debit-credit analysis (**Appendix F**). This mitigation proposal is reasonable and practicable to ensure zero net loss of wetland/buffer functions and values. Refer to **Appendix G** for wetland mitigation plan design drawings.

8.1. Mitigation Actions (Offsite)

The following offsite mitigation actions are proposed:

Task 1: Excavation

Along the existing edge of MS-2, excavate a minimum of 0.025 ac (1,089 ft²) of adjacent upland soils to a depth sufficient to support the following: [1] the excavated area must support a minimum of 50 percent seasonal inundation across the wetland and [2] at least one area must support seasonal inundation at least three (3) ft deep.

Task 2: Add native wetland plants

Install native plants, including trees and shrubs, such that woody species occupy a minimum of 10 percent of total wetland vegetative aerial cover. At least 20 percent of total woody cover must be comprised of quaking aspen (*Populus tremuloides*).

Task 3: Enhance wetland habitat functions

In order to enhance wetland habitat value, add at least one (1) rock (minimum 4-in diameter) and at least one (1) piece of large wood (minimum 4-in diameter) in the area of seasonal inundation.

Task 4: Control weeds

Class A noxious weeds listed by Kittitas County (Kittitas County 2022) shall be removed. Class B noxious weeds shall be controlled to the extent they do not outcompete the installed native plants. Non-desirable vegetation (including Class C noxious weeds¹²) shall also be controlled to the extent they do not outcompete desirable plants. Control methods may include mechanical, manual, barrier, and/or chemical.¹³

¹² Reed canarygrass (*Phalaris arundinaceae*) and yellow-flag iris (*Iris pseudacorus*) are also established in the wetland. They shall be controlled only to the extent that they do not inhibit the establishment and growth of other desirable plants.

¹³ Application of herbicide near aquatic habitat may require an Aquatic Pesticide Permit (<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits>).

8.2. Monitoring Plan

MS-2 shall be monitored for ten (10) years after plant installation. The performance standards for each mitigation goal are outlined below. Since MS-2 was confirmed in 2023 to exhibit all three wetland indicators (hydric soil, wetland hydrology, hydrophytic vegetation) (**Appendix F**), it is inferred that the enlarged zone would be delineate as wetland as long as the post-mitigation vegetation community is dominated by hydrophytic plants (FAC, FACW, and/or OBL) or quaking aspen (which adds Special Characteristics to the wetland), per Ecology rating guidance.

Goal 1 – Excavation

Objective:

Excavate sufficient material such that wetland MS-2 supports a minimum of 0.125 ac of wetland, as evidenced by dominance of hydrophytic plant species, supported by existing groundwater hydrology. The excavated area must also support a minimum of 50 percent seasonal inundation across the wetland, and [2] at least one area must support seasonal inundation at least three (3) ft deep. A conceptual grading plan is included in **Appendix G**.

Performance Measure:

Year 0 (year of construction): Geospatially survey the excavated profile to confirm the area and elevations excavated. Photo-document the excavated area from fixed photo points, the spatial locations of which shall be provided in a mitigation as-built report (as-built report).

Goal 2 – Install native wetland plants

Objective:

Add native plants to the excavated footprint and adjacent wetland buffer. Native trees and shrubs must occupy at least 10 percent of total aerial vegetative cover across the wetland, of which quaking aspen (*Populus tremuloides*) must represent at least 20 percent of total native woody cover. The final plant palette installed will be documented in an as-built report. A conceptual planting plan is included in **Appendix G**.

Performance Measure:

Year 0 (year of construction): Geospatially survey and map the planted areas. Photo-document the planted zone from fixed photo points, the spatial locations of which shall be provided in an as-built report.

Year 1 (one year post-construction): -Survival of installed plants shall be 100 percent and at least 20 percent of native woody cover must be comprised of quaking aspen. If dead plants are replaced to achieve this threshold, the performance measure will be met. Native woody plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted area from fixed photo points.

Year 3 (three years post-construction): Survival of installed plants shall be a minimum of 90 percent and at least 20 percent of native woody cover must be comprised of quaking aspen. If dead plants are replaced to achieve these thresholds, the performance measure will be met. Native woody

plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted area from fixed photo points.

Year 5 (five years post-construction): Survival of installed plants shall be a minimum of 80 percent and at least 20 percent of native woody cover must be comprised of quaking aspen. If dead plants are replaced to achieve these thresholds, the performance measure will be met. Native woody plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted area from fixed photo points.

Year 7 (seven years post-construction): -Survival of installed plants shall be a minimum of 80 percent and at least 20 percent of native woody cover must be comprised of quaking aspen. If dead plants are replaced to achieve these thresholds, the performance measure will be met. Native woody plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted area from fixed photo points.

Year 10 (ten years post-construction): -Survival of installed plants shall be a minimum of 80 percent and at least 20 percent of native woody cover must be comprised of quaking aspen. If dead plants are replaced to achieve these thresholds, the performance measure will be met. Native woody plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted area from fixed photo points.

Goal 3 – Enhance wetland habitat functions

Objective:

In order to enhance wetland habitat functions and values, add at least one (1) rock (minimum 4-in diameter) and one (1) piece of large wood (minimum 4-in diameter) in the area of seasonal inundation. Refer to **Appendix G** for proposed rock and large wood installation locations.

Performance Measures:

Year 0 (year of construction): Geospatially survey the rock and LWD locations. Photo-document these areas from fixed photo points, the spatial locations of which shall be provided in an as-built report.

Goal 4 – Control weeds

Objective:

Remove Class A noxious weeds. Control Class B noxious weeds and other non-desirable vegetation.

Performance Measures:

Years 0-10: Class A noxious weeds listed by Kittitas County (Kittitas County 2022) shall be removed from the wetland and any planted zones. Class B noxious weeds shall be controlled to the extent they do not outcompete the installed native plants. All other non-desirable plants shall be managed to the extent that Year-10 objective for Goal 2 is achieved.

8.3. As-built and Monitoring Reports

An **as-built report** that documents the constructed baseline of MS-2 shall be submitted to the City within 30 days of construction. The report shall document the excavation limits and elevation profiles, native plant installation baseline, rock and large wood locations, and photos captured from static (mapped) photo points.

An annual **monitoring report**, documenting progress toward meeting the annual performance measures for Goal 2, shall be submitted to the City within 30 days of each monitoring effort for post-planting years 1, 3, 5, 7, and 10. The monitoring report must contain metrics on plant survival, aerial coverage, photos referenced to static photo point locations as per the as-built report, and any adaptive management implemented (see below).

8.3.1. Adaptive Management

Should plant survival and/or growth not perform on a trajectory to meet the performance measures for post-construction years 1, 3, 5, 7, or 10, adaptive management may include, but is not limited to, one or more of the following:

1. Installation of additional native plants.
2. Modification of the excavated profile.
3. Modification of hydrology.
4. Modified weed control methods.
5. Lengthened monitoring period.

Adaptive management measures implemented each year (if any) shall be described in the annual report for that monitoring year.

Excess Plant Mortality

Should installed plants exhibit mortality exceeding 50 percent in monitoring years 1 or 2, despite adaptive management, a discussion with the City would be warranted to address the challenge and to discuss adaptive management and/or mitigation alternatives.

8.3.2. Early Closeout

Should wetland vegetation meet or exceed performance measures for two (2) consecutive monitoring sessions (with minimal to no adaptive management required), it would be logical to conclude that: [1] the wetland hydrology and hydrophytic vegetation baseline is stable, [2] the wetland vegetation community would continue to establish over time, and [3] additional monitoring would not be warranted. In this case, it would be reasonable for the City to apply for early permit closeout.

9. Proposed Stream Mitigation – Lyle Creek

9.1. Mitigation Actions

The following mitigation actions are proposed in order ensure zero net loss of riparian functions. Refer to **Appendix E** for Project design plans, including stream impacts and onsite planting plans.

Task 1: Install native woody plants

In order to compensate for 0.003 ac (127 ft²) of permanent streambed impact below the OHWM¹⁴, it is proposed to enhance 0.066 ac (2,888 ft²) of the adjacent riparian buffer zone with planting of native plant species. This action concurrently serves as compensation for temporary wetland impacts (see **Section 7.2.1**).

Task 2: Control weeds

Class A noxious weeds listed by Kittitas County (Kittitas County 2022) shall be removed from the planted zone. Class B noxious weeds shall be controlled to the extent they do not outcompete the plantings. Non-desirable vegetation (including Class C noxious weeds¹⁵) shall also be controlled to the extent they do not outcompete desirable plants. Control methods may include mechanical, manual, barrier, and/or chemical.¹⁶

9.2. Monitoring Plan

The riparian buffer plantings shall be monitored for three (3) years after installation. The performance standards for each mitigation goal, are outlined below.

Goal 1 – Enhance the Lyle Creek riparian buffer

Objective:

Increase the coverage of native riparian vegetation within 0.066 ac (2,888 ft²) of the Lyle Creek riparian buffer.

Performance Measure:

Year 0 (year of construction): Geospatially survey and map the planted buffer zone and photo-document from fixed photo points, the spatial locations of which shall be provided in an as-built report.

Year 1 (one year post-planting): Survival of the installed plants shall be 100 percent. If dead plants are replaced to achieve this threshold, the performance measure will be met. Native plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted zone from fixed photo points.

Year 2 (two years post-planting): Survival of the installed plants shall be a minimum of 90 percent. If dead plants are replaced to achieve this threshold, the performance measure will be met. Native plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted zone from fixed photo points.

¹⁴ Measured as the total creek bed area below the OHWM to be culverted. No reduction in creek length would occur.

¹⁵ Reed canarygrass (*Phalaris arundinaceae*) and yellow-flag iris (*Iris pseudacorus*) are also established in the wetland. They shall be controlled only to the extent that they do not inhibit the establishment and growth of other desirable plants.

¹⁶ Application of herbicide near aquatic habitat may require an Aquatic Pesticide Permit (<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits>).

Year 3 (three years post-planting): -Survival of the installed plants shall be at least 80 percent. If dead plants are replaced to achieve this threshold, the performance measure will be met. Native plants that volunteer within the planted zone shall count toward survivorship. Photo-document the planted zone from fixed photo points.

Goal 2 – Control weeds

Objective:

Remove Class A noxious weeds. Control Class B noxious weeds and other non-desirable vegetation.

Performance Measures:

Years 1-3: Class A noxious weeds listed by Kittitas County (Kittitas County 2022) shall be removed from the planted buffer zone. Class B noxious weeds shall be controlled to the extent they do not outcompete the installed plants. All other non-desirable plants shall be managed to the extent that Year-3 objective for Goal 1 is achieved.

9.3. As-built and Monitoring Reports

An **as-built report** that documents the planted baseline of the riparian buffer zone shall be submitted to the City within 30 days of planting. The report shall document the planted limits, the plant palette installed, and include photos taken from static (mapped) photo points.

An annual **monitoring report**, documenting progress toward meeting the annual performance measures for Goals 1 and 2, shall be submitted to the City within 30 days of each monitoring effort for post-planting years 1-3. The monitoring report must contain metrics on plant survival, photos referenced to static photo point locations as per the as-built report, and any adaptive management implemented (see below).

9.3.1. Adaptive Management

Should plant survival and/or growth not perform on a trajectory to meet the performance measures for post-planting year 3, adaptive management may include, but is not limited to, one or more of the following:

1. Installation of additional plants.
2. Modified weed control methods.
3. Lengthened monitoring period.

Adaptive management measures implemented each year (if any) shall be described in the annual report for that monitoring year.

Excess Plant Mortality

Should plant mortality exceed 50 percent for two consecutive monitoring years despite adaptive management, a discussion with the City would be warranted to address the survivorship challenge and discuss enhancement alternatives.

10. Limitations

The data presented herein reflect site conditions encountered at impacted wetlands WU-1 and WU-2 on April 1, 2022 and subsequently verified in the field from 2023-2025. They also reflect the wetland baseline documented at MS-2 on November 1, 2023. Work was performed in accordance with accepted standards for professional wetland biologists and applicable federal, state, and local ordinances. Although these findings are accurate and complete to the best of scientific knowledge, the conclusions herein should be considered as preliminary until they have been reviewed and approved in writing by the appropriate jurisdictional authorities.

11. Consultant Qualifications

Geoffrey Gray is a professional biologist and wetland scientist whose 28-year career has provided him with a unique breadth of experience that can readily assist you in moving your project forward.

Investing eight years in higher education, he earned a Bachelor's Degree in Business Management and a Master's degree in Biology from California State University at Fresno.

Geoffrey has earned 12.4 credit hours of certified professional wetland training, including completion of the 38-hour *Army Corps of Engineers (Corps) Wetland Delineation and Management Training Program*, as well as *Corps Advanced Wetland Delineation*, *Corps Delineation Manual Regional Supplements*, *Washington State Department of Ecology (Ecology) 2014 Wetland Rating System*, *Ecology Credit-Debit Method for Estimating Mitigation Needs*, *Ecology Selecting Wetland Mitigation Sites Using a Watershed Approach*, and multiple courses in wetland plant identification.

Continuously employed as a wetland, fish, and wildlife biologist since 1997, while serving tenures in field research, a large environmental consulting firm, state agencies in both California and Washington, and as an independent environmental consultant, Geoff's resume includes 20 years of full-time duty as a wetland biologist, with experience ranging from the unique vernal pool wetland habitats of California's Central Valley to the diverse wetlands of Eastern Washington State, stretching from the Cascade crest to Idaho.

Spanning his career, Geoff has performed hundreds of wetland delineations and has managed 35 wetland mitigation/riparian restoration sites. As a fish and wildlife biologist, he has evaluated over 600 projects for compliance under the Endangered Species Act, including 128 federal consultations.

Geoff founded GG Environmental, LLC in 2015, and serves a diverse palette of clients including salmonid habitat restoration groups, private landowners, land developers, Yakama Nation, commercial enterprises, state agencies, and local governments who need assistance in overcoming the challenges of Critical Areas/Shorelines permitting and Endangered Species Act consultation.

A professional-level GPS/GIS user for 27 years, Geoff employs cutting-edge GPS technology in the field and is proficient in GIS mapping with ArcGIS and QGIS.

Certified as a Professional Wetland Scientist by the Society of Wetland Scientists, Geoff's work is performed to the highest standards and is fully insured.

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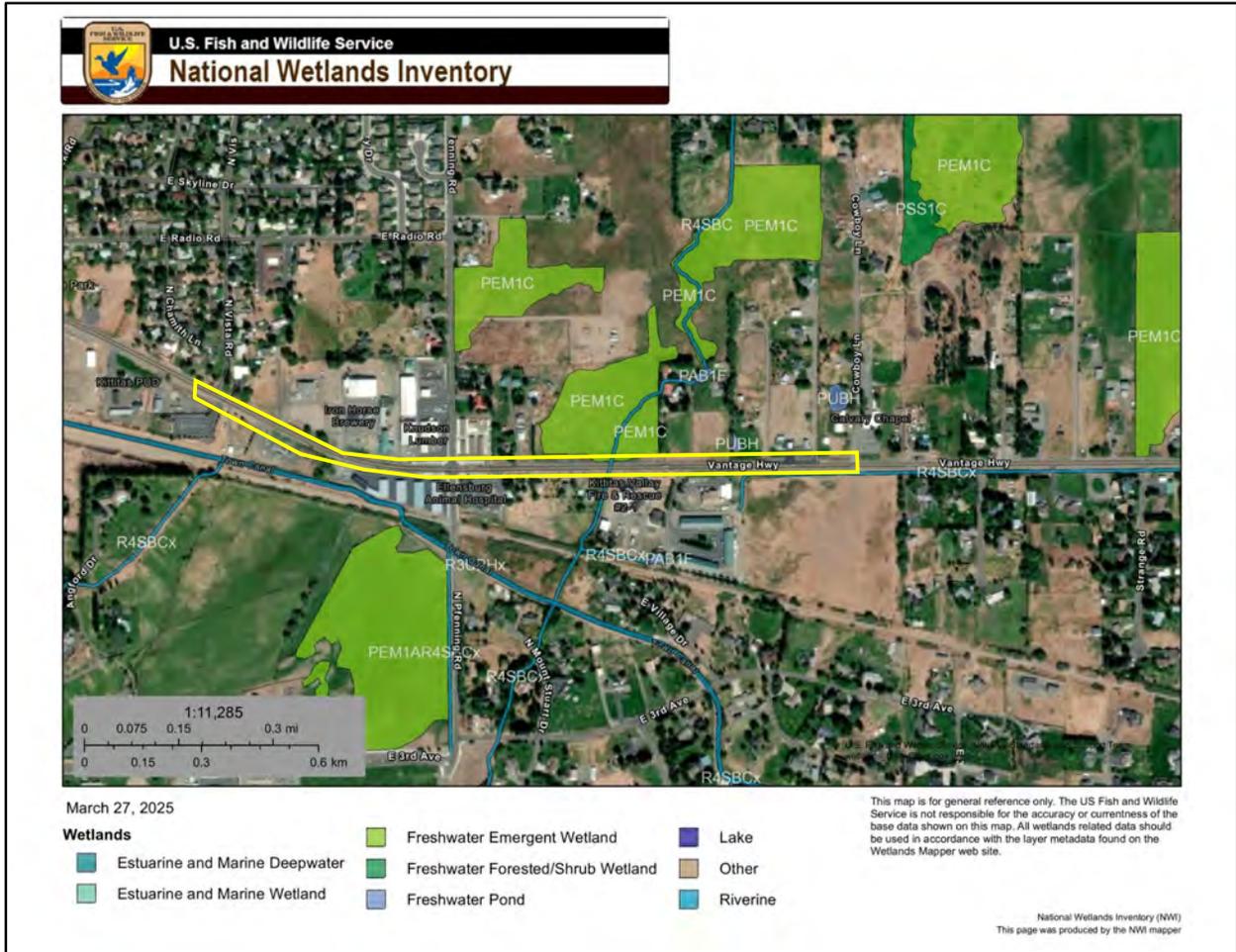
Appendix A. Background Information

Appendix A includes the following sub-appendices:

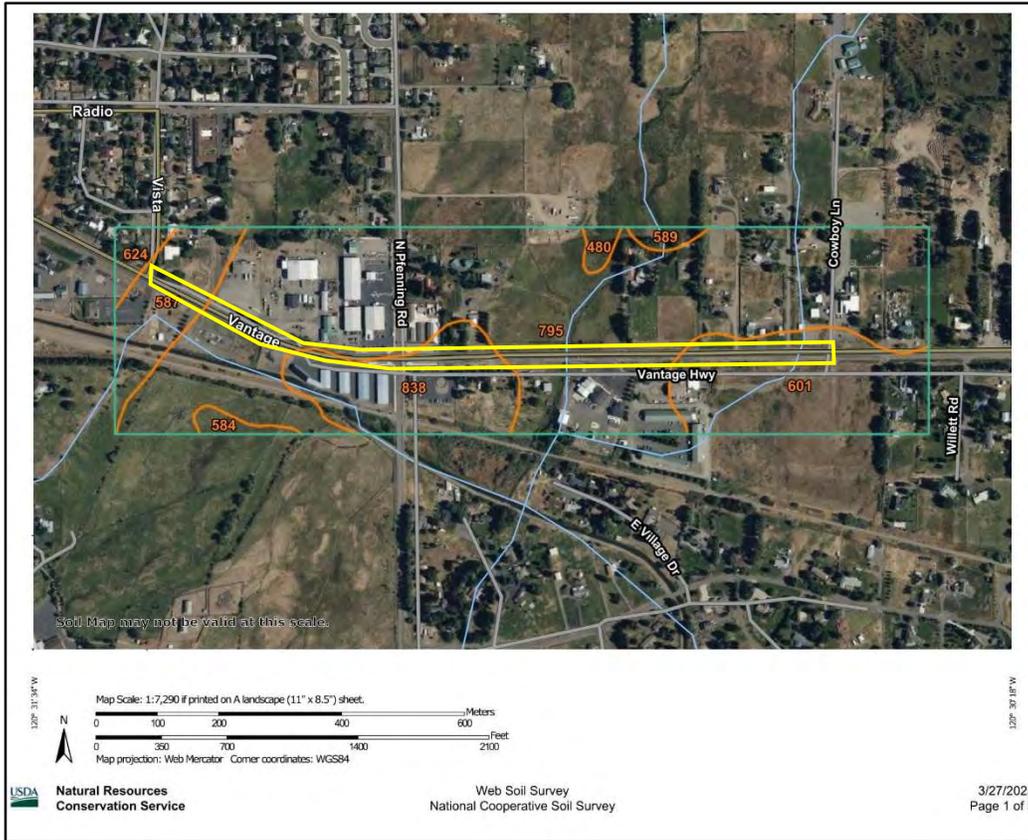
- A-1 USFWS National Wetlands Inventory
- A-2 NRCS Soil Survey
- A-3 Lyle Creek Buffer
- A-4 1954 Historic Aerial



Appendix A-1. USFWS National Wetlands Inventory



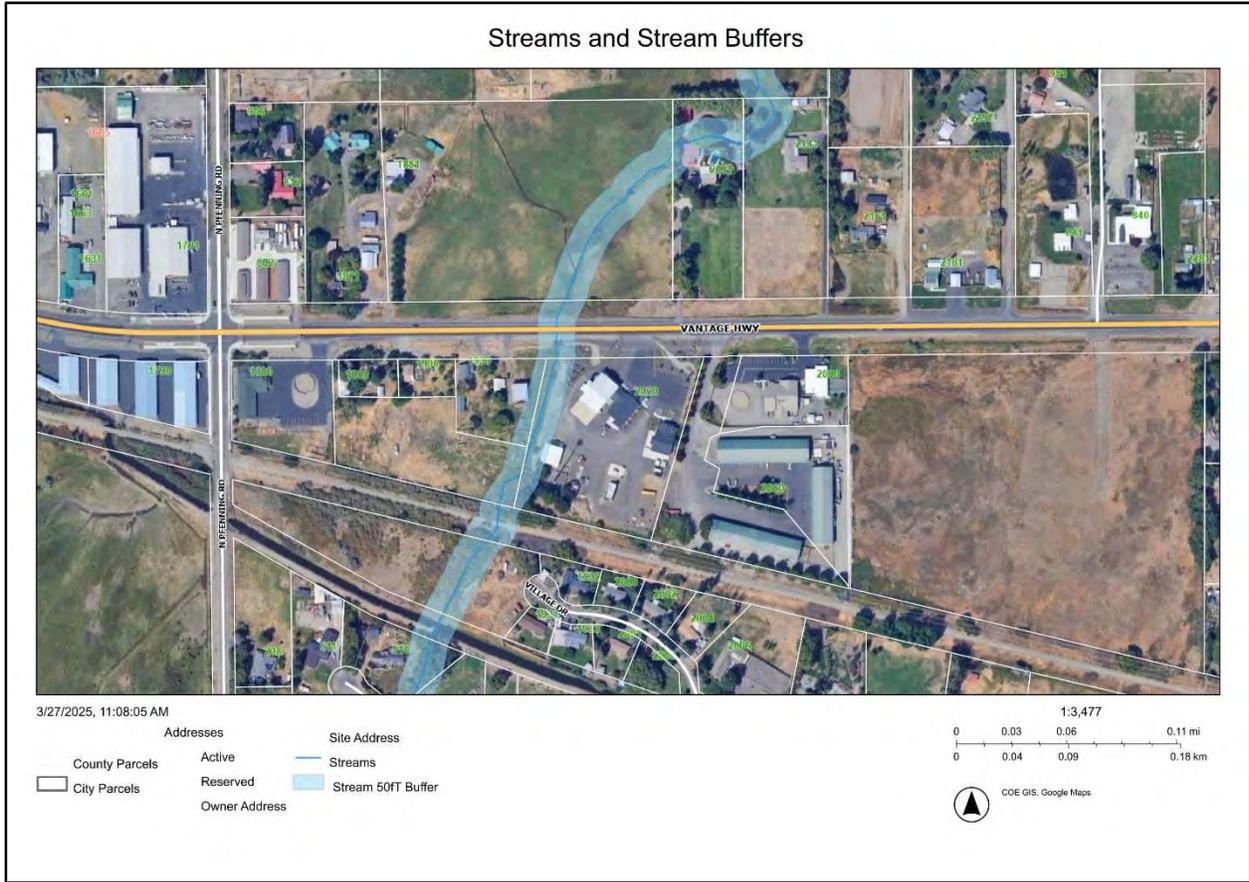
Appendix A-2. NRCS Soil Survey



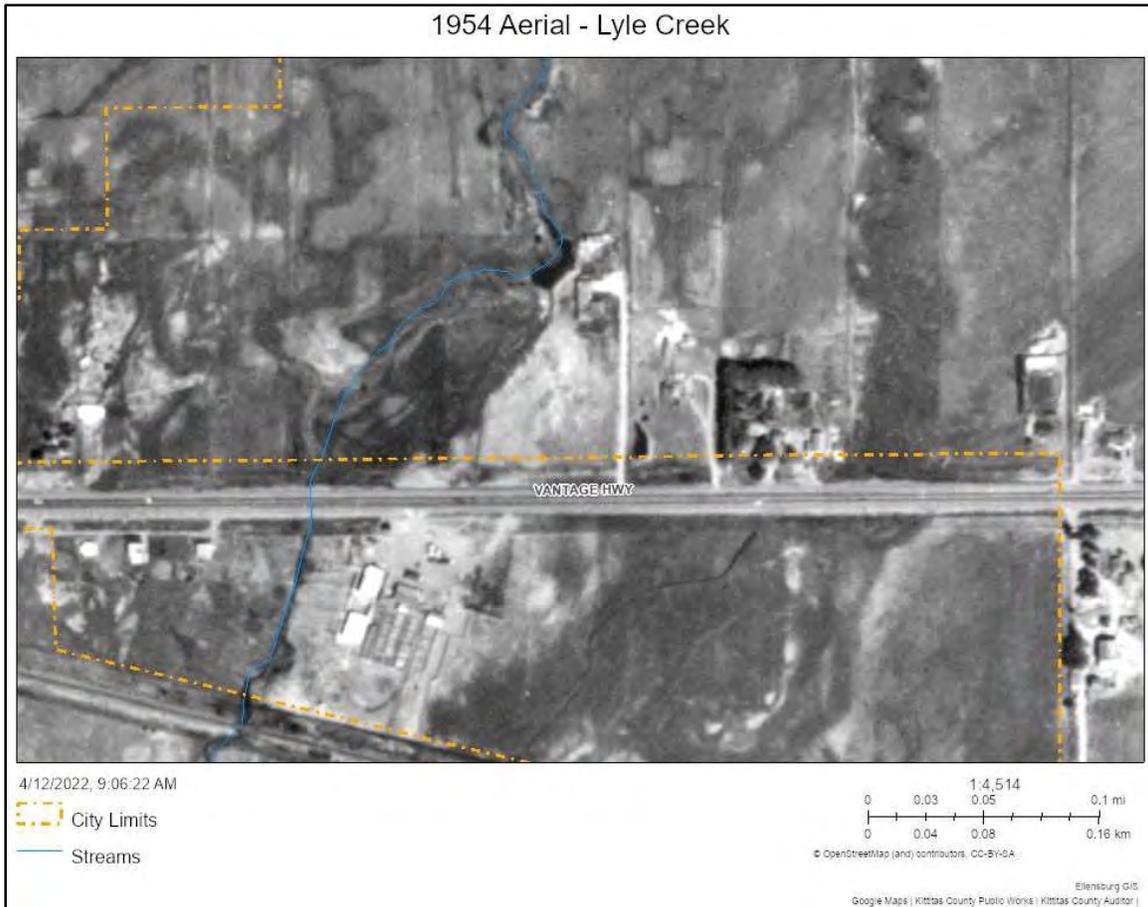
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
480	Nanum ashy loam, 0 to 2 percent slopes	1.6	1.4%
584	Varodale clay, 0 to 2 percent slopes	0.6	0.6%
587	Argixerolls, 15 to 30 percent slopes	8.5	7.4%
589	Nack-Brickmill complex, 0 to 5 percent slopes	2.4	2.1%
601	Brickmill gravelly ashy loam, 0 to 2 percent slopes	13.0	11.3%
624	Manastash loam, 5 to 10 percent slopes	2.8	2.4%
795	Nack-Opnish complex, 0 to 2 percent slopes	74.4	64.7%
838	Nosal ashy silt loam, 0 to 2 percent slopes	11.5	10.0%
Totals for Area of Interest		114.9	100.0%

Appendix A-3. Lyle Creek Buffer



Appendix A-4. 1954 Historic Aerial¹⁷



¹⁷ Obtained from City of Ellensburg (2025a) in 2022.

