



CRITICAL AREAS REPORT - REVISED

May 2, 2024



13th Street Gas Station Camas, WA

Prepared for

PAK USA Camas, LLC
c/o Taz Khan
3993 NW Currawong Court
Camas, WA 98607
(512) 779-4999

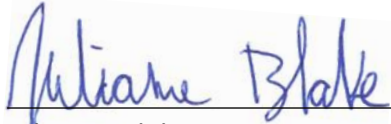
Prepared by

Ecological Land Services

1157 3rd Avenue, Suite 220A • Longview, WA 98632
(360) 578-1371 • Project Number 3934.01

SIGNATURE PAGE

The information in this report was compiled and prepared under the supervision and direction of the undersigned.

A handwritten signature in blue ink that reads "Julianne Blake". The signature is written in a cursive style and is positioned above a horizontal line.

Julianne Blake
Biologist III

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INTRODUCTION

Ecological Land Services, Inc. (ELS) was contracted by PAK USA Camas, LLC (PAK) to complete a critical areas assessment for wetlands and fish and wildlife habitat conservation areas, for the purpose of future development. The site is approximately 0.97 acres and consists of Clark County Tax Parcel 176148000 located at 20101 NE 13th Street within the NW ¼ of Section 29, Township 2 North, and Range 3 East of the Willamette Meridian in Camas, Washington (Figure 1). This report summarizes the findings of the site visit in accordance with *Camas Municipal Code (CMC) Title 16 Environment (2023)*.

PROJECT HISTORY

PLS Engineering (PLS) applied for permit approval for site development on behalf of PAK with the City of Camas (City) in December 2023 (DAHP Project Tracking # 2023-12-08397). The *Critical Areas Report for 13th Street Gas Station* completed by ELS in October 2023 identified a single Oregon white oak tree (*Quercus garryana*, FACU) onsite. No other critical areas were identified during the August 29, 2023 site visit. A State Environmental Policy Act (SEPA) Determination of Non-Significance (DNS) was issued by the City on February 22, 2024. The Department of Ecology (Ecology) responded to the SEPA DNS on March 6, 2024 requesting an additional site visit be completed during the normal wet portion of the growing season to reevaluate the property for the presence of wetlands. An additional site visit was completed by ELS on April 2, 2024. Although the site visit confirmed no wetlands or additional critical areas were located onsite, surface water was observed offsite to the west that was not present during the initial August 2023 site visit. This revised critical areas report documents the findings of the August 29, 2023 and April 2, 2024 site visits.

SITE DESCRIPTION

The 0.97-acre site consists of Clark County Tax Parcel 176148000 and is accessed by a paved driveway off NE 13th Street. The site is zoned as Business Park (BP) and currently contains a single-family mobile home, shed, carport, and paved driveway. The site is bordered to the north by NE 13th Street, to the east by NW Friberg-Strunk Street, to the south by undeveloped land and commercial development in progress, and to the west by undeveloped land and a single-family residence (Figure 2).

Vegetation onsite consists primarily of regularly mowed grasses, ornamental shrubs, and coniferous and deciduous trees. Topography onsite is generally flat with NE 13th Street and NW Friberg-Strunk Street roughly two feet higher in elevation than the site. One Oregon white oak was identified onsite along the southern property boundary.

METHODOLOGY

The property was evaluated for the presence of wetlands using the Routine Determination Method according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987); *Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). The Routine Determination Method and defining wetland criteria are discussed further in Appendix

A. Wetlands are regulated as “Waters of the United States” by the U.S. Army Corps of Engineers (Corps) and as “Waters of the State” by the Washington Department of Ecology (Ecology), and locally by The City of Camas (City).

