BIOLOGICAL ASSESSMENT

Gateway II Project
City of Ellensburg
Kittitas County, Washington

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November 18, 2025

GG Environmental, LLC
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Executive Summary

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

The Project is supported exclusively by state funding, but a federal nexus is anticipated through an anticipated Army Corps of Engineers (Corps) Nationwide No. 14 Permit (NWP 14) for wetland and stream impacts. In order to issue a permit, the Corps, as the federal lead agency, must first ensure that that the Project complies with federal Endangered Species Act (ESA) requirements, potentially requiring federal interagency consultation with the United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS), for which purpose this Biological Assessment (BA) has been prepared on the Corps' behalf.

The BA evaluates all foreseeable actions associated with the Project including, but not limited to, road widening, existing concrete box culvert extension, stormwater treatment infrastructure, and onsite/offsite mitigation for wetland and stream impacts.

Lyle Creek is managed and maintained to function as an irrigation ditch/swale that eventually mouths into Wilson Creek and eventually the Yakima River approximately five miles to the south. According to the Washington Department of Fish and Wildlife (WDFW), it is possible, under suitable aquatic conditions, that fish may access the creek reach near Vantage Highway. Although unlikely, it is possible that juvenile steelhead, listed as Threatened under the ESA, could also utilize the creek.

The creek typically dries down outside the irrigation season (dry from mid-October to early April, depending on water supply). Work below the ordinary high water mark (OHWM) would take place when the creek is dry, precluding the opportunity for fish to be present during construction.

Road widening is anticipated to result in both temporary and permanent impacts to the creek channel and associated wetlands within the City's managed right-of-way along Vantage Highway. Temporary wetland impacts (0.066 ac, 2,888 ft^2) would be minimized onsite through vegetation trimming (not grubbing) and restorative planting of native plant species. This action is also intended to concurrently compensate for impacts to the Lyle Creek channel, both temporary (0.010 ac, 417 ft^2) and permanent (0.003 ac, 127 ft^2).

Permanent wetland impacts (0.015 ac, 674 ft^2) would be mitigated offsite within the nearby Paul Rogers Wildlife Park (PRWP). The PRWP, owned and managed by the City, includes an existing wetland, referred to as *Mitigation Site #2*, (MS-2). No fish can access MS-2. It is proposed to enlarge MS-2 from 0.10 ac to 0.125 ac as well as enhance the wetland through native plantings and addition of large wood and rocks.

Species listed by USFWS and/or NMFS as potentially occurring within the Project action area (PAA) include bull trout, Middle Columbia River (MCR) Distinct Population Segment (DPS) steelhead (steelhead), gray wolf, and yellow-billed cuckoo. No Designated Critical Habitat (DCH) is present.

In reviewing the current status and potential presence of listed species, mapped DCH, Essential Fish Habitat (EFH), the environmental baseline within the PAA, potential effects of the proposed action, and any effects of interrelated and interdependent activities, it is determined that the Project would result in **no effect** to above species or DCH. The Project would **not adversely affect** Essential Fish Habitat (EFH).

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1 Project Description

The Gateway to the City of Ellensburg Stormwater LID Retrofit Project II (Gateway II Project or Project), proposed by the City of Ellensburg (City), would construct drainage improvements along both sides of Vantage Highway from Vista Road to the eastern City limits (**Figure 1**). The collection and treatment of stormwater would reduce the amount of pollution that flows into Lyle Creek (creek). The Project would also widen Vantage Highway between North Vista Road and vicinity of Cowboy Lane and add pedestrian and bicycle pathways to enhance community accessibility. The Project scope includes offsite wetland mitigation at the nearby Paul Rogers Wildlife Park (PRWP), owned and managed by the City.

The Project is 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 Vantage Highway widening is latitude 46°59'58.55" North and longitude 120°30'57.02" West (WGS84), while offsite wetland mitigation would take place at approximate latitude 47° 0'22.48" North and longitude 120°30'27.61" West. Elevation along Vantage Highway ranges from approximately 1,600 – 1,620 feet (ft) while elevation at the wetland mitigation site is approximately 1,645 ft (**Figure 2**).

Figure 1. Project Location

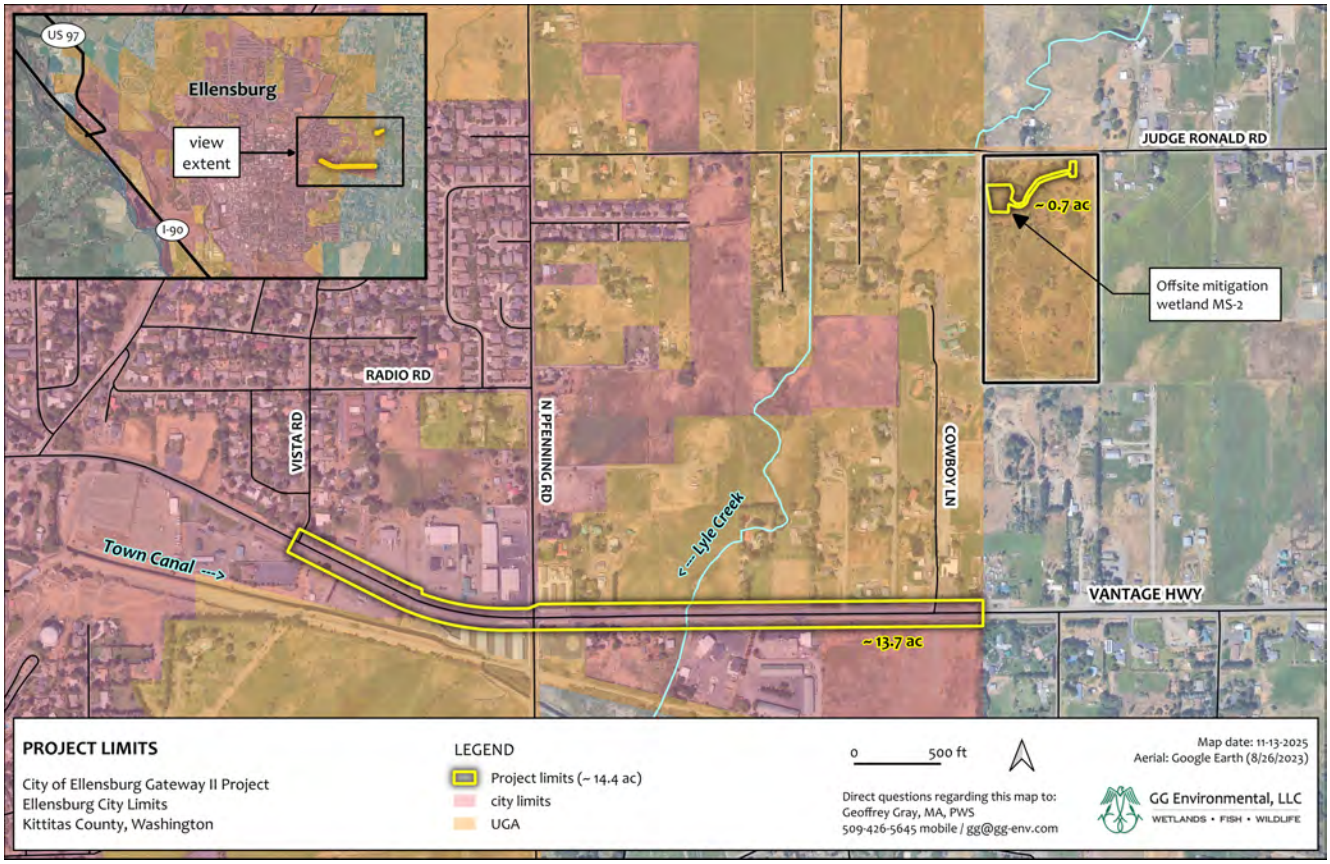
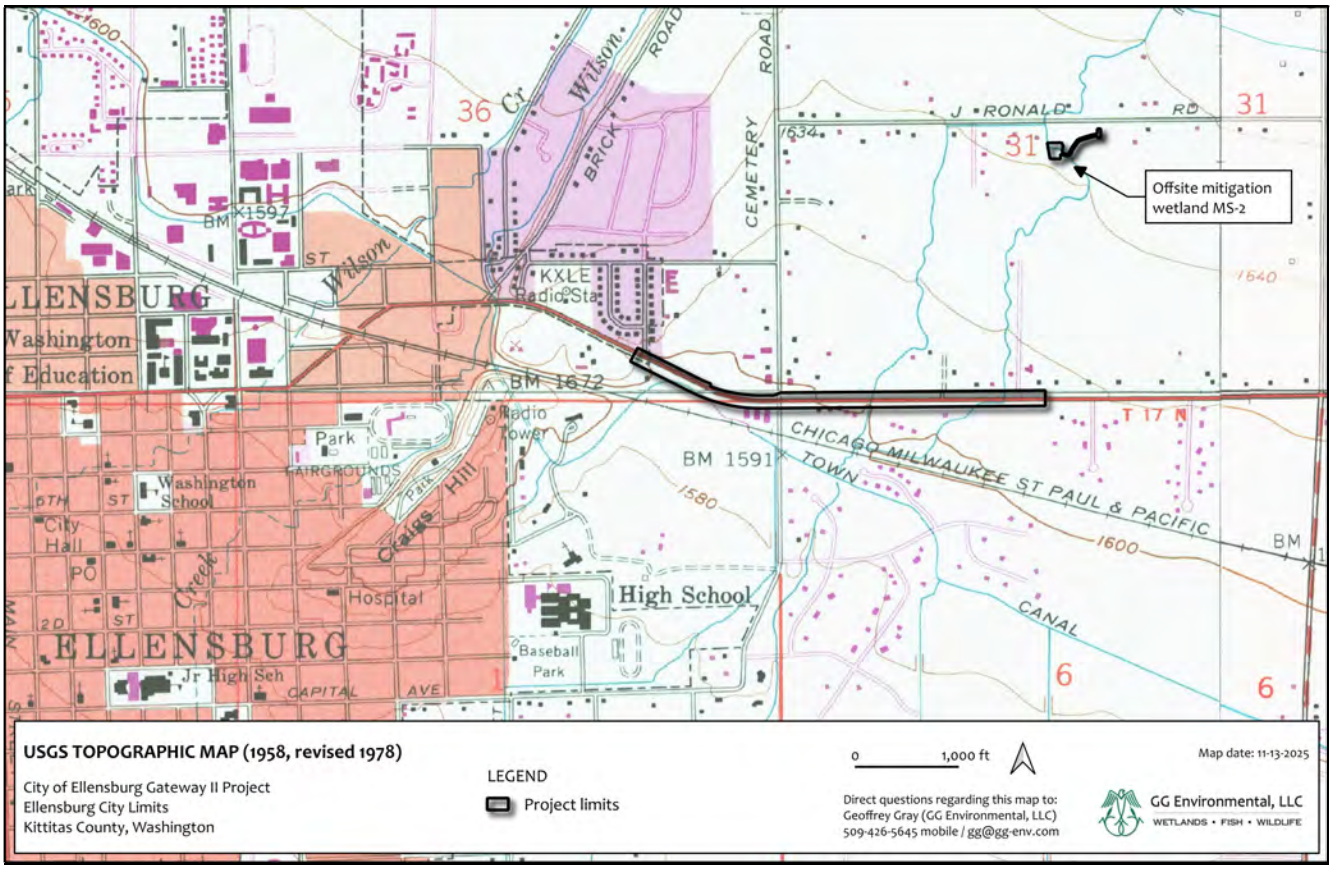


Figure 2. USGS Topographic Map



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

2 Project Permitting Background

The Project is supported exclusively by state funding, but a federal nexus is anticipated through an anticipated Army Corps of Engineers (Corps) Nationwide No. 14 Permit (NWP 14 – *Linear Transportation Projects*) for wetland and stream impacts. In order to issue a permit, the Corps, as the federal lead agency, must first ensure that that the Project complies with federal Endangered Species Act (ESA) requirements, potentially requiring federal interagency consultation with the United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS), for which purpose this Biological Assessment (BA) has been prepared on the Corps' behalf.

Lyle Creek is managed and maintained to function as an irrigation ditch/swale that eventually mouths into Wilson Creek and eventually the Yakima River approximately five miles to the south. Regarding fish presence in Lyle Creek, best available science was obtained from the Washington Department of Fish and Wildlife (WDFW 2025a). According to WDFW, it is possible, under suitable aquatic conditions, that fish may access the creek reach near Vantage Highway. Although unlikely,

it is possible that juvenile steelhead, listed as Threatened under the ESA, could also utilize the creek.

3 Project Actions

This biological assessment evaluates all reasonably-foreseeable actions associated with the Project including, but not limited to, road widening, extension of an existing concrete box culvert in Lyle Creek, installation of stormwater collection and treatment infrastructure within the right-of-way (ROW), installation of permeable pavement pedestrian/bicycle pathways, installation of native plants, and offsite wetland mitigation (creation + enhancement).

3.1 Road widening

Vantage Highway would be widened from Vista Road to approximately 250 east of Cowboy Lane at the eastern City limits. The roadway is currently designated as a principal arterial that generally runs east to west through the City. The Project would enhance the functionality of the existing roadway by upgrading compacted gravel shoulders to curb and gutter road surface and widening to accommodate a new center turn lane. Additional benefits of the Project would include providing corridor beautification, improved pedestrian/bicycle access with roadway and drainage improvements, improved utility access, and traffic safety improvements. All work would be restricted to the existing City right-of-way (ROW). Design drawings are included in **Appendix B**.

3.2 Culvert extension in Lyle Creek

The existing Lyle Creek culvert crossing consists of a 4 ft x 4 ft concrete box culvert that passes under Vantage Highway. The existing box culvert would be extended both upstream and downstream to accommodate the fill prism for the widened roadway and pedestrian/bicycle pathways on the north and south side of Vantage Highway.

3.3 Stormwater conveyance and treatment infrastructure

Stormwater runoff within the Project area is currently discharged untreated to Lyle Creek. Lyle Creek flows through the Project and drains to Wilson Creek, a tributary to the Yakima River. These waterways are under two active Total Maximum Daily Load (TMDL) plans that address total suspended solids, fecal coliform, DDT, and Dieldrin. Currently, there is no stormwater treatment for this 2.6-acre roadway section before discharging runoff into Lyle Creek.

To address TMDL concerns and help improve water quality and fish habitat, the Project would retrofit in stormwater infiltration swales to provide treatment and flow control for existing and replaced pollutant-generating impervious surface (PGIS) along the one-mile segment of widened roadway. Stormwater retrofits would be designed to provide treatment for total suspended solids, oil, metals, and other pollutants, and to also reduce stormwater runoff to Lyle Creek through increased infiltration of runoff. To ensure that surface flows reach the new infiltration swales, the curb and gutter design would force roadway runoff through curb cuts into the infiltration swales. Flows in excess of the water quality treatment design storm would be routed to new storm drain catch basins, which would be piped to relocated ditches and/or Lyle Creek.

3.4 Onsite wetland and stream mitigation

Temporary wetland impacts (0.066 ac, 2,888 ft^2) would be minimized onsite through vegetation trimming (not grubbing) and restorative planting of native plant species. This action is also intended to concurrently compensate for impacts to Lyle Creek, both temporary (0.010 ac, 417 ft^2) and permanent (0.003 ac, 127 ft^2). Planting locations are included in **Appendix B** [see Sheet 49 (Landscaping Plan IV)].

3.5 Offsite wetland mitigation

Permanent wetland impacts (0.015 ac) would be mitigated offsite within the nearby PRWP. The PRWP, owned and managed by the City, includes an existing Category III depressional, palustrine emergent wetland ("Mitigation Site #2," (MS-2)). No fish can access MS-2. It is proposed to enlarge MS-2 from 0.10 acres (ac) to 0.125 ac as well as enhance the wetland through native plantings and addition of large wood and rocks. Wetland impacts and proposed mitigation are covered in the *Wetland and Stream Critical Areas Report including Mitigation Plan*, dated November 6, 2024 (GG 2025) (**Appendix B**).

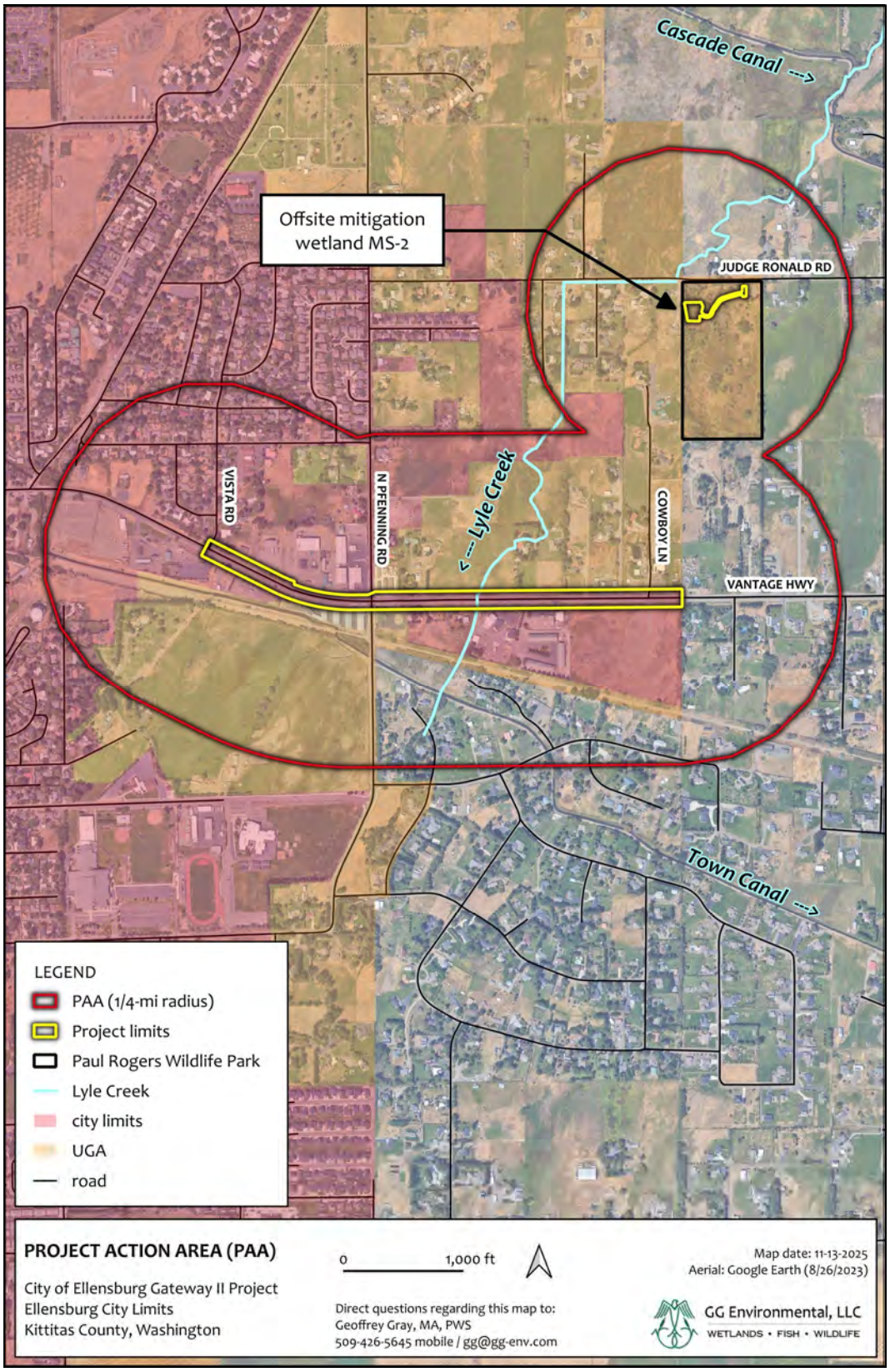
4 Project Action Area

A typical project footprint incorporates the total surface area to be directly disturbed by construction including, but not limited to, equipment access, operation, staging, material cut or fill, foot traffic, stockpiling, and/or offsite mitigation work. The project action area (PAA) includes the geographic extent of all physical, biological, and chemical impacts resulting from an action, not only within the project footprint, but also in adjacent and surrounding areas exposed to, for example, elevated noise and/or increased aquatic sedimentation. Consequently, the action area is typically larger than a project footprint, but the size of the action area can be reduced by the implementation of minimization measures. The limits of the action area can include both terrestrial and aquatic zones of impact.

Since the Project footprint is located within the City limits, surrounded by residential and commercial development and adjacent to a transportation corridor, construction is not expected to produce terrestrial noise significantly greater than the ambient baseline. However, in order to remain conservative, the terrestrial zone of impact, primarily driven by elevated construction noise, includes all areas within a 0.25-mile (mi) radius of the Project footprint (**Figure 3**).

An aquatic zone of impact includes a work footprint within the wetted width of an aquatic resource as well as maximum extent of elevated aquatic turbidity. Work below the OHWM of Lyle Creek would take place when the creek is dry. No in-water work would occur and no measurable increased sedimentation above baseline is anticipated during *first flush* when irrigation flows are released into the creek the following spring. The creek reach near Vantage Highway would receive dislodged sediment and pollutants washed downstream from the Cascade Canal at *first flush*, serving to mask any potential contribution to the sediment baseline within the Project's channel footprint. As such, no aquatic zone of impact is addressed in this report.

Figure 3. Project Action Area



5 Environmental Setting

5.1 Project Footprint

The Project footprint includes the existing City ROW along Vantage Highway and an offsite wetland mitigation location at the PRWP (**Figure 3**).

Vantage Highway serves as a major transportation corridor for the City, including high traffic volumes and pedestrian use. The narrow ROW is highly disturbed as it is largely paved, and open ground is managed to control weeds, provide access to underground utilities, and to maintain existing stormwater infrastructure (ditches). The Lyle Creek channel within the ROW is periodically maintained (channel dredging and vegetation removal) to ensure that flows continue past the highway.

The PRWP, owned and managed by the City, is maintained (including irrigation, vegetation management, and weed control) for public pedestrian use, including a paved parking area, a public restroom, graveled trails, informational kiosk, and park benches. Dogs are allowed while leashed. Photos of the Project footprint are included in **Appendix A**.

5.2 Surrounding Land Use

Land use within the action area includes high-density housing and commercial buildings (~35 percent), rural residential (~20 percent), and interstitial fallow fields and flood-irrigated grazeland (~45 percent) (Google 2025) (**Figure 3**). Aquatic resources documented within this radius include Lyle Creek and Wilson Creek. The Town Canal and Cascade Canal also flow through the vicinity.

5.3 Lyle Creek

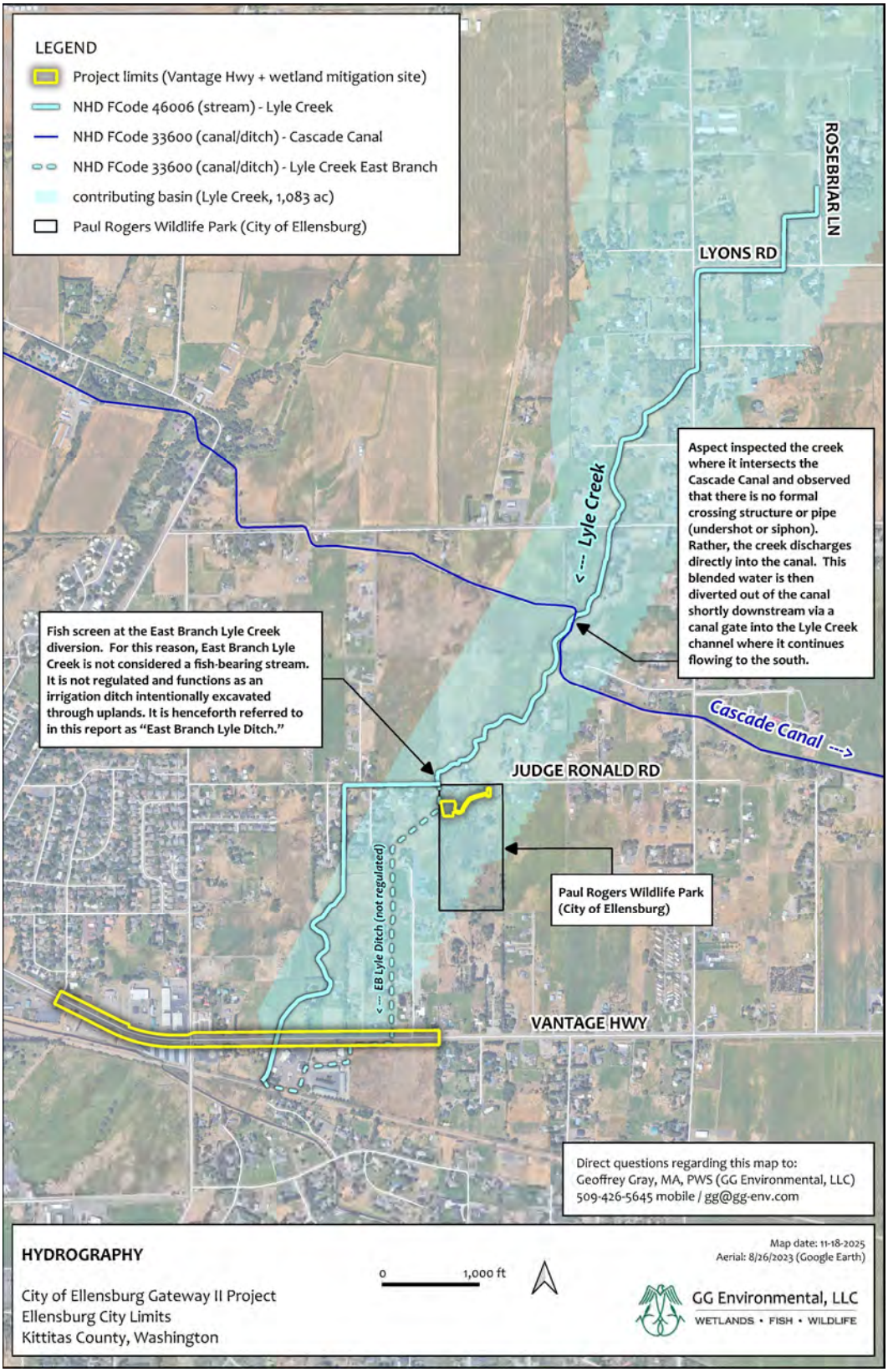
Lyle Creek is managed and maintained to function as an irrigation ditch/swale. It typically dries down at the end of the irrigation season and typically remains dry throughout the winter (dry from mid-October to early April). Woody vegetation along the creek banks is sparse to non-existent along most creek reaches due to irrigation management, livestock grazing, and encroachment by development. However, small patches of coyote willows and a variety of palustrine emergent hydrophytic species are rooted within the Project footprint, both upstream and downstream of Vantage Highway.