Appendix B. Precipitation Analysis

Precipitation analysis per NRCS (2015). All data were obtained from the AgACIS weather station¹⁸ at Ellensburg. Wetland delineation fieldwork was completed on April 1, 2022.

Normal climatic conditions prevailed the previous three months prior to fieldwork, with 0.02 in falling on March 22.

	Month	Long-term rainfall records ¹ (in)			Total Rainfall Obs. ²	Condition dry, wet, normal ³	Condition Value	Month weight value ⁴	Product of previous two columns
		3 yrs. in 10 less than	Average	3 yrs. in 10 more than					
1 st prior month	Mar	0.36	0.76	0.93	0.44	Normal	2	3	6
2 nd prior month	Feb	0.59	0.91	1.10	Trace	Dry	1	2	2
3 rd prior month	Jan	0.65	1.19	1.45	1.49	Wet	3	1	3
Sum								11 ⁵	

¹ WETS table (NRCS 2025b); ² Accumulated Daily Precipitation (NRCS 2025b); ³ WETS table “30% more than and 30% less than values are referenced to compare recorded rainfall to statistically-normal precipitation; ⁴ Value: Dry = 1; Normal = 2; Wet = 3;

⁵ 6-9: drier than normal, 10-14: normal, 15-18: wetter than normal.

Date (2022)	Precipitation Total (in)
April 1 (fieldwork)	0
March 23-31	0
March 22	0.02
TOTAL	0.02

¹⁸ (NRCS 2025b). AgACIS station: Ellensburg, Kittitas County (FIPS 53037).

Appendix C. Wetland Photos (4/1/2022)

Photo 1. Lyle Creek north of Vantage Hwy at fence. View toward north.



Photo 2. Lyle Creek north of Vantage Hwy. View toward south from fence.



Photo 3. Cleared vegetation west of Lyle Creek, north of Vantage Hwy. View toward east.



Photo 4. Lyle Creek south of Vantage Hwy. View toward southeast.



Appendix D. Delineation and Rating Data Forms



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Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 1
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): streambank Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR): LRR B Lat: 46°59'59.35"N Long: 120°30'52.81"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
---	--

Remarks:
 Left bank of Lyle Creek near the pasture fence. Soil and vegetation are disturbed by periodic city maintenance of the right of way, including vegetation and accumulated sediment removal. Sans maintenance, the wetland would be dominated by coyote willow (Cowardin = PSS).

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Rosa woodsii</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>92</u> x 1 = <u>92</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>118</u> (B) Prevalence Index = B/A = <u>1.18</u>
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Carex pellita</u>	<u>85</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Typha latifolia</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
3.	<u>Juncus balticus</u>	<u>3</u>	<u>No</u>	<u>FACW</u>	
4.	<u>Iris pseudacorus</u>	<u>2</u>	<u>No</u>	<u>OBL</u>	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
=Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2.	_____	_____	_____	_____	
=Total Cover					
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 3/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:
Saturated although no surface flow in the creek.

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 2
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): city road right of way Local relief (concave, convex, none): flat Slope (%): 1
 Subregion (LRR): LRR B Lat: 46°59'59.24"N Long: 120°30'52.37"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: City right of way north of Vantage Hwy.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>101</u> x 4 = <u>404</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>101</u> (A) <u>404</u> (B) Prevalence Index = B/A = <u>4.00</u>
1.	<u>Rosa woodsii</u>	<u>90</u>	<u>Yes</u>	<u>FACU</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		<u>90</u>	=Total Cover		
Herb Stratum	(Plot size: <u>5x5</u>)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	<u>Tanacetum vulgare</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Cirsium arvense</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>11</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5x5</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum <u>89</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 3/2	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 3
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 46°59'59.19"N Long: 120°30'53.49"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
---	---

Remarks:
 Depression near right bank of Lyle Creek. Soil and vegetation are disturbed by periodic city maintenance of the right of way, including vegetation and accumulated sediment removal. Sans maintenance, the mowed coyote willow would quickly recover (Cowardin = PSS).

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Salix exigua</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>101</u> x 2 = <u>202</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>101</u> (A) <u>202</u> (B) Prevalence Index = B/A = <u>2.00</u>
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Phalaris arundinacea</u>	<u>99</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Juncus balticus</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100					Loamy/Clayey	
8-12	10YR 4/1	98	7.5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Flow in the creek terminates in the winter but begins again during the irrigation (growing) season. Given the lush vegetation (OBL/FACW-dominant), geomorphic position of the depression, adjacency to the creek channel, and hydric soil indicators, it is logical that hydrology indicator C3 was observed.

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 4
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 46°59'59.19"N Long: 120°30'54.01"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
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Remarks:
 Depression near right bank of Lyle Creek. Soil and vegetation are disturbed by periodic city maintenance of the right of way, including vegetation and accumulated sediment removal. Sans maintenance, the mowed coyote willow would quickly recover (Cowardin = PSS).

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>31</u> x 2 = <u>62</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>101</u> (A) <u>232</u> (B) Prevalence Index = B/A = <u>2.30</u>
1.	<u>Salix exigua</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	<u>Carex pellita</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	
2.	<u>Phalaris arundinacea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3.	<u>Juncus balticus</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	
4.	<u>Unknown pasture grass</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
=Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
=Total Cover					
% Bare Ground in Herb Stratum <u>9</u> % Cover of Biotic Crust <u>0</u>					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>

Remarks:
 Pasture grass is assumed to be FAC in order to remain conservative.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/1	95					Loamy/Clayey	
7-14	10YR 3/1	95	10YR 3/4	5	C	M	Loamy/Clayey	Distinct redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Flow in the creek terminates in the winter but begins again during the irrigation (growing) season. Given the lush vegetation (OBL/FACW-dominant), geomorphic position of the depression, adjacency to the creek channel, and hydric soil indicators, the hydrology indicator is inferred to be present later in the growing season.

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 5
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): city road right of way Local relief (concave, convex, none): flat Slope (%): 1
 Subregion (LRR): LRR B Lat: 46°59'59.17"N Long: 120°30'54.67"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: upland

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: City right of way north of Vantage Hwy.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)				
1.	<u>Salix exigua</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>42</u> x 2 = <u>84</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>102</u> (A) <u>264</u> (B) Prevalence Index = B/A = <u>2.59</u>
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)				
1.	<u>Phalaris arundinacea</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Unknown pasture grass</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
=Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)				
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2.	_____	_____	_____	_____	
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:
 Pasture grass assumed to be FAC in order to remain conservative.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 6
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T17N-R19E-S6
 Landform (hillside, terrace, etc.): streambank Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 46°59'58.05"N Long: 120°30'53.50"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Right streambank of Lyle Creek, south of Vantage Hwy.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Salix exigua</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Iris pseudacorus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
2.	<u>Phalaris arundinacea</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

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 170 x 2 = 340
 FAC species 0 x 3 = 0
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 180 (A) 350 (B)
 Prevalence Index = B/A = 1.94

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 3/2	100					Loamy/Clayey	
11-16	10YR 3/1	95	7.5YR 3/4	5	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> Other (Explain in Remarks)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:

Project/Site: City of Ellensburg - Gateway II Project City/County: Ellensburg / Kittitas Sampling Date: 4-1-2022
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 7
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): manicured lawn Local relief (concave, convex, none): flat Slope (%): 1
 Subregion (LRR): LRR B Lat: 46°59'58.06"N Long: 120°30'53.72"W Datum: WGS84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes (not hydric) NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
---	---

Remarks:
 Manicured lawn. Slightly higher in elevation than soil pit 6. Soil pit 6 barely met hydric soil indicator at 12 inches. No coyote willow growing through the lawn grass. No soil pit dug to avoid disturbing the grass or hit irrigation.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15x15</u>)				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5x5</u>)				
1.	<u>Lawn grass</u>	<u>100</u>	<u>Yes</u>	<u>FAC</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5x5</u>)				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

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 100 x 3 = 300
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 100 (A) 300 (B)
 Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
 Lawn grass assumed to be FAC in order to remain conservative.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
No soil pit dug in lawn grass. No hydrophytic vegetation present, in particular, coyote willow (FACW) - which would be sprouting through the grass if it were present.

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland Unit 1 (WU-1) Date of site visit: 4/1/2022

Rated by Geoffrey Gray Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Riverine Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google Earth Pro

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- Category II - Total score = 19 - 21
- X Category III - Total score = 16 - 18
- Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	L	L	L	
Landscape Potential	H	M	L	
Value	H	L	H	Total
Score Based on Ratings	7	4	5	16

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	X

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1A
Hydroperiods	H 1.2, H 1.3	1A
Ponded depressions	R 1.1	1A
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	1A
Map of the contributing basin	R 2.2, R 2.3, R 5.2	2
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1A
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	1A
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	3A
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	4
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	4

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

The wetland unit consists of a depression within the city right of way upstream of Vantage Hwy through which Lyle Creek flows. The creek has been maintained as an irrigation ditch for many decades and is periodically cleared of vegetation (including mowing, which is equal in function to grazing) and accumulated debris to ensure flow through the box culvert under Vantage Hwy.

The creek does not carry natural flow nor does it flow perennially. It functions like as an irrigation ditch, and given its incised, excavated alignment, does not overflow its banks. Because the wetland is located within the city limits of Ellensburg, it earns high points for water quality due to increased opportunity to process surrounding pollution. It receives low points for flood control due to channelization, lack of habitat, absence of floodplain, and hydrology limited to irrigation releases.

The creek is not mapped as critical habitat by the USFWS or NMRS but WDFW confirmed it is possible for fish to be in the creek, including ESA-listed steelhead. Thus, the wetland earns moderate habitat points.

RIVERINE WETLANDS		Points (only 1 score per box)
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 > 1/3 area of wetland	points = 6	0
Depressions cover > 1/10 area of wetland	points = 3	
Depressions present but cover < 1/10 area of wetland	points = 1	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with > 90% cover at person height; not Cowardin classes):		
Forest or shrub > 2/3 the area of the wetland	points = 10	2
<input type="checkbox"/> Forest or shrub 1/3 - 2/3 area of the wetland	points = 5	
<input type="checkbox"/> Ungrazed, herbaceous plants > 2/3 area of wetland	points = 5	
Ungrazed herbaceous plants 1/3 - 2/3 area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland	points = 0	
Total for R 1	Add the points in the boxes above	2

Rating of Site Potential If score is: 12 - 16 = H 9 - 11 = M 5 = L *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 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0	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 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	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?		0
Sources	Yes = 1 No = 0	
Total for R 2	Add the points in the boxes above	5

Rating of Landscape Potential If score is: 3 - 6 = H 1 or 2 = M = L *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 No = 0	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 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).	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	2

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

RIVERINE WETLANDS		Points (only 1 score per box)
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: <i>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).</i>		
If the ratio is more than 2	points = 10	1
If the ratio is 1 - 2	points = 8	
If the ratio is 1/2 - < 1	points = 4	
If the ratio is 1/4 - < 1/2	points = 2	
If the ratio is < 1/4	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>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).</i>		
Forest or shrub for more than 2/3 the area of the wetland	points = 6	2
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 2	
Plants do not meet above criteria	points = 0	
Total for R 4		3

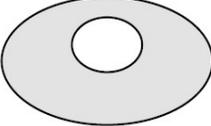
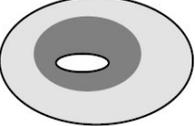
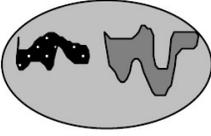
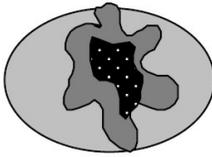
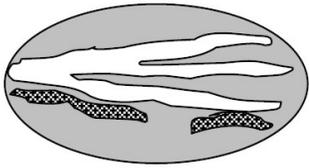
Rating of Site Potential If score is: 12 - 16 = H 8 - 11 = M 5 = L *Record the rating on the first page*

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 No = 1	0
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	1
Total for R 5		2

Rating of Landscape Potential If score is: 3 = H or 2 = M = L *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? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		0
		Yes = 2 No = 0
Total for R 6		0

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

These questions apply to wetlands of all HGM classes.			(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat			
H 1.0. Does the wetland have the potential to provide habitat for many species?			
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.</i>			
<input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover <input checked="" type="checkbox"/> Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover <input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) <input type="checkbox"/> Forested (areas where trees have > 30% cover)	4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0		0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0	0
H 1.3. Surface water			
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>		<input type="checkbox"/> Yes = 3 points & go to H 1.4 No = go to H 1.3.2	0
H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>		<input type="checkbox"/> Yes = 3 No = 0	
H 1.4. Richness of plant species			
Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i>			
# of species _____		Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0	1
H 1.4. Interspersion of habitats			
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>			
			
None = 0 points	Low = 1 point	Moderate = 2 points	
All three diagrams in this row are HIGH = 3 points			
			Riparian braided channels with 2 classes

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		1
<input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		Add the points in the boxes above 3

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 0 % undisturbed habitat + (16 % moderate & low intensity land uses / 2) = 8%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 0 % undisturbed habitat + (23 % moderate & low intensity land uses / 2) = 11.5%		
Undisturbed habitat > 50% of Polygon	points = 3	2
Undisturbed habitat 10 - 50% and in 1 - 3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs		
Yes = 3	No = 0	0
Total for H 2		Add the points in the boxes above 0

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.

NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Vernal Pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
<input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.	
<input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>	
<input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.	
<input type="checkbox"/> Surface water is present for less than 120 days during the wet season.	
<input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool	
SC 1.1.	Is the vernal pool relatively undisturbed in February and March?
<input type="checkbox"/> Yes - Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics	
SC 1.2.	Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?
<input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III	
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
<input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm.	
<input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
<input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
<input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland	
<input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4	
<input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	
<input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1.	Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?
<input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3	
SC 3.2.	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?
<input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV	
SC 3.3.	Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf
<input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV	
SC 3.4.	Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?
<input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	

<p>SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No - Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? <input type="checkbox"/> Yes = Is a Calcareous Fen for purpose of rating <input type="checkbox"/> No - Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: <input type="checkbox"/> Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems <input type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland <input type="checkbox"/> Yes = Is a Category I calcareous fen <input type="checkbox"/> No = Is not a calcareous fen</p>	
<p>SC 5.0. Forested Wetlands Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H</i> <input type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream <input type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species <input type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) <input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>Category of wetland based on Special Characteristics <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland Unit 2 (WU-2) Date of site visit: 4/1/2022

Rated by Geoffrey Gray Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Riverine Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google Earth Pro

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- X Category II - Total score = 19 - 21
- Category III - Total score = 16 - 18
- Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	H	L	
Landscape Potential	H	H	L	
Value	H	L	H	Total
Score Based on Ratings	8	7	5	20

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	X

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1A
Hydroperiods	H 1.2, H 1.3	1A
Ponded depressions	R 1.1	1A
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	1A
Map of the contributing basin	R 2.2, R 2.3, R 5.2	2
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1A
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	1A
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	3A
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	4
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	4

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

The wetland unit comprises Lyle Creek downstream of the box culvert under Vantage Hwy. The creek has been managed and maintained as an irrigation ditch for many decades.

Because the wetland is located within the city limits of Ellensburg, it earns high points for water quality due to increased opportunity to process surrounding pollution. It receives high points for flood control - but it is not located within a floodplain and flows are limited to the controlled release of irrigation water. Therefore, the points awarded for flood control are artificially high.

The creek is not mapped as critical habitat by the USFWS or NMRS but WDFW confirmed it is possible for fish to be in the creek, including ESA-listed steelhead. Therefore, it scores moderate points for habitat.

RIVERINE WETLANDS		Points (only 1 score per box)
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 > 1/3 area of wetland	points = 6	0
Depressions cover > 1/10 area of wetland	points = 3	
Depressions present but cover < 1/10 area of wetland	points = 1	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with > 90% cover at person height; not Cowardin classes):		
Forest or shrub > 2/3 the area of the wetland	points = 10	10
<input type="checkbox"/> Forest or shrub 1/3 - 2/3 area of the wetland	points = 5	
<input type="checkbox"/> Ungrazed, herbaceous plants > 2/3 area of wetland	points = 5	
Ungrazed herbaceous plants 1/3 - 2/3 area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland	points = 0	
Total for R 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 12 - 16 = H 9 - 11 = M 5 = L *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 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0	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 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	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?		0
Sources	Yes = 1 No = 0	
Total for R 2	Add the points in the boxes above	5

Rating of Landscape Potential If score is: 3 - 6 = H 1 or 2 = M = L *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 No = 0	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (<i>Answer YES if there is a TMDL for the drainage in which the unit is found</i>).	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	2

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

RIVERINE WETLANDS		Points (only 1 score per box)
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: <i>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).</i>		
If the ratio is more than 2	points = 10	8
If the ratio is 1 - 2	points = 8	
If the ratio is 1/2 - < 1	points = 4	
If the ratio is 1/4 - < 1/2	points = 2	
If the ratio is < 1/4	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>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).</i>		
Forest or shrub for more than 2/3 the area of the wetland	points = 6	6
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 2	
Plants do not meet above criteria	points = 0	
Total for R 4		14

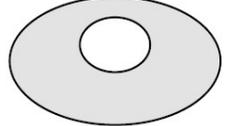
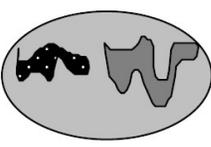
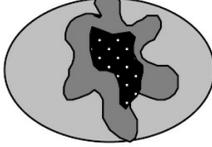
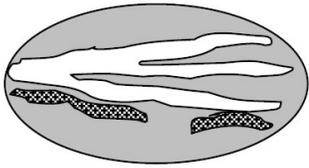
Rating of Site Potential If score is: 12 - 16 = H 9 - 11 = M 5 - 8 = L *Record the rating on the first page*

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 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	1
Total for R 5		3

Rating of Landscape Potential If score is: 3 = H 2 = M 1 = L *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? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resources	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		0
		Yes = 2 No = 0
Total for R 6		0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover</p> <p><input type="checkbox"/> Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover</p> <p><input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover</p> <p><input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)</p> <p><input type="checkbox"/> Forested (areas where trees have > 30% cover)</p>		<p>4 or more checks: points = 3</p> <p>3 checks: points = 2</p> <p>2 checks: points = 1</p> <p>1 check: points = 0</p> <p style="text-align: center;">0</p>
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. Surface water		
<p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: center;"><input type="checkbox"/> Yes = 3 points & go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: center;"><input type="checkbox"/> Yes = 3 No = 0</p>		0
H 1.4. Richness of plant species		
<p>Count the number of plant species in the wetland that cover at least 10 ft². <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0</p>		0
H 1.4. Interspersion of habitats		
<p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div> <p>All three diagrams in this row are HIGH = 3 points</p>		1

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		1
<input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		Add the points in the boxes above 2

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 0 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 0%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 0 % undisturbed habitat + (23 % moderate & low intensity land uses / 2) = 11.5%		
Undisturbed habitat > 50% of Polygon	points = 3	2
Undisturbed habitat 10 - 50% and in 1 - 3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs		
Yes = 3	No = 0	0
Total for H 2		Add the points in the boxes above 0

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.
NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Vernal Pools</p> <p>Is the wetland less than 4000 ft², and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. <input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> <input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. <input type="checkbox"/> Surface water is present for less than 120 days during the wet season. <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III</p>	
<p>SC 2.0. Alkali wetlands</p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm. <input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems). <input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland <input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 <input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland</p>	
<p>SC 3.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	

<p>SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No - Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? <input type="checkbox"/> Yes = Is a Calcareous Fen for purpose of rating <input type="checkbox"/> No - Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: <input type="checkbox"/> Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems <input type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland <input type="checkbox"/> Yes = Is a Category I calcareous fen <input type="checkbox"/> No = Is not a calcareous fen</p>	
<p>SC 5.0. Forested Wetlands Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H</i> <input type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream <input type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species <input type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) <input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>Category of wetland based on Special Characteristics Choose the highest rating if wetland falls into several categories If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

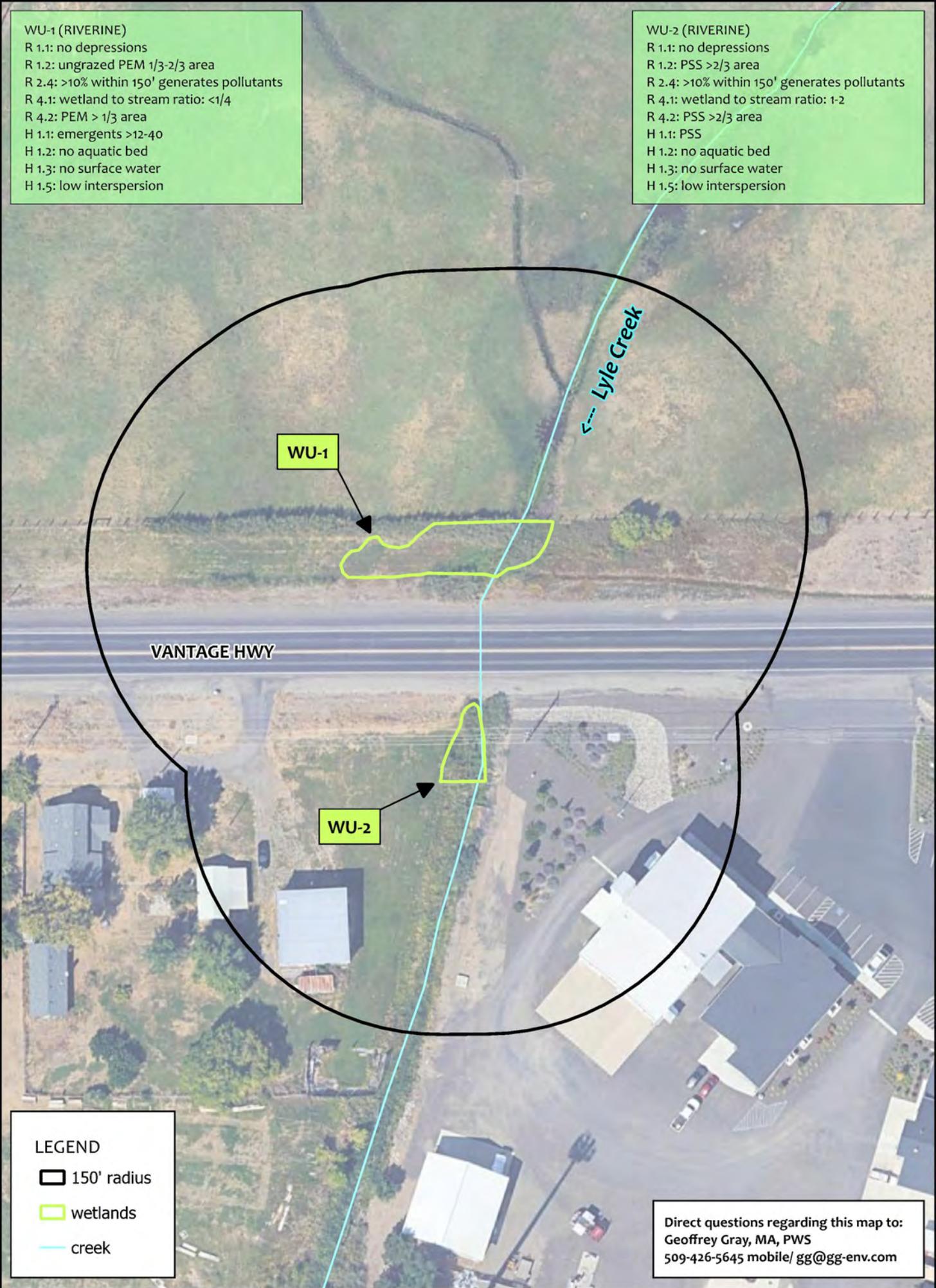
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