ELS biologists evaluated the property on August 29, 2023 and April 2, 2024 to determine the presence or absence of critical areas including streams, wetlands, and priority habitats. One Oregon white oak (oak) was identified onsite during the August 2023 site visit, and no wetlands, streams, or other priority habitats were identified onsite. Vegetation, soil, and hydrology data were collected from one test plot (TP-1) during the August 2023 visit in an area with mapped hydric soils. Although no wetlands were present onsite, one wetland (Wetland A) was observed offsite to the southwest during the April 2024 site visit. As such, data was collected from another test plot (TP-2) in the southwest corner of the site, in the vicinity of Wetland A, to determine if the wetland boundaries extend onsite. Offsite boundaries for Wetland A were estimated by visual observations and aerial photos; therefore, Wetland A boundaries are approximate. The oak dripline and test plot locations were mapped using a hand-held Global Positioning System (GPS) unit capable of sub-meter accuracy under ideal conditions.

VEGETATION

General vegetation consists primarily of regularly mowed grass and ornamental trees and shrubs (Photoplates 1 and 2). One Oregon white oak was observed along the southern site boundary. The plant indicator status following the plant scientific name is defined by the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012) and can be found in Appendix A.

WETLANDS

Wetland A is located offsite. As such, wetland vegetation observations were limited to what could be observed from within site boundaries and are therefore generalized. Dominant wetland vegetation consisted of Oregon ash (*Fraxinus latifolia*, FACW) and reed canarygrass (*Phalaris arundinacea*, FACW), as well as other woody and herbaceous species.

UPLANDS

Dominant upland vegetation consisted of domestic apple trees (*Malus* spp., assumed FAC), Japanese maple (*Acer palmatum*, UPL), rhododendron (*Rhododendron* spp., assumed FAC), Oregon white oak, osoberry (*Oemleria cerasiformis*, FACU), mowed English hawthorn saplings (*Crataegus monogyna*, FAC), swordfern (*Polystichum munitum*, FACU), and fescue grass (*Festuca* spp., assumed FAC). The wetland determination data forms contain vegetation information at TP-1 and TP-2 and can be found in Appendix B.

SOILS

The Natural Resources Conservation Service (NRCS) designates soils onsite as cove silty clay loam, thin solum, 0 to 3 percent slopes (CwA), and Wind River gravelly loam, 0 to 8 percent slopes (WrB) (Figure 3, NRCS 2024B). Of the two soil types found onsite, cove silty clay loam, thin solum, 0 to 3 percent slopes is designated as hydric.

According to soil profile descriptions developed by NRCS, cove silty clay loam, thin solum, is characterized as a poorly drained soil, forming on floodplains, with a depth to water table of 0 to 12 inches below ground surface (BGS). A typical soil profile includes silty clay loam from 0 to 14 inches, clay from 14-21 inches, and silt loam from 21 to 60 inches BGS. Wind River gravelly loam is categorized as a somewhat excessively drained soil with a typical soil profile of gravelly loam from 0 to 4 inches, coarse sandy loam from 4 to 24 inches, and loamy coarse sand from 24 to 60 inches BGS. Wind River gravelly loam forms on floodplains from alluvium parent material and has an average depth to water table of more than 80 inches.

Evaluated soils were characterized as loamy with a value of 4, and a chroma of 3, with no observations of redoximorphic concentrations and meeting no hydric soil indicators. Mapped hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic wetland vegetation, and hydric soils must all be present to classify an area as a wetland. The test plot data forms are in Appendix B.

HYDROLOGY

WETLAND A (OFFSITE)

Wetland A is an emergent depressionnal wetland located just offsite to the west and outlets to Ditch 1. As it was outside of the site boundaries, an approximate boundary was mapped using aerial imagery and topography, and hydrology determinations are approximate. Wetland hydrology likely comes from a seasonally high groundwater table, runoff, and precipitation. Wetland A likely has two hydroperiods, seasonally flooded and saturated only. The wetland rating form is in Appendix D. Surface water was not observed at the time of the August 2023 site visit but was observed at the April 2024 visit.

DITCH 1 (OFFSITE)

One ditch is located just offsite to the west, along NE 13th Street, and is the outlet for Wetland A. Ditch 1 flows west for approximately 250 feet, where it flows through a culvert to the north under NE 13th Street, and discharges into an unnamed, Type F (fish-bearing) stream. Ditch 1 receives road runoff and outflow from Wetland A.