The creek is 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[1] stream (FCode 46006) (USGS 2025b) (**Figure 4**).

With a contributing basin of 1,083 ac (USGS 2025c), the upstream extent of the creek is first mapped two miles north of the Project area, at the intersection of Lyons Road and Rosebriar Lane. Field staff with Aspect Consulting, LLC (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.

[1] Since Lyle Creek near Vantage Highway dries down outside the irrigation season, it functions as an *intermittent* stream.

Figure 4. Hydrography Overview



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 WDFW compliant fish screen. For this reason, East Branch Lyle Creek is not considered a fish-bearing stream. It is not regulated and functions as an irrigation ditch intentionally excavated through uplands. It is henceforth referred to as *East Branch Lyle Ditch* in **Figure 4** and **Appendix A**.

The Department of Natural Resources classifies Lyle Creek as "Unknown" (DNR 2025). 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 2025a) or National Marine Fisheries Service (NMFS) (NOAA 2025).

The creek does not offer salmonid spawning habitat due to lack suitable spawning substrate, high water temperature, and inconsistent flow. However, according to WDFW (WDFW 2025a), it is possible, under ideal aquatic conditions, for juvenile fish to utilize the creek reach near Vantage Highway for rearing when it carries water during the irrigation season. Although unlikely, is also possible for Mid-Columbia Distinct Population Segment (DPS) steelhead to be present – listed as Threatened by NMFS.

5.1 Wetlands

Two wetland units (WU-1, WU-2) were delineated within the ROW of Vantage Highway in association with Lyle Creek. A third wetland unit (MS-2) was identified within the PRWP as suitable for offsite wetland mitigation (**Table 1**). Wetland photos are included in **Appendix A**.

Project impacts to wetlands and Lyle Creek, including proposed mitigation, are documented in a separate *Wetland and Stream Critical Areas Report, including Mitigation Plan*, dated 11-6-2025 (GG 2025) (**Appendix B**).

6 Project Effects on the Environment

This section discusses the potential physical, biological, and/or chemical effects of the Project on the environment, including direct effects, indirect effects, and the effects of interdependent or interrelated activities.

6.1 Direct Effects

Direct effects are caused by, or will result from and occur contemporaneous with, the proposed action. Potential direct effects expected to result from the Project are described below.

6.1.1 Terrestrial Noise

Noise upon Vantage Highway would be produced by various types of construction equipment comparable to linear transportation projects including, but not limited to, tracked excavator, backhoe, bulldozer, grader, dump truck, flatbed truck, crane, asphalt paving equipment, compactor, roller, generator, powered and pneumatic hand tools, and other incidental equipment. Due to the location of the Project along a major vehicular arterial within the

Table 1. Wetlands

Wetland Unit	Area [a]	Cowardin [b]	HGM [c]	Rating	Notes
[a] Delineated wetland areas adjusted to match extent of existing public road ROW; [b] Cowardin class: (PEM) Palustrine Scrub-Shrub; (PSS); [c] Hydrogeomorphic class: (RIV) Riverine					
WU-1	0.065 ac	PEM	RIV	III	Upstream of Vantage Hwy
WU-2	0.017 ac	PSS	RIV	II	Downstream of Vantage Hwy
Mitigation Site #2 (MS-2)	0.10 ac	PEM	DEP	III	Northwest corner of PRWP

developed City limits, elevated construction noise, above baseline, is conservatively estimated to be limited to ¼-mile from the Project footprint (**Figure 3**). Equipment staging and access would be upon existing transportation corridors and existing nearby staging/parking areas where activity would not produce noise above baseline. Wetland mitigation site construction would likely require, but not be limited to, an excavator, dump truck, pickup truck, and powered hand tools. Due to the location of the Project within a City park, adjacency to rural residential and Judge Ronald Road, and the relatively small construction scope, elevated construction noise, above baseline, is also estimated to project up to ¼-mile from the Project footprint.

6.1.2 Terrestrial Disturbance

Terrestrial disturbance to widen Vantage Highway, limited to the ROW, would include imported fill and wetland/riparian planting. Offsite wetland mitigation would include temporary vegetation disturbance for equipment access, excavation to enlarge existing mitigation wetland MS-2, and installation of plantings in MS-2.

6.1.3 Visual Disturbance

The Project would result in visual disturbance, caused by equipment operation and associated pedestrian activities. However, given the location of the Project footprint within the City limits and in the PRWP, the ambient visual disturbance resulting from vehicular traffic, commercial operations, farming operations, residential disturbance, and pedestrian activity, the impact of visual disturbance resulting from construction is expected to be insignificant.

6.1.4 Lyle Creek Channel Disturbance

Lyle Creek would be rerouted slightly within the ROW to match the extension of an existing concrete box culvert under Vantage Highway. This action would include fill below the OHWM (including the extended culvert) and new channel excavation, resulting in a net loss of 127 ft^2 of daylit channel (daylit channel loss would occur due to culvert extension but the culvert would remain fish passable and provide improved shading on the water). This action would take place outside the irrigation season when the creek is dry. Since the creek is occasionally dredged within the City ROW to maintain flow, the proposed channel reroute is not expected to result in

increased disturbance above baseline during construction or result in measurable sedimentation at *first flush* when irrigation flows resume the following spring. The channel disturbance footprint is small in the context of overall creek disturbance and the poor water quality baseline. Best Management Practices (BMPs), including stabilization of loose soils, would be implemented during construction. Furthermore, natural precipitation following construction (likely including snowpack) would saturate and compact any loose soils[2], minimizing the potential for sediment mobilization at *first flush*.[3] The creek channel is entirely vegetated with reed canarygrass and coyote willow immediately downstream of the culvert. This vegetation functions as a biofiltration swale that would filter out any minor sedimentation that might occur. The relocated channel substrate and water quality baseline would stabilize under irrigation flows before any fish could migrate upstream to the creek reach near Vantage Highway.

6.1.5 Lyle Creek Riparian Vegetation Disturbance

Native coyote willow (*Salix exigua*), capable of providing shade to the channel, would be removed from the ROW (total canopy removal ~550 ft^2). However, 2,888 ft^2 of native woody vegetation would be planted along the creek to offset this impact (also refer to **Section 6.1.5** below).

6.1.6 Lyle Creek Wetland disturbance

Two wetland units (WU-1, WU-2) are present within the ROW of Vantage Highway in association with Lyle Creek. These wetlands would be subject to both temporary disturbance (2,888 ft^2) and permanent disturbance (0.015 ac). Temporary wetland impacts would be minimized onsite through vegetation trimming (not grubbing) and restorative planting (2,888 ft^2) of native plant species within the ROW. This action is proposed to concurrently compensate for net loss of Lyle Creek channel (see **Sections 6.1.3**) and associated riparian vegetation impacts (see **Section 6.1.4**). A third wetland unit (MS-2) was identified within the PRWP as suitable for offsite wetland mitigation. Mitigation wetland MS-2 would be temporarily impacted during mitigation construction but result in additional wetland area and enhanced wetland functions.

6.2 Indirect Effects

Indirect effects are caused by, or would result from, the proposed action and are later in time, but are still reasonably certain to occur. The Project is intended to improve safety on Vantage Highway, better collect and treat stormwater, reduce pollution entering Lyle Creek, add pedestrian/bicycle pathways to enhance community accessibility, and enlarge/enhance an existing wetland within the PRWP. The Project is not designed to facilitate future development or urban growth. As such, no significant indirect effects resulting from the Project are anticipated.

6.3 Effects of Interrelated and Interdependent Actions

An *interrelated* action is an action that is part of a larger action and that depends on the larger action for its justification, while an *interdependent* action is an action that has no independent utility apart from the proposed action. Since construction work is independent of any other action, no interrelated or interdependent effects are anticipated.

[2] Natural precipitation does not typically result in channel flow.

[3] The creek reach near Vantage Hwy would receive dislodged sediment and pollutants washed downstream from the Cascade Canal at *first flush*, serving to mask any potential contribution to the sediment baseline within the Project's channel footprint.

7 Avoidance and Minimization Measures

The Project would incorporate the following measures to avoid or minimize potential impacts.

7.1 Timing of Work

Work would be timed to occur outside the irrigation season when both Lyle Creek and offsite mitigation wetland MS-2 are dry[4].

7.2 General Minimization Measures

1. Riparian vegetation along Lyle Creek and existing vegetation within the PRWP would be avoided to the greatest extent practicable. If avoidance is not possible, vegetation would be trimmed, rather than grubbed. Any vegetation to be grubbed would be compensated via replacement planting.
2. Equipment and materials would be staged upon existing paved or graveled areas or upon land already environmentally cleared for such use.
3. BMPs would be implemented to prevent pollutants and sediment from entering Lyle Creek or Wetland MS-2 following an approved Construction Stormwater Pollution Prevention Plan (SWPP), Project Spill Prevention, Control, and Countermeasures (SPCC) Plan, and other permit requirements.

8 Occurrence of Federally Listed and Proposed Species in the Project Action Area

All ESA-listed species and Designated Critical Habitats (DCH) with the potential to occur in the general vicinity were obtained from USFWS (USFWS 2025b)[5] and NMFS (NOAA 2025) (**Table 2**). However, only those species or DCH noted in **bold font** are documented, or reasonably certain to occur, within the PAA.

The remaining species (or DCH) would not be affected by the Project due to lack of suitable habitat or lack of designation within the PAA. As such, they are not addressed further in this report.

8.1 Species and Critical Habitats in the PAA

The species and critical habitats discussed in this section are those documented, or demonstrate the reasonable potential to occur, within the PAA.

8.1.1 MCR DPS Steelhead

MCR DPS steelhead was listed under the ESA as Threatened on March 25, 1999 (64 FR 14517) and its status was reaffirmed on June 28, 2005 (70 FR 37160) and August 15, 2011 (76 FR 50448). NMFS

[4] Offsite mitigation wetland MS-2 is supported primarily by an elevated groundwater table raised during the irrigation season. Outside the irrigation season, the wetland typically dries down.

[5] Official USFWS ESA list obtained online at https://ipac.ecosphere.fws.gov/. PROJECT CODE: 2025-0074016 (11/12/2025 20:43:11 UTC)

has defined a steelhead DPS to include only the anadromous members of the species (70 FR 67130)[6].

Most Yakima Basin steelhead are tributary spawners, although the distribution of redds throughout the basin is highly variable from year to year. Spawning locations include intermittent streams, mainstems, and side-channels of larger rivers, as well as perennial streams up to relatively steep gradients. Virtually any reach with at least a pocket of gravel at suitable depths and velocities can be used by steelhead spawners.

Table 2. ESA-listed Species and Designated Critical Habitats Query for the PAA

Common Name (*Scientific Name*) - Status	**In PAA?**
bull trout (*Salvelinus confluentus*) – Lower 48 states coterminus – Threatened	No. Bull trout are not documented in Lyle Creek nor does the creek offer suitable aquatic habitat (WDFW 2025a.
Steelhead (*Oncorhynchus mykiss*) – Mid-Columbia DPS[7] – Threatened	**Unlikely, but juveniles can possibly utilize the creek for rearing (WDFW 2025a) under ideal aquatic conditions during the irrigation season.**
gray wolf (*Canis lupus*) – Endangered	No. No packs, den sites, or rendezvous areas are documented in the PAA (WDFW 2025c).
yellow-billed cuckoo (*Coccyzus americanus*) – Western U.S. DPS - Threatened	No. Cuckoos are extremely rare in Washington State with only 20 sightings since the 1950s (Wiles and Kalasz 2017, WDFW 2025d). No suitable habitat (defined as large, continuous riparian zones with cottonwoods and willows) is present within the PAA.
Designated Critical Habitat (DCH)	
N/A	No. No DCH designated within the PAA.

The current distribution of Yakima Basin steelhead is much more restricted and spatially variable than it was historically. Only six percent of total spawning in the basin occurs in the upper Yakima (the Yakima mainstem and tributaries upstream of the Naches confluence) (Hockersmith et al. 1995 as cited in YBFWRB 2009).

All Yakima Basin steelhead are classified as summer steelhead based on the timing of their return from the ocean to the Columbia River (YBFWRB 2009). Spawning in the Upper Yakima mainstem above the Yakima Canyon is from mid-April to late May with a peak in early May. Fry emergence is from mid-June through late July (Haring 2001). Juvenile steelhead spend from one to three years in fresh water before migrating to the Pacific Ocean. Juveniles use tributary and mainstem reaches throughout the Yakima Basin as rearing habitat, until they begin to smolt and leave the

[6] Cited from NMFS BO No. WCR-2015-3055 (October 19, 2016).

[7] Distinct Population Segment

basin. Some juveniles leave their natal areas and may spend considerable time from fall to spring rearing in areas that may have been inhospitable in the summer (YBFWRB 2009).

It is unlikely that steelhead are present in Lyle Creek when flowing given: (a) the small size of the creek, (b) warm shallow water with little shading, (c) muddy substrate, (d) poor water quality due to livestock access and trampling, (e) flood irrigation tailwater, and (f) annual dry-down at the end of the irrigation season that prevents flows during cooler months (more ideal water temperatures). However, WDFW (2025a) does consider it to be possible, under ideal conditions, for fish (including steelhead) to access Lyle Creek during the irrigation season, in which case the steelhead life stage potentially present would be juveniles that could utilize the creek for rearing.

9 Impacts to Listed Species and Critical Habitats

9.1 MCR DPS Steelhead

Since the Project is scheduled to work in the creek when dry, no steelhead would be present during construction. Furthermore, the Project would not result in any alteration of Lyle Creek that would measurably affect any steelhead that might migrate into the creek reach once irrigation flows begin post-construction. As a result, **no impact** to steelhead is anticipated.

10 Effect Determinations

10.1 Steelhead

It is determined that the Project would result in **no effect** to steelhead because:

- WDFW (2025a) confirms that steelhead is unlikely to be present in the Lyle Creek reach near Vantage Highway;
- Lyle Creek would be dry during construction, precluding any possibility of affecting fish during construction; and
- The Project would not result in any alteration of Lyle Creek that would, during *first flush*, measurably affect any steelhead that might migrate into the creek after irrigation flows begin, post-construction.

10.2 Essential Fish Habitat

Federal agencies are required, under 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR 600 Subpart K), to consult with NMFS regarding actions that are authorized, funded, or undertaken by that agency that may adversely affect EFH. The MSA (3) defines EFH as "those waters and substrate necessary to fish for spawning breeding, feeding, or growth to maturity." If an action would adversely affect EFH, NMFS is required to provide the Federal action agency with EFH conservation recommendations (MSA 305(b)(4)(A)).

Although unlikely, Pacific salmon that might, under ideal aquatic conditions, access Lyle Creek include juvenile Chinook (*O. tshawytscha*) and coho (*O. kisutch*) salmon (WDFW 2025a). However,

given the poor aquatic habitat conditions in the creek (shallow depth, elevated temperature, poor water quality), lack of spawning substrate, the small Project disturbance footprint below the OHWM, BMPs implemented during construction, and restorative woody riparian plantings, the Project would result in **no adverse effect to EFH**.

11 Cumulative Effects

Cumulative effects are "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation" (50 CFR 402.02).

It is the responsibility of USFWS and NMFS to review all federal actions and the cumulative effects of all state and private actions when making a jeopardy/no jeopardy call on a species and preparing their biological opinions. The conclusions of this BA are based on direct effects, indirect effects, as well as interrelated and interdependent activities, but not cumulative effects. The possible cumulative effects in this section are provided for federal agency information only. Cumulative effects that reduce the capacity of listed species to meet their biological requirements in the action area increase the risk that the effects of the proposed action on the species or its habitat will result in jeopardy.

No other state or private actions are known that may contribute toward cumulative effect.

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Appendix A – Site Photos

Photo 1. Lyle Creek north of Vantage Highway (view toward N, 4-7-2022).
Note dredged channel and lack of gravels.

Photo 2. Lyle Creek south of Vantage Highway (view toward S, 4-7-2022).
Note vegetation across the channel profile.

Photo 3. Typical ROW (east of Cowboy Lane) (view toward W, 4-7-2022)

Photo 4. Typical ROW (east of N Pfenning Rd) (view toward W, 4-7-2022)

Photo 5. Typical irrigation ditch maintenance ("East Branch Lyle Ditch") (view toward N, 4-7-2022). ***Note ash that would be captured during first flush.***

Photo 6. Wetland mitigation/enhancement site #2 at PRWP (view toward west, 4-7-2022).

Appendix B – Project Design Drawings and Wetland/Stream Mitigation Plan

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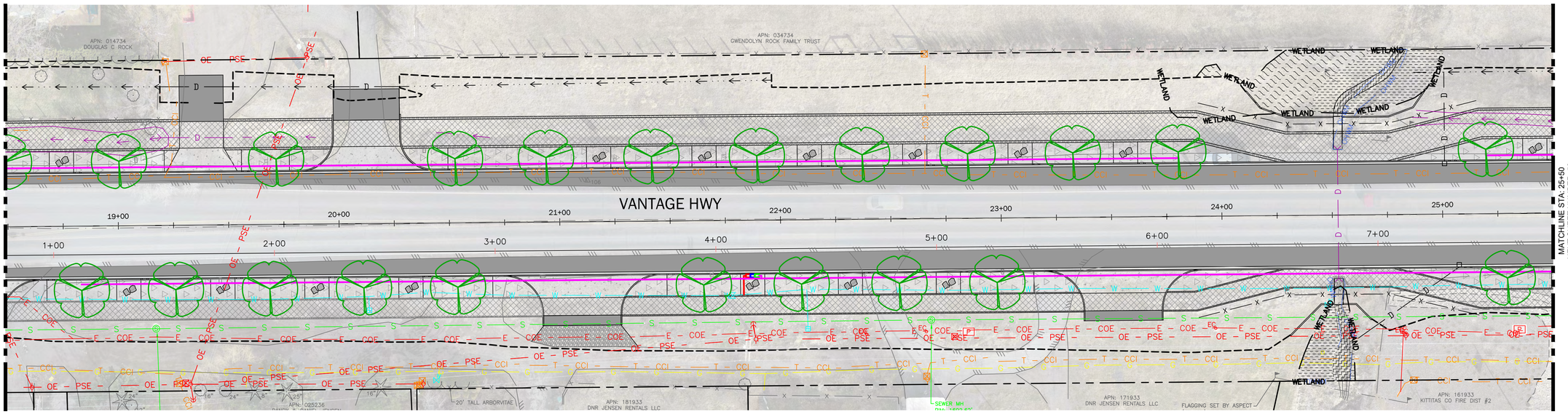


LANDSCAPING PLAN
SCALE: 1" = 25'

0 25 50 Feet

NEW STREET TREE, MAX. HEIGHT 25'

NEW INFILTRATION SWALE

STREAMBED (PIT RUN)

PLANTING ZONE A

PLANTING ZONE B

RELOCATED DITCH/CREEK

NEW 1" IRRIGATION SERVICE LINE

NEW IRRIGATION SLEEVE & DRIP LINE

GRADING LIMITS

NEW 5/8" BACKFLOW & HANDBOX

NEW 5/8" WATER METER & HANDBOX (BY OWNER)

NEW IRRIGATION VALVE BOX

LANDSCAPE BOULDERS

PLANT SCHEDULE - LYLE CREEK

SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	ZONE A QTY	ZONE B QTY
RIBES AUREUM	GOLDEN CURRANT	5 GAL	10 FT	0	3
CORNUS SERICEA	RED OSIER DOGWOOD	5 GAL	10 FT	0	3
SAMBUCUS NIGRA	BLUE ELDERBERRY	5 GAL	10 FT	0	3
SALIX EXIGUA	COYOTE WILLOW	LIVE STAKE	5 FT	61	10

GENERAL NOTES

1. DRAWING IS FOR INFORMATIONAL PURPOSES. ACTUAL LOCATIONS AND FACILITIES NEEDED FOR THE IRRIGATION SYSTEM MAY VARY.
2. CONTRACTOR TO INSTALL A COMPLETE IRRIGATION SYSTEM INCLUDING BUT NOT LIMITED TO: BATTERY OPERATED TIMING VALVES, SERVICE LINES, SLEEVES, DRIP OR SPRAY TERMINATIONS, VALVE BOXES, AND BLOW-OFFS. WATER MAIN HOT TAP BY OWNER.
3. TREES TO BE INSTALLED PER COE DETAIL ST-10. TREES SHALL BE MALE GOLDEN COLONNADE GINKGO (GINKGO BILOBA), 1.5" TO 2" CALIPER, OR APPROVED EQUIVALENT.
4. MINIMUM SLEEVE COVER = 12 IN.
5. IRRIGATION SERVICES IN EACH BIOINFILTRATION SWALE SHALL BE INSTALLED AT THE BOTTOM OF THE CLEAN FRACTURED ROCK LAYER.
6. FILL SLOPES WIDER THAN 1.5 FEET SHALL BE HYDROSEEDED.
7. INSTALL LANDSCAPE BOULDERS AT LOCATIONS SHOWN AND PER DETAIL 3, SHEET 56.