WU-1 (RIVERINE)

- R 1.1: no depressions
- R 1.2: ungrazed PEM 1/3-2/3 area
- R 2.4: >10% within 150' generates pollutants
- R 4.1: wetland to stream ratio: <1/4
- R 4.2: PEM > 1/3 area
- H 1.1: emergents >12-40
- H 1.2: no aquatic bed
- H 1.3: no surface water
- H 1.5: low interspersions

WU-2 (RIVERINE)

- R 1.1: no depressions
- R 1.2: PSS >2/3 area
- R 2.4: >10% within 150' generates pollutants
- R 4.1: wetland to stream ratio: 1-2
- R 4.2: PSS >2/3 area
- H 1.1: PSS
- H 1.2: no aquatic bed
- H 1.3: no surface water
- H 1.5: low interspersions



ECOLOGY RATING FORM - FIGURE 1 (WU-1, WU-2)

Map date: April 12, 2022
Aerial: April 17, 2021 (Google)

City of Ellensburg Gateway II Project
Ellensburg City Limits
Kittitas County, Washington

0 100 ft



GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

LEGEND

-  contributing basin (1,083 ac)
-  city limits and UGA

**Lyle Creek
contributing
basin**

Ellensburg

**WU-1-2
Locations**

Direct questions regarding this map to:
Geoffrey Gray, MA, PWS
509-426-5645 mobile/ gg@gg-env.com

ECOLOGY RATING FORM - FIGURE 2

City of Ellensburg Gateway II Project
Ellensburg City Limits
Kittitas County, Washington

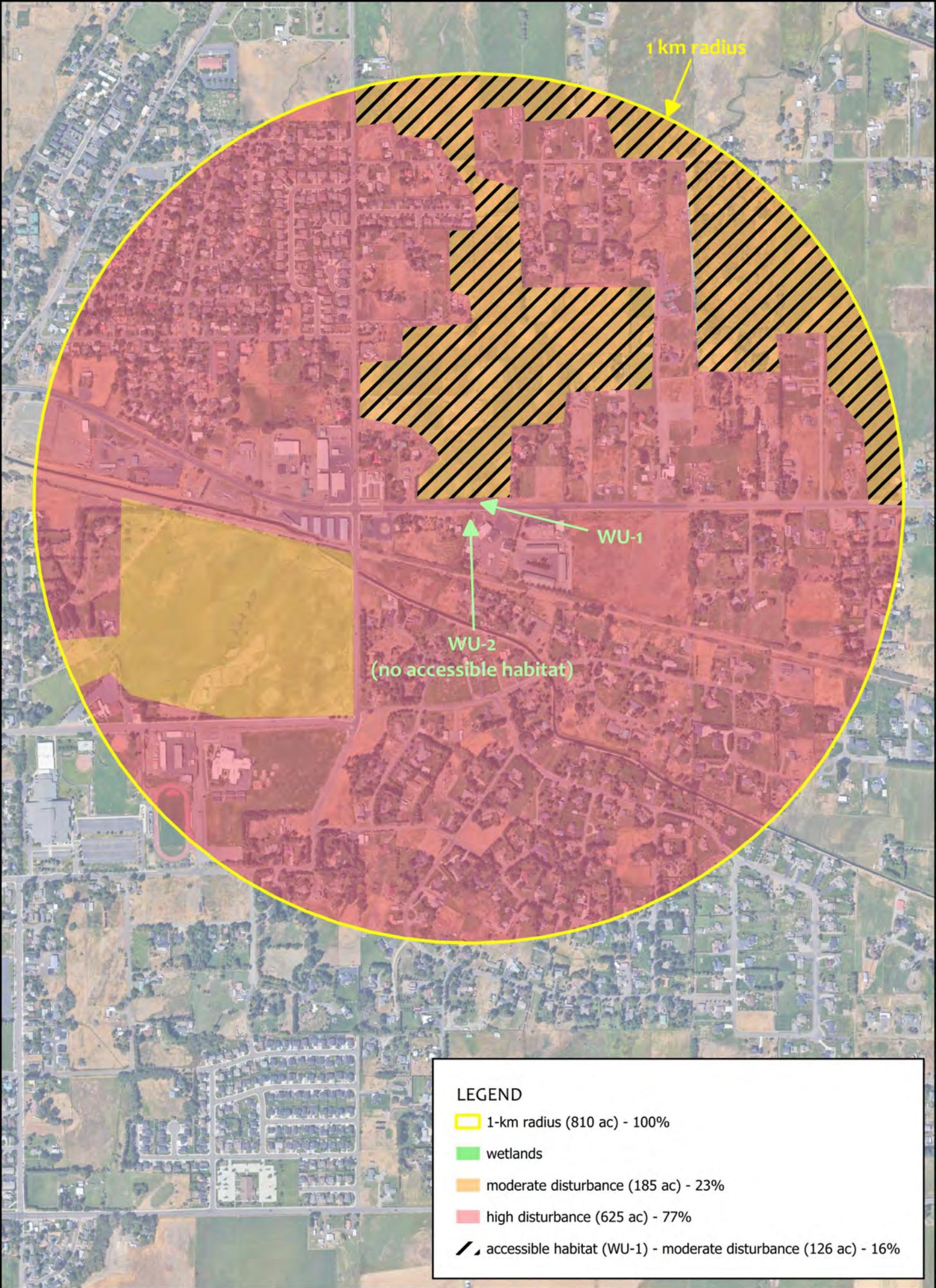
0 0.5 mi



Map date: April 12, 2022
Aerial: April 17, 2021 (Google)



GG Environmental, LLC
WETLANDS • FISH • WILDLIFE



ECOLOGY RATING FORM - FIGURE 3

0 1,000 ft



Map date: April 12, 2022
Aerial: April 17, 2021 (Google)

City of Ellensburg Gateway II Project
Ellensburg City Limits
Kittitas County, Washington

Direct questions regarding this map to:
Geoffrey Gray, MA, PWS
509-426-5645 mobile/ gg@gg-env.com



GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

Figure 4

Assessed Water/Sediment Water

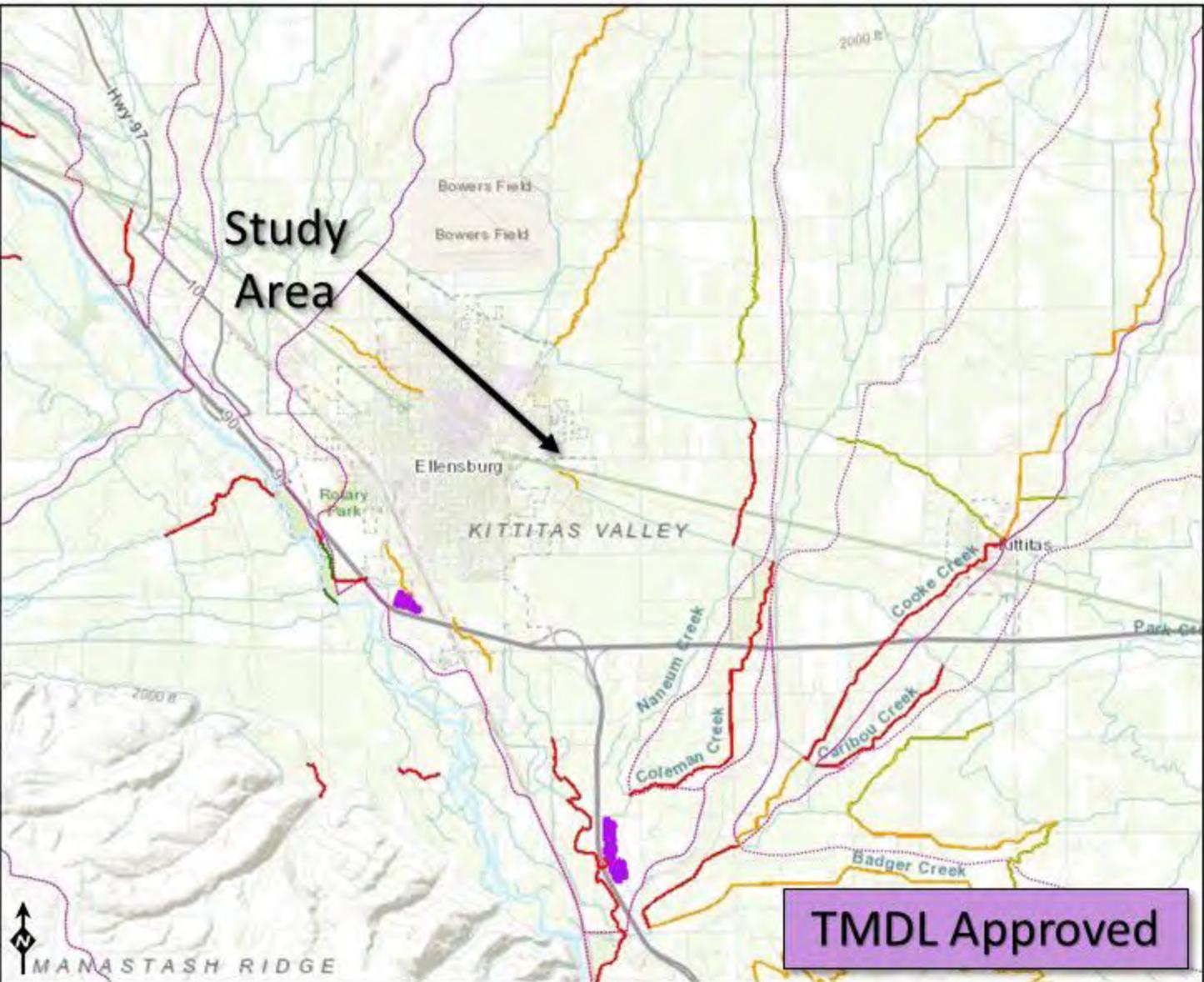
-  Category 5 - 303d
-  Category 4C
-  Category 4B
-  Category 4A
-  Category 2
-  Category 1

Sediment

-  Category 5 - 303d
-  Category 4C
-  Category 4B
-  Category 4A
-  Category 2
-  Category 1

Subbasins (12 digit HUCs)

-  HUC boundary



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

Appendix E. Project Design Plans



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CAD Path: C:_Geo-ACC\Projects\City of Ellensburg_Gateway\Project Files\CADD\01_SV_LID_RETROFIT PROJ\DWGS\SHEETS\AS190930A\01-C03.dwg Layout: 13 PAVING & DRAINAGE PLAN IV II Date Saved: 10/9/2025 9:00:31 AM User: jduran

CONSTRUCTION NOTES

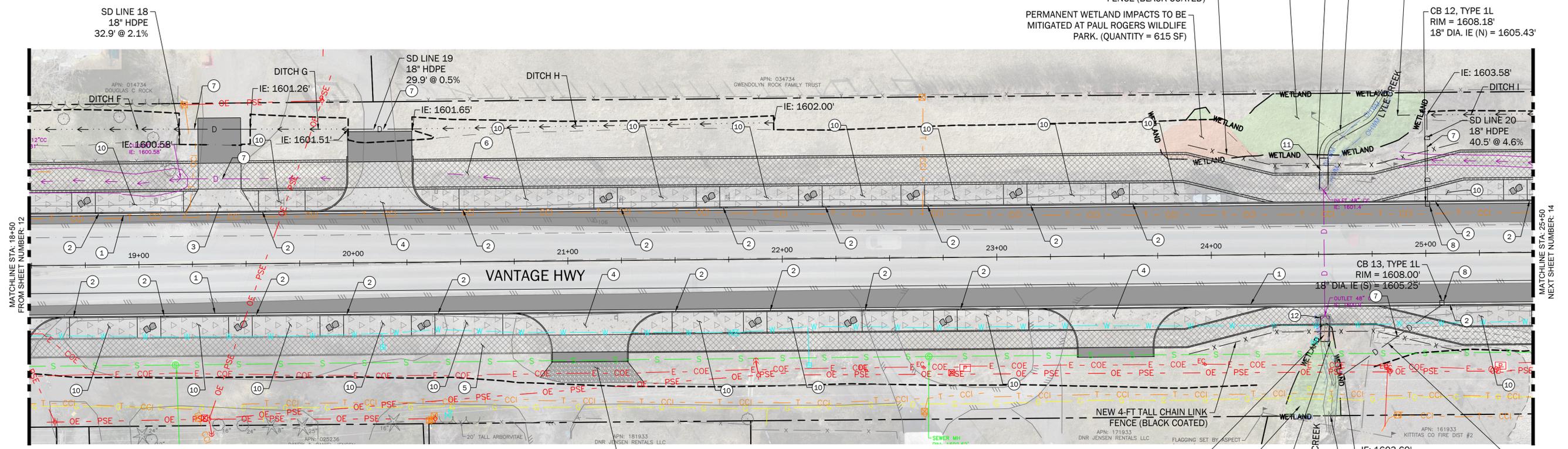
- ① NEW TYPE A CONCRETE CURB AND GUTTER (PER COE DETAIL SW-51).
- ② CURB INLET (PER COE DETAIL SD-27).
- ③ NEW 6 INCH CONCRETE DRIVEWAY (PER COE DETAIL SW-24) WITH ASPHALT APRON TRANSITION.
- ④ NEW 6 INCH CONCRETE COMMERCIAL DRIVEWAY (PER COE DETAIL SW-25A) WITH ASPHALT APRON TRANSITION.
- ⑤ NEW 8 FOOT POROUS ASPHALT PATHWAY (PER DETAIL SHEETS 16-23).
- ⑥ NEW 12 FOOT POROUS ASPHALT PATHWAY (PER DETAIL SHEETS 16-23).
- ⑦ NEW STORM PIPE (PER COE DETAIL SD-10).
- ⑧ NEW TYPE 1L STORM CATCH BASIN (PER COE DETAIL SD-20).
- ⑨ NEW TYPE 2 STORM CATCH BASIN (PER COE DETAIL SD-44).
- ⑩ NEW BIOINFILTRATION SWALE (PER TYPICAL STREET SECTIONS AND TYPICAL GRADING PLAN & DIMENSIONS).
- ⑪ NEW 15 LF 4' W X 4' T CONCRETE BOX CULVERT, MATCH EXISTING CULVERT SLOPE.
- ⑫ NEW 12 LF 4' W X 4' T CONCRETE BOX CULVERT, MATCH EXISTING CULVERT SLOPE.

GENERAL CONSTRUCTION NOTES (FOR PAVING & DRAINAGE SHEETS)

1. DRAWING IS FOR INFORMATIONAL PURPOSES. ACTUAL DIMENSIONS AND SHAPES OF ALIGNMENTS MAY VARY.
2. WATER METERS SHALL BE RELOCATED OUTSIDE OF DRIVEWAYS AND PATHWAYS; CONFLICTING WATER METERS WILL BE RELOCATED OR ADJUSTED BY OTHERS.

ITEMS TO BE INCLUDED IN NEXT DESIGN PHASE

- DITCH AND STORM DRAIN PROFILES
- ROADWAY/CURB ELEVATION CALLOUTS
- CURB RETURN TABLES
- BUS PULLOUT
- RELOCATE FIRE STATION SWALES



LEGEND

	NEW CONCRETE		NEW CATCH BASIN TYPE 1L
	RELOCATED DITCH		NEW CATCH BASIN TYPE 2
	NEW STORM PIPE		PERMANENT IMPACT, CRITICAL AREA
	GRADING LIMITS		TEMPORARY IMPACT, CRITICAL AREA
	NEW ASPHALT		WETLAND BOUNDARY
	NEW GRAVEL		
	NEW POROUS ASPHALT		
	NEW INFILTRATION SWALE		
	NEW CONCRETE		

DRAINAGE PLAN
SCALE: 1" = 25'



DRAFT
90% DESIGN
NOT FOR CONSTRUCTION

PAVING & DRAINAGE PLAN IV
GATEWAY TO THE CITY OF ELLENSBURG
STORMWATER LID RETROFIT PROJECT II
CITY OF ELLENSBURG, WA

SHEET REFERENCE NUMBER:
13
SHEET 13 OF 56

REV.	DESCRIPTION	DATE	APP.

DESIGNED BY:	EBP/JHK
DRAWN BY:	CP/CW
PROJECT NUMBER:	AS190930A
REVISION:	0
DATE:	Oct-25



Appendix F. MS-2 Documentation

This appendix includes the following data that document the suitability of MS-2 for offsite wetland mitigation:

1. Wetland delineation report for WU-3 at MS-2 (2023).
2. MS-2 Ecology rating form (anticipated post-mitigation rating, showing functional lift from Category III to Category I) for WU-3 at MS-2.
3. Department of Ecology Credit-Debit worksheet for WU-3 at MS-2.

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WETLAND DELINEATION REPORT

Gateway II Project
City of Ellensburg, Kittitas County, Washington

Wetland Mitigation Sites #1 and #2

Paul Rogers Wildlife Park

Prepared for:

City of Ellensburg
501 N Anderson Street, Ellensburg, WA 98926

Aspect Consulting, LLC
John H. Knutson, PE, Principal Water Resources Engineer
1106 N 35th Avenue, Yakima, WA 98902

Prepared by:

GG Environmental, LLC
Geoffrey Gray, MA, PWS
151 Poulin Rd. Selah, WA 98942
gg@gg-env.com
(509) 426-5645



GG Environmental, LLC

WETLANDS • FISH • WILDLIFE

November 6, 2023

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Executive Summary

GG Environmental, LLC (Geoffrey Gray, PWS) investigated two existing mapped wetlands within Paul Rogers Wildlife Park (PRWP), managed by the City of Ellensburg (City). The focus of the investigation was to determine the potential of these locations to provide mitigation for wetland impacts incurred by the City's "Gateway II Project" (Project) whereby the City is proposing to construct drainage improvements along both sides of Vantage Highway from Vista Road to the city limits, widen Vantage Highway between North Vista Road and vicinity of Cowboy Lane, and add pedestrian and bicycle pathways to enhance community accessibility.

The vicinity in which the sites occur is located within the historic alluvial van/meander zone of Lyle Creek. Both sites are depressions located in topographic swales that are likely relict channels of the creek. Given their low-lying geomorphic positions, wetland hydrology in the depressions is supported by irrigation surface runoff, hyporheic seepage, and/or seasonally-elevated groundwater. Established and managed by the City for many years, both sites are enhanced with excavated depressions to provide surface inundation valuable for wildlife.

Three wetland units were delineated. Two adjacent wetland units were delineated in the PRWP southwest corner (Mitigation Site #1) including WU-1 (Category II Depressional wetland elevated to Category I via Special Characteristics) and WU-2 (Category IV Slope wetland). A third Category III Depressional wetland unit (Mitigation Site #2) was delineated in the PRWP northwest corner.

Mitigation Potential

Since the sites receive consistent hydrology during the growing season due to irrigation, lie within a favorable geomorphic position, support established native wetland vegetation, exhibit hydric soil indicators, have functional buffers, and are perpetually protected upon city (public) property, they exhibit a good potential to serve as wetland mitigation sites.

Both sites occur within the watershed of Lyle Creek in close proximity to the Project where wetland impacts are anticipated. As such the sites meet the selection standards outlined by the Department of Ecology's *Selecting Wetland Mitigation Sites Using a Watershed Approach*.

Utilizing Ecology's *Calculating Credits and Debits for Mitigation in Eastern Washington* (Credit-Debit Method), mitigation credits required to compensate for lost wetland functions (debits) must be calculated to confirm whether the two sites will meet the needs of the Project for mitigation.

Given the risk that regulators may view the mitigation sites as "atypical wetlands" due to their (at least partial) reliance on artificial hydrology (irrigation), it is recommended that early coordination be sought from the Department of Ecology prior to JARPA submittal. Furthermore, it is recommended that groundwater be monitored prior to the 2024 irrigation season (if practicable) to determine the role of groundwater in observed wetland hydrology.



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Acronyms and Abbreviations

AgACIS	Agricultural Applied Climate Information System
Corps	United States Army Corps of Engineers
Cowardin	Cowardin Classification System
DNR	Washington State Department of Natural Resources
ECC	Ellensburg City Code
Ecology	Washington State Department of Ecology
GIS	Geographic Information System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HGM	Hydrogeomorphic (Wetland Classification)
HUC	Hydrologic Unit Code
LRR	Land Resource Region
MLRA	Major Land Resource Area
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
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
PWS	Professional Wetland Scientist
SITES	Mitigation Sites 1 and 2
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDFW	Washington State Department of Fish and Wildlife
WETS	Climate Analysis for Wetlands Tables
WGS84	World Geodetic System 1984
WRIA	Water Resource Inventory Area
WU	Wetland Unit



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1. Introduction

The City of Ellensburg (City) is proposing to construct drainage improvements along both sides of Vantage Highway from Vista Road to the city limits, widen Vantage Highway between North Vista Road and vicinity of Cowboy Lane, and add pedestrian and bicycle pathways to enhance community accessibility. The proposal is referred to as the “Gateway II Project” (Project).

The Project will result in wetland impacts¹ along Lyle Creek and East Branch of Lyle Creek (EB Lyle Creek) for which mitigation is required. Aspect Consulting, LLC (Aspect) retained GG Environmental, LLC to evaluate two potential mitigation sites (Mitigation Sites #1 and #2) (sites) identified by Aspect on property managed by the City.

2. Location

The sites are located within Paul Rogers Wildlife Park (PRWP), City property that occurs south of Judge Ronald Road and between Wilson Creek Road and Lyle Creek Lane (**Figure 1**).

Geospatially positioned in the northwest quarter of the southeast quarter of Township 18 North - Range 19 East – Section 31, Mitigation Site #1 is located within the PRWP’s southwest corner at approximate latitude 47° 0'12.88" North, longitude 120°30'26.18" West (WGS84) and at an approximate elevation of 1,630 feet (ft) (**Figures 2, 3**). Mitigation Site #2 is located in the PRWP’s northwest corner at approximate latitude 47° 0'12.88" North, longitude 120°30'26.18" West (WGS84) and at an approximate elevation of 1,643 ft.

Both sites occur within USDA Land Resource Region (LRR) B and USDA Major Land Resource Area (MLRA) 8 (Columbia Plateau) (NRCS 2006), Water Resource Inventory Area (WRIA) 39 (Upper Yakima), and Naneum Creek-Wilson Creek subwatershed (12th Hydrologic Unit Code 170300010408).

¹ Wetland and stream delineation completed by GG Environmental, LLC, report dated 4-22-2022 (GG Environmental, LLC 2022).