PRECIPITATION

Precipitation data was gathered from the NOAA Regional Climate Centers *Clark County, Washington, WETS Station: Battle Ground*, which is located closest to the site.

AUGUST 2023 SITE VISIT

No rainfall occurred the day of the site visit or in the two weeks prior. Rainfall in June, July, and August 2023 was below exceedance levels and approximately 94 percent of August rainfall occurred prior to the site visit. Furthermore, review of the USACE Antecedent Precipitation Tool (APT) indicates rainfall in the two months preceding the August 29th site visit was drier than normal with a score of 6. A copy of the APT data is provided in Appendix C. Table 1 summarizes the precipitation data.

Table 1. Precipitation Summary – August 29, 2023

Precipitation (inches)								
Date of Visit	Two Weeks Prior	3 Months Prior		30%	70%	DAREM ¹		
		30 Days Ending	Observed			Value	Weight	Total
8/29/23	8/15/23 – 8/28/23	8/29/23	0.05	0.25	0.99	1	3	3
0.0	0.0	7/30/23	0.0	0.24	0.82	1	2	2
		6/30/23	0.83	1.48	2.80	1	1	1
Rainfall 3 months prior was: drier than normal (sum 6-9), normal (sum 10-14), wetter than normal (sum 15-18). ¹								6
Year to Date Average Rainfall ^{2,3} : 50.06								
Year to Date Actual Rainfall ³ : 45.32								

¹ Direct Antecedent Rainfall Evaluation Methods (Sumner et al 2009)

² Includes 94% of August Rainfall

³ Based on a water year, October 2022 – August 2023

APRIL 2024 SITE VISIT

No rainfall occurred the day of the site visit and 1.82 inches occurred the two weeks prior. Rainfall in February and March was above exceedance levels while rainfall in April was below exceedance levels. Approximately 7 percent of April rainfall occurred prior to the site visit. Furthermore, review of the APT indicates rainfall in the two months preceding the April 2nd site visit was normal with a score of 12. A copy of the APT data is provided in Appendix C. Table 2 summarizes the precipitation data.

Table 2. Precipitation Summary – April 2, 2024

Precipitation (inches)								
Date of Visit	Two Weeks Prior	3 Months Prior		30%	70%	DAREM ¹		
		30 Days Ending	Observed			Value	Weight	Total
4/2/24	3/19/24 – 4/1/24	4/2/24	2.46	3.17	4.86	1	3	3
0.0	1.82	3/3/24	5.63	2.71	5.08	3	2	6
		2/2/24	8.93	4.26	7.11	3	1	3
Rainfall 3 months prior was: drier than normal (sum 6-9), normal (sum 10-14), wetter than normal (sum 15-18). ¹								12
Year to Date Average Rainfall ^{2,3} : 39.50								
Year to Date Actual Rainfall ³ : 43.69								

¹ Direct Antecedent Rainfall Evaluation Methods (Sumner et al 2009)

² Includes 7% of April Rainfall

³ Based on a water year, October 2023 – April 2024

CRITICAL AREA INVENTORIES

NATIONAL WETLANDS INVENTORY

The National Wetlands Inventory (NWI) map does not indicate any wetlands onsite or in the vicinity of the site (Figure 4, USFWS 1988). ELS partially agrees with the NWI mapping as no wetlands were identified onsite, but Wetland A was identified offsite to the west which was not shown by the NWI.

CLARK COUNTY CRITICAL AREA INVENTORY

The Clark County Critical Area Inventory (CAI) map does not indicate any wetlands onsite or in the location of Wetland A but does indicate potential wetlands presence on the property to the south. Hydric soils are mapped along the eastern site boundary and the southwestern corner, and a habitat area is mapped over the majority of the eastern portion of the site (Figure 5). ELS partially agrees with the CAI as no wetlands were identified onsite and one oak was observed in the vicinity of the mapped habitat area. However, ELS does not agree with the extent of the mapped habitat area as only one oak was identified onsite and no other critical habitats were identified. The potential wetlands mapped to the south of the site are located in the footprint of a commercial development that has received permit approval.