DRAFT
90% DESIGN
NOT FOR CONSTRUCTION

APPR.	DATE	DESCRIPTION	REV.
-	-	-	-

REVISED BY: -
DRAWN BY: CP/CMV
DESIGNED BY: EBP/JHK
PROJECT NUMBER: AS190390A
REVISION: 0
DATE: Oct-25

Aspect CONSULTING

LANDSCAPING PLAN IV

GATEWAY TO THE CITY OF ELLENSBURG
STORMWATER LID RETROFIT PROJECT II
CITY OF ELLENSBURG, WA

SHEET REFERENCE NUMBER:
52

SHEET **52** *OF* **56**

CONSTRUCTION NOTES

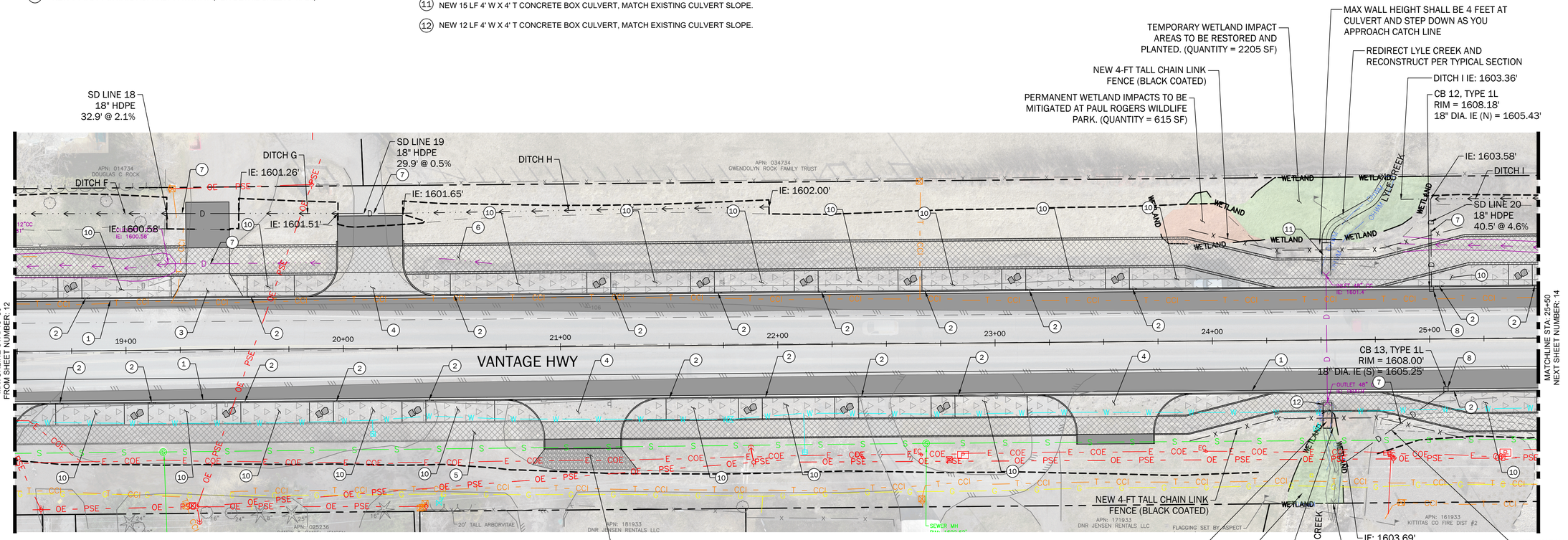
1. NEW TYPE A CONCRETE CURB AND GUTTER (PER COE DETAIL SW-51).
2. CURB INLET (PER COE DETAIL SD-27).
3. NEW 6 INCH CONCRETE DRIVEWAY (PER COE DETAIL SW-24) WITH ASPHALT APRON TRANSITION.
4. NEW 6 INCH CONCRETE COMMERCIAL DRIVEWAY (PER COE DETAIL SW-25A) WITH ASPHALT APRON TRANSITION.
5. NEW 8 FOOT POROUS 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
- RELOCATED DITCH
- NEW STORM PIPE
- GRADING LIMITS
- NEW ASPHALT
- NEW GRAVEL
- NEW POROUS ASPHALT
- NEW INFILTRATION SWALE
- NEW CONCRETE
- NEW CATCH BASIN TYPE 1L
- NEW CATCH BASIN TYPE 2
- PERMANENT IMPACT, CRITICAL AREA
- TEMPORARY IMPACT, CRITICAL AREA
- WETLAND BOUNDARY

DRAINAGE PLAN
SCALE: 1" = 25'

0 25 50 Feet

DRAFT
90% DESIGN
NOT FOR CONSTRUCTION

REV.	DESCRIPTION	DATE	APPR.
-	-	-	-

REVISED BY: -
DRAWN BY: CP/CMV
DESIGNED BY: EBP/JHK
PROJECT NUMBER: AS190390A
REVISION: 0
DATE: Oct-25

Aspect CONSULTING

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**

CAD Path: C:_GEO-ACC\ACCDocs\Geosyntec\CITY OF ELLENSBURG_GATEWAY II\Project Files\CADD\01_SW LID RETROFIT PROJ II\DWGS\SHEETS\AS190390A.01-C03.dwg Layout: 13 PAVING & DRAINAGE PLAN IV || Date Saved: 10/9/2025 9:00:31 AM || User: jduran

WETLAND AND STREAM CRITICAL AREAS REPORT *including* MITIGATION PLAN

Gateway II Project
City of Ellensburg
Kittitas County, Washington

Prepared for:

Aspect Consulting, LLC
1106 N 35th Avenue, Yakima, WA 98902

Prepared by:

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

November 6, 2025

GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

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 ft^2) 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 ft^2) and permanent (0.003 ac, 127 ft^2).

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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Figures

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Appendices

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).

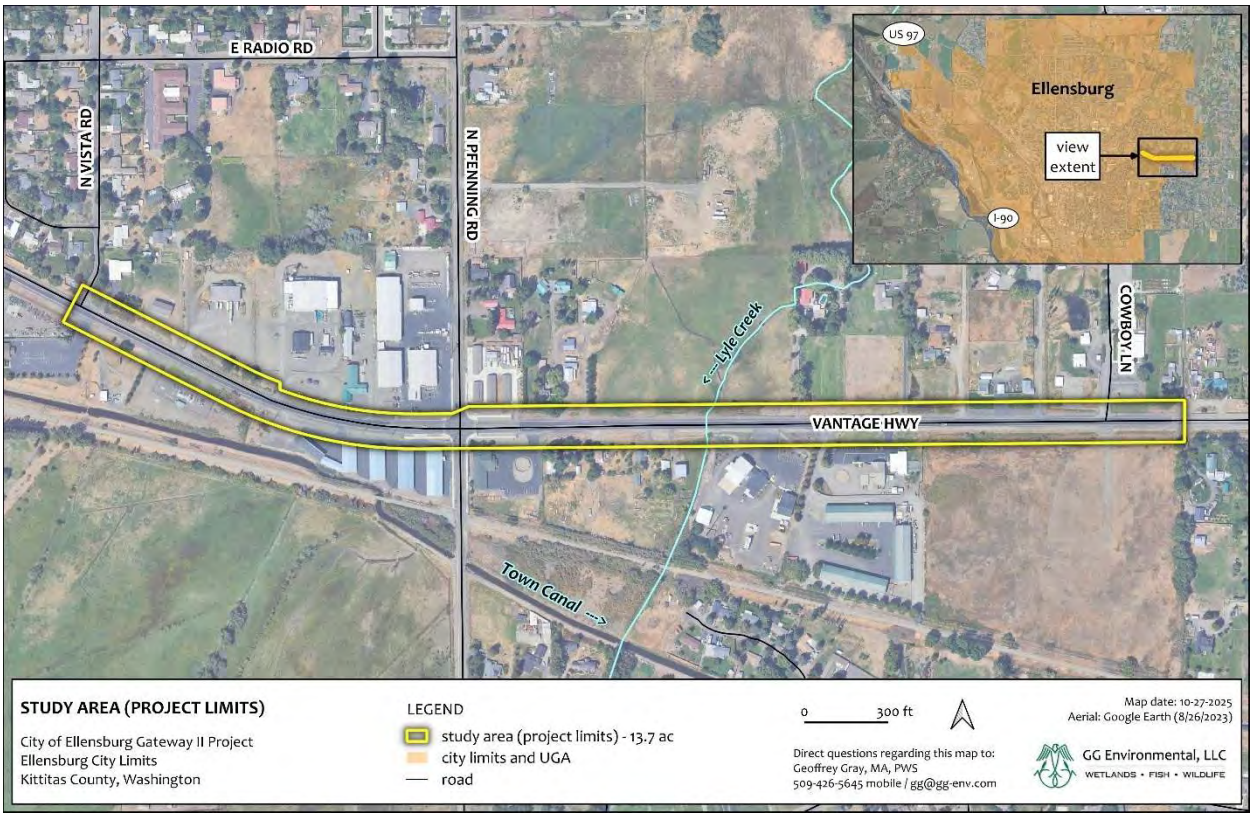
3. Methods

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.

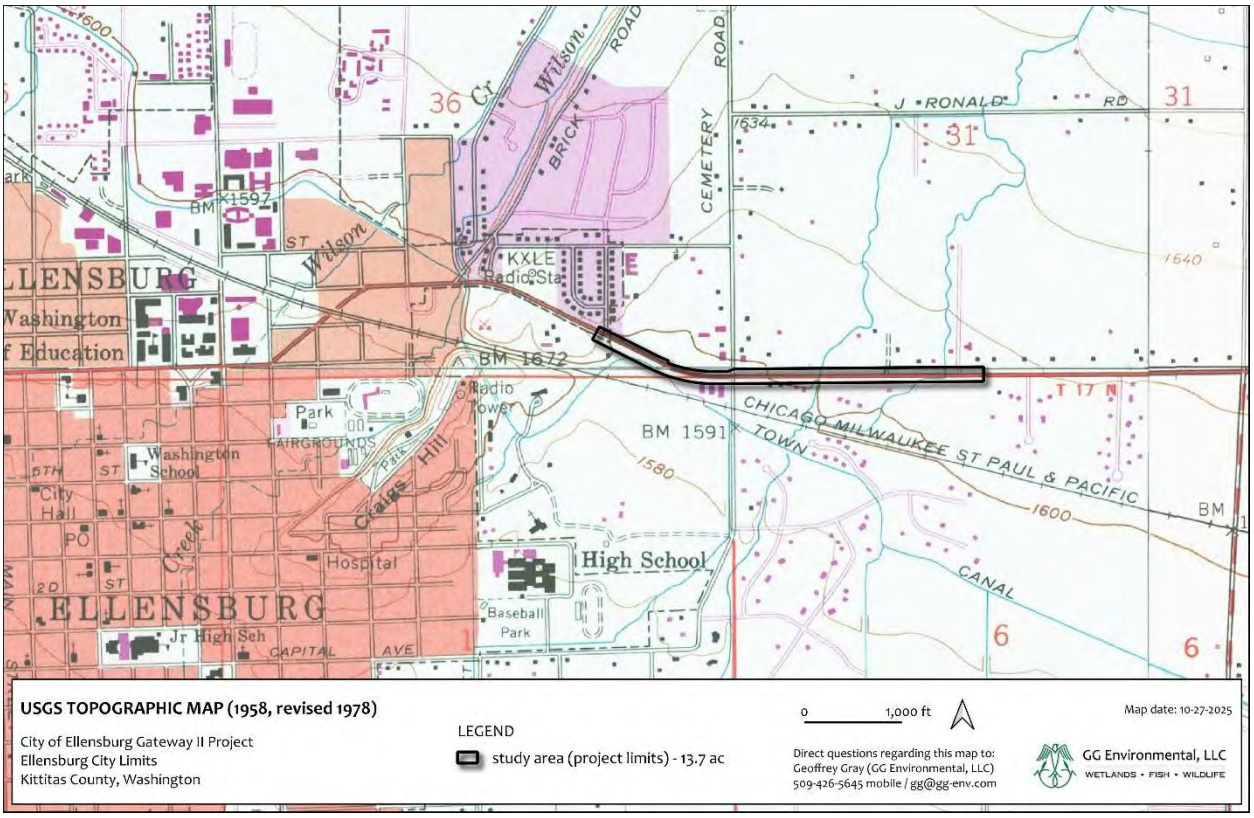
Figure 1. Study Area (Project Limits)



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$_{TM}$ 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 Areas[3] 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 ft[5] 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.

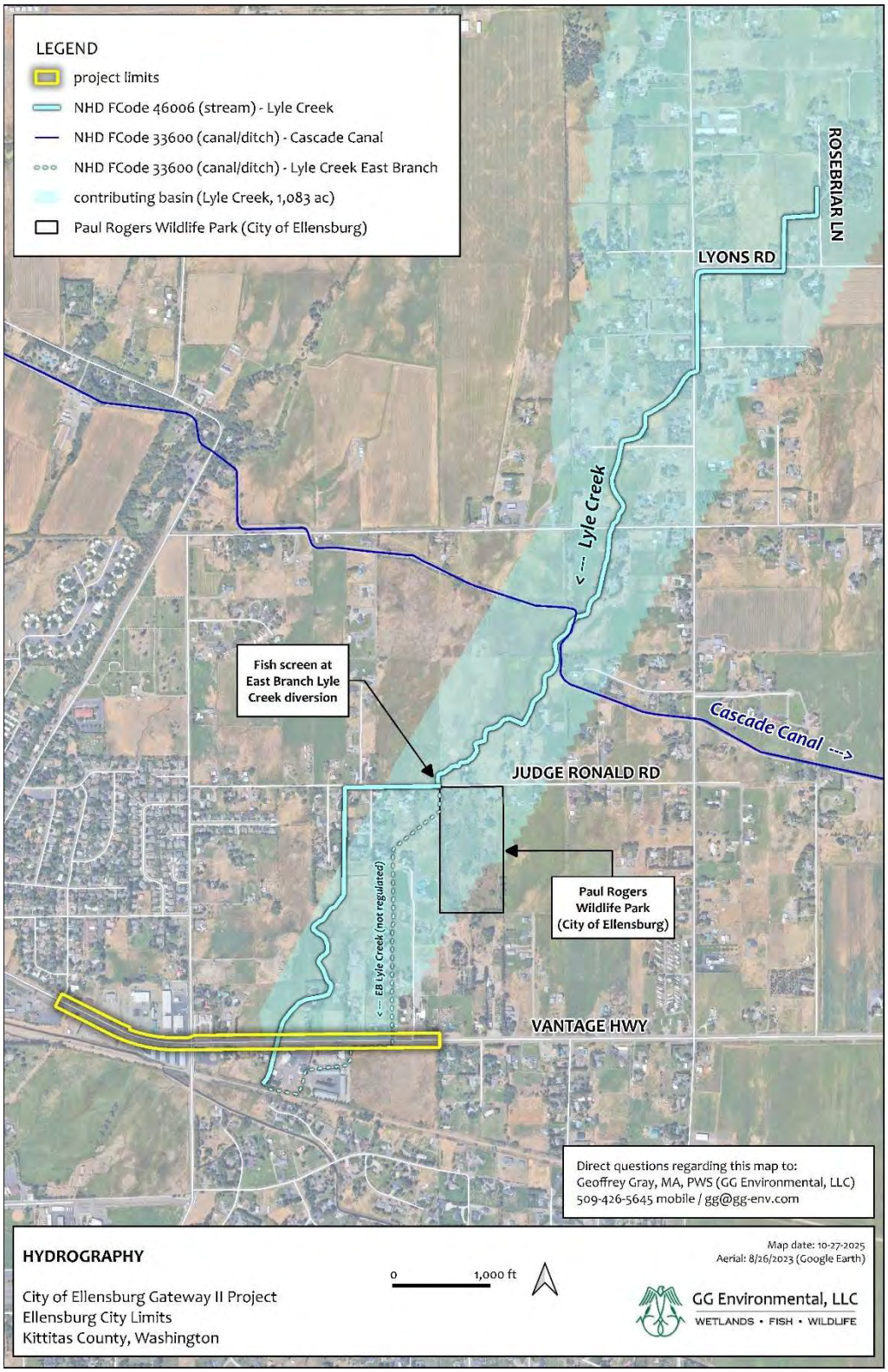
The creek was not illustrated on USGS topographic maps for 1897 and 1902 but was first included in the 1958 USGS topographic map as a perennial stream (USGS 2025a). The National Hydrography Dataset (NHD) also maps the creek as a perennial stream (FCode 46006) (USGS 2025b) (**Figure 3**).

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 screen[6].

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

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 ft²	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 ft²	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		
	**Latitude** **Longitude** **Elevation**	46°59'59.16" N 120°30'53.19" W 1,606 ft
	Lead Agency	City of Ellensburg
	Ecology Rating	III
	Area	0.068 ac (2,962 ft²)
	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), *Carex* sp (likely *pellita*) (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 ft²)
	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	
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.	

[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)

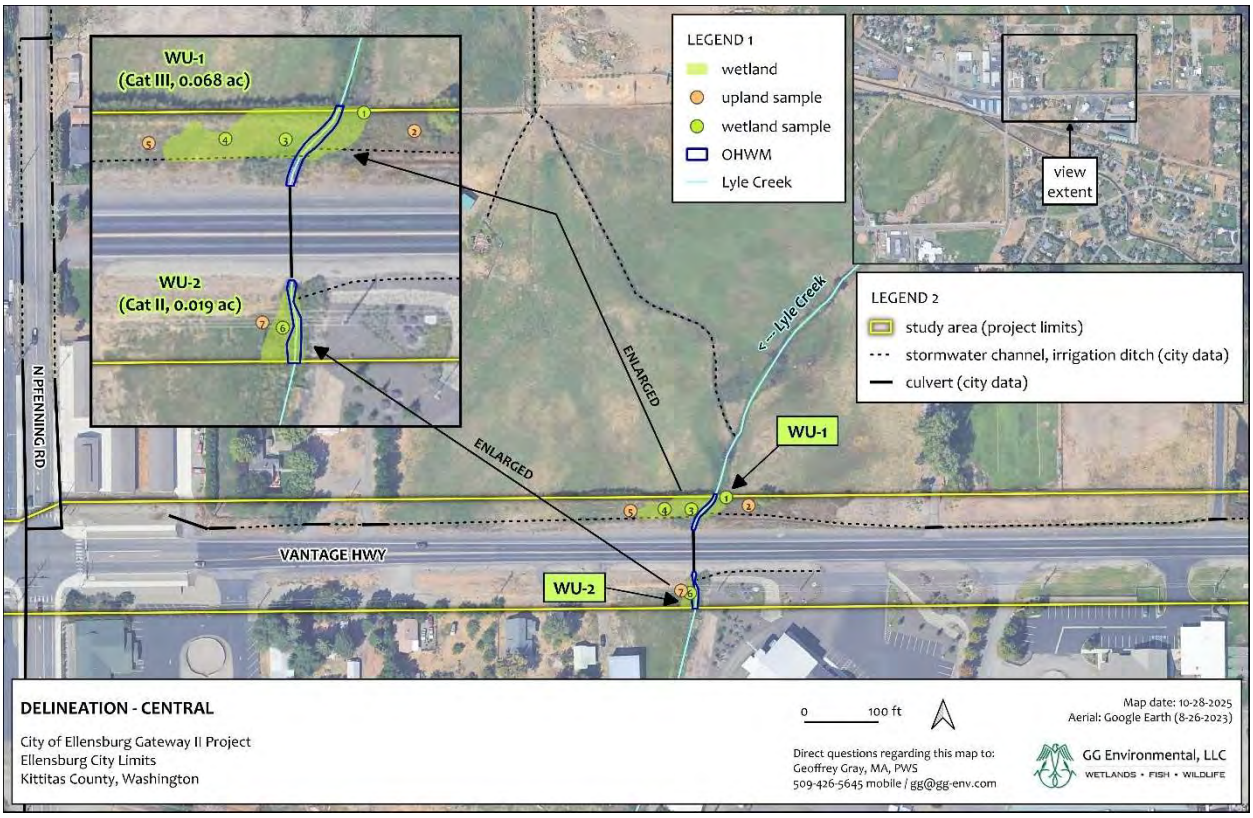
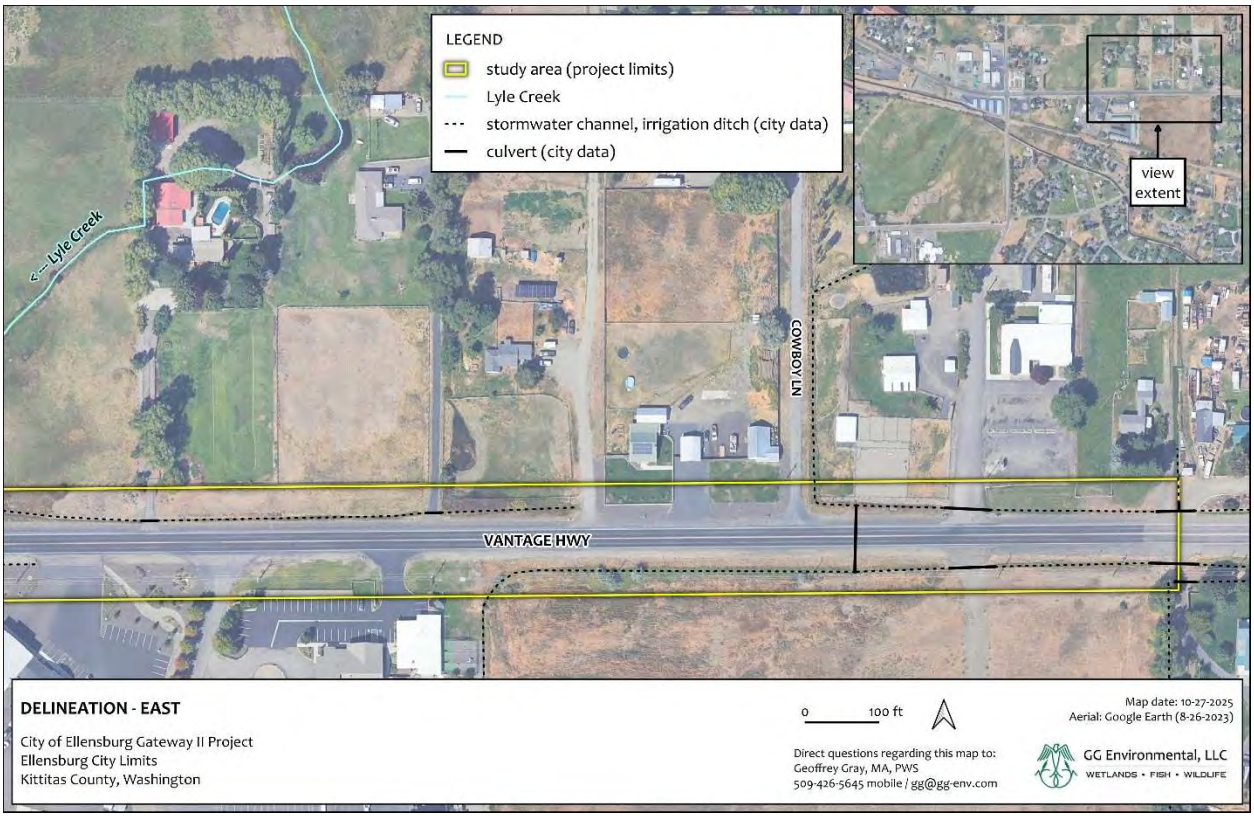


Figure 6. Wetlands and Stream Delineation Map (East)



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 ft²)	0.014 ac (615 ft²)	0.051 ac (2,205 ft²)
WU-2	0.019 ac (828 ft²)	0.001 ac (59 ft²)	0.016 ac (683 ft²)
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 streambed[10] (**Table 7**).

Table 7. Impacts to Lyle Creek

Stream ID	Stream Impacts below the OHWM	
	Permanent	Temporary
Lyle Creek	0.003 ac (127 ft²)	0.010 ac (417 ft²)

[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 ft^2) 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 (*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 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 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 offsite wetland 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 ft^2) 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 weeds[12]) 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 OHWM[14], 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 weeds[15]) 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.