Figure 1. Location Map

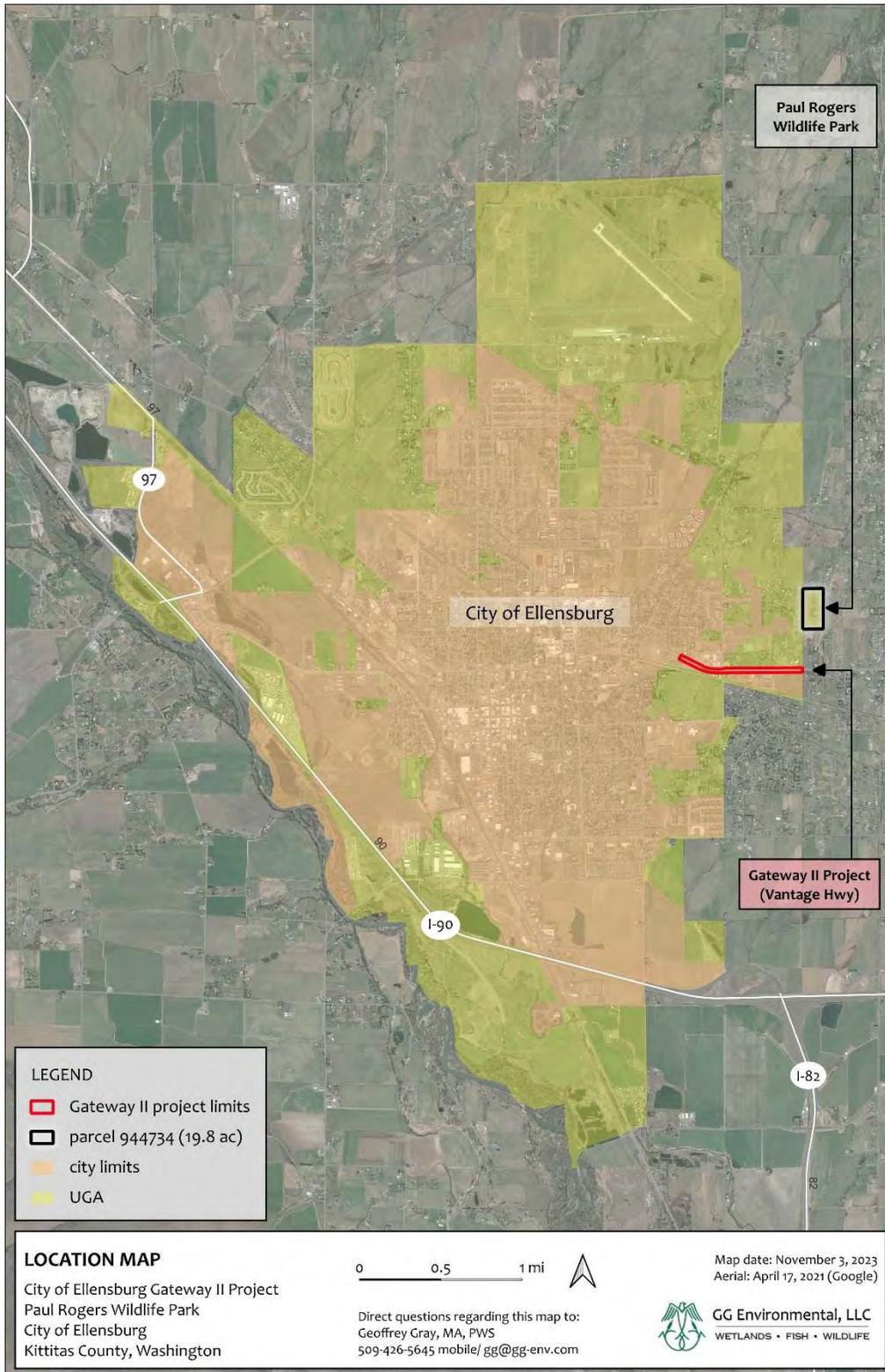


Figure 2. USGS Topographic Map

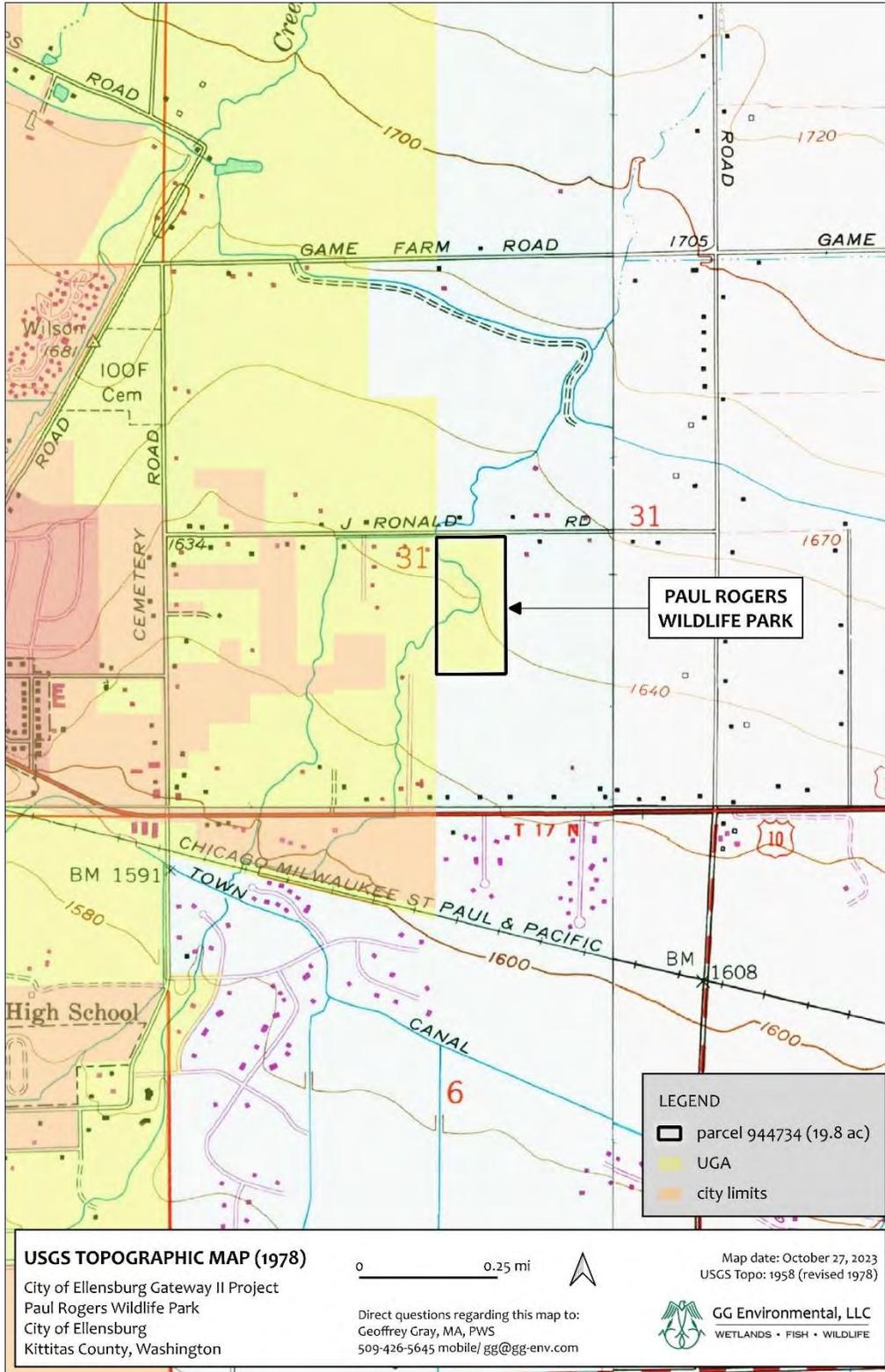
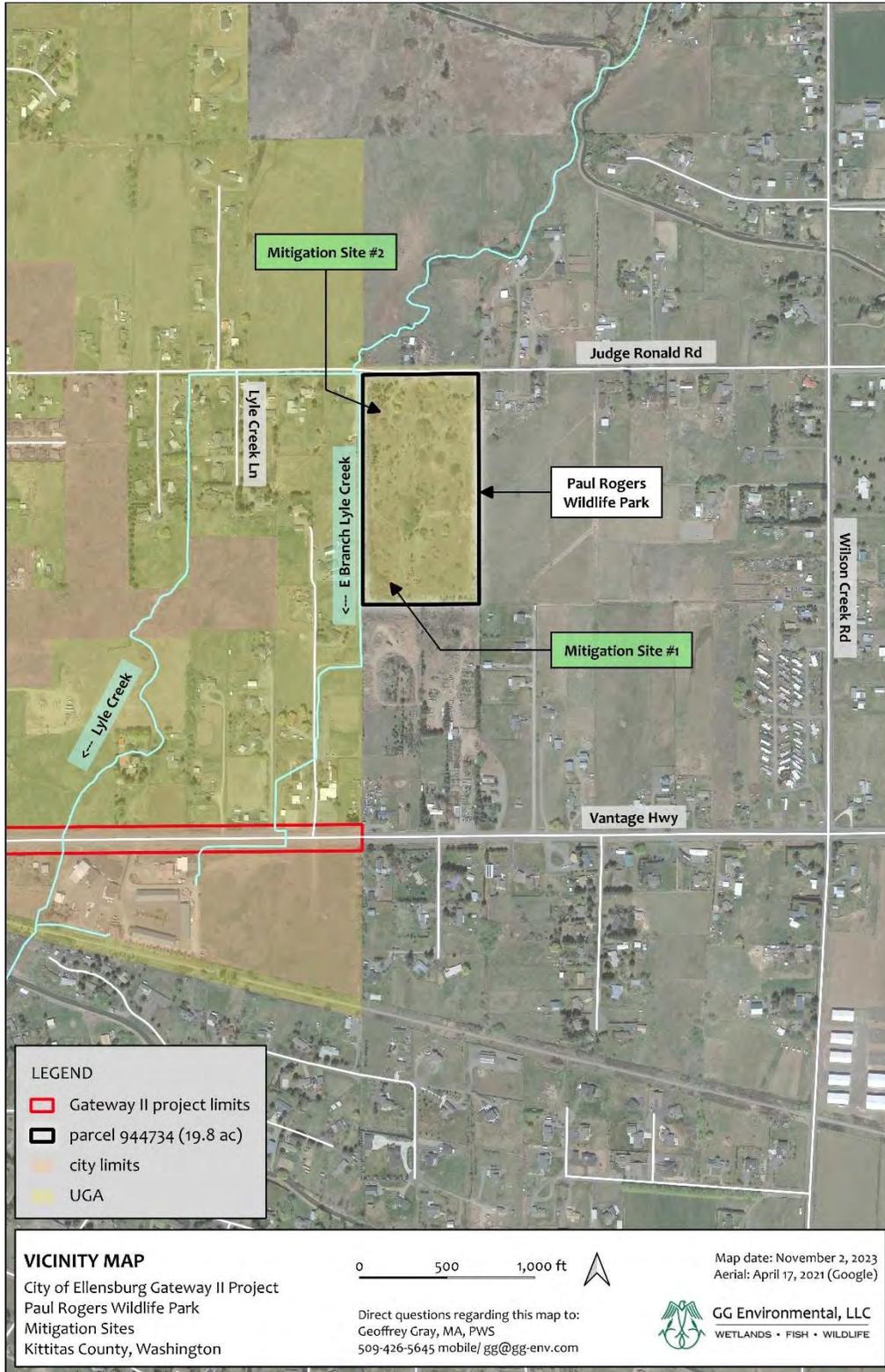


Figure 3. Vicinity Map



3. Methods

An overview of the methods implemented to delineate the site is presented in this section.

3.1. Field Investigation

The PRWP was reconnoitered on October 5, 2023 by GG Environmental, LLC (Geoffrey Gray, MA, PWS) while accompanied by Bill Rice (Aspect Consulting). Two potential wetland mitigation sites were identified. These sites were subsequently delineated by GG Environmental, LLC on October 9, 2023 (Mitigation Site #1) and November 1, 2023 (Mitigation Site #2). Park irrigation was shut down several weeks prior to the first field visit.

3.2. Geospatial Documentation

Features were geospatially surveyed with a Motorola G Stylus mobile phone running the Mapit Spatial GIS application paired via Bluetooth® with a Juniper Systems Geode™ Multi-Global Navigation Satellite System (Multi-GNSS) receiver capable of sub-foot horizontal accuracy.²

3.3. Background Data

The following sources were referenced for existing data on soils, topography, vegetation, precipitation, wetlands, streams, sensitive species, and habitats:

- National Wetlands Inventory (NWI) (USFWS 2023a). (**Appendix A-1**).
- Wetlands and Plants of High Conservation Value (DNR 2023a).
- Natural Resources Conservation Service soil survey data (NRCS 2023a). (**Appendix A-2**).
- Agricultural Applied Climate Information System (AgACIS) climate data (NRCS 2023b). (**Appendix B**).
- Historic aerial photography: (CWU 2023) (**Appendix A-3**) and 1985-2023 (Google 2023).
- Historic topographic maps (USGS 2023a).
- National Hydrography Dataset (USGS 2023b).
- Kittitas County floodplain data (Kittitas County 2023a).
- Kittitas County stream type (Kittitas County 2023a).
- DNR stream type (DNR 2023b).
- City of Ellensburg streams and stream buffers (City of Ellensburg 2023a).
- Federal and state-listed threatened, endangered, or candidate species (USFWS 2023b, WDFW 2020).
- Designated critical habitats (USFWS 2023c, NOAA 2023).
- Priority Habitats and Species (PHS) (WDFW 2023).

² Horizontal accuracy is typically eight (8) inches with open sky and good satellite coverage.



3.4. Wetland Delineation, Rating, and Regulatory Jurisdiction

Wetlands were delineated using routine methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008). Plants were identified by scientific name and wetland indicator status per the National Wetland Plant List (Corps 2020).

Wetlands were rated per the *Washington State Wetland Rating System for Eastern Washington – 2014 Update* (Hruby 2014) and classified following the United States Fish and Wildlife Service (USFWS) *Cowardin Classification System* (Cowardin et al. 1979) and *Hydrogeomorphic Classification System* (HGM) (Brinson 1993).

Wetlands within the Project area are regulated as Critical Areas³ under the Ellensburg City Code (ECC) (City of Ellensburg 2023b).

4. Existing Conditions

4.1. Surrounding Landscape

Land use within one kilometer (0.62 miles) of the sites includes the city limits (~15 percent), urban growth area (UGA, ~30 percent) and rural residential and grazeland in adjacent unincorporated areas (~55 percent) (Google 2023). The PRWP, managed as wildlife habitat, is irrigated and open to pedestrian foot traffic including dogs. East Branch Lyle Creek (EB Lyle Creek) parallels the PRWP along its western boundary.

4.2. Soils and Topography

Three soil units are mapped by the Natural Resources Conservation Service (NRCS) in association with the sites (NRCS 2023a) (**Appendix A-2**), none of which are characterized as hydric soils:

Nack-Brickmill complex, 0 to 5 percent slopes (map unit 589): **Nack** consists of alluvium with a mantle of volcanic ash. Associated with alluvial fans, the typical profile includes gravelly ashy loam to six (6) inches (in), clay loam from 6-15 in, and extremely gravelly sandy clay from 15-60 in. The soil is somewhat poorly drained with more than 80 in to a restrictive feature. Depth to water table is about 15-39 in. The soil unit does not flood or pond. **Brickmill** consists of alluvium with an influence of volcanic ash at the surface. Associated with alluvial fans, the typical profile includes gravelly ashy loam to 12 in and extremely gravelly ashy sandy loam from 12-49 in. The soil is somewhat poorly drained, with 40-60 in to strongly contrasting textural stratification. Depth to water table is about 28-38 in. The soil unit does not flood or pond. Minor components include **Nanum** (5%) and **Opnish** (5%).

³ ECC 15.620.010(A)



Nanum ashy sandy clay loam, 0 to 2 percent slopes (map unit 720): consists of alluvium with an influence of volcanic ash in the upper part. Associated with alluvial fans, the typical profile includes ashy sandy clay loam to six (6) inches (in), ashy loam from 6-15 in, and ashy clay loam from 15-28 in. The soil is somewhat poorly drained with more than 80 in to a restrictive feature. Depth to water table is about 21-28 in. The soil unit does not flood or pond. Minor components include **Brickmill** (5%), **Opnish** (5%), and **Nack** (5%).

Nack-Opnish complex, 0 to 2 percent slopes (map unit 795): **Nack** consists of alluvium with a mantle of volcanic ash. Associated with alluvial fans, the typical profile includes gravelly ashy loam to six (6) inches (in), clay loam from 6-15 in, and extremely gravelly sandy clay from 15-60 in. The soil is somewhat poorly drained with more than 80 in to a restrictive feature. Depth to water table is about 15-39 in. The soil unit does not flood or pond. **Opnish** consists of alluvium with an influence of volcanic ash in the upper part. Associated with alluvial fans, the typical profile includes gravelly ashy loam to 8 in, ashy clay loam from 8-13 in, and clay loam from 13-26 in. The soil is moderately well drained with more than 80 in to a restrictive feature. Depth to water table is about 24-40 in. The soil unit does not flood or pond. Minor components include **Brickmill** (5%).

The PRWP occurs at the sloped edge of a raised alluvial fan with a southwest aspect. Grass-lined swales cross the park that are relict channels within the historic alluvial fan/meander zone of Lyle Creek. These channels are evident in historic 1954 aerial imagery presented in **Appendix A-3**.

4.3. Precipitation and Hydrology

Chapter 19 of the Engineering Field Handbook (NRCS 2015) was referenced in determining if precipitation that fell within three months of the site visits was within the normal range (30-year average). Drier than normal climatic conditions prevailed the three months prior to October 9 fieldwork while normal precipitation fell the three months prior to November 1 fieldwork (**Appendix B**). However, irrigation practices during the growing season minimize the relative contribution of snowmelt and rainfall to wetland hydrology.

Given the low-lying geomorphic positions of the sites, their depressions collect surface runoff, receive hyporheic seepage, and/or intercept seasonally-elevated groundwater. The PRWP is flood irrigated via a network above-ground pipes, excavated irrigation ditches, and grass-lined swales are utilized to support vegetation. Although a stream feature is mapped across the property in the 1978 USGS topographic map (**Figure 2**), it is probable that flow was subsequently re-routed to parallel the PRWP's western boundary, thus forming the alignment of EB Lyle Creek as mapped by the National Hydrography Dataset (NHD). This relict stream channel today is utilized to collect and transport irrigation tailwater which impounds at Site #1. Impounded water, under normal circumstances, does not re-enter EB Lyle Creek although an overflow ditch connecting Site #1 and the creek was observed.⁴ The relict stream channel directly supports Site #2 which occurs in the channel bottom.

⁴ Refer to **Figure 3**.



Groundwater elevation in the vicinity is likely to be heavily influenced by infiltration from EB Lyle Creek, irrigation infiltrating upon the PRWP, and up-gradient flood irrigation practices.

4.4. Growing Season

According to Climate Analysis for Wetlands Tables (WETS) (NRCS 2023b), the growing season (28 °F or greater) at the nearest AgACIS station (Ellensburg) demonstrates a 70 percent probability of occurring between April 16 and October 14 (181 days) and 50 percent between April 20 and October 10 (173 days). The October 9 wetland delineation was completed during the growing season while the November 1 delineation was not. However, plants were in a suitable condition to identify to species.

4.5. Vegetation

Vegetation communities observed in associate with the site are categorized according to Cowardin classifications including Aquatic Bed (AB), Palustrine Emergent (PEM), and Palustrine Forested (PFO). The character of each Cowardin classification is described in **Table 1**.

5. Findings

5.1. Wetland Delineation Results

Two adjacent wetland units (WU-1, WU-2) were delineated in the PRWP's southwest corner while one wetland unit (WU-3) was delineated in the northwest corner (**Table 2**). Wetland boundaries were demarcated based on field observations, including hydroperiod, geomorphic position, and plant communities. The specifications of each wetland unit are summarized in **Tables 3-5**.

Delineation maps are presented in **Figures 4 and 5**. Wetland delineation data sheets are included in **Appendix C**. Wetland rating forms and figures are included in **Appendix D**. Photos are included in **Appendix E**.



Table 1. Cowardin Plant Communities

Cowardin Classification	Dominant Plants and Typical Locations Observed in the Study Area
Aquatic Bed (AB)	Plants that grow principally on or below the surface of the water for most of the growing season in most years. WU-1 pond is dominated by pondweed (likely <i>Zannichellia palustris</i>) (OBL).
Palustrine Emergent (PEM)	Plants rooted in standing water of the WU-1 pond including reed canarygrass (<i>Phalaris arundinaceae</i>) (FACW) and northern water plantain (<i>Alisma triviale</i>) (OBL). PEM is also to the north, east, and south of the pond by surface flow and hyporheic seepage (irrigation water). Wetter areas are dominated by broadleaf cattail (<i>Typha latifolia</i>) (OBL), reed canarygrass (FACW), yellow-flag iris (<i>Iris pseudocorus</i>) (OBL), fringed willowherb (<i>Epilobium ciliatum</i>) (FACW), and cut-leaf water-horehound (<i>Lycopus americanus</i>) (OBL). The eastern hillside (WU-2), supported mainly by hyporheic seepage, is dominated by Baltic rush (<i>Juncus balticus</i>) (FACW) with pockets of western goldentop (<i>Euthamia occidentalis</i>) (FACW), and wooly sedge (<i>Carex pellita</i>) (OBL). WU-3 supports broadleaf cattail (OBL), reed canarygrass (FACW), swamp smartweed (<i>Persicaria hydropiperoides</i>) (OBL), and red-tinge bulrush (<i>Scirpus microcarpus</i>) (OBL).
Palustrine Forested (PFO)	Rooted west of the pond. The dominant tree species in WU-1 include quaking aspen (<i>Populus tremuloides</i>) (FACU ⁵), and a single large crack willow (<i>Salix fragilis</i>) (FAC).
<p>KEY TO WETLAND PLANT LIST INDICATOR RATINGS</p> <p>OBL (Obligate Wetland Plants) – Almost always occur in wetlands.</p> <p>FACW (Facultative Wetland Plants) – Usually occur in wetlands, but may occur in non-wetlands.</p> <p>FAC (Facultative Wetland Plants) – Occur in wetlands and non-wetlands.</p> <p>FACU (Facultative Upland Plants) – Usually occur in non-wetlands, but may occur in wetlands.</p> <p>UPL (Upland Plants) – Almost never occur in wetlands.</p>	

Table 2. Wetlands Delineated

Wetland Unit	Acres	Cowardin ^a	HGM ^b	Rating
WU-1	0.53	AB, PEM, PFO	DEP	I ⁶
WU-2	0.18	PEM	SLO	IV
WU-3	0.10	PEM	DEP	III

⁵ Although this species is not listed as a hydrophytic plant, it is rooted in a location that exhibits both wetland hydrology and hydric soil indicators. The understory is heavily shaded and herbaceous plants are sparse. The association of this species with WU-1 elevates the wetland category to Category I.

⁶ Rated Category II based on functions but Category I per Special Characteristics (presence of quaking aspen).

Table 3. Wetland WU-1

WETLAND UNIT WU-1		
	Latitude Longitude Elevation	47° 0'12.78"N 120°30'26.44"W ~1,630 ft
	Lead Agency	City of Ellensburg
	Ecology Rating	II (Functions) I (SC ⁷)
	Size (ac)	0.53
	City Buffer	90 ft ⁸
	Wetland Data Sheet(s):	
	Appendix C; Delineation Forms 6, 13, 14, 16	
	Upland Data Sheet(s):	
Appendix C; Delineation Forms 4, 5, 15		
Description		
HGM (Depressional); Cowardin (AB, PEM, PFO).		
Primary Hydrology: Irrigation surface flow and probable groundwater.		
Vegetation Dominants: pondweed (OBL), reed canarygrass (FACW), northern water plantain (OBL) broadleaf cattail (OBL), yellow-flag iris (OBL), cut-leaf water-horehound (OBL), fringed willowherb (FACW).		
Soils		
Hydric soil indicator:	F3 (Depleted Matrix), F11 (Depleted Below Dark Surface)	
Functions Provided (Ecology Rating Form)		
Water Quality:	8 points (high) – sediment removal, nutrient and toxicant removal	
Hydrology:	6 points (moderate) – erosion control and shoreline stabilization	
Habitat:	5 points – (moderate to low) – disturbance regime, connectivity, ESA-listed species habitat	
Buffer Condition		
The wetland occurs in the southwest corner of Paul Rogers Wildlife Park which is accessible only to pedestrian traffic along established trails. Vegetated areas of the park are relatively undisturbed within 50 feet to the west, north, and east. Central Nursery operations disturb the buffer to the southeast. Overall, the buffer is in good condition and functions to protect the wetland.		

⁷ Special Characteristics

⁸ Per ECC Table 15-620.030(E)(1) if the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 130 ft per Table 15.620.030(E)(3).

Table 4. Wetland WU-2

WETLAND UNIT WU-2		
	Latitude Longitude Elevation	47° 0'13.34"N 120°30'25.62"W ~1,630 ft
	Lead Agency	City of Ellensburg
	Ecology Rating	IV
	Size (ac)	0.18
	City Buffer	40 ft ⁹
	Wetland Data Sheet(s):	
	Appendix C; Delineation Forms 1, 2, 3, 12.	
	Upland Data Sheet(s):	
Appendix C; Delineation Forms 4, 11		
Description		
HGM (Slope); Cowardin (PEM).		
Primary Hydrology: hyporheic seepage.		
Vegetation Dominants: Baltic rush (FACW), woolly sedge (OBL).		
Soils		
Hydric Soil Indicator:	F3 (Depleted Matrix), F11 (Depleted Below Dark Surface)	
Functions Provided (Ecology Rating Form)		
Water Quality:	6 points (moderate) – sediment removal, nutrient and toxicant removal	
Hydrology:	4 points (low) – erosion control and shoreline stabilization	
Habitat:	4 points – (low) – disturbance regime, connectivity, ESA-listed species habitat	
Buffer Condition		
The wetland occurs in the southwest corner of Paul Rogers Wildlife Park which is accessible only to pedestrian traffic along established trails. Vegetated areas of the park are relatively undisturbed within 50 feet to the west, north, and east. Central Nursery operations disturb the buffer to the southeast. Overall, the buffer is in good condition and functions to protect the wetland.		

⁹ Per ECC Table 15-620.030(E)(1) if the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 50 ft per Table 15.620.030(E)(3).

Table 5. Wetland WU-3

WETLAND UNIT WU-3																			
	<table border="1"> <tr> <td>Latitude</td> <td>47° 0'22.51"N</td> </tr> <tr> <td>Longitude</td> <td>120°30'27.82"W</td> </tr> <tr> <td>Elevation</td> <td>~1,643 ft</td> </tr> <tr> <td>Lead Agency</td> <td>City of Ellensburg</td> </tr> <tr> <td>Ecology Rating</td> <td>III</td> </tr> <tr> <td>Size (ac)</td> <td>0.10</td> </tr> <tr> <td>City Buffer</td> <td>60 ft¹⁰</td> </tr> <tr> <td colspan="2">Wetland Data Sheet(s): Appendix C; Delineation Form 18.</td> </tr> <tr> <td colspan="2">Upland Data Sheet(s): Appendix C; Delineation Form 19.</td> </tr> </table>	Latitude	47° 0'22.51"N	Longitude	120°30'27.82"W	Elevation	~1,643 ft	Lead Agency	City of Ellensburg	Ecology Rating	III	Size (ac)	0.10	City Buffer	60 ft ¹⁰	Wetland Data Sheet(s): Appendix C; Delineation Form 18.		Upland Data Sheet(s): Appendix C; Delineation Form 19.	
	Latitude	47° 0'22.51"N																	
	Longitude	120°30'27.82"W																	
	Elevation	~1,643 ft																	
	Lead Agency	City of Ellensburg																	
	Ecology Rating	III																	
	Size (ac)	0.10																	
	City Buffer	60 ft ¹⁰																	
Wetland Data Sheet(s): Appendix C; Delineation Form 18.																			
Upland Data Sheet(s): Appendix C; Delineation Form 19.																			
Description																			
HGM (Depressional); Cowardin (PEM).																			
Primary Hydrology: hyporheic seepage and/or seasonally-elevated groundwater.																			
Vegetation Dominants: swamp smartweed (OBL), broadleaf cattail (OBL), red-tinge bulrush (OBL).																			
Soils																			
Hydric Soil Indicator:	S5 (Sandy Redox)																		
Functions Provided (Ecology Rating Form)																			
Water Quality:	8 points (high) – sediment removal, nutrient and toxicant removal																		
Hydrology:	4 points (low) – erosion control and shoreline stabilization																		
Habitat:	4 points – (low) – disturbance regime, connectivity, ESA-listed species habitat																		
Buffer Condition																			
The wetland occurs in the northwest corner of Paul Rogers Wildlife Park which is accessible only to pedestrian traffic along established trails. Vegetated areas of the park are relatively undisturbed within 50 feet to the north, and east, and south. A gravel road occurs within 30 ft to the west. Overall, the buffer is in good condition and functions to protect the wetland.																			

¹⁰ Per ECC Table 15-620.030(E)(1) if the requirements of ECC Table 15.620.030(E)(2) are implemented. Otherwise, the buffer is 50 ft per Table 15.620.030(E)(3).

Figure 4. Wetland Delineation – Mitigation Site #1

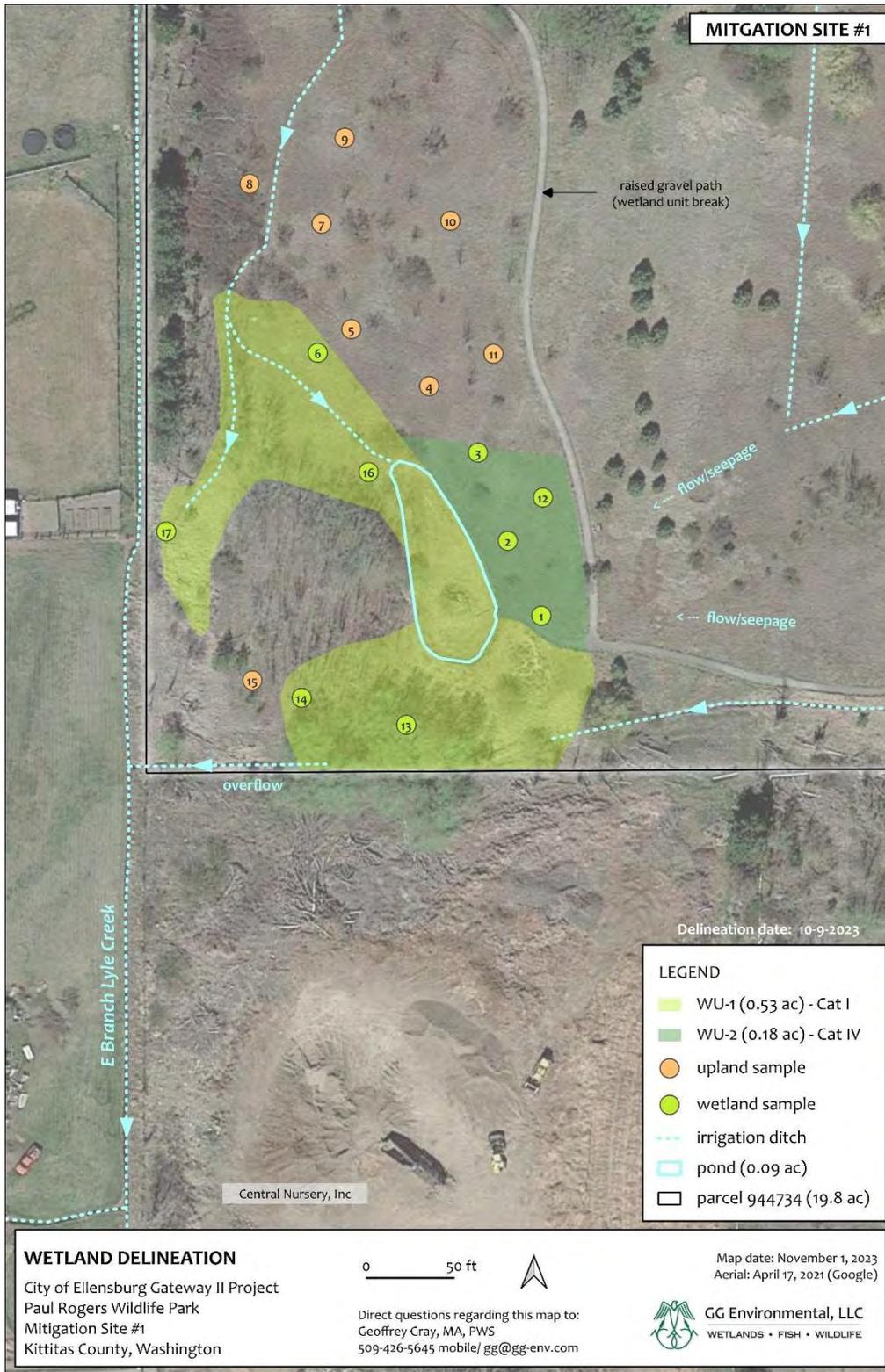


Figure 5. Wetland Delineation – Mitigation Site #2



6. Discussion

6.1. Suitability for Mitigation

Since the two sites are supplied with a consistent source of hydrology during the growing season via required irrigation, lie within a favorable geomorphic position, support established native wetland vegetation, exhibit hydric soil indicators, have functional buffers, and are perpetually protected upon City (public) property, they exhibit a good potential to serve as wetland mitigation sites.

Both sites occur within the watershed of Lyle Creek in close proximity to the Project where wetland impacts are anticipated. As such the sites meet the selection standards outlined by the Department of Ecology's *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Hruby et al. 2010).

WU-1 and WU-2

WU-1 offers little to no enhancement headroom due to its existing rating as Category I (Special Characteristics). However, this elevated rating makes the wetland a **unique candidate for wetland enlargement (creation)**. This option is only available to the north (**Figure 5**), where elevated upland terrain would require excavation, planting, and, possibly, supplemental irrigation during plant establishment.

WU-2, as a Category IV Slope wetland, offers little enhancement value. Improvement would likely be limited to the addition of woody wetland-associated species. This sole action may not be sufficient to improve functions such that the category is raised. Furthermore, the vegetation would probably interfere with the public's ability to view the pond habitat. An option worthy of consideration would be to enlarge WU-1 toward the east, thereby lifting WU-2 functions from Category IV to Category I (Special Characteristics) (**Figure 5**). However, this option would result in **permanent conversion** involving the "loss" of Category IV wetland which would reduce the mitigation credit earned. This objective may be achieved via excavation and a combination of natural plant recruitment and installed plantings. Permanent signage to educate the public about the mitigation effort, as well as several park benches, could be installed.

Due to relatively steep terrain, the amount of excavation for both options above would be significant. Site access and staging would be relatively easy, however, if equipment is allowed to traverse Central Nursery from the south.

WU-3

WU-3 may be the most practical wetland to enlarge (**wetland creation**) as adjacent upland areas are relatively flat while groundwater appears to play a significant role (**Figure 6**). Access may prove challenging since equipment would need to traverse the park and/or cross EB Lyle Creek. Permanent signage to educate the public about the mitigation effort, as well as several park benches, could be installed at this location as well.



Utilizing Ecology’s *Calculating Credits and Debits for Mitigation in Eastern Washington* (Credit-Debit Method) (Hruby 2012), mitigation credits required to compensate for lost wetland functions (debits) must be calculated to confirm whether the two sites will meet the needs of the Project for mitigation.

Given the risk that regulators may view the mitigation sites as “atypical wetlands” per Ecology et al. (2021) due to their (at least partial) reliance on artificial hydrology (irrigation), it is recommended that early coordination be sought from the Department of Ecology prior to JARPA submittal. Furthermore, it is recommended that groundwater be monitored prior to the 2024 irrigation season (if practicable) to determine the role of groundwater in observed wetland hydrology.



Figure 6. Draft Mitigation Concept – Site #1

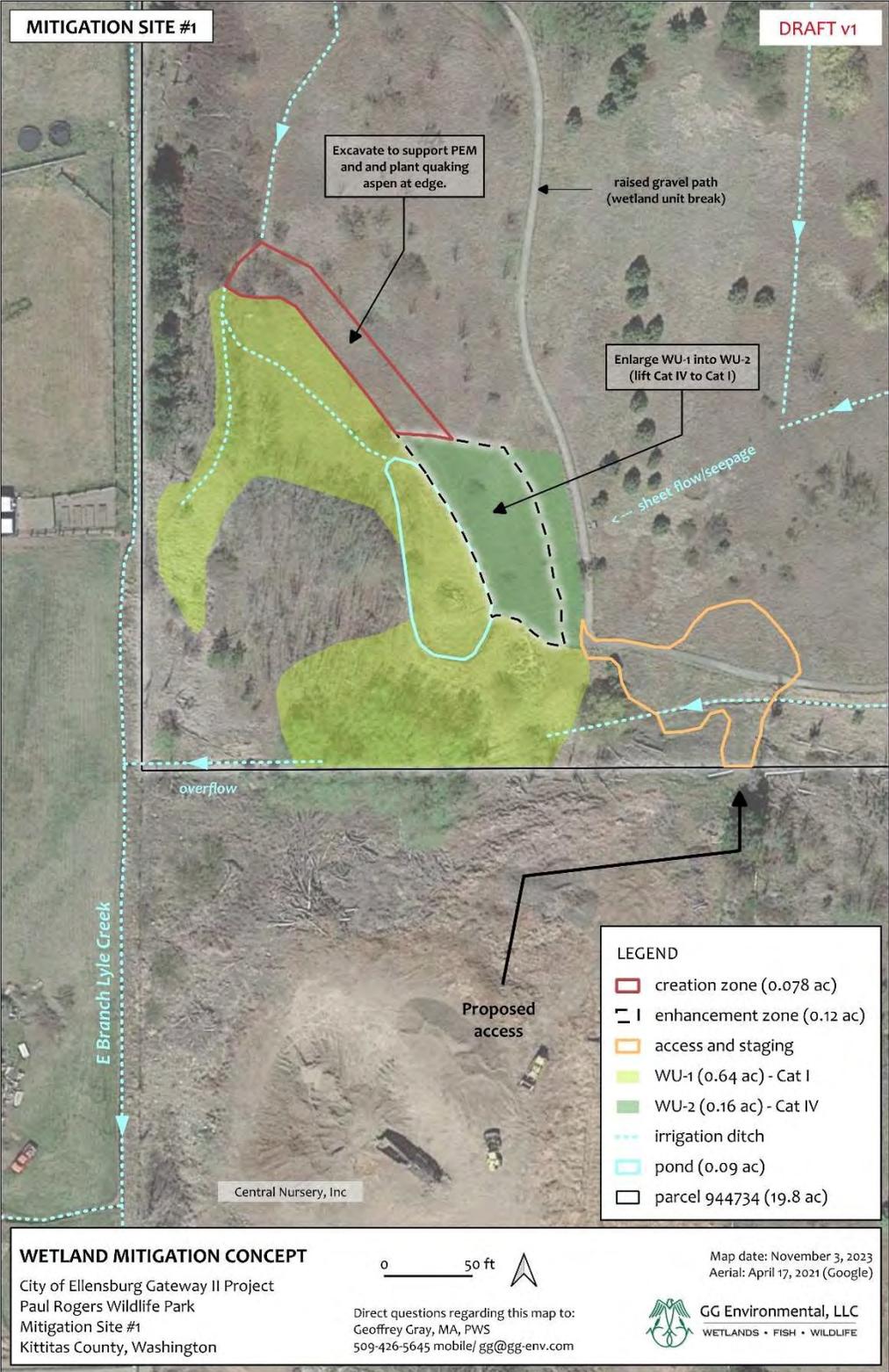


Figure 7. Draft Mitigation Concept – Site #2



7. Limitations

The data presented herein reflect site conditions encountered on the dates listed in **Section 3.1**. Work was performed in accordance with accepted standards for professional wetland biologists and applicable and current federal, state, and local ordinances.

Although the report is accurate and complete to the best of available scientific knowledge, it should be considered a preliminary determination, with no warranty, express or implied, until it has been reviewed and approved in writing by appropriate jurisdictional authorities.



8. Consultant Qualifications

Geoffrey Gray, MA, PWS is a professional biologist and wetland scientist whose 27-year career has provided him with a unique breadth of experience that can readily assist you in moving your project forward.

Investing eight years in higher education, he earned a Bachelor's Degree in Business Management and a Master's degree in Biology from California State University at Fresno.

Geoffrey has earned 12.4 credit hours of certified professional wetland training, including completion of the 38-hour Army Corps of Engineers (Corps) Wetland Delineation and Management Training Program, as well as Corps Advanced Wetland Delineation , Corps Delineation Manual Regional Supplements, Washington State Department of Ecology (Ecology) 2014 Wetland Rating System, Ecology Credit-Debit Method for Estimating Mitigation Needs, Ecology Selecting Wetland Mitigation Sites Using a Watershed Approach, and multiple courses in wetland plant identification.

Continuously employed as a wetland, fish, and wildlife biologist since 1997, while serving tenures in field research, a large environmental consulting firm, state agencies in both California and Washington, and as an independent environmental consultant, Geoff's resume includes 17 years of full-time duty as a wetland biologist, with experience ranging from the unique vernal pool wetland habitats of California's Central Valley to the diverse wetlands of Eastern Washington State, stretching from the Cascade crest to Idaho.

Spanning his career, Geoff has performed over 160 wetland delineations and has managed 35 wetland mitigation/riparian restoration sites. As a fish and wildlife biologist, he has evaluated over 600 projects for compliance under the Endangered Species Act, including 128 federal consultations.

Geoff founded GG Environmental in 2015, and has since served a diverse palette of clients including habitat restoration groups, private landowners, commercial businesses, and city governments who need assistance in overcoming the challenges of Critical Areas/Shorelines permitting and Endangered Species Act consultation.

A professional-level GPS/GIS user for 26 years, Geoff employs cutting-edge GPS technology in the field and is proficient in GIS mapping with ArcGIS and Quantum GIS (QGIS).

Globally recognized as a Professional Wetland Scientist by the Society of Wetland Scientists, Geoff's work is performed to the highest standards and is fully insured.

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Appendix A. Background Information

Appendix A includes the following sub-appendices:

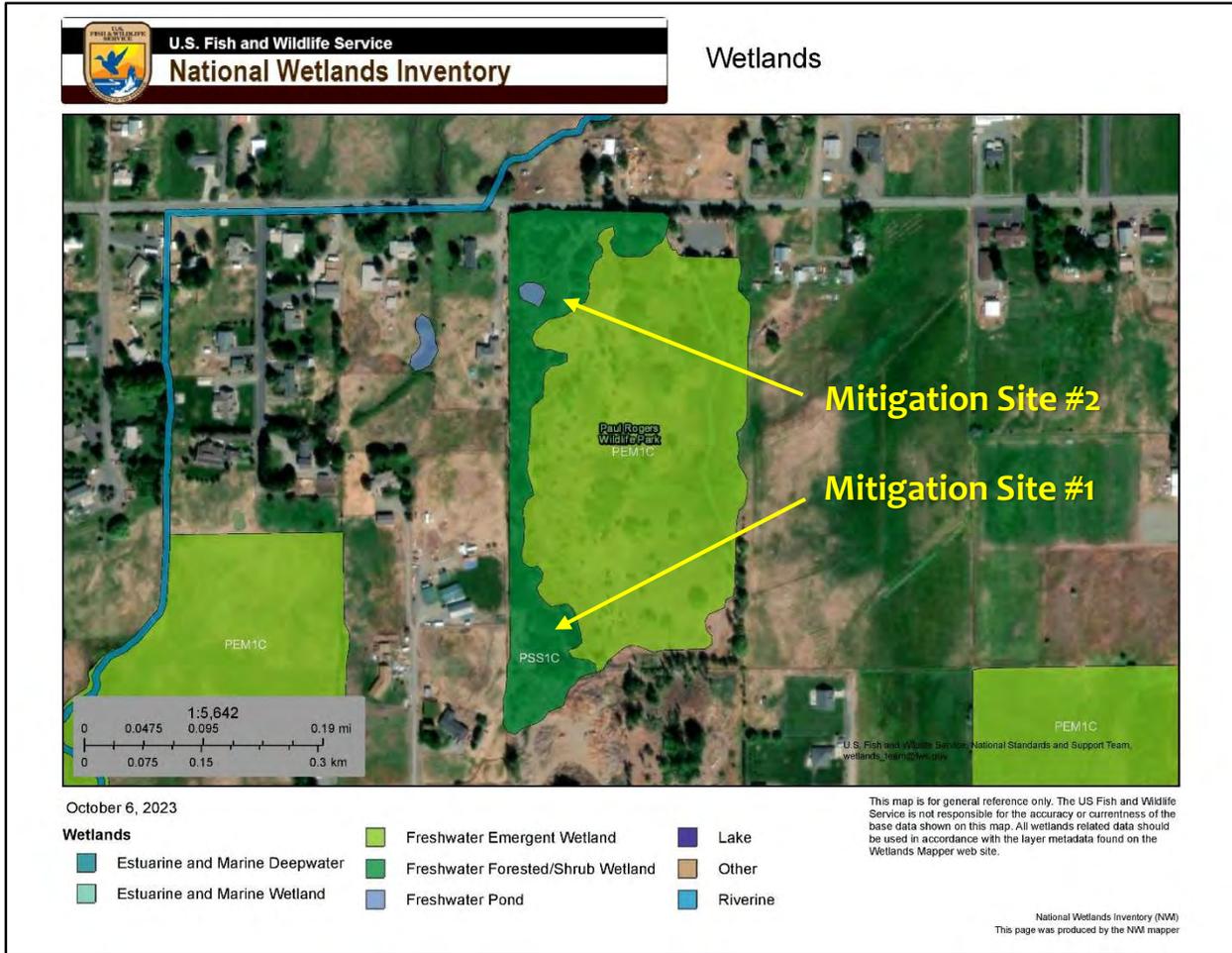
- A-1 USFWS National Wetlands Inventory
- A-2 NRCS Soil Survey Data
- A-3 1954 Historic Aerial



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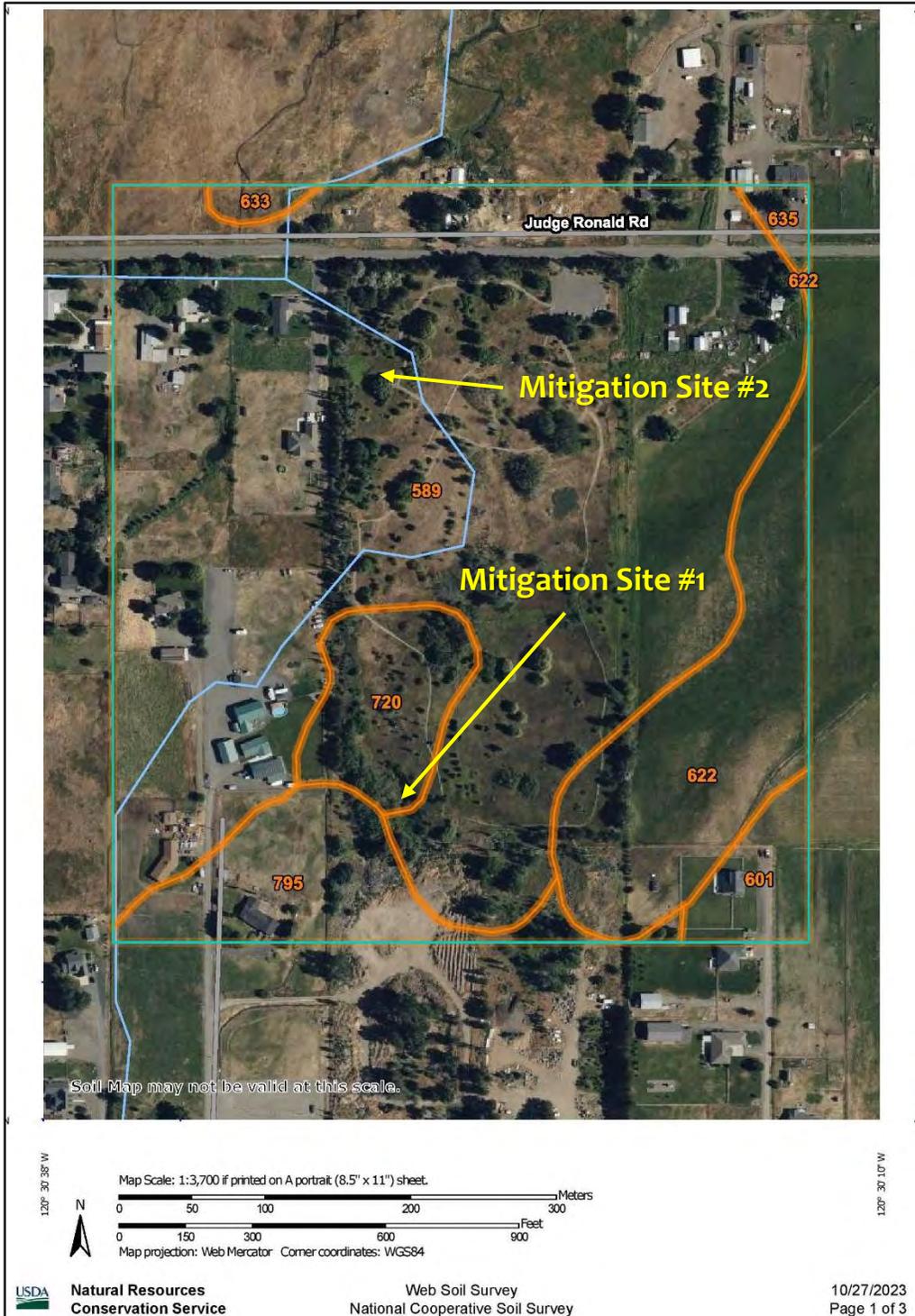
Appendix A-1. USFWS National Wetlands Inventory



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Appendix A-2. NRCS Soil Survey

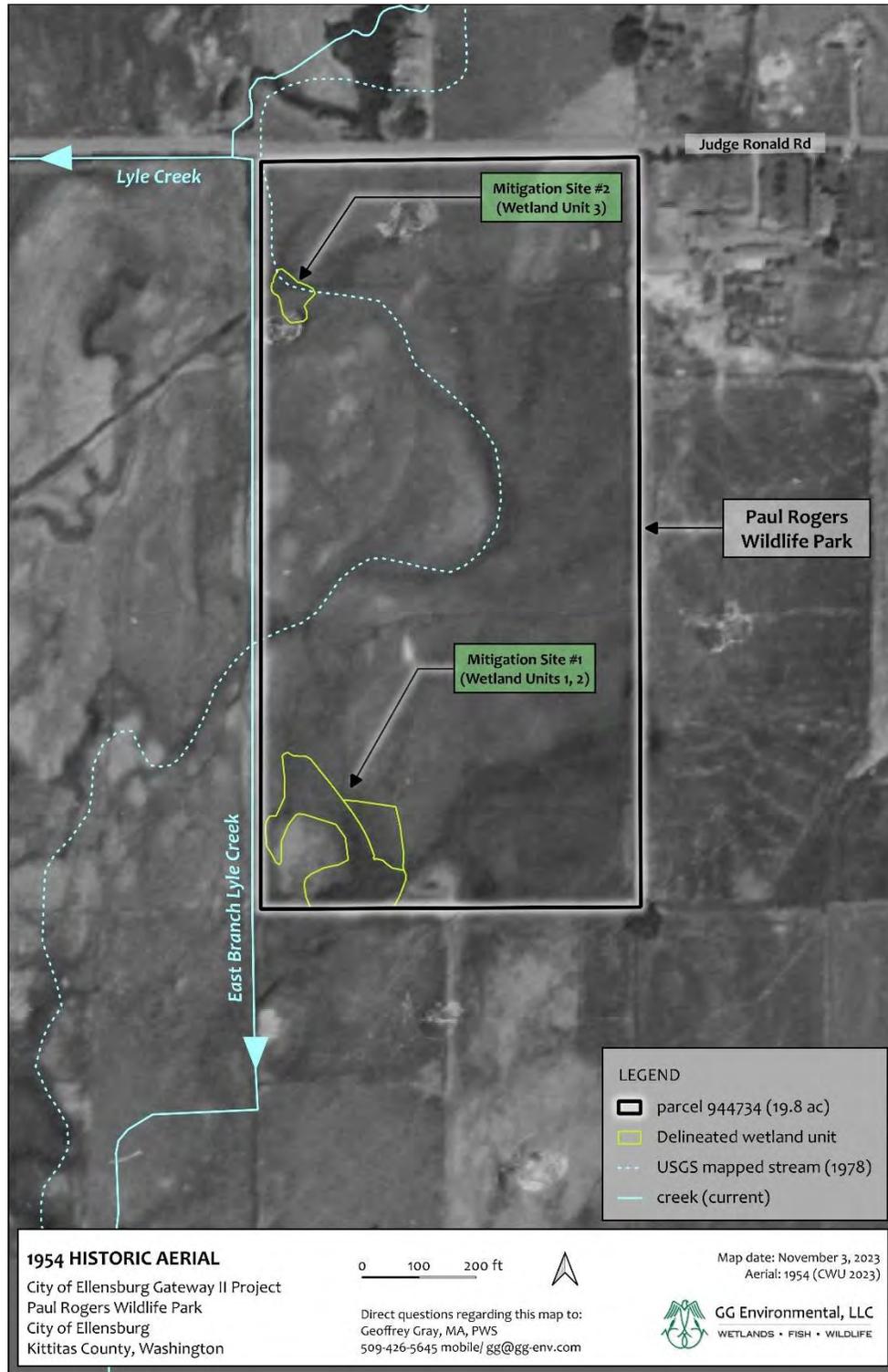


Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
589	Nack-Brickmill complex, 0 to 5 percent slopes	44.3	72.0%
601	Brickmill gravelly ashy loam, 0 to 2 percent slopes	1.6	2.6%
622	Manastash loam, 0 to 2 percent slopes	7.4	12.0%
633	Nack ashy loam, 0 to 2 percent slopes	0.4	0.6%
635	Opnish ashy loam, 0 to 2 percent slopes	0.4	0.7%
720	Nanum ashy sandy clay loam, 0 to 2 percent slopes	3.0	4.9%
795	Nack-Opnish complex, 0 to 2 percent slopes	4.3	7.1%
Totals for Area of Interest		61.5	100.0%



Appendix A-3. 1954 Historic Aerial



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Appendix B. Precipitation Analysis

Precipitation analysis per NRCS (2015). All data were obtained from the AgACIS weather station at Ellensburg (NRCS 2023b), Kittitas County. Fieldwork was completed on October 9, 2023.