12. References

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Appendix A. Background Information

Appendix A includes the following sub-appendices:

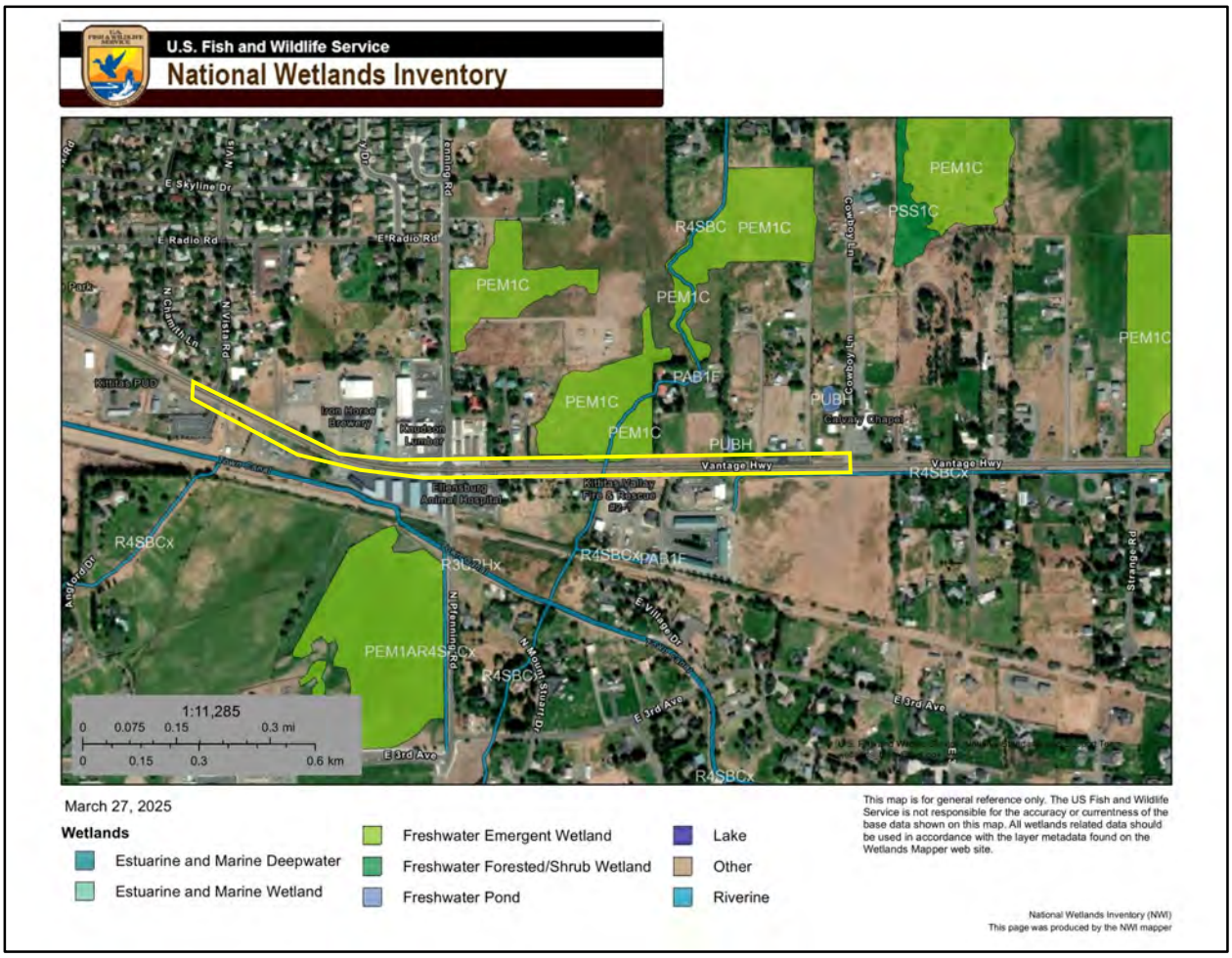
A-1 USFWS National Wetlands Inventory

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

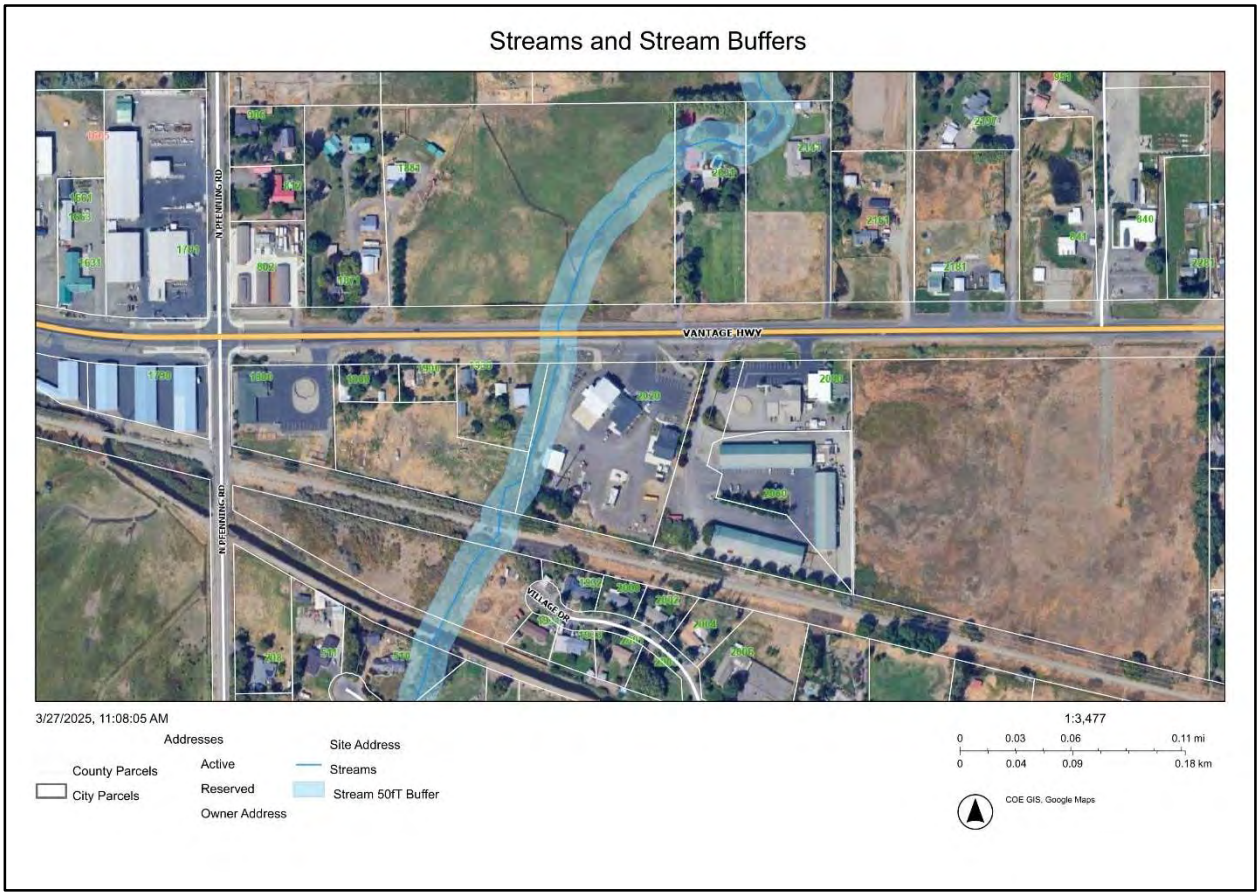
Map Scale: 1:7,290 if printed on A landscape (11" x 8.5") sheet.
Meters 0 100 200 400 600
Feet 0 350 700 1400 2100
Map projection: Web Mercator Corner coordinates: WGS84

Natural Resources Conservation Service | Web Soil Survey, National Cooperative Soil Survey | 3/27/2025 Page 1 of 3

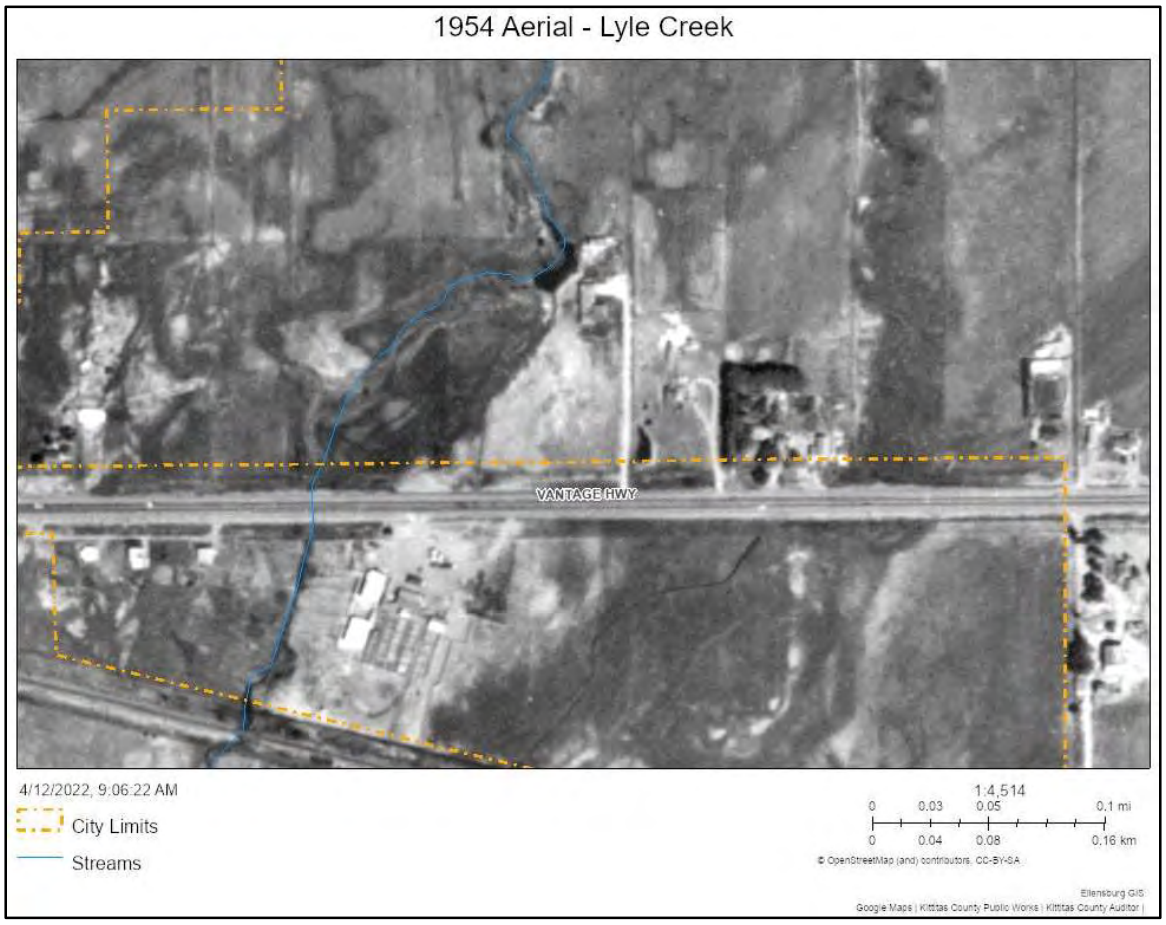
Map Unit Legend

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 Aerial[17]



[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 station[18] 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.

		Long-term rainfall records[1] (in)							
	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
1st prior month	Mar	0.36	0.76	0.93	0.44	Normal	2	3	6
2nd prior month	Feb	0.59	0.91	1.10	Trace	Dry	1	2	2
3rd 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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U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 20x20)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rosa woodsii*	5	Yes	FACU
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Carex pellita*	85	Yes	OBL
2. *Typha latifolia*	5	No	OBL
3. *Juncus balticus*	3	No	FACW
4. *Iris pseudacorus*	2	No	OBL
5.			
6.			
7.			
8.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	92	x 1 =	92
FACW species	3	x 2 =	6
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	100 (A)		118 (B)
Prevalence Index = B/A =			1.18

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6	**Wetland Hydrology Present?**	**Yes** X **No** ___

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

Remarks:
Saturated although no surface flow in the creek.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
City right of way north of Vantage Hwy.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rosa woodsii*	90	Yes	FACU
2.			
3.			
4.			
5.			
	90 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Tanacetum vulgare*	10	Yes	FACU
2. *Cirsium arvense*	1	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	11 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 89 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	101	x 4 =	404
UPL species	0	x 5 =	0
Column Totals:	101 (A)		404 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Loamy/Clayey	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ 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** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

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: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Salix exigua*	1	No	FACW
2.			
3.			
4.			
5.			
	1 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Phalaris arundinacea*	99	Yes	FACW
2. *Juncus balticus*	1	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	101	x 2 =	202
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	101 (A)		202 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	
8-12	10YR 4/1	98	7.5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

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: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Salix exigua*	10	Yes	FACW
2.			
3.			
4.			
5.			
	10 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Carex pellita*	20	Yes	OBL
2. *Phalaris arundinacea*	20	Yes	FACW
3. *Juncus balticus*	1	No	FACW
4. Unknown pasture grass	50	Yes	FAC
5.			
6.			
7.			
8.			
	91 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 9 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	31	x 2 =	62
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	101 (A)		232 (B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
City right of way north of Vantage Hwy.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Salix exigua*	2	No	FACW
2.			
3.			
4.			
5.			
	2 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Phalaris arundinacea*	40	Yes	FACW
2. Unknown pasture grass	60	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	42	x 2 =	84
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	102 (A)		264 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:
X 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.

Hydrophytic Vegetation Present? Yes X No ____

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Loamy/Clayey	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
Right streambank of Lyle Creek, south of Vantage Hwy.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Salix exigua*	80	Yes	FACW
2.			
3.			
4.			
5.			
	80 =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Iris pseudacorus*	10	No	OBL
2. *Phalaris arundinacea*	90	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	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:

X Dominance Test is >50%

X 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.

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20x20)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5x5)			
1. *Lawn grass*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	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:
X 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.

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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

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

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
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:		0
Depressions cover > $^1/_3$ area of wetland	points = 6	
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):		2
Forest or shrub > $^2/_3$ the area of the wetland	points = 10	
☐ Forest or shrub $^1/_3$ – $^2/_3$ area of the wetland	points = 5	
☐ 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** ☐ **- 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 **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion		Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*		
If the ratio is more than 2	points = 10	1
If the ratio is 1 - 2	points = 8	
If the ratio is ½ - < 1	points = 4	
If the ratio is ¼ - < ½	points = 2	
If the ratio is < ¼	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*		
Forest or shrub for 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	Add the points in the boxes above	**3**

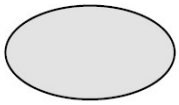
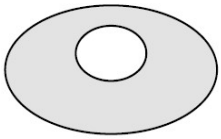
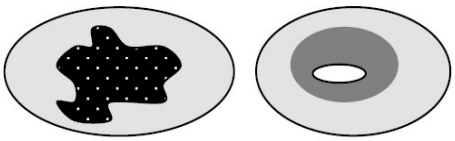
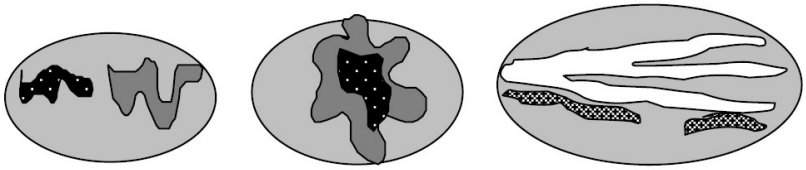
Rating of Site Potential If score is: ☐ **12 - 16 = H** ☐ **- 11 = M** ☑ **) - 5 = L** *Record the rating on the first page*

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	Add the points in the boxes above	**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? *Choose the description that best fits the site.*		
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?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	**0**

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

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☑ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☐ Scrub-shrub (areas where shrubs have > 30% cover) ☐ 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? *Answer YES for Lake Fringe wetlands.* ☐ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # 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. *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	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.* ☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☑ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☐ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	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:* 0 % undisturbed habitat + (16 % moderate & low intensity land uses / 2) = 8% > 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:* 0 % undisturbed habitat + (23 % moderate & low intensity land uses / 2) = 11.5% 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	-2
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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☑ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2

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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☐ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☐ Yes - Go to **SC 5.1** ☑ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☐ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☐ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

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

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

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 artifically 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 **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
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:		0
Depressions cover > $^1/_3$ area of wetland	points = 6	
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):		10
Forest or shrub > $^2/_3$ the area of the wetland	points = 10	
☐ Forest or shrub $^1/_3$ – $^2/_3$ area of the wetland	points = 5	
☐ 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** ☑ **6 - 11 = M** ☐ **0 - 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** ☐ **0 = 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** ☐ **0 = L** *Record the rating on the first page*

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion		Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*		
If the ratio is more than 2	points = 10	8
If the ratio is 1 - 2	points = 8	
If the ratio is ½ - < 1	points = 4	
If the ratio is ¼ - < ½	points = 2	
If the ratio is < ¼	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*		
Forest or shrub for 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	Add the points in the boxes above	**14**

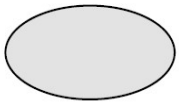
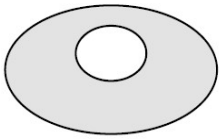
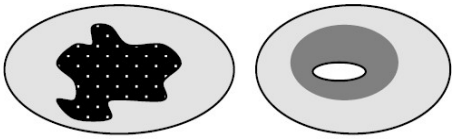
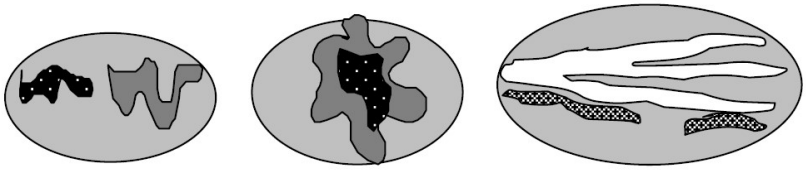
Rating of Site Potential If score is: ☑ **12 - 16 = H** ☐ **- 11 = M** ☐ **) - 5 = L** *Record the rating on the first page*

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	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	Add the points in the boxes above	**3**

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? *Choose the description that best fits the site.*		
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?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	**0**

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

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☐ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☑ Scrub-shrub (areas where shrubs have > 30% cover) ☐ 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? *Answer YES for Lake Fringe wetlands.* ☐ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # of species _____ Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0	0
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. *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	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.* ☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☑ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☐ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	1
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 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:* 0 % undisturbed habitat + (23 % moderate & low intensity land uses / 2) = 11.5% 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	-2
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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☑ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2

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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☐ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☐ Yes - Go to **SC 5.1** ☑ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☐ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☐ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

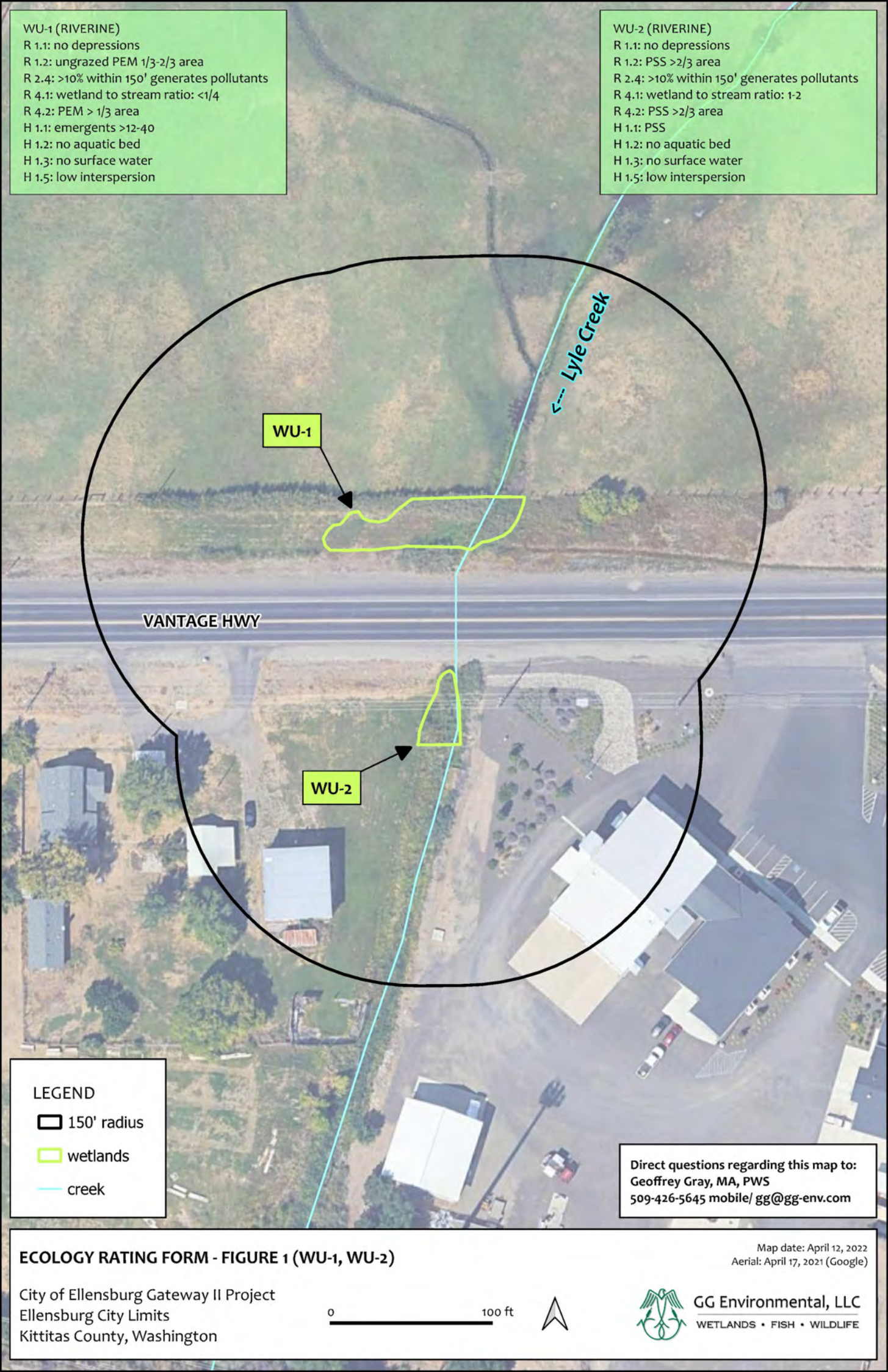
Appendix B: WDFW Priority Habitats in Eastern Washington

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.



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

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

0 100 ft

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

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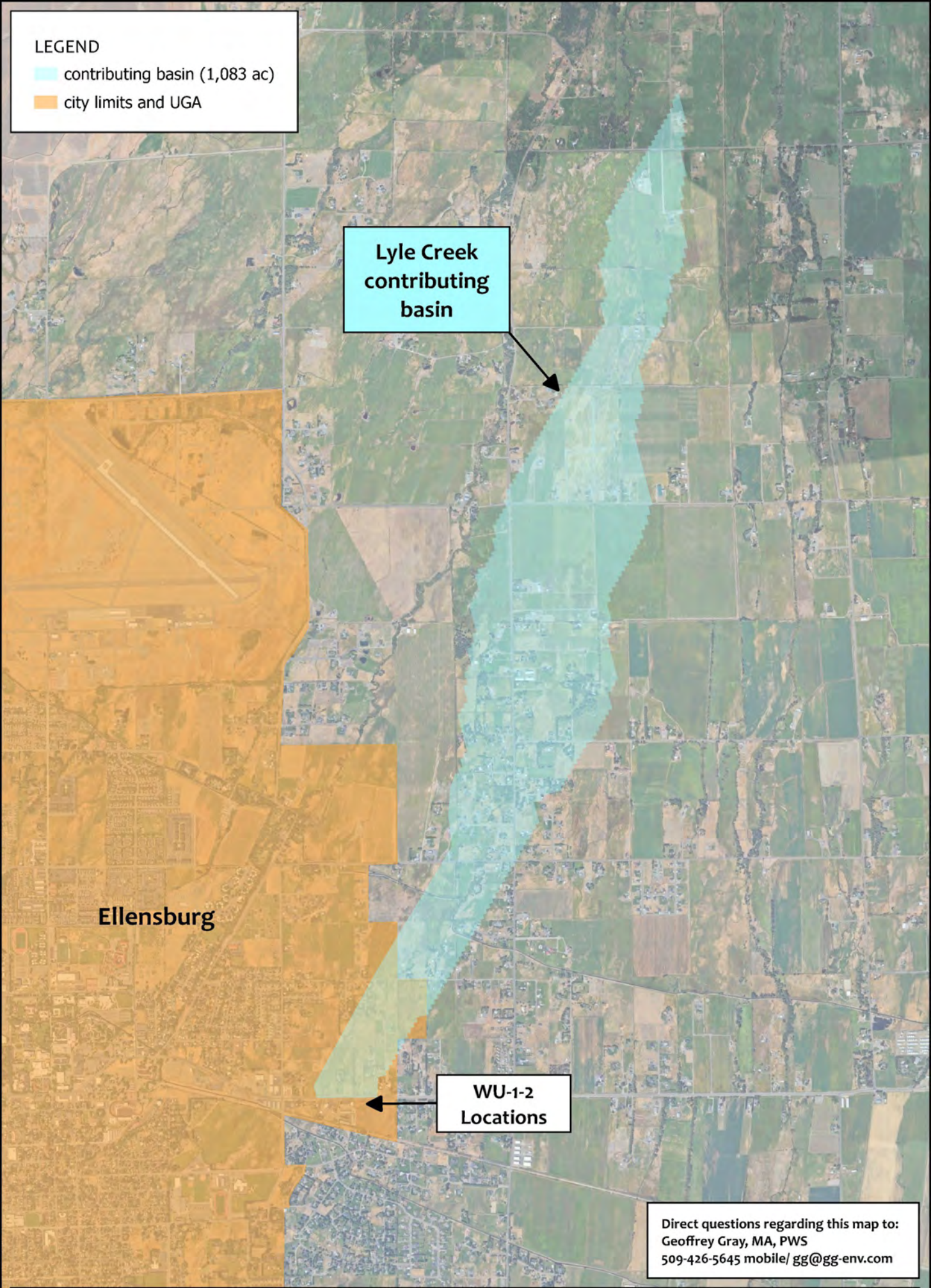

ECOLOGY RATING FORM - FIGURE 2

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)

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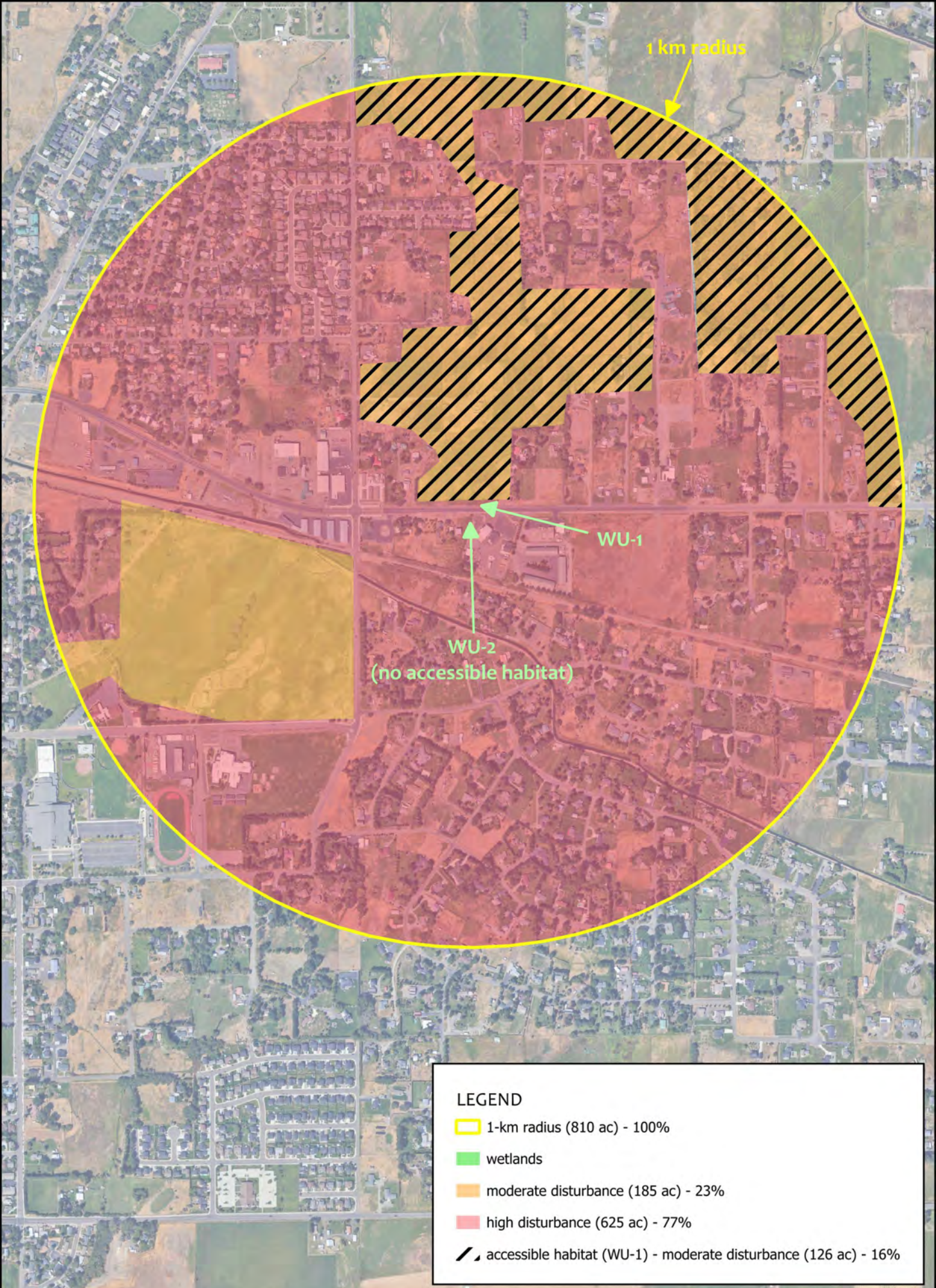

ECOLOGY RATING FORM - FIGURE 3

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

0 1,000 ft

Map date: April 12, 2022
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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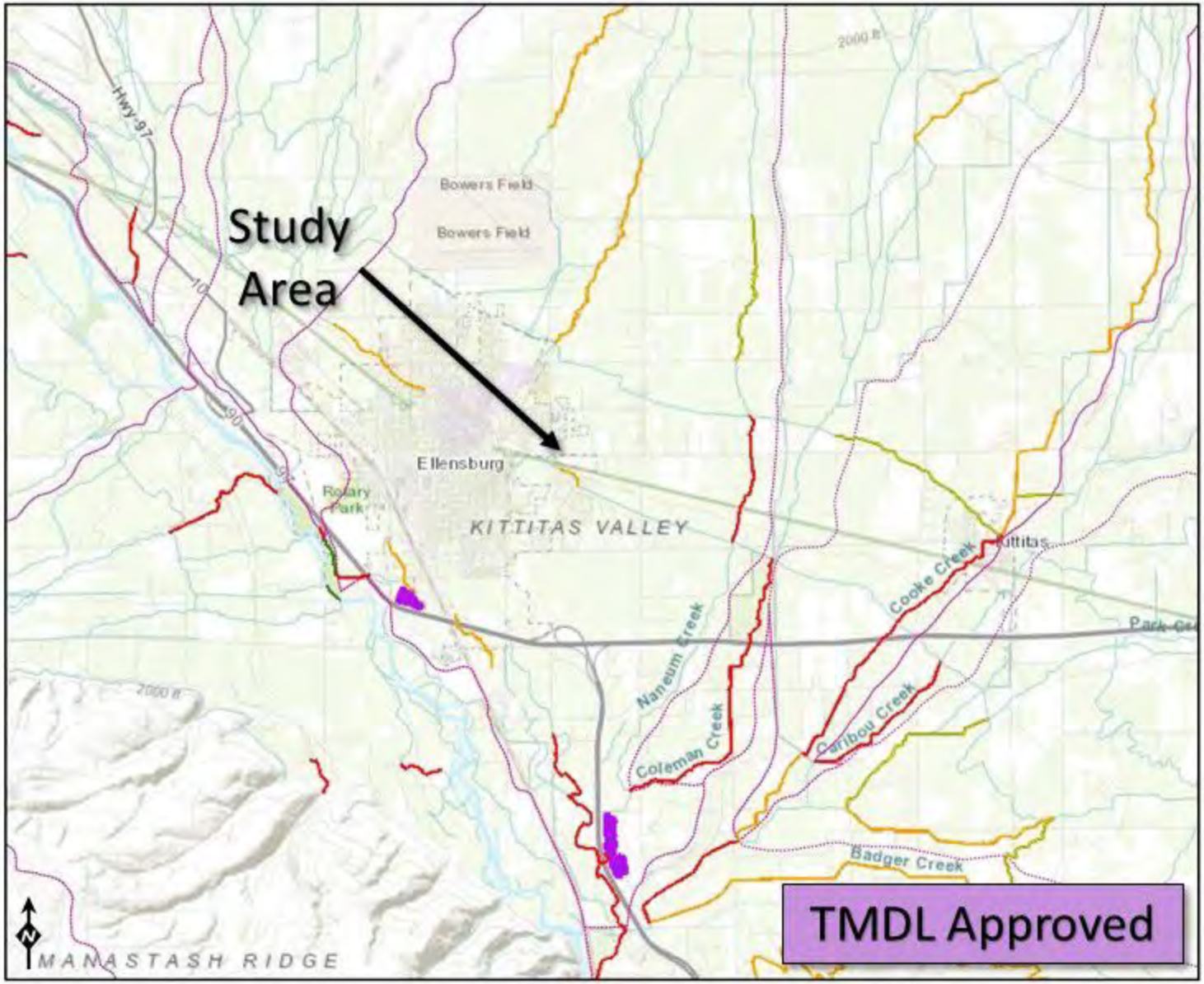
April 8, 2022

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

Miles 0 1 2 4

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

DEPARTMENT OF ECOLOGY State of Washington

Appendix E. Project Design Plans

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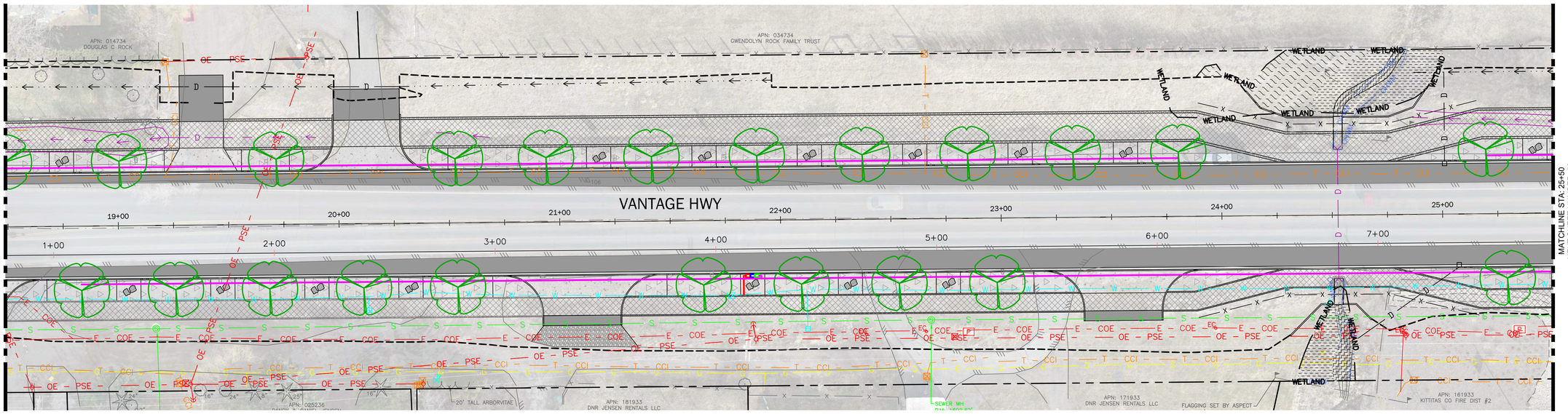


LANDSCAPING PLAN
SCALE: 1" = 25'

0 25 50 Feet

NEW STREET TREE, MAX. HEIGHT 25'

NEW INFILTRATION SWALE

STREAMBED (PIT RUN)

PLANTING ZONE A

PLANTING ZONE B

RELOCATED DITCH/CREEK

NEW 1" IRRIGATION SERVICE LINE

NEW IRRIGATION SLEEVE & DRIP LINE

GRADING LIMITS

NEW 5/8" BACKFLOW & HANDBOX

NEW 5/8" WATER METER & HANDBOX (BY OWNER)

NEW IRRIGATION VALVE BOX

LANDSCAPE BOULDERS

PLANT SCHEDULE - LYLE CREEK

SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	ZONE A QTY	ZONE B QTY
RIBES AUREUM	GOLDEN CURRANT	5 GAL	10 FT	0	3
CORNUS SERICEA	RED OSIER DOGWOOD	5 GAL	10 FT	0	3
SAMBUCUS NIGRA	BLUE ELDERBERRY	5 GAL	10 FT	0	3
SALIX EXIGUA	COYOTE WILLOW	LIVE STAKE	5 FT	61	10

GENERAL NOTES

1. DRAWING IS FOR INFORMATIONAL PURPOSES. ACTUAL LOCATIONS AND FACILITIES NEEDED FOR THE IRRIGATION SYSTEM MAY VARY.
2. CONTRACTOR TO INSTALL A COMPLETE IRRIGATION SYSTEM INCLUDING BUT NOT LIMITED TO: BATTERY OPERATED TIMING VALVES, SERVICE LINES, SLEEVES, DRIP OR SPRAY TERMINATIONS, VALVE BOXES, AND BLOW-OFFS. WATER MAIN HOT TAP BY OWNER.
3. TREES TO BE INSTALLED PER COE DETAIL ST-10. TREES SHALL BE MALE GOLDEN COLONNADE GINKGO (GINKGO BILOBA), 1.5" TO 2" CALIPER, OR APPROVED EQUIVALENT.
4. MINIMUM SLEEVE COVER = 12 IN.
5. IRRIGATION SERVICES IN EACH BIOINFILTRATION SWALE SHALL BE INSTALLED AT THE BOTTOM OF THE CLEAN FRACTURED ROCK LAYER.
6. FILL SLOPES WIDER THAN 1.5 FEET SHALL BE HYDROSEEDED.
7. INSTALL LANDSCAPE BOULDERS AT LOCATIONS SHOWN AND PER DETAIL 3, SHEET 56.

DRAFT
90% DESIGN
NOT FOR CONSTRUCTION

APPR.	DATE	DESCRIPTION	REV.
-	-	-	-

REVISED BY: -
DRAWN BY: CP/CMV
DESIGNED BY: EBP/JHK
PROJECT NUMBER: AS190390A
REVISION: 0
DATE: Oct-25

Aspect CONSULTING

LANDSCAPING PLAN IV

GATEWAY TO THE CITY OF ELLENSBURG
STORMWATER LID RETROFIT PROJECT II
CITY OF ELLENSBURG, WA

SHEET REFERENCE NUMBER:
52

SHEET **52** *OF* **56**

CONSTRUCTION NOTES

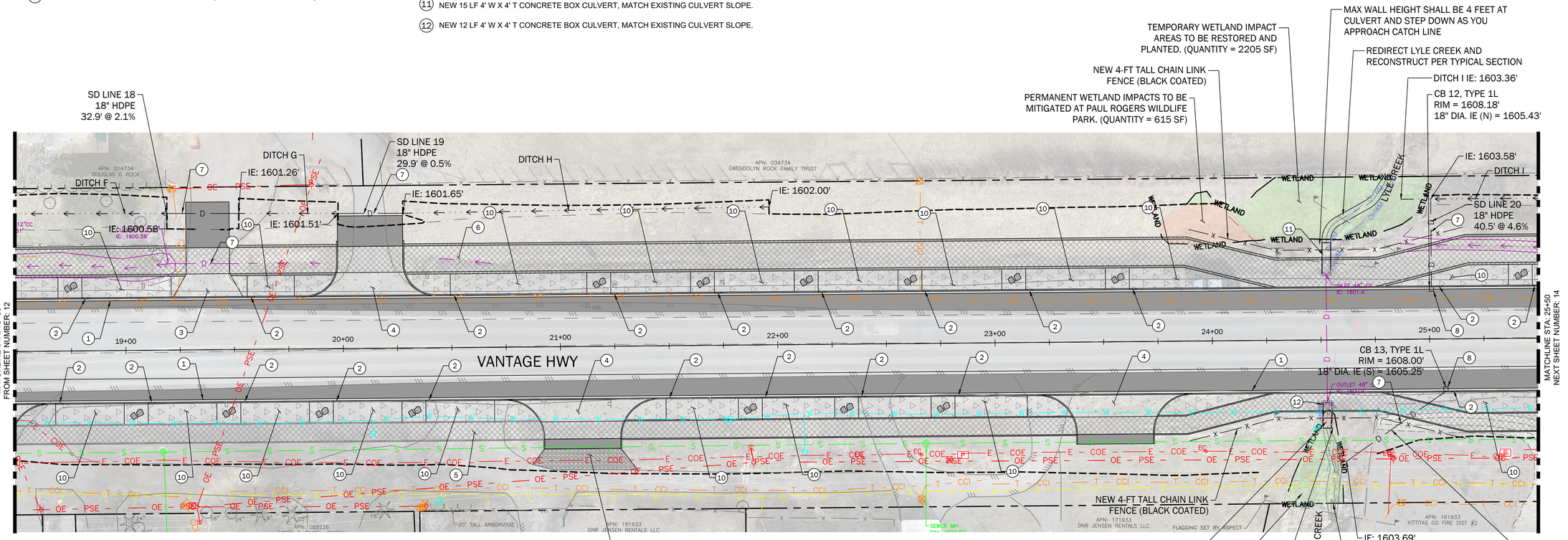
1. NEW TYPE A CONCRETE CURB AND GUTTER (PER COE DETAIL SW-51).
2. CURB INLET (PER COE DETAIL SD-27).
3. NEW 6 INCH CONCRETE DRIVEWAY (PER COE DETAIL SW-24) WITH ASPHALT APRON TRANSITION.
4. NEW 6 INCH CONCRETE COMMERCIAL DRIVEWAY (PER COE DETAIL SW-25A) WITH ASPHALT APRON TRANSITION.
5. NEW 8 FOOT POROUS 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
- RELOCATED DITCH
- NEW STORM PIPE
- GRADING LIMITS
- NEW ASPHALT
- NEW GRAVEL
- NEW POROUS ASPHALT
- NEW INFILTRATION SWALE
- NEW CONCRETE
- NEW CATCH BASIN TYPE 1L
- NEW CATCH BASIN TYPE 2
- PERMANENT IMPACT, CRITICAL AREA
- TEMPORARY IMPACT, CRITICAL AREA
- WETLAND BOUNDARY

DRAINAGE PLAN
SCALE: 1" = 25'

0 25 50 Feet

DRAFT
90% DESIGN
NOT FOR CONSTRUCTION

REV.	DESCRIPTION	DATE	APPR.
-	-	-	-

REVISED BY: -
DRAWN BY: CP/CMV
DESIGNED BY: EBP/JHK
PROJECT NUMBER: AS190390A
REVISION: 0
DATE: Oct-25

Aspect CONSULTING

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**

CAD Path: C:_GEO-ACC\ACCDocs\Geosyntec\CITY OF ELLENSBURG_GATEWAY II\Project Files\CADD\01_SW LID RETROFIT PROJ II\DWGS\SHEETS\AS190390A.01-C03.dwg Layout: 13 PAVING & DRAINAGE PLAN IV || Date Saved: 10/9/2025 9:00:31 AM || User: jduran

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

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

November 6, 2023

GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

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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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Table of Contents

Figures

Tables

Appendices

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 impacts[1] 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

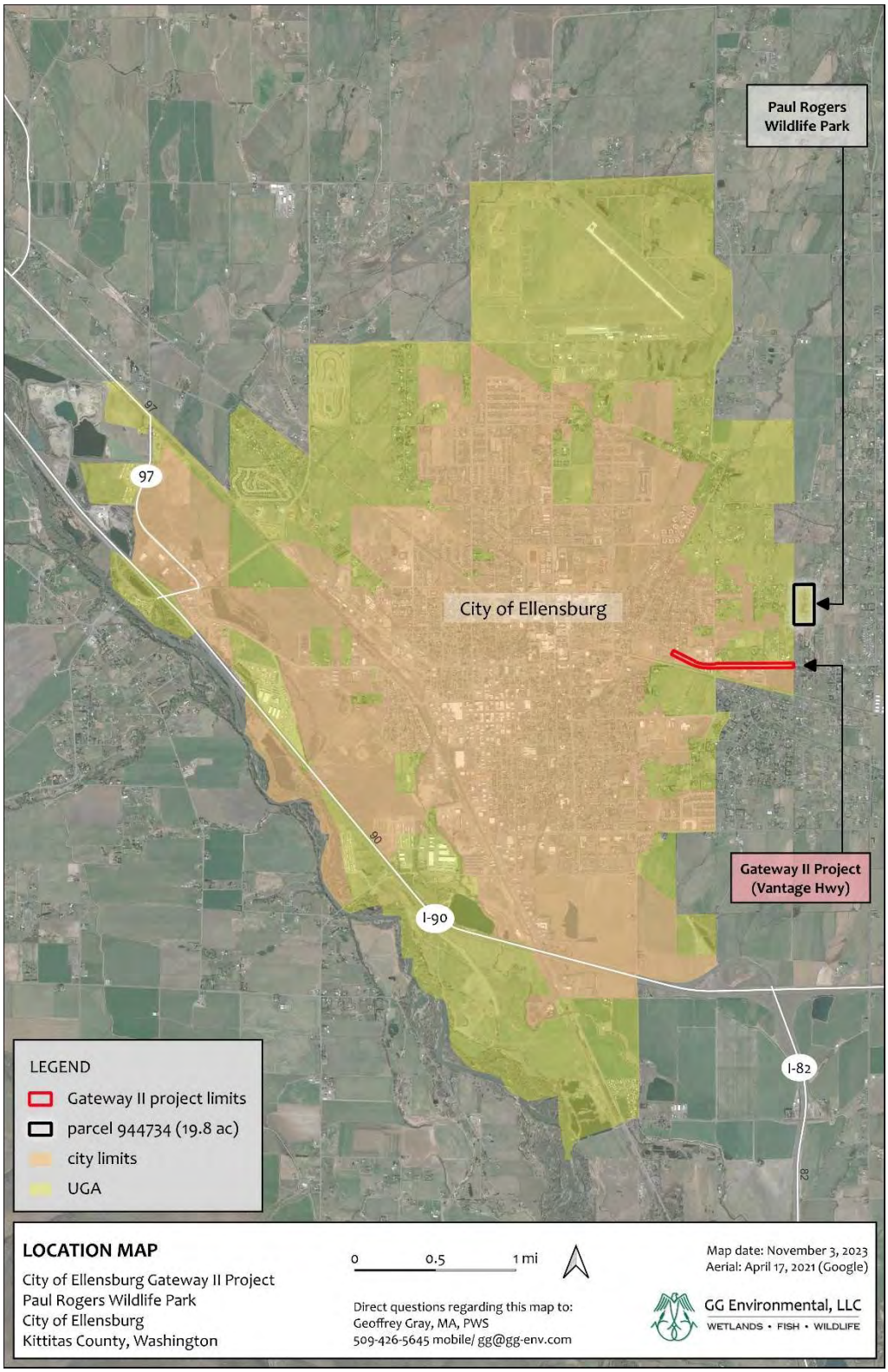


Figure 2. USGS Topographic Map

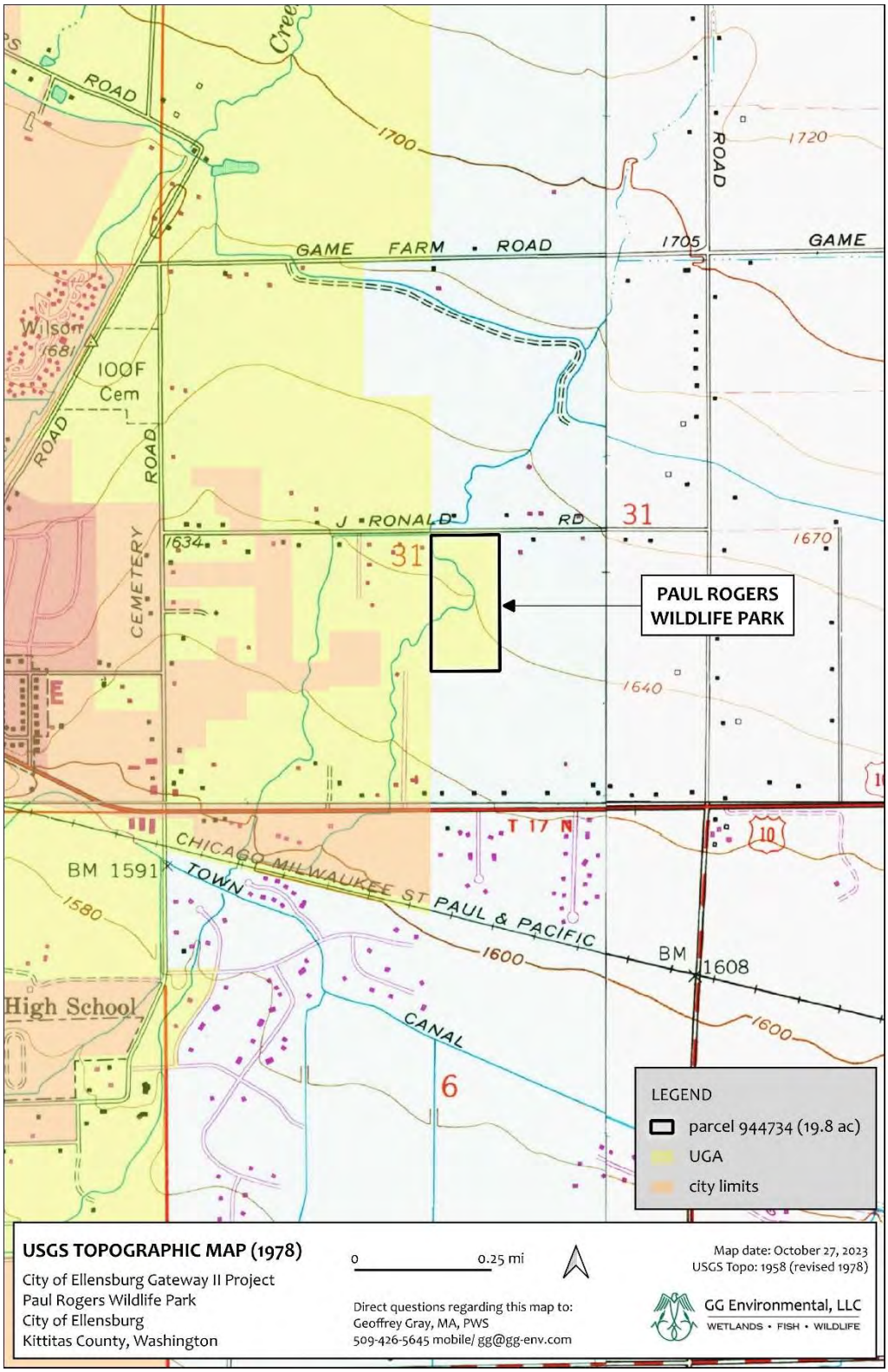
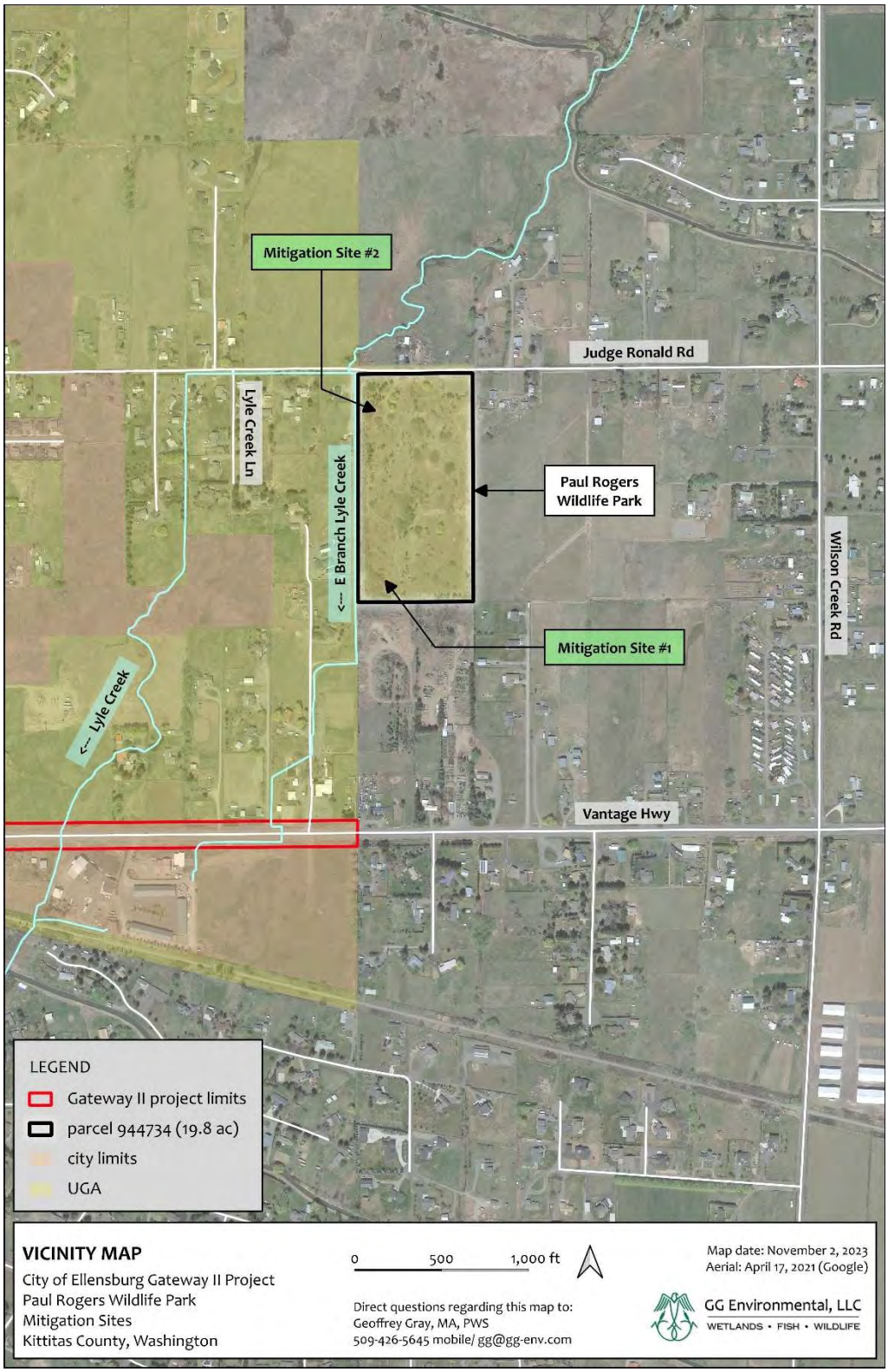