Drier than Normal climatic conditions prevailed the previous three months prior to October 9 fieldwork (July through September) while **normal** climatic conditions prevailed the previous three months (August through October) prior to November 1 fieldwork. A total of 0.02 inches fell within the prior 10 days of October fieldwork while 0.21 inches fell prior to November fieldwork.

		Long-term rainfall records ¹ (inches)			OCTOBER 9, 2023 DELINEATION WETS Station: ELLENSBURG, WA				
	Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than	Total Rainfall Obs. ²	Condition dry, wet, normal ³	Condition Value	Month weight value ⁴	Product of previous two columns
1 st prior month	Sep	0.15	0.45	0.44	0.35	Normal	2	3	6
2 nd prior month	Aug	0.10	0.36	0.38	0.09	Dry	1	2	2
3 rd prior month	Jul	0.19	0.37	0.42	0.13	Dry	1	1	1
								Sum	9⁵

		Long-term rainfall records ¹ (inches)			NOVEMBER 1, 2023 DELINEATION WETS Station: ELLENSBURG, WA				
	Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than	Total Rainfall Obs. ²	Condition dry, wet, normal ³	Condition Value	Month weight value ⁴	Product of previous two columns
1 st prior month	Oct	0.19	0.55	0.64	0.27	Normal	2	3	6
2 nd prior month	Sep	0.15	0.45	0.44	0.35	Normal	2	2	4
3 rd prior month	Aug	0.10	0.36	0.38	0.09	Dry	1	1	1
								Sum	11⁵

¹ WETS table; ² Accumulated Daily Precipitation; ³ WETS table “30% more than and 30% less than values are referenced to compare recorded rainfall to statistically-normal precipitation; ⁴ Value: Dry = 1; Normal = 2; Wet = 3; ⁵ 6-9: drier than normal, 10-14: normal, 15-18: wetter than normal.

Date (2023)	Precipitation Total (inches)
September 29 - October 8	0.02 (10/3)
October 22-31	0.21 (10/25)

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Appendix C. Wetland Delineation Data Sheets



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Project/Site: Paul Rodgers Wildlife Park - SW Pond (Site #1) City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 1
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'12.79"N Long: 120°30'25.46"W Datum: WGS 84
 Soil Map Unit Name: Nack-Brickmill complex, 0 to 5 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

Remarks:
 Pit dug where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated with hyporheic seepage.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 x 15 ft</u>)					
1. <u>Cornus alba</u>		<u>5</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>50</u> x 1 = <u>50</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>160</u> (B) Prevalence Index = B/A = <u>1.52</u>
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum (Plot size: <u>5 x 5 ft</u>)					
1. <u>Carex pellita</u>		<u>50</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Juncus balticus</u>		<u>50</u>	<u>Yes</u>	<u>FACW</u>	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____				=Total Cover	
Woody Vine Stratum (Plot size: <u>5 x 5 ft</u>)					
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	100					Loamy/Clayey	
4-16	10YR 4/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 The slope is flood irrigated but irrigation had not been applied recently. Area was drying down. Saturation within upper 12 inches assumed based on redox and OBL/FACW-dominant plants.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 2
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'13.21"N Long: 120°30'25.73"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit dug where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated with hyporheic seepage.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Juncus balticus</u>		<u>98</u>	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Euthamia occidentalis</u>		<u>2</u>	No	FACW	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____				=Total Cover	
		<u>100</u>		=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/1	98					Loamy/Clayey	
3-14	10YR 4/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Saturation within the upper 12 inches is assumed.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 3
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'13.71"N Long: 120°30'25.98"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit dug where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated with hyporheic seepage.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>2</u> x 1 = <u>2</u> FACW species <u>98</u> x 2 = <u>196</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>198</u> (B) Prevalence Index = B/A = <u>1.98</u>
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Juncus balticus</u>		90	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Euthamia occidentalis</u>		8	No	FACW	
3. <u>Carex pellita</u>		2	No	OBL	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
		100		=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/2	98					Sandy	
3-14	10YR 4/2	90	5YR 4/6	10	C	M	Sandy	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Saturation within the upper 12 inches is assumed.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 4
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 4
 Subregion (LRR): LRR B Lat: 47° 0'14.08"N Long: 120°30'26.38"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Vicinity is flood irrigated.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>92</u> x 2 = <u>184</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>7</u> x 4 = <u>28</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>215</u> (B) Prevalence Index = B/A = <u>2.15</u>
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Juncus balticus</u>		<u>92</u>	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Cirsium arvense</u>		<u>2</u>	No	FACU	
3. <u>Taraxacum officinale</u>		<u>5</u>	No	FACU	
4. <u>Rumex crispus</u>		<u>1</u>	No	FAC	
5. _____					
6. _____					
7. _____					
8. _____					
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/2	100					Loamy/Clayey	
4-14	10YR 4/2	99	5YR 3/4	1	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Does not meet redox concentration percentage threshold.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Based on lack of hydric soil, soil is wet but does not meet hydric soil threshold.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 5
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 3
 Subregion (LRR): LRR B Lat: 47° 0'14.40"N Long: 120°30'27.01"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Vicinity is flood irrigated.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>None</u>				
2.					
3.					
4.					
			=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1.	<u>None</u>				
2.					
3.					
4.					
5.					
			=Total Cover		
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1.	<u>Juncus balticus</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	
2.	<u>Cirsium arvense</u>	<u>14</u>	<u>No</u>	<u>FACU</u>	
3.	<u>Asclepias speciosa</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
4.	<u>Lactuca serriola</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	
5.					
6.					
7.					
8.					
		<u>100</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1.	<u>None</u>				
2.					
			=Total Cover		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>80</u>	x 2 = <u>160</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>235</u> (B)
Prevalence Index = B/A = <u>2.35</u>	

Hydrophytic Vegetation Indicators:

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/2	100					Loamy/Clayey	
8-12								Rock (shovel denial)

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Powdery dry and rock hard. Rock cobble encountered at 8 inches (shovel denial).

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 6
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): swale bottom Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): LRR B Lat: 47° 0'14.27"N Long: 120°30'27.29"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
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Remarks:
 Pit dug where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Vicinity is flood irrigated.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
				=Total Cover																	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)																				
1. <u>None</u>					Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>210</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.10</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>2.10</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>50</u>	x 1 = <u>50</u>																				
FACW species <u>20</u>	x 2 = <u>40</u>																				
FAC species <u>0</u>	x 3 = <u>0</u>																				
FACU species <u>30</u>	x 4 = <u>120</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>100</u> (A)	<u>210</u> (B)																				
Prevalence Index = B/A = <u>2.10</u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>				=Total Cover																	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)																				
1. <u>Juncus balticus</u>		20	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carex pellita</u>		50	Yes	OBL																	
3. <u>Cirsium arvense</u>		30	Yes	FACU																	
4. <u> </u>																					
5. <u> </u>																					
6. <u> </u>																					
7. <u> </u>																					
8. <u> </u>				=Total Cover																	
		100																			
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)																				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
2. <u> </u>				=Total Cover																	
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>																			

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 2/2	98					Sandy	
10-14	10YR 3/2	99	5YR 4/6	1	C	M	Sandy	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Given persistent saturation at 10" and predominant of OBL/FACW vegetation, hydric soil indicator is presumed present. Sandy soil and consistent irrigation hyporheic flow may also inhibit ready formation of redox.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Geomorphic position (swale bottom) supports water retention/saturation longer than other locations sampled on the adjacent hill slope.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 7
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'14.99"N Long: 120°30'27.26"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>None</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.					
3.					
4.					
		=Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>100</u> x 1 = <u>100</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>100</u> (B) Prevalence Index = B/A = <u>1.00</u>
1.	<u>None</u>				
2.					
3.					
4.					
		=Total Cover			
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	<u>Carex pellita</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		<u>100</u> =Total Cover			
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.	<u>None</u>				
2.					
		=Total Cover			
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:
 C. pellita can persist on irrigated uplands (personal obs.).

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	10YR 3/2	100					Sandy	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Soil very pervious.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Slope is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was dried down very rapidly.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 8
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): LRR B Lat: 47° 0'15.22"N Long: 120°30'27.85"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. RECONNAISSANCE SAMPLE.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>Rosa woodii</u>		<u>100</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. _____					Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____				=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Due to 100% FACU vegetation, no soil sample taken.

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of surface hydrology observed. Due to 100% FACU vegetation, no soil sample taken.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 9
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 3
 Subregion (LRR): LRR B Lat: 47° 0'15.48"N Long: 120°30'27.07"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. RECONNAISSANCE SAMPLE.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>200</u> (A) <u>620</u> (B) Prevalence Index = B/A = <u>3.10</u>
1. _____		<u>100</u>	<u>Yes</u>	<u>FACU</u>	
2. _____					
3. _____					
4. _____					
		<u>100</u>		=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>		<u>40</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Carex pellita</u>		<u>20</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Unknown grasses</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
		<u>100</u>		=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:
 Unknown grasses assumed to be FAC in order to remain conservative (plus, vicinity is flood irrigated).

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
	<input type="checkbox"/> Reduced Vertic (F18)
	<input type="checkbox"/> Red Parent Material (F21)
	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	<input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Very dry and hard at the surface. No soil sample taken.

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of surface hydrology observed. Due to hydrogeomorphic position (slope), very dry soil surface condition, and vegetation similar to Sample #7, no soil sample taken.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 10
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'15.01"N Long: 120°30'26.20"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus balticus</u>		<u>100</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:
 Juncus balticus is often observed on irrigated uplands and with rhizomes that extend up to three feet underground is not a reliable species, when alone, to determine wetland boundaries (personal obs.).

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100					Loamy/Clayey	
8-12								rock (shovel denial)

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Rock hard and powdery dry. Rock cobble encountered at 8 inches (shovel denial). Given geomorphic position (slope) and relatively dry condition, hydric soil indicator inferred as absent.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Slope is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Given the geomorphic position and relatively dry surface condition, the hydrology indicator is inferred as absent.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 11
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'14.26"N Long: 120°30'25.85"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
2. <u> </u>																																					
3. <u> </u>																																					
4. <u> </u>																																					
=Total Cover																																					
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td></td> <td style="text-align: right;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: right;">x 1 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>90</u></td> <td style="text-align: right;">x 2 =</td> <td style="text-align: center;"><u>180</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>2</u></td> <td style="text-align: right;">x 3 =</td> <td style="text-align: center;"><u>6</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>8</u></td> <td style="text-align: right;">x 4 =</td> <td style="text-align: center;"><u>32</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: right;">x 5 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>100</u> (A)</td> <td></td> <td style="text-align: center;"><u>218</u> (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>2.18</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>90</u>	x 2 =	<u>180</u>	FAC species	<u>2</u>	x 3 =	<u>6</u>	FACU species	<u>8</u>	x 4 =	<u>32</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>100</u> (A)		<u>218</u> (B)	Prevalence Index = B/A = <u>2.18</u>			
Total % Cover of:		Multiply by:																																			
OBL species	<u>0</u>	x 1 =	<u>0</u>																																		
FACW species	<u>90</u>	x 2 =	<u>180</u>																																		
FAC species	<u>2</u>	x 3 =	<u>6</u>																																		
FACU species	<u>8</u>	x 4 =	<u>32</u>																																		
UPL species	<u>0</u>	x 5 =	<u>0</u>																																		
Column Totals:	<u>100</u> (A)		<u>218</u> (B)																																		
Prevalence Index = B/A = <u>2.18</u>																																					
1. <u>None</u>																																					
2. <u> </u>																																					
3. <u> </u>																																					
4. <u> </u>																																					
=Total Cover																																					
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
1. <u>Juncus balticus</u>		90	Yes	FACW																																	
2. <u>Taraxacum officinale</u>		7	No	FACU																																	
3. <u>Asclepias speciosa</u>		2	No	FAC																																	
4. <u>Cirsium arvense</u>		1	No	FACU																																	
5. <u> </u>																																					
6. <u> </u>																																					
7. <u> </u>																																					
8. <u> </u>																																					
100 =Total Cover																																					
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																																
1. <u>None</u>																																					
2. <u> </u>																																					
=Total Cover																																					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>																																			

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100					Sandy	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 12
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): slope Slope (%): 5
 Subregion (LRR): LRR B Lat: 47° 0'13.46"N Long: 120°30'25.44"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Pit dug where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated with hyporheic seepage.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>8</u> x 3 = <u>24</u> FACU species <u>2</u> x 4 = <u>8</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>212</u> (B) Prevalence Index = B/A = <u>2.12</u>
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Juncus balticus</u>		<u>90</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Asclepias speciosa</u>		<u>5</u>	<u>No</u>	<u>FAC</u>	
3. <u>Plantago lanceolata</u>		<u>3</u>	<u>No</u>	<u>FAC</u>	
4. <u>Taraxacum officinale</u>		<u>2</u>	<u>No</u>	<u>FACU</u>	
5. _____					
6. _____					
7. _____					
8. _____					
<u>100</u> =Total Cover					
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	98					Loamy/Clayey	
4-16	10YR 4/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Slope is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Saturation within the upper 12 inches is assumed.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 13
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 47° 0'12.18"N Long: 120°30'26.56"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Pit dug in area with seasonally-high groundwater (irrigation induced). Drier than normal precipitation fell within the prior aggregate three months.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix fragilis</u>		100	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
		100	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>103</u> (A) <u>306</u> (B) Prevalence Index = B/A = <u>2.97</u>
1. <u>None</u>					
2. _____					
3. _____					
4. _____					
			=Total Cover		
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>		3	No	FACW	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
		3	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					
2. _____					
			=Total Cover		
% Bare Ground in Herb Stratum <u>97</u> % Cover of Biotic Crust <u>0</u>					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>

Remarks:
 Very dense and thick tree roots.

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Loamy/Clayey	
4-12	10YR 4/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input checked="" type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Saturation within the upper 12 inches is supported by presence of redox and geomorphic position (depression).

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 14
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 47° 0'12.33"N Long: 120°30'27.42"W Datum: WGS 84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Pit dug in area with seasonally-high groundwater (irrigation induced). Drier than normal precipitation fell within the prior aggregate three months.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus tremuloides</u>	100	Yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
100 =Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>105</u> x 4 = <u>420</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>200</u> (A) <u>685</u> (B) Prevalence Index = B/A = <u>3.43</u>
Sapling/Shrub Stratum (Plot size: <u>15 x 15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ =Total Cover				
Herb Stratum (Plot size: <u>5 x 5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>	20	Yes	FACW	
2. <u>Cirsium arvense</u>	5	No	FACU	
3. <u>Asclepias speciosa</u>	5	No	FAC	
4. <u>Unknown grass</u>	70	Yes	FAC	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
100 =Total Cover				
Woody Vine Stratum (Plot size: <u>5 x 5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	_____ =Total Cover
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:
 Unknown grass assumed to be FAC in order to remain conservative.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100					Sandy	
8-14	10YR 4/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. The area was drying down rapidly. Saturation within the upper 12 inches is supported by presence of redox (seasonally-high groundwater inferred) and geomorphic position (depression).

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 15
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): LRR B Lat: 47° 0'12.43"N Long: 120°30'27.83"W Datum: WGS 84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Drier than normal precipitation fell within the prior aggregate three months. Raised, rocky area.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus tremuloides</u>	80	Yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
4. _____				
	80	=Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet:
1. <u>None</u>				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>0</u> x 1 = <u>0</u>
3. _____				FACW species <u>20</u> x 2 = <u>40</u>
4. _____				FAC species <u>70</u> x 3 = <u>210</u>
5. _____				FACU species <u>105</u> x 4 = <u>420</u>
				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>195</u> (A) <u>670</u> (B)
				Prevalence Index = B/A = <u>3.44</u>
Herb Stratum (Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators:
1. <u>Juncus balticus</u>	20	No	FACW	<input type="checkbox"/> Dominance Test is >50%
2. <u>Taraxacum officinale</u>	20	No	FACU	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Cirsium vulgare</u>	5	No	FACU	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Unknown grass</u>	70	Yes	FAC	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____				
7. _____				
8. _____				
	115	=Total Cover		
Woody Vine Stratum (Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Present?
1. <u>None</u>				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				
% Bare Ground in Herb Stratum <u>0</u>	% Cover of Biotic Crust <u>0</u>			

Remarks:
 Unknown grass assumed to be FAC in order to remain conservative.

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					Sandy	
2-12								Rock. Shovel denial.

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Rock encountered at 2 inches. Geomorphic position is elevated and FACU-dominant vegetation support the inference that the hydric soil indicator is absent.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Geomorphic position is elevated and FACU-dominated vegetation support the inference that the hydrology indicator is absent.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 16
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): swale bottom Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): LRR B Lat: 47° 0'13.60"N Long: 120°30'26.87"W Datum: WGS 84
 Soil Map Unit Name: Naneum ashy sandy clay loam, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit dug near pond in swale bottom where surface flow and elevated groundwater may meet. Drier than normal precipitation fell within the prior aggregate three months. Vicinity is flood irrigated.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>190</u> (B) Prevalence Index = B/A = <u>1.90</u>
1. <u>None</u>					
2. _____					
3. _____					
4. _____					
				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>		75	Yes	FACW	
2. <u>Carex pellita</u>		5	No	OBL	
3. <u>Lycopus americanus</u>		5	No	OBL	
4. <u>Epilobium ciliatum</u>		15	No	FACW	
5. _____					
6. _____					
7. _____					
8. _____					
		100		=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>					
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/2	100					Loamy/Clayey	
4-13	10YR 3/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Does not cleanly fit a hydric soil indicator but deemed present due to clear evidence of hydrology and dominance by FACW/OBL plant species.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input checked="" type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Geomorphic position (swale bottom) supports water retention/saturation longer than other locations sampled on the adjacent hill slope. Swale used for irrigaiton purposes and likely intercepts seasonally-elevated groundwater during the growing season.

Project/Site: Paul Rodgers Wildlife Park - SW Pond City/County: Ellensburg, Kittitas County Sampling Date: 10-9-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 17
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 47° 0'13.26"N Long: 120°30'28.53"W Datum: WGS 84
 Soil Map Unit Name: Nack-Opnish complex, 0 to 2 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit dug in depression into which irrigation runoff is directed and seasonally-high groundwater may play a role. Drier than normal precipitation fell within the prior aggregate three months.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.00</u>
1. <u>None</u>					
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>		100	Yes	FACW	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
		100		=Total Cover	
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>None</u>					
2. _____				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Loamy/Clayey	
4-12	10YR 4/2	98	5YR 3/3	2	C	M	Loamy/Clayey	Distinct redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Rock cobble @ 12". Shovel denial.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Vicinity is flood irrigated but the irrigation system had been shut down prior to fieldwork. Saturation within the upper 12 inches is supported by presence of redox (seasonally-high groundwater inferred) and geomorphic position (depression).

Project/Site: Paul Rodgers Wildlife Park - NW Pond City/County: Ellensburg, Kittitas County Sampling Date: 11-1-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 18
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR B Lat: 47° 0'22.62"N Long: 120°30'27.36"W Datum: WGS 84
 Soil Map Unit Name: Nack-Brickmill complex, 0 to 5 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit dug where lateral seep flow from EB Lyle Creek and seasonally-elevated groundwater provide hydrology. Drier than normal precipitation fell within the prior aggregate three months.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>None</u>					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>190</u> (B) Prevalence Index = B/A = <u>1.90</u>
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Phalaris arundinacea</u>		<u>80</u>	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Juncus balticus</u>		<u>10</u>	No	FACW	
3. <u>Carex pellita</u>		<u>10</u>	No	OBL	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
<u>100</u> =Total Cover					
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>			

Remarks:

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					Loamy/Clayey	
2-6	10YR 4/3	100					Sandy	
6-13	10YR 4/2	95	5YR 4/4	5	C	M	Sandy	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

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

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Paul Rodgers Wildlife Park - NW Pond City/County: Ellensburg, Kittitas County Sampling Date: 11-1-2023
 Applicant/Owner: City of Ellensburg State: WA Sampling Point: 19
 Investigator(s): Geoffrey Gray, MA, PWS (GG Environmental, LLC) Section, Township, Range: T18N-R19E-S31
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): LRR B Lat: 47° 0'22.60"N Long: 120°30'27.23"W Datum: WGS 84
 Soil Map Unit Name: Nack-Brickmill complex, 0 to 5 percent slopes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Pit dug very close to the wetland edge. Drier than normal precipitation fell within the prior aggregate three months.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>20 x 20 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>					Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 x 15 ft</u>)				
1. <u>Rosa multiflora</u>		<u>2</u>	<u>No</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>12</u> x 4 = <u>48</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>102</u> (A) <u>203</u> (B) Prevalence Index = B/A = <u>1.99</u>
2. _____					
3. _____					
4. _____					
5. _____				=Total Cover	
Herb Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>Cirsium arvense</u>		<u>5</u>	<u>No</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Juncus balticus</u>		<u>65</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Carex pellita</u>		<u>25</u>	<u>Yes</u>	<u>OBL</u>	
4. <u>Verbascum thapsus</u>		<u>5</u>	<u>No</u>	<u>FACU</u>	
5. _____					
6. _____					
7. _____					
8. _____				=Total Cover	
		<u>100</u>			
Woody Vine Stratum	(Plot size: <u>5 x 5 ft</u>)				
1. <u>None</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
				=Total Cover	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Loamy/Clayey	
3-13	10YR 4/2	99	5YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Only one small redox concentration observed (<1%) - does not meet the indicator threshold.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Not saturated to to a duration to create >1% redox concentrations.

Appendix D. Wetland Rating Forms and Figures



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RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland Unit 1 (WU-1) Date of site visit: 10/9/2023

Rated by Geoffrey Gray, MA, PWS Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google satellite

OVERALL WETLAND CATEGORY I (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- X Category II - Total score = 19 - 21
- Category III - Total score = 16 - 18
- Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	H	H	
Landscape Potential	H	M	M	
Value	H	L	L	Total
Score Based on Ratings	8	6	6	20

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	I
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	3

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

1. This wetland is located in the lowest topographic elevation of Paul Rodgers Wildlife Park (PRWP). The entire PRWP is sloped toward the west/southwest with several slight swales crossing the park. The wetland occurs within a natural depression that is likely a relict stream channel. The existing pond is manually excavated. Irrigation practices are the primary source of hydrology during the growing season although seasonally-elevated groundwater is suspected to play a role. The pond was still partially inundated on 11-1-2023. A groundwater study would be helpful.
2. [D 5.3 comment]: At the time of fieldwork, primary hydrology appears to be dependent on the manual application of flood irrigation water onto the PRWP that sheet flows toward the SW. Multiple irrigation ditches cross the PRWP with flow sourced from the Cascade Canal.
3. [D 1.1 comment]: An apparent outlet ditch is present that was likely constructed to provide overflow drainage from extreme flooding into E Branch Lyle Creek. Based on plant and soil patterns, it does not appear to flow under normal circumstances.
4. [D 2.4 comment]: The irrigation ditch that supplies the PRWP with water from the Cascade Canal is routed through grazeland where livestock (cattle) can access it (feces, sedimentation).
5. [D 5.2 comment]: Widespread flood irrigation that drains into the wetland meets the functional intent of this question.
6. [H 3.1 comment]: No shrubsteppe was observed within or near to the wetland.
8. [D 2.3 comment]: The suspected presence of a septic system to the west was determined by Google satellite imagery dated 4-18-2021.
9. [SC 5.0 comment]: *Populus tremuloides* would increase in coverage if adjacent crack willow were to be removed.