Figure 3. Vicinity Map



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 Areas[3] 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 van/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 *Zannichellia palustris*) (OBL).
Palustrine Emergent (PEM)	Plants rooted in standing water of the **WU-1** pond including reed canarygrass (*Phalaris arundinaceae*) (FACW) and northern water plantain (*Alisma triviale*) (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 (*Typha latifolia*) (OBL), reed canarygrass (FACW), yellow-flag iris (*Iris pseudocorus*) (OBL), fringed willowherb (*Epilobium ciliatum*) (FACW), and cut-leaf water-horehound (*Lycopus americanus*) (OBL). The eastern hillside (**WU-2**), supported mainly by hyporheic seepage, is dominated by Baltic rush (*Juncus balticus*) (FACW) with pockets of western goldentop (*Euthamia occidentalis*) (FACW), and wooly sedge (*Carex pellita*) (OBL). **WU-3** supports broadleaf cattail (OBL), reed canarygrass (FACW), swamp smartweed (*Persicaria hydropiperoides*) (OBL), and red-tinge bulrush (*Scirpus microcarpus*) (OBL).
Palustrine Forested (PFO)	**Rooted west of the pond.** The dominant tree species in **WU-1** include quaking aspen (*Populus tremuloides*) (FACU[5]), and a single large crack willow (*Salix fragilis*) (FAC).
KEY TO WETLAND PLANT LIST INDICATOR RATINGS *OBL (Obligate Wetland Plants) – Almost always occur in wetlands.* *FACW (Facultative Wetland Plants) – Usually occur in wetlands, but may occur in non-wetlands.* *FAC (Facultative Wetland Plants) – Occur in wetlands and non-wetlands.* *FACU (Facultative Upland Plants) – Usually occur in non-wetlands, but may occur in wetlands.* *UPL (Upland Plants) – Almost never occur in wetlands.*	

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		
	**Latitude** **Longitude** **Elevation**	47° 0'22.51"N 120°30'27.82"W ~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

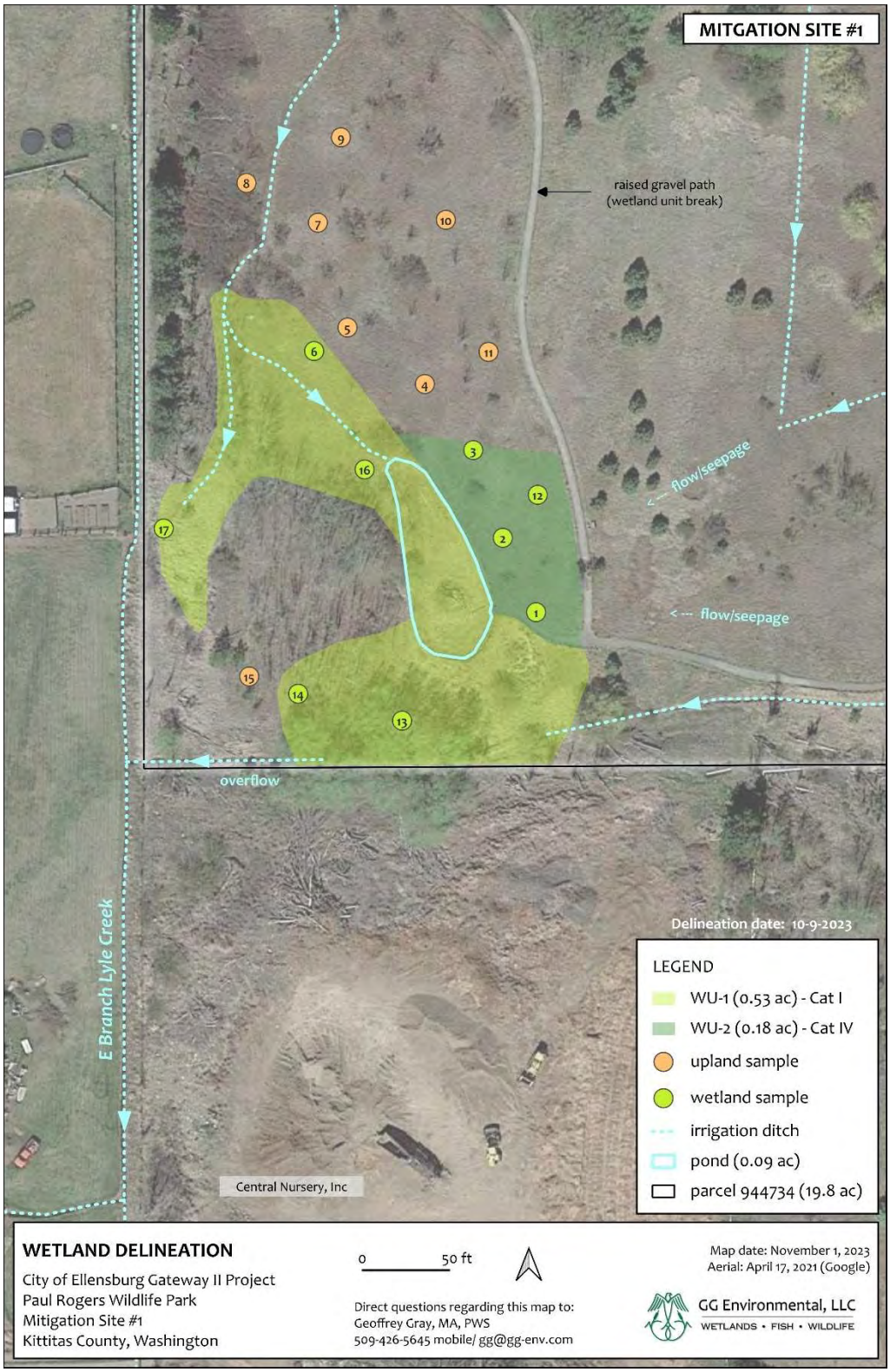


Figure 5. Wetland Delineation – Mitigation Site #2

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

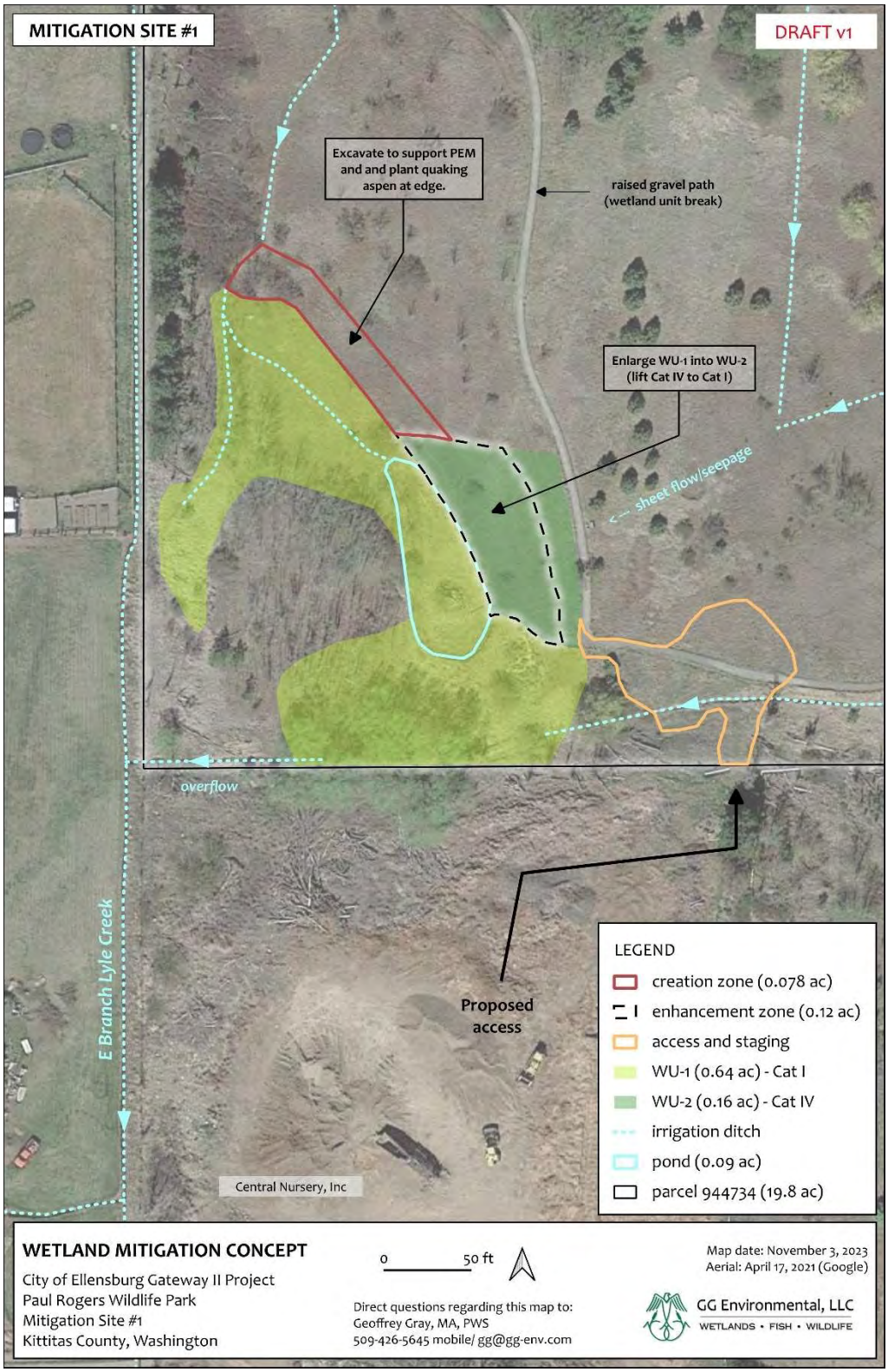


Figure 7. Draft Mitigation Concept – Site #2

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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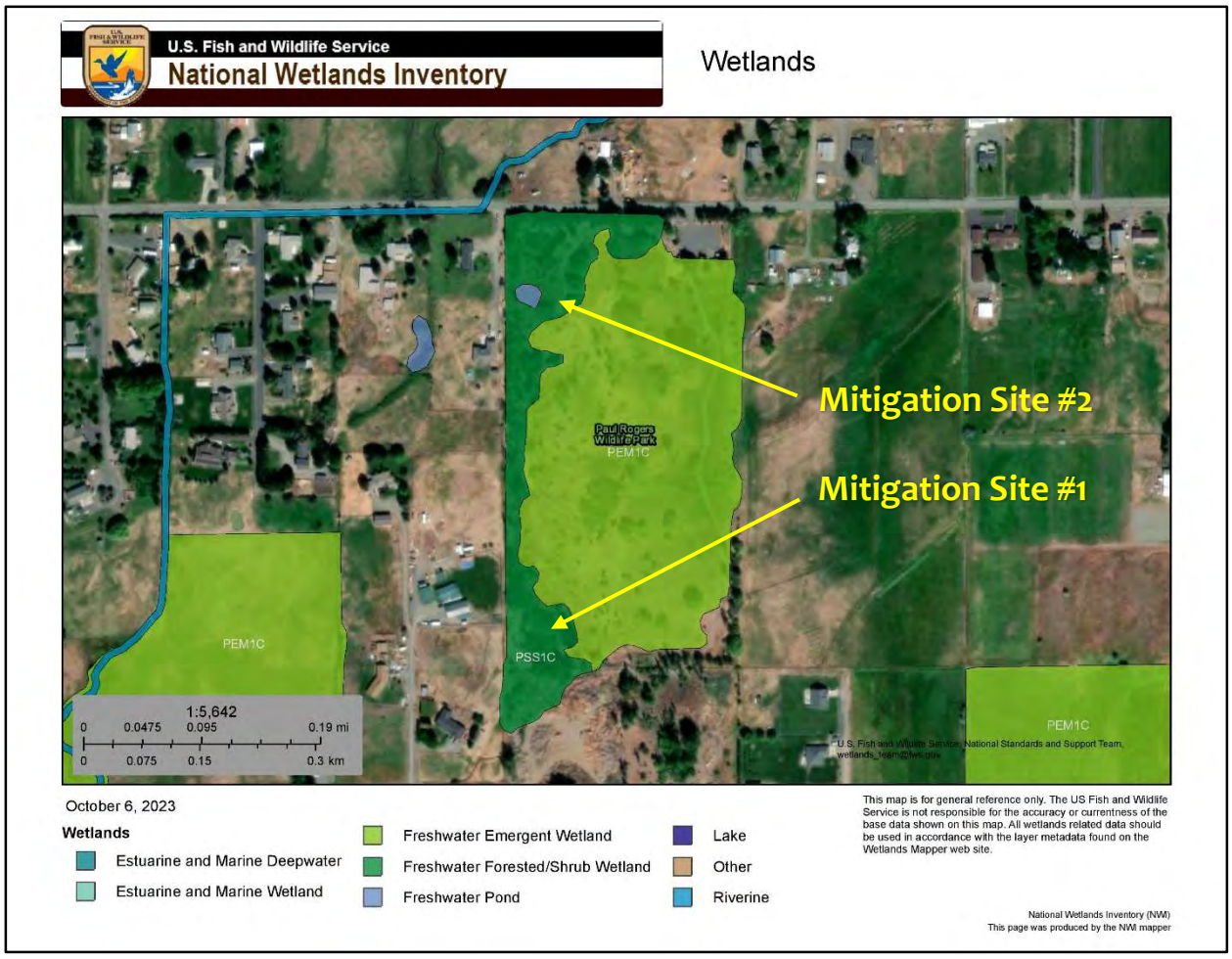
Appendix A-1. USFWS National Wetlands Inventory



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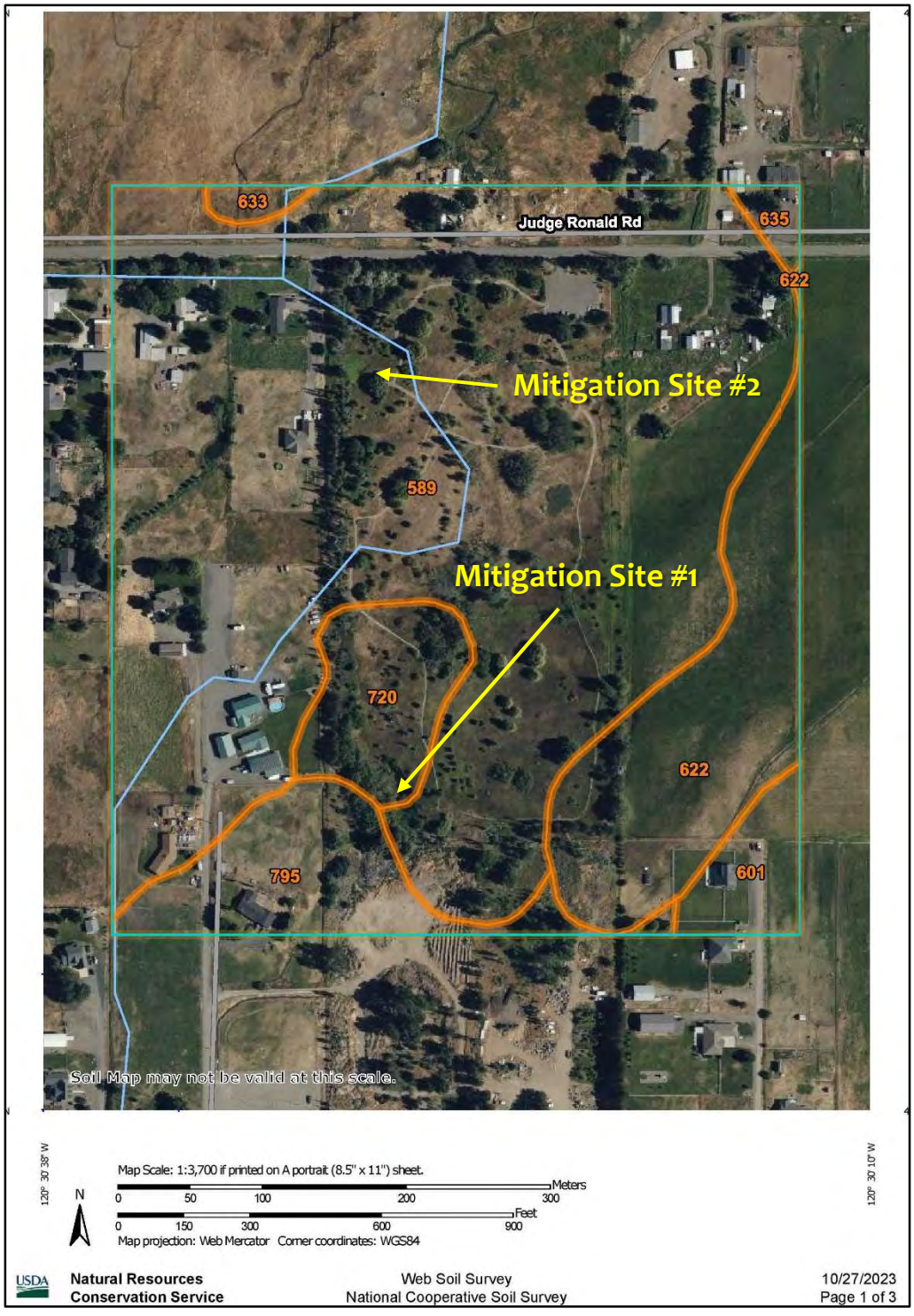
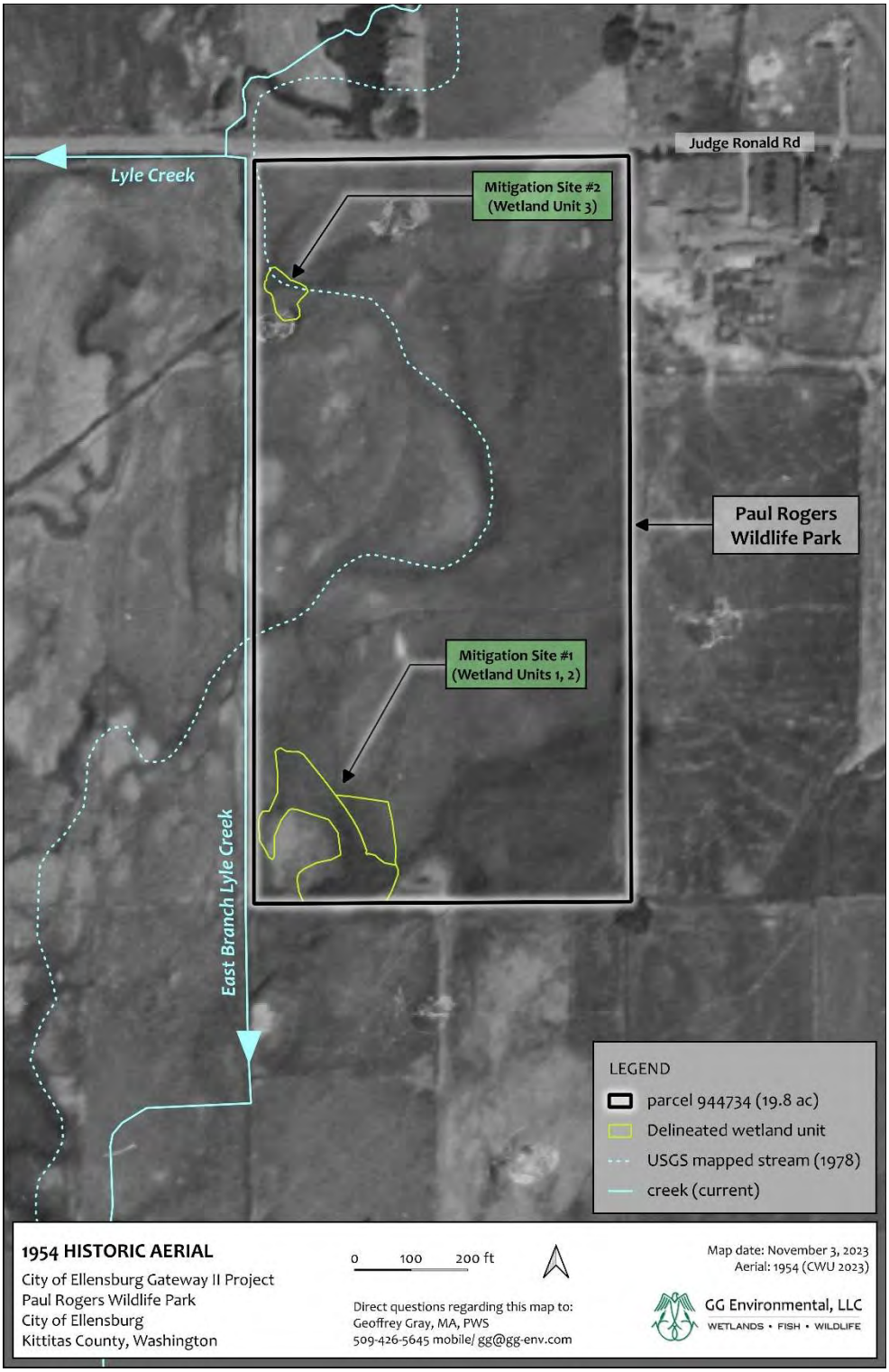
Appendix A-2. NRCS Soil Survey



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
1st prior month	Sep	0.15	0.45	0.44	0.35	Normal	2	3	6
2nd prior month	Aug	0.10	0.36	0.38	0.09	Dry	1	2	2
3rd prior month	Jul	0.19	0.37	0.42	0.13	Dry	1	1	1
								Sum	**9** [5]

		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
1st prior month	Oct	0.19	0.55	0.64	0.27	Normal	2	3	6
2nd prior month	Sep	0.15	0.45	0.44	0.35	Normal	2	2	4
3rd prior month	Aug	0.10	0.36	0.38	0.09	Dry	1	1	1
								Sum	**11** [5]

[1] WETS table; [2]Accumulated Daily Precipitation; [3] WETS table "30% more than and 30% less than values ere 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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U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. *Cornus alba*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Carex pellita*	50	Yes	OBL
2. *Juncus balticus*	50	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		160 (B)

Prevalence Index = B/A = 1.52

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loamy/Clayey	
4-16	10YR 4/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	98	Yes	FACW
2. *Euthamia occidentalis*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	98					Loamy/Clayey	
3-14	10YR 4/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:
Soil very sandy (sandy loam).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	90	Yes	FACW
2. *Euthamia occidentalis*	8	No	FACW
3. *Carex pellita*	2	No	OBL
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	98	x 2 =	196
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		198 (B)
Prevalence Index = B/A =			1.98

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	98					Sandy	
3-14	10YR 4/2	90	5YR 4/6	10	C	M	Sandy	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	92	Yes	FACW
2. *Cirsium arvense*	2	No	FACU
3. *Taraxacum officinale*	5	No	FACU
4. *Rumex crispus*	1	No	FAC
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	92	x 2 =	184
FAC species	1	x 3 =	3
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Loamy/Clayey	
4-14	10YR 4/2	99	5YR 3/4	1	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

Remarks:
Does not meet redox concentration percentage threshold.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	5	x 3 =	15
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	100 (A)		235 (B)

Prevalence Index = B/A = 2.35

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					Loamy/Clayey	
8-12								Rock (shovel denial)

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	20	Yes	FACW
2. *Carex pellita*	50	Yes	OBL
3. *Cirsium arvense*	30	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	100 (A)		210 (B)

Prevalence Index = B/A = 2.10

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	98					Sandy	
10-14	10YR 3/2	99	5YR 4/6	1	C	M	Sandy	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- X Other (Explain in Remarks)

[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** X **No** ___

Remarks:

Given persistent saturation at 10" and predominanct 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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Carex pellita*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/2	100					Sandy	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

Remarks:
Soil very pervious.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
Drier than normal precipitation fell within the prior aggregate three months. RECONNAISSANCE SAMPLE.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. *Rosa woodii*	100	Yes	FACU
2.			
3.			
4.			
5.			
	100 =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____ =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** ___ **No** X

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
Drier than normal precipitation fell within the prior aggregate three months. RECONNAISSANCE SAMPLE.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1.	100	Yes	FACU
2.			
3.			
4.			
5.			
	100 =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	40	Yes	FACW
2. *Carex pellita*	20	Yes	OBL
3. Unknown grasses	40	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	200 (A)		620 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	
8-12								rock (shovel denial)

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

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

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) **(LRR C)**
___ 1 cm Muck (A9) **(LRR D)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR C)**
___ 2 cm Muck (A10) **(LRR B)**
___ Iron-Manganese Masses (F12) **(LRR D)**
___ Reduced Vertic (F18)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[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** X

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)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) **(Nonriverine)**
___ Sediment Deposits (B2) **(Nonriverine)**
___ Drift Deposits (B3) **(Nonriverine)**
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water Marks (B1) **(Riverine)**
___ Sediment Deposits (B2) **(Riverine)**
___ Drift Deposits (B3) **(Riverine)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** X

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

Remarks:
Drier than normal precipitation fell within the prior aggregate three months. Slope is flood irrigated.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 20 x 20 ft)			
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	90	Yes	FACW
2. *Taraxacum officinale*	7	No	FACU
3. *Asclepias speciosa*	2	No	FAC
4. *Cirsium arvense*	1	No	FACU
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	2	x 3 =	6
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	100 (A)		218 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Sandy	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	90	Yes	FACW
2. *Asclepias speciosa*	5	No	FAC
3. *Plantago lanceolata*	3	No	FAC
4. *Taraxacum officinale*	2	No	FACU
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	8	x 3 =	24
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	100 (A)		212 (B)
Prevalence Index = B/A =			2.12

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	98					Loamy/Clayey	
4-16	10YR 4/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Sallix fragilis*	100	Yes	FAC
2.			
3.			
4.			
	100 =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Phalaris arundinacea*	3	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	3 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	103 (A)		306 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	100	Yes	FACU
2.			
3.			
4.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	20	Yes	FACW
2. *Cirsium arvense*	5	No	FACU
3. *Asclepias speciosa*	5	No	FAC
4. Unknown grass	70	Yes	FAC
5.			
6.			
7.			
8.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	75	x 3 =	225
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	200 (A)		685 (B)

Prevalence Index = B/A = 3.43

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Sandy	
8-14	10YR 4/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

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).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	80	Yes	FACU
2.			
3.			
4.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	20	No	FACW
2. *Taraxacum officinale*	20	No	FACU
3. *Cirsium vulgare*	5	No	FACU
4. Unknown grass	70	Yes	FAC
5.			
6.			
7.			
8.			
	115	=Total Cover	
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	70	x 3 =	210
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	195 (A)		670 (B)

Prevalence Index = B/A = 3.44

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.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					Sandy	
2-12								Rock. Shovel denial.

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** X

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Juncus balticus*	75	Yes	FACW
2. *Carex pellita*	5	No	OBL
3. *Lycopus americanus*	5	No	OBL
4. *Epilobium ciliatum*	15	No	FACW
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 16

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Loamy/Clayey	
4-13	10YR 3/2	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- X Other (Explain in Remarks)

[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** X **No** ___

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) **(Nonriverine)**
- X Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Phalaris arundinacea*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 17

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Loamy/Clayey	
4-12	10YR 4/2	98	5YR 3/3	2	C	M	Loamy/Clayey	Distinct redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:
Rock cobble @ 12". Shovel denial.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Phalaris arundinacea*	80	Yes	FACW
2. *Juncus balticus*	10	No	FACW
3. *Carex pellita*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 18

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes X No ___ Depth (inches): 6

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

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: 20 x 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 x 15 ft)			
1. *Rosa multiflora*	2	No	FACU
2.			
3.			
4.			
5.			
	2 =Total Cover		
Herb Stratum (Plot size: 5 x 5 ft)			
1. *Cirsium arvense*	5	No	FACU
2. *Juncus balticus*	65	Yes	FACW
3. *Carex pellita*	25	Yes	OBL
4. *Verbascum thapsus*	5	No	FACU
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 5 x 5 ft)			
1. None			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	102 (A)		203 (B)

Prevalence Index = B/A = 1.99

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 19

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	
3-13	10YR 4/2	99	5YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[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** X

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** X **No** ___

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

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

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 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

Water Quality Functions - Indicators that the site functions to improve water quality

	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland has no surface water outlet — points = 5	
☐ Wetland has an intermittently flowing outlet — points = 3	5
☐ Wetland has a highly constricted permanently flowing outlet — points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet — points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions of soils*) Yes = 3 No = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)	
Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area — points = 5	
Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area — points = 3	5
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. Characteristics of seasonal ponding or inundation:	
This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.	
Area seasonally ponded is > ½ total area of wetland — points = 3	0
Area seasonally ponded is ¼ - ½ total area of wetland — points = 1	
Area seasonally ponded is < ¼ 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 Livestock feces in irrigation water 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

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion

	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	8
Wetland has no surface water outlet — points = 8	
☐ Wetland has an intermittently flowing outlet — points = 4	
☐ Wetland has a highly constricted permanently flowing outlet — points = 4	
Wetland has a permanently flowing unconstricted surface outlet — points = 0	
(*If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing"*)	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*	6
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 6	
☐ The wetland is a headwater wetland — points = 4	
☐ 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**

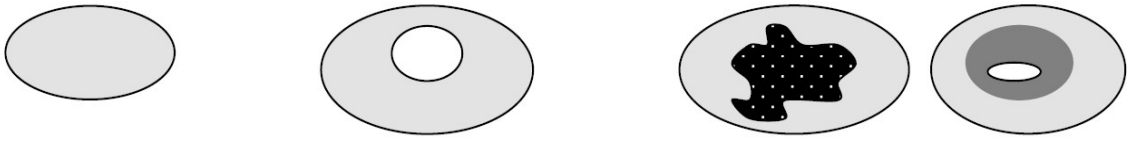
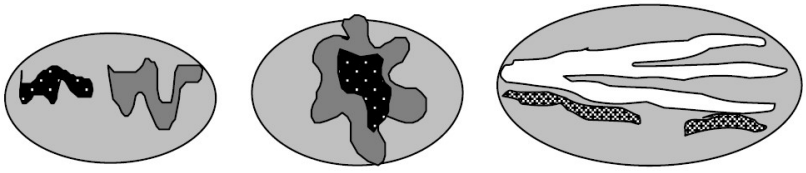
Rating of Site Potential If score is: ☑ **12 - 16 = H** ☐ **- 11 = M** ☐ **- 5 = L** *Record the rating on the first page*

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. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*	0
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	
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	
☐ 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	
Explain why	
☑ 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. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☑ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☑ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☑ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☐ Scrub-shrub (areas where shrubs have > 30% cover) ☑ 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	3
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	1
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? *Answer YES for Lake Fringe wetlands.* ☑ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	3
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # of species _____ Scoring: > 9 species: points = 2 4 - 9 species: points = 1 < 4 species: points = 0	2
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. *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	3

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.* ☑ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☑ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☑ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	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	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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☑ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☑ Yes - Go to **SC 5.1** ☐ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☑ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☑ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

Cat. I

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

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

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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

Water Quality Functions - Indicators that the site functions to improve water quality

	Points (only 1 score per box)
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less — points = 3 Slope is > 1% - 2% — points = 2 Slope is > 2% - 5% — points = 1 Slope is greater than 5% — points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions*): Yes = 3 No = 0	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. *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.* Dense, uncut, herbaceous plants > 90% of the wetland area — points = 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	6
Total for S 1 — Add the points in the boxes above	**6**

Rating of Site Potential If score is: ☐ **12 = H** ☑ **3 - 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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other Sources livestock feces in irrigation water — Yes = 1 No = 0	1
Total for S 2 — Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: ☑ **1 - 2 = M** ☐ **0 = 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 (*within 1 mi*)? Yes = 1 No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* Yes = 1 No = 0	1
S 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 S 3 — Add the points in the boxes above	**3**

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

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion		Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.*		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:		0
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	
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**

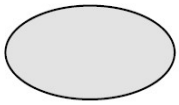
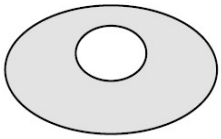
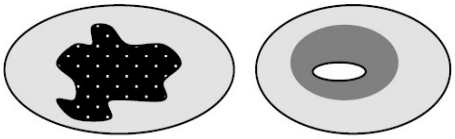
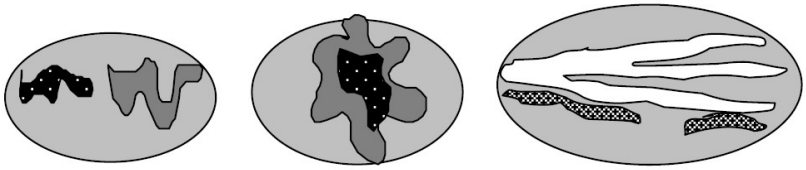
Rating of Value If score is: ☐ **2 - 4 = H** ☐ **1 = M** ☑ **0 = L** *Record the rating on the first page*

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. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☐ Aquatic bed ☑ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☑ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☐ Scrub-shrub (areas where shrubs have > 30% cover) ☐ 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. 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? *Answer YES for Lake Fringe wetlands.* ☐ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # 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. *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	0

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.* ☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☐ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☑ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	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	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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☐ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☐ Yes - Go to **SC 5.1** ☑ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☐ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☐ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

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

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

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 like 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

Water Quality Functions - Indicators that the site functions to improve water quality

	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	5
☐ Wetland has no surface water outlet — points = 5	
☐ Wetland has an intermittently flowing outlet — points = 3	
☐ Wetland has a highly constricted permanently flowing outlet — points = 3	
☐ Wetland has a permanently flowing, unconstricted, surface outlet — points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions of soils*) Yes = 3 No = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)	5
☐ Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area — points = 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. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*	3
☐ Area seasonally ponded is > ½ total area of wetland — points = 3	
☐ Area seasonally ponded is ¼ - ½ total area of wetland — points = 1	
☐ Area seasonally ponded is < ¼ 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

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion

	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	8
Wetland has no surface water outlet — points = 8	
☐ Wetland has an intermittently flowing outlet — points = 4	
☐ Wetland has a highly constricted permanently flowing outlet — points = 4	
Wetland has a permanently flowing unconstricted surface outlet — points = 0	
(*If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing"*)	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*	2
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 6	
☐ The wetland is a headwater wetland — points = 4	
☐ 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**

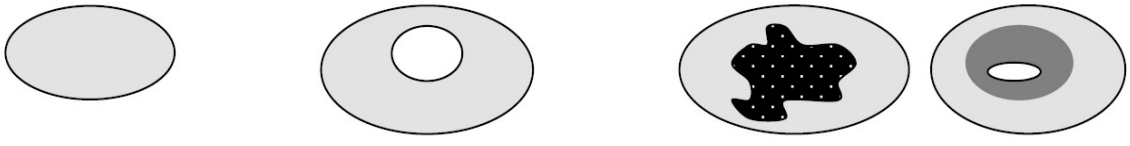
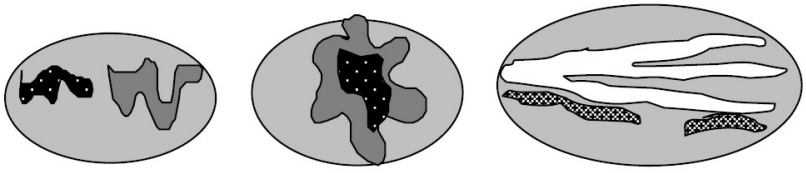
Rating of Site Potential If score is: ☐ **12 - 16 = H** ☑ **7 - 11 = M** ☐ **0 - 5 = L** *Record the rating on the first page*

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** ☐ **1 or 2 = M** ☑ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*	0
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	
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	
☑ 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	
Explain why	
☑ 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** ☑ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☑ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☐ Scrub-shrub (areas where shrubs have > 30% cover) ☐ 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? *Answer YES for Lake Fringe wetlands.* ☐ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # 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. *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	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.*	
☐ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☑ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☐ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	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 + (55 % moderate & low intensity land uses / 2) = 30.5% 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	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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☐ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☐ Yes - Go to **SC 5.1** ☑ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☐ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☐ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

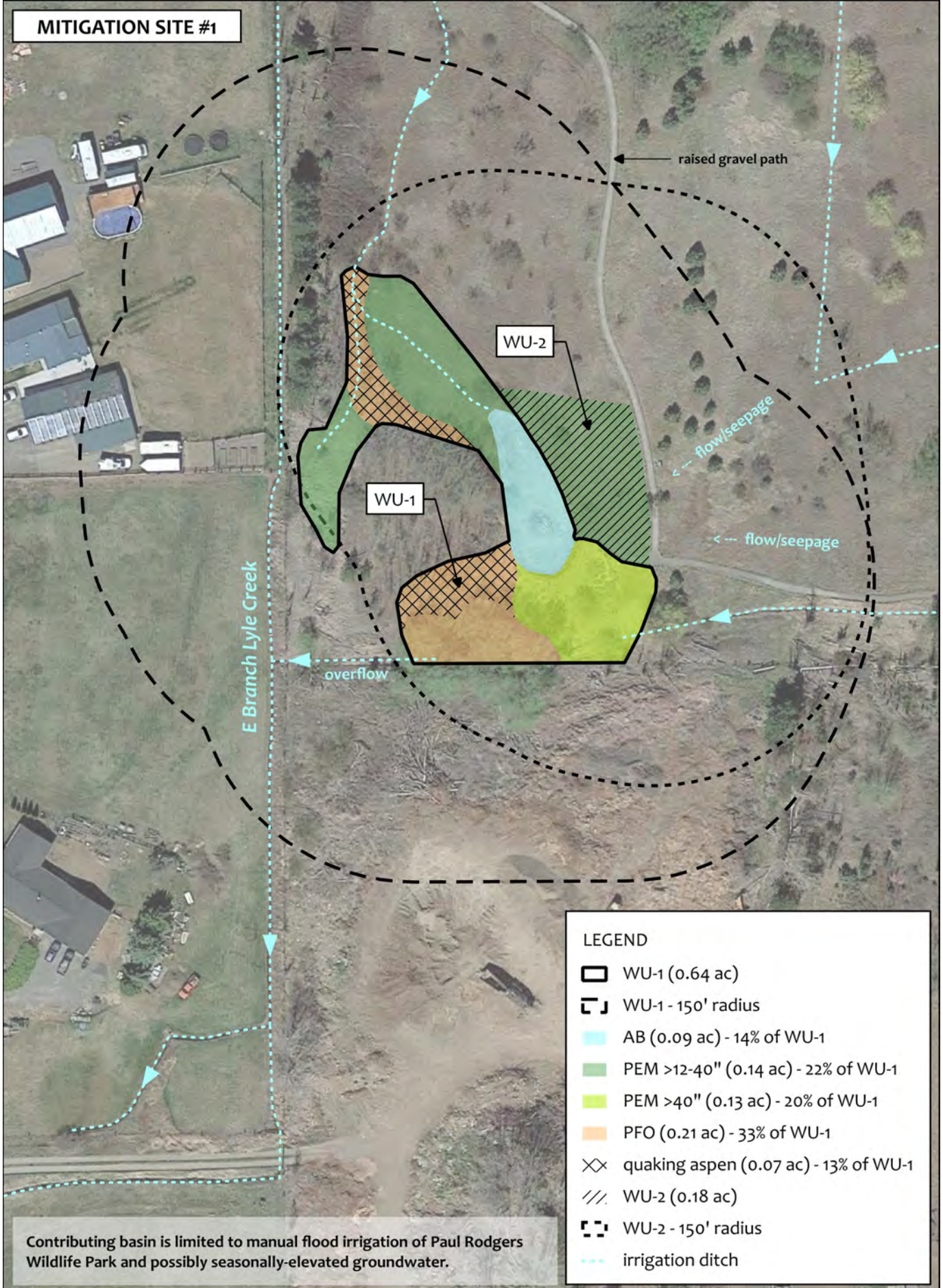
Appendix B: WDFW Priority Habitats in Eastern Washington

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.



ECOLOGY RATING - FIGURE 1

City of Ellensburg Gateway II Project
Paul Rogers Wildlife Park
Wetland Mitigation Site #1
Kittitas County, Washington

0 50 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

GG Environmental, LLC
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ECOLOGY RATING - FIGURE 1

City of Ellensburg Gateway II Project
Paul Rogers Wildlife Park
Wetland Mitigation Site #2
Kittitas County, Washington

0 50 ft

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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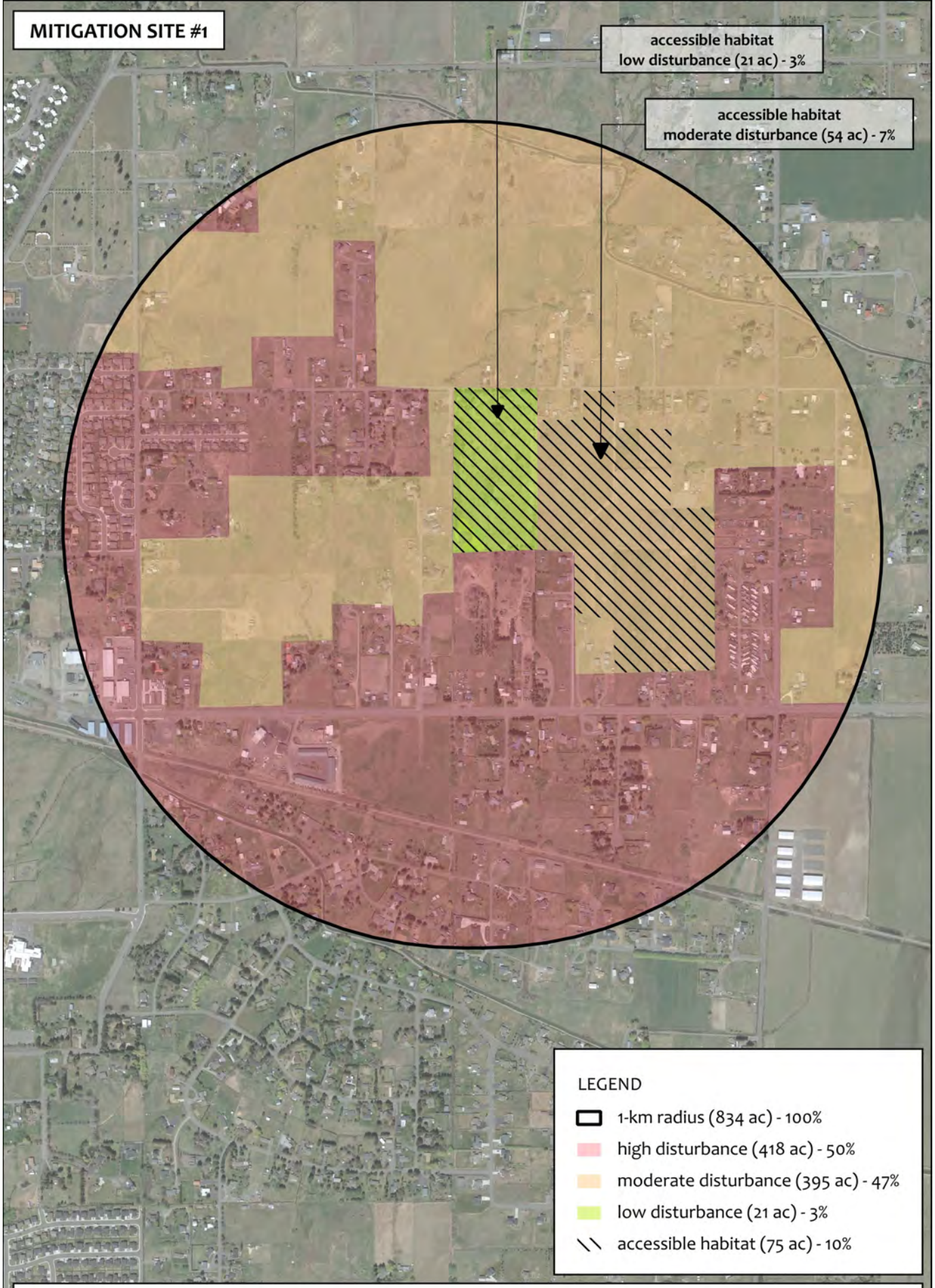