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 5	5
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 3	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u>		
Yes = 3 No = 0		0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	0
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 12 - 16 = H - 11 = M - 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 receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		1
Source <u>Livestock feces in irrigation water</u>	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M = 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, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

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

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 8	8
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 4	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	
<i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>		
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	6
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
<input type="checkbox"/> The wetland is a headwater wetland	points = 4	
<input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	14

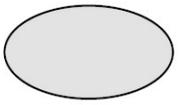
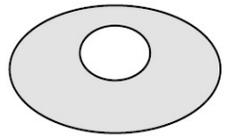
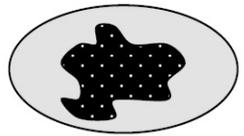
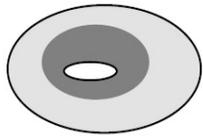
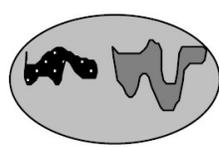
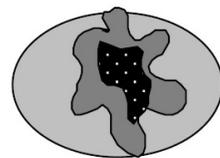
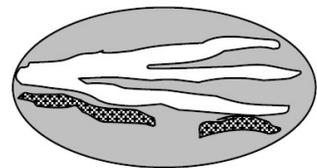
Rating of Site Potential If score is: 12 - 16 = H 9 - 11 = M 5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 3 = H or 2 = M = 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. <u>The wetland is in a landscape that has flooding problems.</u>		
Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
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), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
<input type="checkbox"/> 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.	points = 0	
<i>Explain why</i>		
<input checked="" type="checkbox"/> There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.</i>		3
<input checked="" type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover <input checked="" type="checkbox"/> Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover <input checked="" type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)		
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. <u>Surface water</u>		
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>		3
<input checked="" type="checkbox"/> Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>		
		□ Yes = 3 No = 0
H 1.4. <u>Richness of plant species</u>		
Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species _____		2
Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		
H 1.4. <u>Interspersion of habitats</u>		
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		
   		
None = 0 points Low = 1 point Moderate = 2 points		
  		
All three diagrams in this row are HIGH = 3 points		
Riparian braided channels with 2 classes		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.			
<input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)	3		
Total for H 1		Add the points in the boxes above	15

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?			
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 3 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 6.5%			
> 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0		
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 3 % undisturbed habitat + (47 % moderate & low intensity land uses / 2) = 26.5%			
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1 - 3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2		
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0			
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 No = 0			
Total for H 2		Add the points in the boxes above	2

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.

NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Vernal Pools</p> <p>Is the wetland less than 4000 ft², and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. <input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> <input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. <input type="checkbox"/> Surface water is present for less than 120 days during the wet season. <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III</p>	
<p>SC 2.0. Alkali wetlands</p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm. <input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems). <input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland <input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 <input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland</p>	
<p>SC 3.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland Unit 2 (WU-2) Date of site visit: 10/9/2023

Rated by Geoffrey Gray, MA, PWS Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Slope Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google satellite

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- Category II - Total score = 19 - 21
- Category III - Total score = 16 - 18
- X Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	M	
Value	H	L	L	Total
Score Based on Ratings	7	4	4	15

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	X

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	1
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	1
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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	3

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)
- NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.
- NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.
- NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

- NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

SLOPE WETLANDS		Points (only 1 score per box)
Water Quality Functions - Indicators that the site functions to improve water quality		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of wetland: (<i>a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance</i>)		
Slope is 1% or less	points = 3	0
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (<i>use NRCS definitions</i>):		Yes = 3 No = 0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	6
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1		6

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

S 2.0. Does the landscape have the potential to support the water quality function at the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		Yes = 1 No = 0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		1
Other Sources <u>livestock feces in irrigation water</u>	Yes = 1 No = 0	
Total for S 2		1

Rating of Landscape Potential If score is: 1 - 2 = M = L *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (<i>within 1 mi</i>)?		Yes = 1 No = 0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		Yes = 1 No = 0
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (<i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i>)?		Yes = 2 No = 0
Total for S 3		3

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

SLOPE WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion		
S 4.0. Does the site have the potential to reduce flooding and erosion?		
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.</i>		0
Dense, uncut, rigid plants cover > 90% of the area of the wetland	points = 1	
All other conditions	points = 0	

Rating of site Potential If score is: 1 = M 0 = L *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff?	Yes = 1 No = 0	1

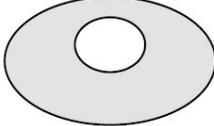
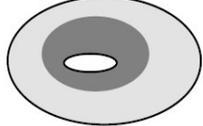
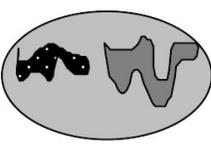
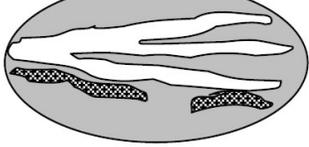
Rating of Landscape Potential If score is: 1 = M 0 = L *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?		
S 6.1. Distance to the nearest areas downstream that have flooding problems:		
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for S 6	Add the points in the boxes above	0

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

NOTES and FIELD OBSERVATIONS:

1. [S 2.1 comment]: Land upgradient of the wetland falls within a relatively undisturbed, heavily-vegetated wildlife park.
2. [S 5.1 comment]: Widespread flood irrigation that drains into the wetland meets the functional intent of this question.
3. [H 3.1 comment]: No shrubsteppe was observed within or near to the wetland.

These questions apply to wetlands of all HGM classes.		(only 1 score per box)	
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat			
H 1.0. Does the wetland have the potential to provide habitat for many species?			
H 1.1. Structure of plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover <input checked="" type="checkbox"/> Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover <input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) <input type="checkbox"/> Forested (areas where trees have > 30% cover) 		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0 1	
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0 0	
H 1.3. <u>Surface water</u>			
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>		0	
H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>			
<input type="checkbox"/> Yes = 3 points & go to H 1.4 No = go to H 1.3.2 <input type="checkbox"/> Yes = 3 No = 0			
H 1.4. <u>Richness of plant species</u>			
Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i>		1	
# of species _____ Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0			
H 1.4. <u>Interspersion of habitats</u>			
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>			
			0
	Moderate = 2 points		
None = 0 points		Low = 1 point	
			0
		Riparian braided channels with 2 classes	
All three diagrams in this row are HIGH = 3 points			

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.			
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)	1		
Total for H 1		Add the points in the boxes above	3

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?			
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 3 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 6.5%			
> 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0		
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 3 % undisturbed habitat + (47 % moderate & low intensity land uses / 2) = 26.5%			
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1 - 3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2		
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0			
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs			
	Yes = 3 No = 0	0	
Total for H 2		Add the points in the boxes above	2

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.
NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. **NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Vernal Pools</p> <p>Is the wetland less than 4000 ft², and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. <input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i> <input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. <input type="checkbox"/> Surface water is present for less than 120 days during the wet season. <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III</p>	
<p>SC 2.0. Alkali wetlands</p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm. <input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems). <input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland <input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4 <input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland</p>	
<p>SC 3.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	

<p>SC 4.0. Bogs and Calcareous Fens <i>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No - Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes - Go to SC 4.3 <input checked="" type="checkbox"/> No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Category I bog <input type="checkbox"/> No - Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? <input type="checkbox"/> Yes = Is a Calcareous Fen for purpose of rating <input type="checkbox"/> No - Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: <input type="checkbox"/> Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems <input type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland <input type="checkbox"/> Yes = Is a Category I calcareous fen <input type="checkbox"/> No = Is not a calcareous fen</p>	
<p>SC 5.0. Forested Wetlands Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H</i> <input type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream <input type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species <input type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) <input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Not a forested wetland with special characteristics</p>	
<p>Category of wetland based on Special Characteristics Choose the highest rating if wetland falls into several categories If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland Unit 3 (WU-3) Date of site visit: 11/1/2023

Rated by Geoffrey Gray, MA, PWS Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google satellite

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- Category II - Total score = 19 - 21
- X Category III - Total score = 16 - 18
- Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	M	L	
Landscape Potential	M	L	M	
Value	H	L	L	Total
Score Based on Ratings	8	4	4	16

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	X

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	3

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

1. This wetland is located in the lowest topographic elevation of the northwest corner of Paul Rodgers Wildlife Park.
2. The wetland is partially excavated to support seasonal inundation. Hydrology source is likely to be lateral seepage through the adjacent creek berm and/or seasonally-elevated groundwater.
3. [D 2.3 comment]: Per satellite imagery, it is estimated that residential septic fields lie beyond 150'.
4. [D 2.4 comment]: Assuming no surface connectivity between EB Lyle Creek and the wetland under normal circumstances.
5. [D 5.2, D 5.3 comments]: Primary hydrology is seasonally-elevated groundwater. Park irrigation appears to play a minimal role in the vicinity. Residences to the west do not have >10% impervious surface and any drainage would not reach the wetland.
6. (H 1.1 comment): Cattails are present but are sparse and do not exhibit 30% cover where they occur.

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 5	5
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 3	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u>		0
Yes = 3 No = 0		
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	3
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: 12 - 16 = H - 11 = M - 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 receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M = 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, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

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

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 8	8
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 4	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet	points = 0	
<i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>		
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	2
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
<input type="checkbox"/> The wetland is a headwater wetland	points = 4	
<input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	10

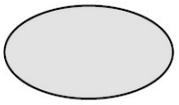
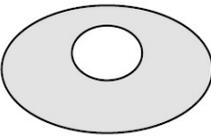
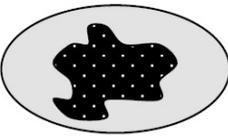
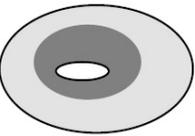
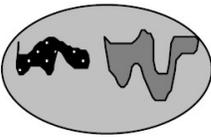
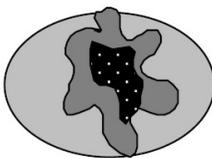
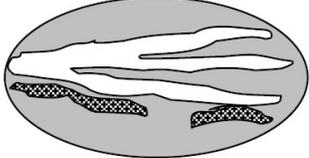
Rating of Site Potential If score is: 2 - 16 = H - 11 = M - 5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 3 = H or 2 = M = 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. <u>The wetland is in a landscape that has flooding problems.</u>		
Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
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), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
<input checked="" type="checkbox"/> 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.	points = 0	
<i>Explain why</i>		
<input checked="" type="checkbox"/> There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is < 2.5 ac.		0
<input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants $> 12 - 40$ in ($> 30-100$ cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover)		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. <u>Surface water</u>		
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands.		0
<input type="checkbox"/> Yes = 3 points & go to H 1.4 No = go to H 1.3.2		
H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? Answer yes only if H 1.3.1 is No.		<input type="checkbox"/> Yes = 3 No = 0
H 1.4. <u>Richness of plant species</u>		
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. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)		1
# of species _____ Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0		
H 1.4. <u>Interspersion of habitats</u>		
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. 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		
Riparian braided channels with 2 classes		

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		1
<input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)		
Total for H 1		Add the points in the boxes above 3

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 3 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 6.5%		
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20 - 33% of 1 km Polygon	points = 2	
10 - 19% of 1 km Polygon	points = 1	
< 10 % of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 3 % undisturbed habitat + (55 % moderate & low intensity land uses / 2) = 30.5%		
Undisturbed habitat > 50% of Polygon	points = 3	2
Undisturbed habitat 10 - 50% and in 1 - 3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs		
Yes = 3	No = 0	0
Total for H 2		Add the points in the boxes above 2

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.

NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Vernal Pools</p> <p>Is the wetland less than 4000 ft², and does it meet at least two of the following criteria?</p> <p><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</p> <p><input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></p> <p><input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</p> <p><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: center;"><input type="checkbox"/> Yes – Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III</p>	
<p>SC 2.0. Alkali wetlands</p> <p>Does the wetland meet one of the following criteria?</p> <p><input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm.</p> <p><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</p> <p><input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</p> <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <p><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</p> <p><input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4</p> <p><input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland</p>	
<p>SC 3.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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



E Branch Lyle Creek

WU-3

raised gravel path

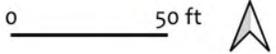
Primary source of hydrology is lateral seepage through creek berm and/or seasonally-elevated groundwater.

LEGEND

- WU-3 (PEM >12-40") (0.10 ac)
- PRWP - WU-3 - 150' radius
- seasonally-inundated (0.06 ac)
- irrigation ditch

ECOLOGY RATING - FIGURE 1

City of Ellensburg Gateway II Project
 Paul Rogers Wildlife Park
 Wetland Mitigation Site #2
 Kittitas County, Washington



Map date: November 3, 2023
 Aerial: April 17, 2021 (Google)

Direct questions regarding this map to:
 Geoffrey Gray, MA, PWS
 509-426-5645 mobile/ gg@gg-env.com

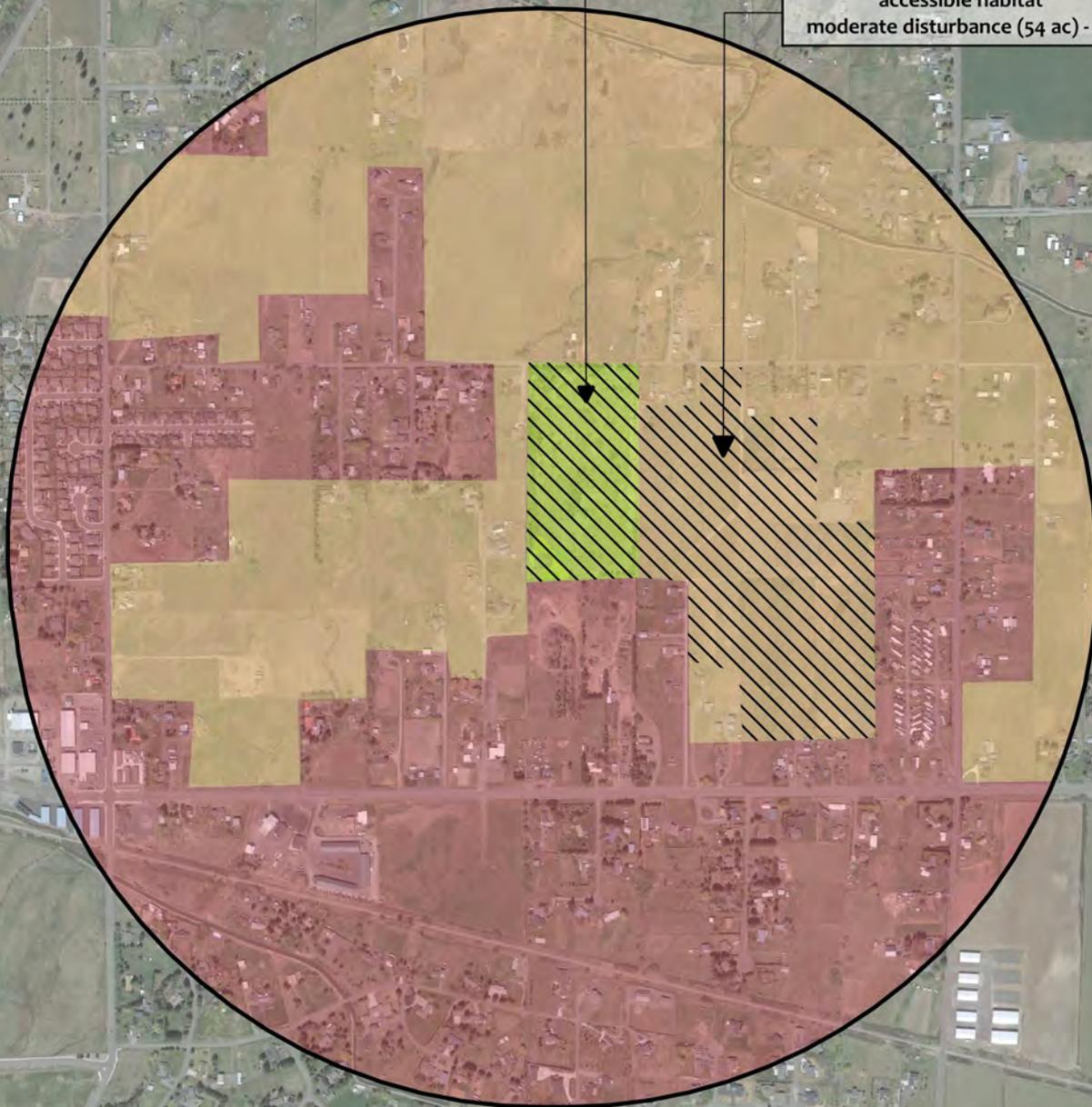


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MITIGATION SITE #1

accessible habitat
low disturbance (21 ac) - 3%

accessible habitat
moderate disturbance (54 ac) - 7%



LEGEND

-  1-km radius (834 ac) - 100%
-  high disturbance (418 ac) - 50%
-  moderate disturbance (395 ac) - 47%
-  low disturbance (21 ac) - 3%
-  accessible habitat (75 ac) - 10%

ECOLOGY RATING - FIGURE 2

City of Ellensburg Gateway II Project
Paul Rogers Wildlife Park
Wetland Mitigation Site #1
Kittitas County, Washington

0 1,000 ft



Map date: November 2, 2023
Aerial: April 17, 2021 (Google)

Direct questions regarding this map to:
Geoffrey Gray, MA, PWS
509-426-5645 mobile/ gg@gg-env.com

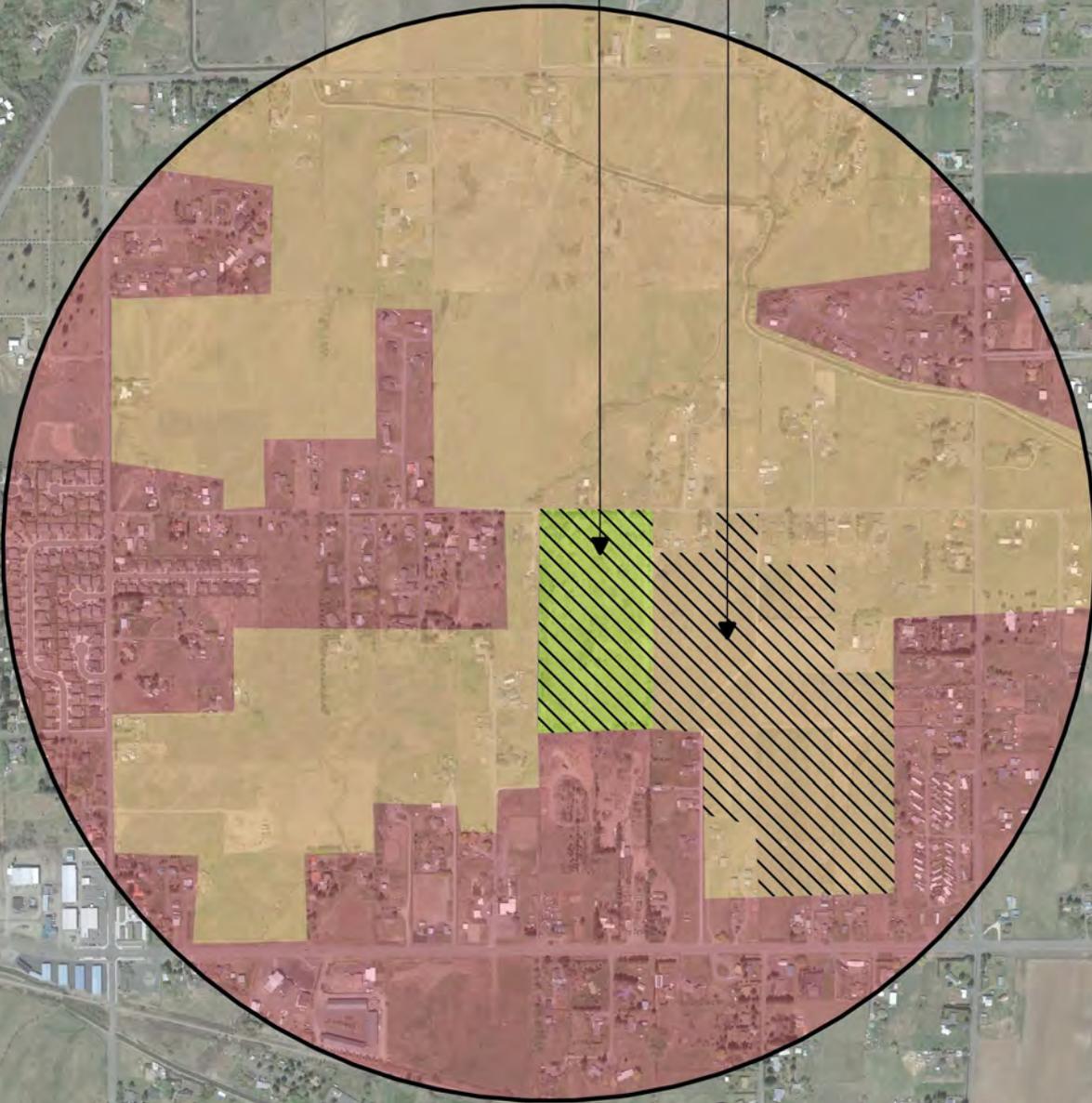


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MITIGATION SITE #2

accessible habitat
low disturbance (21 ac) - 3%

accessible habitat
moderate disturbance (54 ac) - 7%



LEGEND

-  1-km radius (795 ac) - 100%
-  high disturbance (331 ac) - 42%
-  moderate disturbance (443 ac) - 55%
-  low disturbance (21 ac) - 3%
-  accessible habitat (75 ac) - 9%

ECOLOGY RATING - FIGURE 2

City of Ellensburg Gateway II Project
Paul Rogers Wildlife Park
Wetland Mitigation Site #2
Kittitas County, Washington

0 1,000 ft



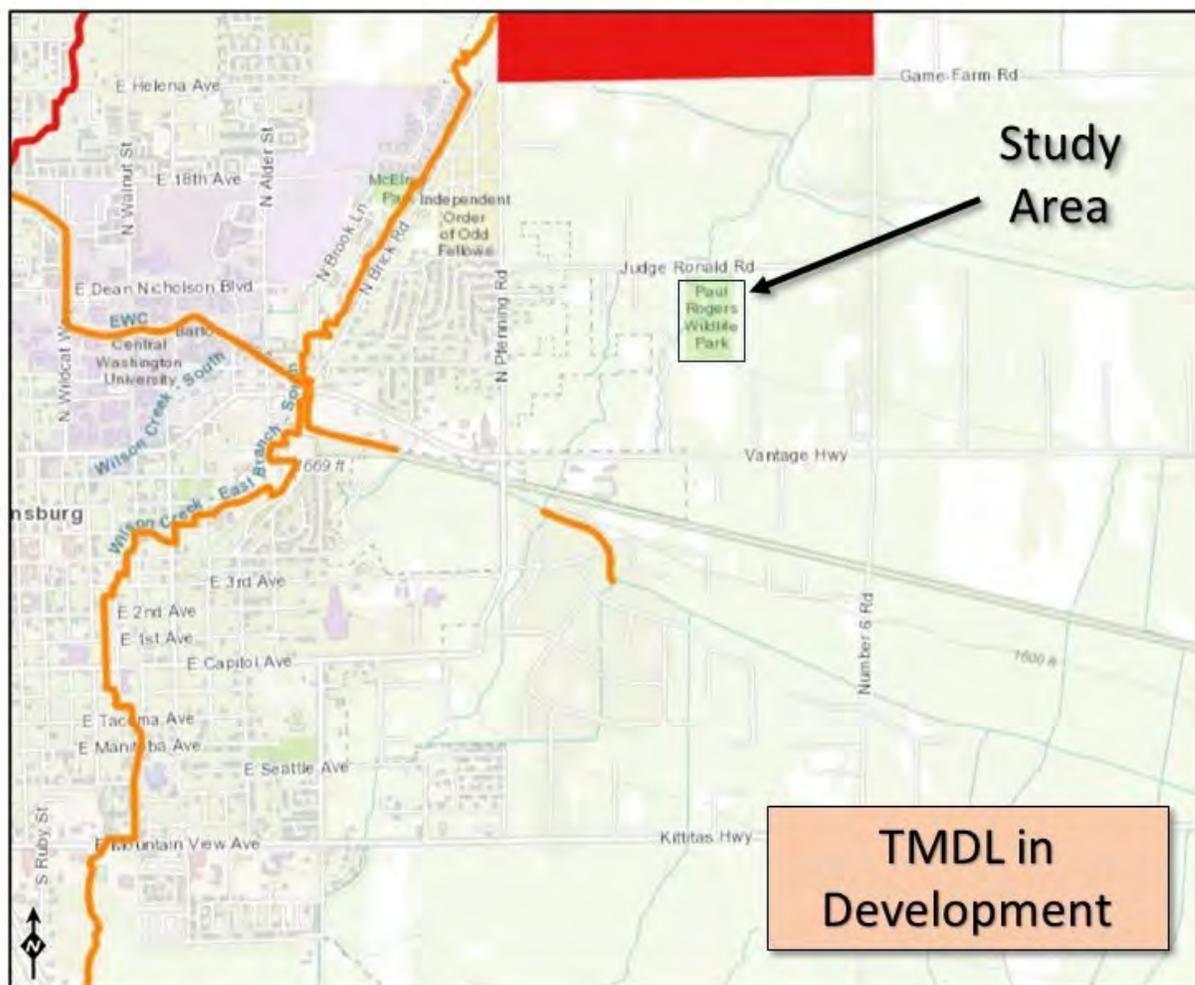
Map date: November 2, 2023
Aerial: April 17, 2021 (Google)

Direct questions regarding this map to:
Geoffrey Gray, MA, PWS
509-426-5645 mobile/ gg@gg-env.com



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ECOLOGY RATING – FIGURE 3



Assessed Water/Sediment

- Water**
- █ Category 5 - 303d
 - █ Category 4C
 - █ Category 4B
 - █ Category 4A
 - █ Category 2
 - █ Category 1

- Sediment**
- Category 5 - 303d
 - Category 4C
 - Category 4B
 - Category 4A
 - Category 2
 - Category 1

Esri, NASA, NGA, USGS, FEMA
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

Miles 0 0.23 0.45 0.9

Appendix E. Photos

Photo 1. Wetland Unit 1. View toward NE on 10-9-2023.