ECOLOGY RATING - FIGURE 2

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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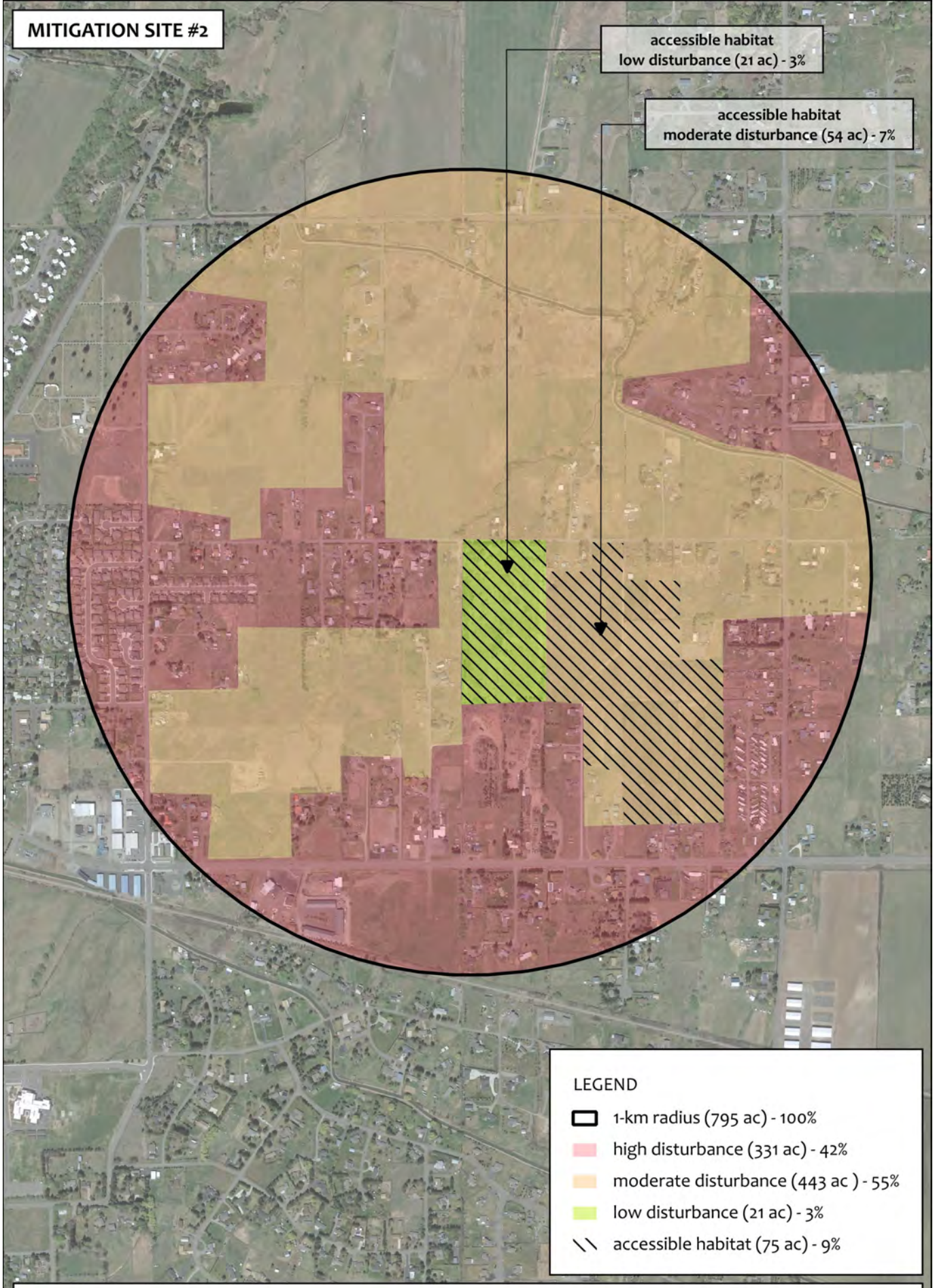

ECOLOGY RATING - FIGURE 2

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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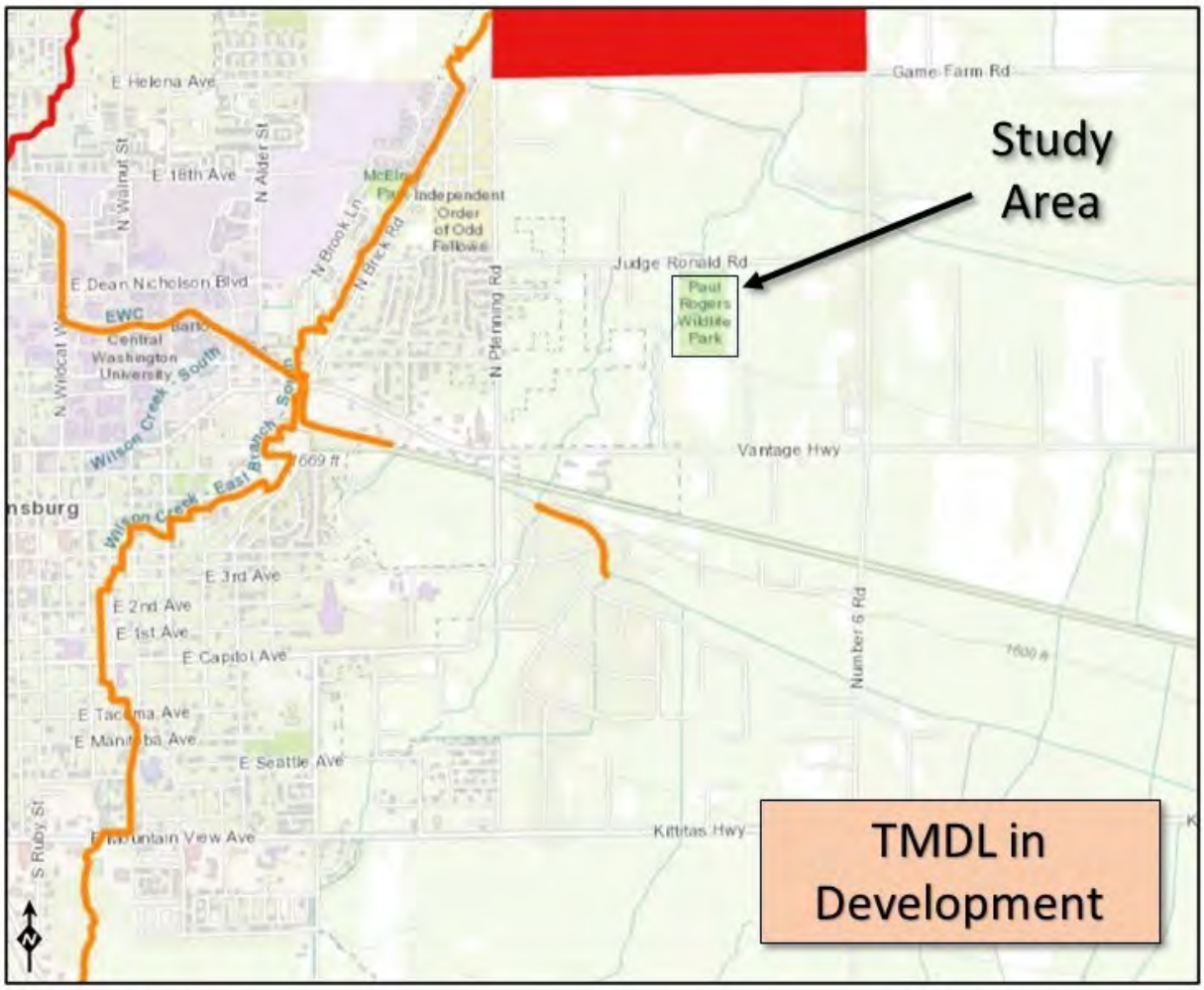
October 6, 2023

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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		List appropriate rating (H, M, L)		
Site Potential	H	H	M	
Landscape Potential	M	L	M	
Value	H	L	L	**Total**
Score Based on Ratings	8	5	5	**18**

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

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
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 (*can be added to map of hydroperiods*)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to another figure*)	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 (*can be added to figure above*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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 like 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

Water Quality Functions - Indicators that the site functions to improve water quality

		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
☐ Wetland has an intermittently flowing outlet	points = 3	
☐ Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions of soils*)	Yes = 3 No = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		5
Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area	points = 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. Characteristics of seasonal ponding or inundation:		3
This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.		
Area seasonally ponded is > ½ total area of wetland	points = 3	
Area seasonally ponded is ¼ - ½ total area of wetland	points = 1	
Area seasonally ponded is < ¼ 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

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion

	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	8
Wetland has no surface water outlet — points = 8	
☐ Wetland has an intermittently flowing outlet — points = 4	
☐ Wetland has a highly constricted permanently flowing outlet — points = 4	
Wetland has a permanently flowing unconstricted surface outlet — points = 0	
(*If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing"*)	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*	8
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 6	
☐ The wetland is a headwater wetland — points = 4	
☐ 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**

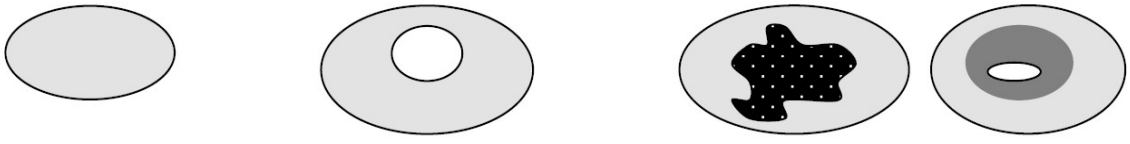
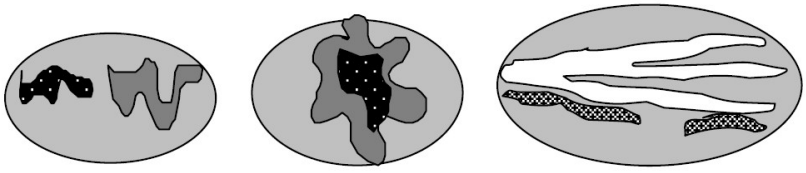
Rating of Site Potential If score is: ☑ **12 - 16 = H** ☐ **- 11 = M** ☐ **- 5 = L** *Record the rating on the first page*

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. The wetland is in a landscape that has flooding problems.	0
Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*	
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND	
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	
☑ 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	
Explain why	
☑ 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. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
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 > = ¼ ac or > = 10% of the wetland if wetland is < 2.5 ac.* ☐ Aquatic bed ☐ Emergent plants 0 - 12 in (0-30 cm) high are the highest layer and have > 30% cover ☑ Emergent plants > 12 - 40 in (> 30-100 cm) high are the highest layer with >30% cover ☐ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ☑ Scrub-shrub (areas where shrubs have > 30% cover) ☑ 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	2
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? *Answer YES for Lake Fringe wetlands.* ☐ 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? *Answer yes only if H 1.3.1 is No.* ☐ Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. 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)* # 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. *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	2

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.*	
☑ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ☑ Cattails or bulrushes are present within the wetland. ☐ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ 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 ☐ Invasive species cover less than 20% in each stratum of vegetation (*canopy, sub-canopy, shrubs, herbaceous, moss/ground cover*)	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 — 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 + (55 % moderate & low intensity land uses / 2) = 30.5%	
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	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 ☐ It has 3 or more priority habitats within 100 m (see Appendix B) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is mapped as a location for an individual WDFW species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	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
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. Vernal Pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? ☐ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. ☐ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* ☐ The soil in the wetland is shallow [< 1 ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay. ☐ Surface water is present for less than 120 days during the wet season. ☐ Yes - Go to **SC 1.1** ☑ No = **Not vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? ☐ Yes – Go to **SC 1.2** ☐ 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.)? ☐ Yes = **Category II** ☐ No = **Category III**	
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 mS/cm. ☐ 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). ☐ 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? ☐ Salt encrustations around more than 75% of the edge of the wetland ☐ More than ¾ of the plant cover consists of species listed on Table 4 ☐ 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. ☐ Yes = **Category I** ☑ 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? ☑ Yes - Go to **SC 3.2** ☐ No - Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ 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 ☐ Yes - **Contact WNHP/WDNR and to SC 3.4** ☐ 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? ☐ Yes = **Category I** ☐ No = **Not WHCV**	

SC 4.0. Bogs and Calcareous Fens

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.***

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? *See Appendix C for a field key to identify organic soils.*

☐ Yes - Go to **SC 4.3** ☑ No - Go to **SC 4.2**

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?

☐ Yes - Go to **SC 4.3** ☑ No = **Is not a bog for rating**

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?

☐ Yes = **Category I bog** ☐ 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.

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?

☐ Yes = **Category I bog** ☐ No - Go to **SC 4.5**

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?

☐ Yes = **Is a Calcareous Fen for purpose of rating** ☐ No - Go to **SC 4.6**

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:

☐ Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems

☐ The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland

☐ Yes = **Is a Category I calcareous fen** ☐ No = **Is not a calcareous fen**

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? (*Continue only if you have identified that a forested class is present in question H*

☐ The wetland is within the 100 year floodplain of a river or stream

☑ Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species

☐ 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*)

☑ Yes - Go to **SC 5.1** ☐ No = **Not a forested wetland with special characteristics**

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*)?

☐ Yes = **Category I** ☑ No - Go to **SC 5.2**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species?

☑ Yes = **Category I** ☐ No - Go to **SC 5.3**

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*)?

☐ Yes = **Category II** ☐ No - Go to **SC 5.4**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?

☐ Yes = **Category II** ☐ No = **Not a forested wetland with special characteristics**

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

Cat. I

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: [X] 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**	**0.1125**

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

Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Washington

Credit Worksheet (corrected 2/20/18) **Project** Gateway II Stormwater Retrofit Project

Only fill in boxes that are highlighted. Use risk factors in table below.

Mitigation Project is: Advanced [ ] Concurrent [X]

This spreadsheed can calculate credits for three <u>separate</u> mitigation sites.

Input Ratings for Functions from Scoring Sheet.

	Site 1	WU-1		Site 2	WU-2		Site 3	WU-3	
Insert a "1" in cell if creation or re-establishment	1								
Rating of Unit BEFORE mitigation	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Site Potential (H,M,L)	H	M	L						
Landscape Potential (H,M,L)	M	L	M						
Value (H,M,L)	H	L	L						
Score for Wetland Unit	0	0	0	3	3	3	3	3	3

	Site 1			Site 2			Site 3		
Rating of Unit AFTER mitigation	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Site Potential (H,M,L)	H	H	M						
Landscape Potential (H,M,L)	M	L	M						
Value (H,M,L)	H	L	L						
Score for Wetland Unit	8	5	5	3	3	3	3	3	3
Lift in Functions	8	5	5	0	0	0	0	0	0

CREATION and RE-ESTABLISHMENT									
Acres created or re-established **(aquatic bed, shrub, forest)**									
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
Acres created or re-established **(emergent)**	0.025								
Basic mitigation Credit	0.2	0.125	0.125	0	0	0	0	0	0
Risk Factor (see below)	0.9								
CREDITS	0.18	0.1125	0.1125	0	0	0	0	0	0
REHABILITATION AND ENHANCEMENT									
Acres rehabilitated or enhanced **(aquatic bed, shrub, forest)**									
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
Acres rehabilitated or enhanced (**emergent**)									

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**		
Function	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat	Improving Water Quality	Hydrologic	Habitat
Acre-points	**0.18**	**0.1125**	**0.1125**	**0**	**0**	**0**	**0**	**0**	**0**

Total Credits by Function for Project	Improving Water Quality	Hydrologic	Habitat
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) ***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.~~*	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) *Risk factor applies to all types of mitigation.*	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) *Risk factor applies to all types of mitigation.*	0.80
Site does not meet criteria in site selection guide, or guide was not used.	
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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PARCEL# 944734
CITY OF ELLENSBURG
(PAUL ROGERS WILDLIFE PARK)

PARCEL
#684734
NATHAN
ALLEMAND

EXISTING
DRIVEWAY

PARCEL# 824734
CODY & LESLIE CAROLLO

EAST BRANCH
LYLE DITCH

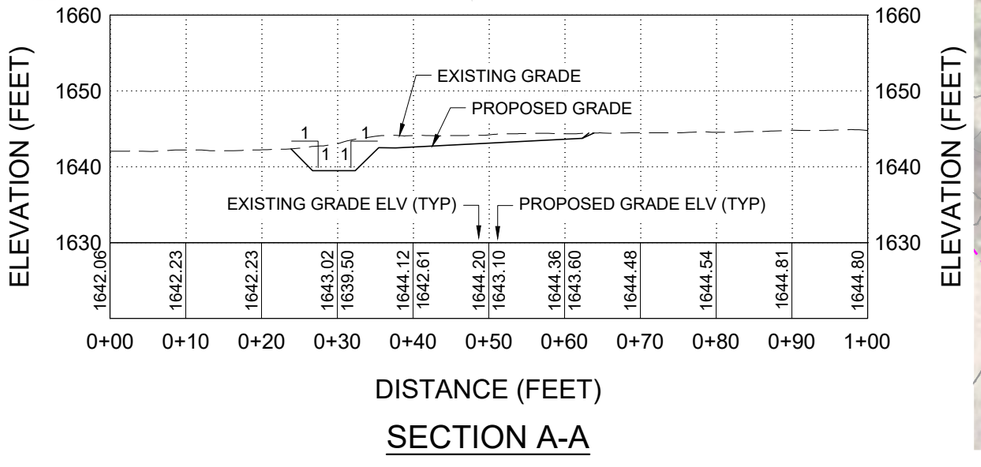
EXISTING WALKING PATH

EXISTING WALKING PATH

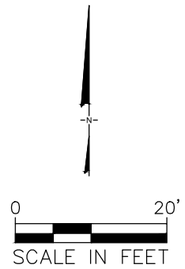
1644.00
1645.50
1644.50
1642.50
1643.50
1643.50

A
0+00
A'
1+00

1642.5
1639.5
1642.5
1642.5
1643.0
1643.5



SECTION A-A



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
Aspect CONSULTING

PROJECT NO:AS190390A | NOVEMBER 2025

FIGURE
1

C:_GEO-ACC\ACCDOCS\GEOSYNTEC\CITY OF ELLENSBURG_GATEWAY II\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK1 (GRADING PLAN) - Last Saved by: nathan.althauser on 11/10/25

LYLE CREEK

JUDGE RONALD RD

JUDGE RONALD RD

STAGING AREA
PRESERVE AND PROTECT EXISTING
KIOSK, BASALT COLUMN ROCK, FENCING,
ASPHALT, AND OTHER IMPROVEMENTS.

EXISTING
PARKING LOT

SIGNAGE
"PATHWAY TEMPORARILY CLOSED"

CHAIN-LINK FENCE W/ VEHICLE
& PERSONNEL GATES

EXISTING WALKING PATH

PARCEL# 684734
NATHAN
ALLEMAND

EXISTING DRIVEWAY

PARCEL# 944734
CITY OF ELLENSBURG
(PAUL ROGERS WILDLIFE PARK)

STABILIZED CONSTRUCTION ENTRANCE
(FODS TRACKOUT CONTROL MATS OR
APPROVED EQUIVALENT)

CONSTRUCTION ACCESS

CONSTRUCTION LIMITS

HIGH VISIBILITY FENCING (TYP)

EAST BRANCH
LYLE DITCH

PARCEL# 824734
CODY & LESLIE
CAROLLO

RESTORE TRAIL CROSSING
UPON COMPLETION

SIGNAGE
"PATHWAY TEMPORARILY CLOSED"

EXISTING WALKING PATH

EXISTING WALKING PATH

EXISTING
RESIDENCE

1650 1655 1645 1644 1643 1642 1652 1653

LEGEND

- HIGH VISIBILITY FENCING
- HIGH VISIBILITY SILT FENCING
- TREE PROTECTION AREA
- CONSTRUCTION ACCESS
- STABILIZED (FODS) CONSTRUCTION ENTRANCE
- CHAIN-LINK FENCING W/ GATES

0 50’
SCALE IN FEET

WETLAND MITIGATION DESIGN
TESC PLAN
ELLENSBURG, WASHINGTON

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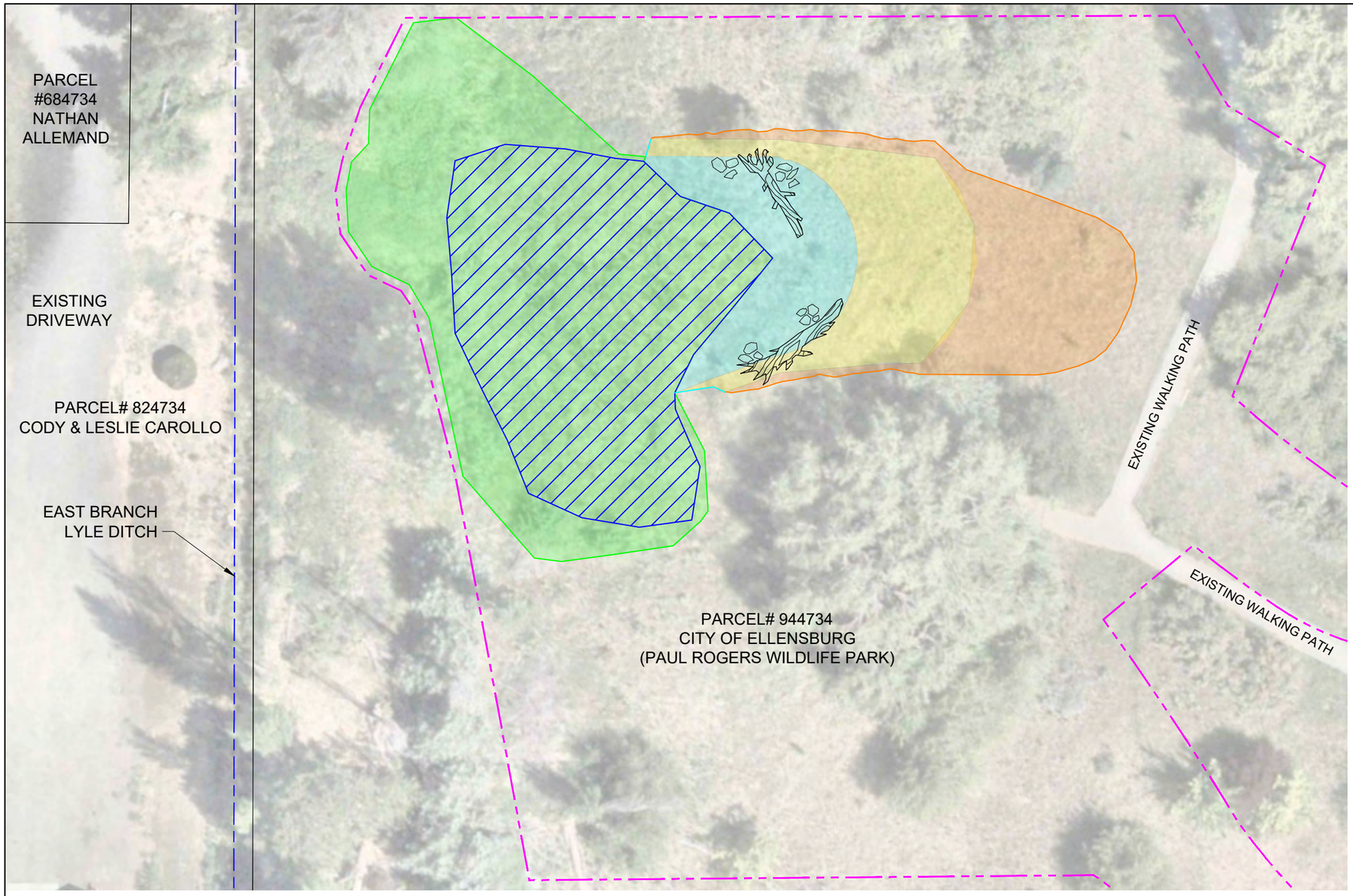
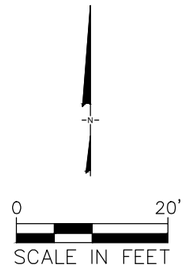
Aspect Consulting

FIGURE
2

PROJECT NO:AS190390A | November 2025

C:_GEO-ACC\ACCDOCS\GEOSYNTEC\CITY OF ELLENSBURG_GATEWAY II\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK2 (TESC PLAN) - Last Saved by: nathan.althauser on 11/14/25





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
PLANTING PLAN
ELLENSBURG, WASHINGTON

GG Environmental, LLC
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FIGURE
3

PROJECT NO:AS190390A | November 2025

C:_GEO-ACC\ACCDOCS\GEOSYNTEC\CITY OF ELLENSBURG_GATEWAY II\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK3 (PLANTING PLAN) - Last Saved by: nathan.althauser on 11/10/25

LYLE CREEK

JUDGE RONALD RD

JUDGE RONALD RD

EXISTING IRRIGATION DELIVERY POINT

PARCEL# 684734
NATHAN
ALLEMAND

EXISTING DRIVEWAY

EXISTING WALKING PATH

EXISTING PARKING LOT

PARCEL# 944734
CITY OF ELLENSBURG
(PAUL ROGERS WILDLIFE PARK)

PROPOSED SURFACE IRRIGATION DISTRIBUTION PIPE.
220LF 1-1/2 INCH POLYETHYLENE W/
FLOW ADJUSTABLE FEED TUBES
2-FT ON CENTER.

EXISTING SURFACE IRRIGATION CONVEYANCE PIPE

EAST BRANCH
LYLE DITCH

PARCEL# 824734
CODY & LESLIE
CAROLLO

EXISTING WALKING PATH

PROPOSED SURFACE IRRIGATION CONVEYANCE PIPE
185LF 2-INCH SCHEDULE 40 PVC

CONTROL VALVE

EXISTING WALKING PATH

EXISTING RESIDENCE

LEGEND

- IRR — PROPOSED IRRIGATION PIPE
- PROPOSED IRR. DISTRIBUTION PIPE
- PROPOSED CONTROL VALVE
- IRR — EXISTING IRRIGATION PIPE

N

0 50'

SCALE IN FEET

WETLAND MITIGATION DESIGN
IRRIGATION PLAN
ELLENSBURG, WASHINGTON

GG Environmental, LLC
WETLANDS • FISH • WILDLIFE

Aspect CONSULTING

FIGURE
4

PROJECT NO:AS190390A | November 2025

C:_GEO-ACC\ACCDOCS\GEOSYNTEC\CITY OF ELLENSBURG_GATEWAY II\PROJECT FILES\CADD\02_WETLAND MITIGATION DESIGN\FIGS\AS190390A.03-FIGWRK4 (IRRIGATION PLAN) - Last Saved by: nathan.althauser on 11/10/25