Photo 2. Wetland Unit 2. View toward NE on 10-9-2023.



Photo 3. Wetland Unit 3. View toward N on 11-1-2023.



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RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Mitigation Site #2 (MS-2) (creation + enhancement) Date of site visit: 11/1/2023

Rated by Geoffrey Gray, MA, PWS Trained by Ecology? Yes No Date of training 2014, 2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY I (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
- Category II - Total score = 19 - 21
- X Category III - Total score = 16 - 18
- Category IV - Total score = 9 - 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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	H	M	
Landscape Potential	M	L	M	
Value	H	L	L	Total
Score Based on Ratings	8	5	5	18

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Vernal Pools	
Alkali	
Wetland of High Conservation Value	
Bog and Calcareous Fens	
Old Growth or Mature Forest - slow growing	
Aspen Forest	I
Old Growth or Mature Forest - fast growing	
Floodplain forest	
None of the above	

Maps and Figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	3

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1 - 4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**

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

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**

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

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

NO - go to 5 **YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1 - 4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

NOTES and FIELD OBSERVATIONS:

1. This wetland is located in the lowest topographic elevation of the northwest corner of Paul Rodgers Wildlife Park.
2. The wetland is partially excavated to support seasonal inundation. Hydrology source is likely to be lateral seepage through the adjacent creek berm and/or seasonally-elevated groundwater.
3. [D 2.3 comment]: Per satellite imagery, it is estimated that residential septic fields lie beyond 150'.
4. [D 2.4 comment]: Assuming no surface connectivity between EB Lyle Creek and the wetland under normal circumstances.
5. [D 5.2, D 5.3 comments]: Primary hydrology is seasonally-elevated groundwater. Park irrigation appears to play a minimal role in the vicinity. Residences to the west do not have >10% impervious surface and any drainage would not reach the wetland.
6. (H 1.1 comment): Cattails are present but are sparse and do not exhibit 30% cover where they occur.

ENHANCEMENT NOTES: Pond must maintain >50% seasonal inundation (D 1.4). Excavate portion as to create >3' inundation (D 4.2). Add PSS and PFO to >10% cover (H 1.1, H 1.4), minimum 20% of which must be quaking aspen (*Populus tremuloides*) (SC 5.0). Add rocks (>4-in diameter) or LWD (>4-in diameter) in areas of standing water (H 1.6).

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 5	5
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 3	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u>		0
Yes = 3 No = 0		
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	3
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: 12 - 16 = H - 11 = M - 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 receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M = 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, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

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

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 8	8
<input type="checkbox"/> Wetland has an intermittently flowing outlet	points = 4	
<input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet	points = 0	
<i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>		
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	8
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
<input type="checkbox"/> The wetland is a headwater wetland	points = 4	
<input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	16

Rating of Site Potential If score is: 12 - 16 = H 9 - 11 = M 5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses ?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 3 = H or 2 = M = 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. <u>The wetland is in a landscape that has flooding problems.</u>		
Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
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), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
<input checked="" type="checkbox"/> 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.	points = 0	
<i>Explain why</i>		
<input checked="" type="checkbox"/> There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

H 1.6. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points.			
<input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)	2		
Total for H 1		Add the points in the boxes above	7

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

H 2.0. Does the landscape have the potential to support habitat functions of the site?			
H 2.1 Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: 3 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 6.5%			
> 1/3 (33.3%) of 1 km Polygon 20 - 33% of 1 km Polygon 10 - 19% of 1 km Polygon < 10 % of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: 3 % undisturbed habitat + (55 % moderate & low intensity land uses / 2) = 30.5%			
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10 - 50% and in 1 - 3 patches Undisturbed habitat 10 - 50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	2	
H 2.3 Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use Does not meet criterion above			
	points = (-2) points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs			
	Yes = 3 No = 0	0	
Total for H 2		Add the points in the boxes above	2

Rating of Landscape Potential If Score is: 4 - 9 = H 1 - 3 = M < 1 = L Record the rating on the first page

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category.

NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Vernal Pools</p> <p>Is the wetland less than 4000 ft², and does it meet at least two of the following criteria?</p> <p><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</p> <p><input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></p> <p><input type="checkbox"/> The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</p> <p><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: center;"><input type="checkbox"/> Yes – Go to SC 1.2 <input type="checkbox"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No = Category III</p>	
<p>SC 2.0. Alkali wetlands</p> <p>Does the wetland meet one of the following criteria?</p> <p><input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm.</p> <p><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</p> <p><input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</p> <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <p><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</p> <p><input type="checkbox"/> More than $\frac{3}{4}$ of the plant cover consists of species listed on Table 4</p> <p><input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not an alkali wetland</p>	
<p>SC 3.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes - Go to SC 3.2 <input type="checkbox"/> No - Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 3.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

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

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

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

Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Washington

Debit Worksheet (corrected 2/20/18) **Project** Gateway II Stormwater Retrofit Project

Mitigation Project is: Advanced Concurrent: Delayed:

Only fill in boxes that are highlighted. Use Temporal Loss Factors from the table below (Appendix E).

Input Ratings for Functions from Scoring Sheet

	Wetland Unit Altered (#1)			Wetland Unit Altered (#2)			Wetland Unit Altered (#3)		
	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Site Potential (H,M,L)	L	L	L	M	H	L			
Landscape Potential (H,M,L)	H	M	L	H	H	L			
Value (H,M,L)	H	L	H	H	L	H			
Score for Wetland Unit	7	4	5	8	7	5	3	3	3
Acres of non-forested areas impacted	0.014			0.001					
Basic mitigation requirement (BMR)	0.098	0.056	0.07	0.008	0.007	0.005	0	0	0
Temporal loss factor (see below)	1.5			1.5					
DEBITS	0.147	0.084	0.105	0.012	0.0105	0.0075	0	0	0
Acres of Deciduous forest impacted									
Basic mitigation requirement (BMR)	0	0	0	0	0	0	0	0	0
Temporal loss factor									
DEBITS	0	0	0	0	0	0	0	0	0
Acres of Evergreen Forest impacted									
Basic mitigation requirement (BMR)	0	0	0	0	0	0	0	0	0
Temporal loss factor (see below)									
DEBITS	0	0	0	0	0	0	0	0	0
Acres of Cat. 1 Deciduous forest									
Basic mitigation requirement (BMR)	0	0	0	0	0	0	0	0	0
Temporal loss factor (see below)									
DEBITS	0	0	0	0	0	0	0	0	0
Acres of Cat. 1 Evergreen forest									
Basic mitigation requirement (BMR)	0	0	0	0	0	0	0	0	0
Temporal loss factor (see below)									
DEBITS	0	0	0	0	0	0	0	0	0

TOTALS	Wetland Unit Altered (#1)			Wetland Unit Altered (#2)			Wetland Unit Altered (#3)		
Function	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Acre-points	0.147	0.084	0.105	0.012	0.0105	0.0075	0	0	0

Total Debits by Function	Improving Water Quality	Hydrologic	Habitat
Acre-points	0.159	0.0945	0.112

Timing of Mitigation	Temporal Loss Factor
Advance – At least two years has passed since plantings were completed or one year since “as-built” plans were submitted to regulatory agencies.	1.25
Concurrent – Physical alterations at mitigation site are completed within a year of the impacts, but planting may be delayed by up to 2 years if needed to optimize conditions for success.	
For impacts to an emergent or shrub community	1.5
For impacts to a deciduous forested wetland community	2.0
For impacts to an evergreen forested wetland community	2.5
For impacts to a deciduous Category I forested wetland community	3
For impacts to an evergreen Category I forested wetland community	3.5
Delayed - Construction is not completed within one year of impact, but is completed (including plantings if required) within 5 growing seasons of impact.	
For impacts to an emergent or shrub community	3
For impacts to a deciduous forested wetland community	4
For impacts to an evergreen forested wetland community	5
For impacts to a deciduous Category I forested wetland community	6
For impacts to an evergreen Category I forested wetland community	7

Basic mitigation Credit	0	0	0	0	0	0	0	0	0
Risk Factor (see below)									
CREDITS	0	0	0	0	0	0	0	0	0
PRESERVATION									
Acres of wetlands preserved									
Score for wetland functions from Scoring Sheet									
Sum of scaling factors (Appendix E)									
CREDITS	0	0	0	0	0	0	0	0	0
Acres of upland preserved									
Habitat score for upland									
Sum of scaling factors (Appendix E)									
CREDITS		0			0				0

TOTALS	Site 1			Site 2			Site 3		
	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Function									
Acre-points	0.18	0.1125	0.1125	0	0	0	0	0	0
Total Credits by Function for Project									
Acre-points	0.18	0.1125	0.1125						

Risk Factors:

Type of Mitigation	Risk Factor
Advance Mitigation The site meets criteria in Charts 1 and 3 of the site selection guidance [i.e., identified in a local plan and is sustainable] AND meets the criteria in Charts 4-11 for the appropriate functions. (All worksheets for Chart 3 and in Appendix B of Ecology publication #09-06-032 for western Washington or #10-06-007 for eastern Washington are submitted) <i>Advance means that at least two years has passed since plantings were completed or one year since "as-built" plans were submitted to regulatory agencies.</i>	1.0
Advance mitigation without meeting criteria in Ecology publication #09-06-032 or #10-06-007	0.83
Concurrent Mitigation Mitigation site meets criteria in Charts 1 and 3 of the site selection guidance [i.e., identified in a local plan and is sustainable] AND meets the criteria in Charts 4-11 for the appropriate functions. (All worksheets for Chart 3 and in Appendix B of Ecology publication #09-06-032 or #10-06-007 are submitted) <i>Risk factor applies to all types of mitigation.</i>	0.9
Mitigation site chosen meets the criteria in Charts 2 and 3 of the site selection guidance [i.e., identified as a site with potential and that is sustainable]; AND meets criteria in Charts 4-11 for the appropriate functions. (All worksheets for Chart 3 and in Appendix B of Ecology publication #09-06-032 or #10-06-007 are submitted) <i>Risk factor applies to all types of mitigation.</i>	0.80
<i>Site does not meet criteria in site selection guide, or guide was not used.</i>	
Re-establishment, rehabilitation, or enhancement that results in an aquatic bed, shrub, or forest community	0.67
Re-establishment, rehabilitation, or enhancement that results in an emergent community	0.5
Creation of an aquatic bed, shrub, or forest community with data showing there is adequate water to maintain wetland conditions 5 years out of every 10.	0.67
Creation of an emergent community with data showing there is adequate water to maintain wetland conditions 5 years out of every 10.	0.5
Creation of an aquatic bed, shrub, or forest community without adequate hydrologic data.	0.5
Creation of an emergent community without adequate hydrologic data.	0.4

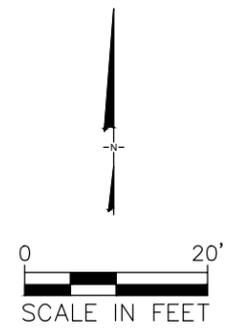
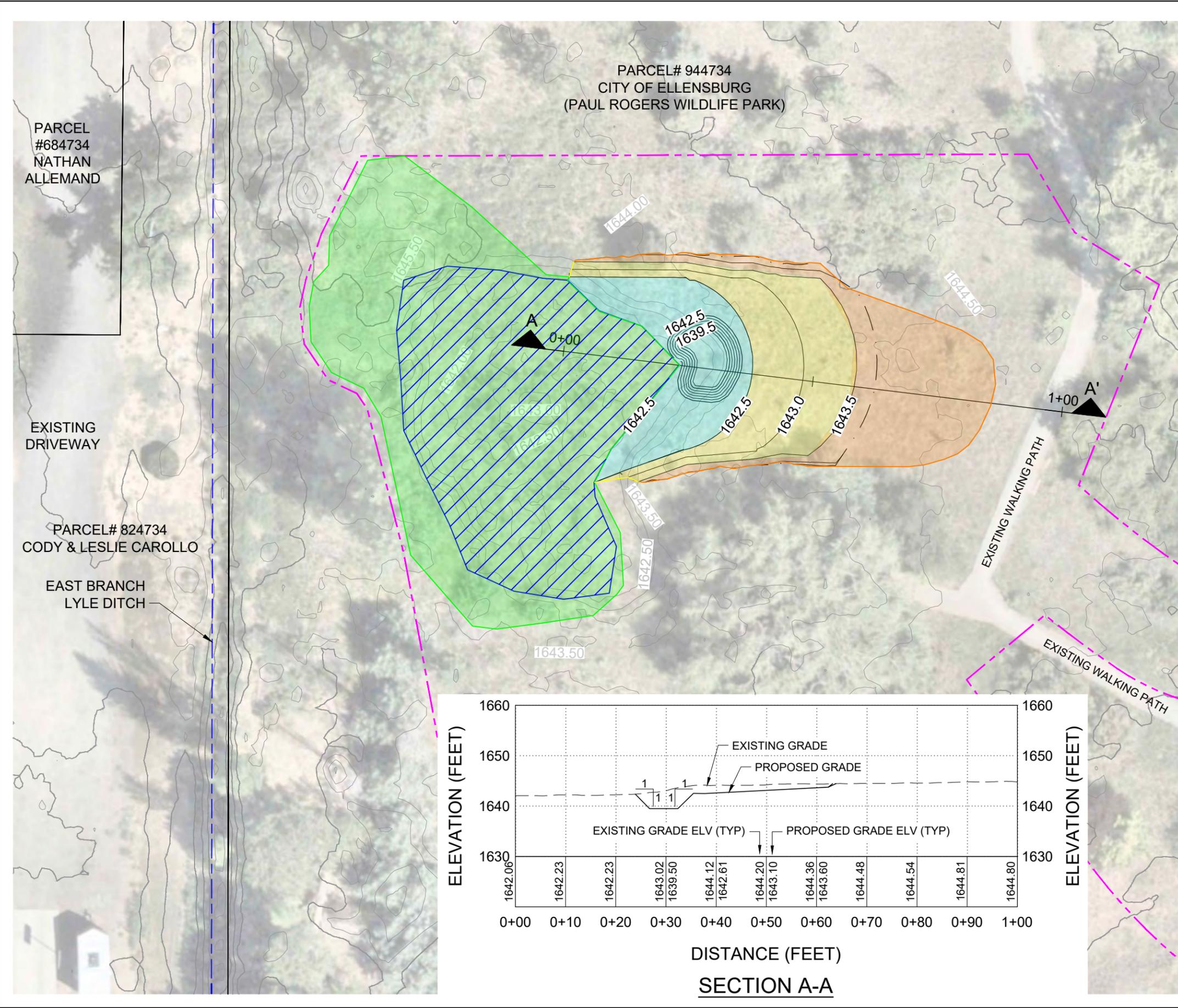
Appendix G. Wetland Mitigation Plan Drawings



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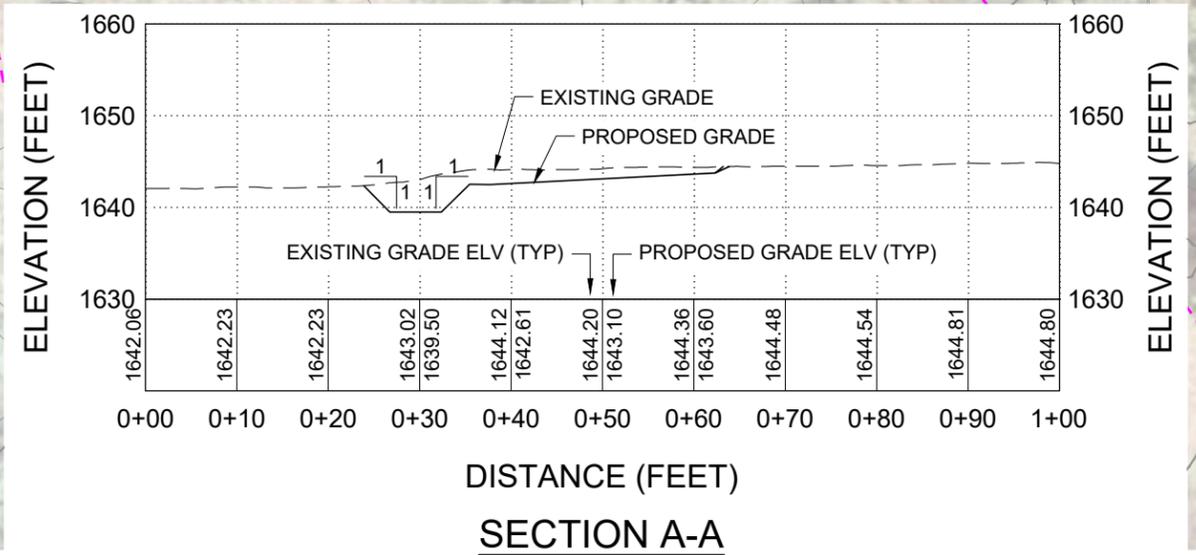


C:\GEO-ACC\GEO\GEO\SYNTEC\CITY OF ELLENSBURG_GATEWAY\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A_03-FIGWRK1 (GRADING PLAN) - Last Saved by: nathan.althaus on 11/10/25



LEGEND

- 164X.XX — EXISTING GRADING CONTOUR
- 164X.XX — PROPOSED GRADING CONTOURS
- - - - - APPROXIMATE CONSTRUCTION LIMITS
- DELINEATED WETLAND
- APPROX. WATER SURFACE AREA AT ELV. 1,642.50
- INUNDATION ZONE (735 SQ-FT)
- SATURATION ZONE (936 SQ-FT)
- UPLAND BUFFER (1,019 SQ-FT)
- - - - - IRRIGATION DITCH



GRADING VOLUMES
 CUT = 66 CY
 TOTAL GRADING AREA = 1,976 SF

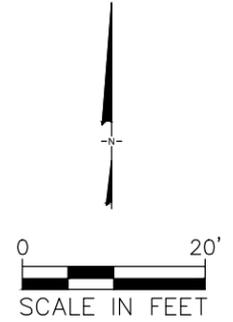
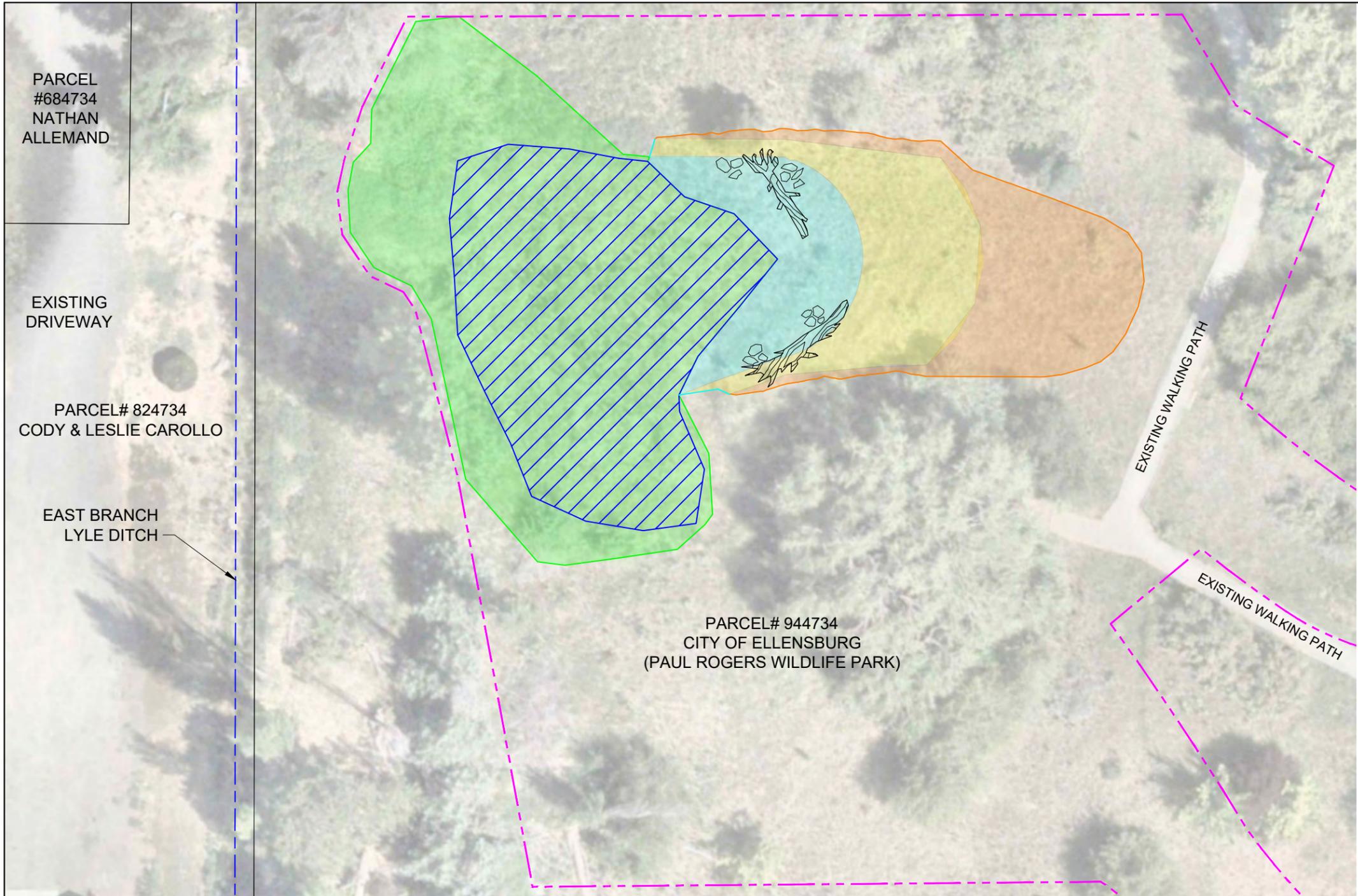
**WETLAND MITIGATION DESIGN
 GRADING PLAN
 ELLENSBURG, WASHINGTON**

GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

PROJECT NO: AS190390A | NOVEMBER 2025

FIGURE
1

C:\GEO-ACC\DCO\GEO\SYNTEC\CITY OF ELLENSBURG_GATEWAY\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK3 (PLANTING PLAN) - Last Saved by: nathan.althaus on 11/10/25



LEGEND

- - - - APPROXIMATE CONSTRUCTION LIMITS
- DELINEATED WETLAND
- APPROX. WATER SURFACE AREA AT ELV. 1,642.50
- INUNDATION ZONE (735 SQ-FT)
- SATURATION ZONE (936 SQ-FT)
- UPLAND BUFFER (1,019 SQ-FT)
- - - - IRRIGATION DITCH
- ROCK CLUSTERS (6-18 INCH)
- LARGE WOODY DEBRIS (MINIMUM 12 INCH DIA W/ ROOT WAD)

PLANT SCHEDULE

SCIENTIFIC NAME	COMMON NAME	CONTAINER	SPACING (FT OC)			QUANTITY		
			INUNDATION ZONE	SATURATION ZONE	UPLAND BUFFER	INUNDATION ZONE	SATURATION ZONE	UPLAND BUFFER
ROSA WOODSII	WOODS' ROSE	1 GAL	---	---	10	0	0	3
RIBES AUREUM	GOLDEN CURRANT	1 GAL	---	5	10	0	10	6
TYPHA LATIFOLIA	BROAD-LEAF CATTAIL	PLUG	2	---	---	61	0	0
SCHOENOPLECTUS ACTUS	HARDSTEM BULRUSH	PLUG	2	---	---	61	0	0
SCIRPUS MICROCARPUS	PANICLED BULRUSH	PLUG	2	---	---	63	0	0
SALIX EXIGUA	NARROWLEAF WILLOW	1 GAL	---	5	---	0	19	0
PINUS PONDEROSA	PONDEROSA PINE	5 GAL	---	---	20	0	0	1
POPULUS TREMULOIDES	QUAKING ASPEN	5 GAL	---	20	20	0	1	1

**WETLAND MITIGATION DESIGN
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Aspect
CONSULTING

FIGURE
3

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November 2025

C:\GEO-ACC\GEO\GEO\SYNTEC\CITY OF ELLENSBURG_GATEWAY\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK4 (IRRIGATION PLAN) - Last Saved by: nathan.althaus on 11/10/25