WASHINGTON DEPARTMENT OF NATURAL RESOURCES STREAM TYPE

The Washington Department of Natural Resources (WDNR) Stream Type Map does not depict any streams onsite (Figure 6, WDNR 2024). ELS agrees with the WDNR mapping as no streams were observed onsite.

PRIORITY HABITATS AND SPECIES

The Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) maps indicate oak woodland and caves or cave-rich areas on the southern boundary of the site and within 300 feet of the site to the southwest (Figure 7, WDFW 2024). ELS confirmed the presence of a single oak along the southern site boundary, but no oak woodlands or caves were observed onsite.

Critical area inventory maps are typically used to gather general information about a region and due to the large scale necessary for regional mapping, are limited in accuracy for localized analyses.

CRITICAL AREAS SUMMARY

OFFSITE WETLAND

Wetland A is a Category III, depressionnal, forested and emergent wetland totaling approximately 0.57 acres offsite to the west, and outlets to Ditch 1. Offsite boundaries for Wetland A were estimated by visual observations of changes in vegetation, the presence of surface water, and aerial photos; therefore, Wetland A boundaries are approximate. Vegetation in Wetland A is dominated by deciduous trees and herbaceous vegetation. Wetland hydrology likely comes from a seasonally high groundwater table, runoff, and precipitation. Hydroperiods include seasonally flooded and saturated only. According to the *Washington State Wetland Rating System for*

Western Washington: 2014 Update (Rating System), Wetland A is a Category III wetland scoring 7 points for water quality functions, 7 points for hydrologic functions, and 4 points for habitat functions, for a total of 18 points.

WETLAND BUFFERS AND FUNCTIONAL ISOLATION

The designated buffer width for a Category III wetland with a high land use intensity and a habitat score of 4 is 80 feet, as listed in *CMC Table 16.53.040-1* (Table 3).

According to *CMC 16.53.040(B)(4)(b)*, functionally isolated buffer areas are areas that are separated from a wetland and do not protect the wetland from adverse impacts. When impervious surfaces from previous development, such as pre-existing roads, structures, or vertical separation completely functionally isolate the wetland, the wetland buffer shall extend from the wetland boundary to the impervious surfaces. Wetland A's onsite buffer is functionally isolated on the east side by the existing mobile home.

Table 3. Wetland Summary

Wetland						
Name	Size	Hydrogeomorphic Classification ¹	Cowardin Class ² / Hydroperiod	Habitat Score ³	Category ³	Buffer Width ⁴
A	Approximately 0.57 acres	Depressional	Emergent, Forested/ Saturated Only	4	III	80 ft.

¹*NRCS 2008*

²*FGDC 2013*

³*Hruby 2014*

⁴*CMC Table 16.53.040-1*

PRIORITY HABITATS

OREGON WHITE OAK

Oregon white oaks are considered a priority habitat and are regulated by the Washington Department of Fish and Wildlife (WDFW) and locally by the City of Camas. According to WDFW's Management Recommendations for Washington's priority habitats: Oregon white oak woodlands (Larsen and Morgan, 1998), in urban or urbanizing areas west of the Cascades, priority oak habitat is defined as single oaks, stands of pure oak, or oak/conifer associations, one acre or greater in size. WDFW may also consider individual Oregon white oak trees a priority habitat when found to be particularly valuable to wildlife [i.e., contains many cavities, has a large diameter at breast height (DBH), is used by priority species, or has a large canopy]. The site is within the City of Camas. WDFW recommendation is that in urban and urbanizing areas, single trees should be maintained if they are deemed important to species highly associated with Oregon white oak. Oaks and their associated floras comprise distinct woodland ecosystems with various plant communities providing valuable habitat that contributes to wildlife diversity; oak woodlands provide a mix of feeding, resting, and breeding habitat for many wildlife species (Larsen and Morgan 1998).

The WDFW Priority Habitats and Species online mapping tool depicts oak woodlands within the vicinity of the observed oak along the southern site boundary. One oak tree measuring approximately 52 inches DBH was mapped along the southern site boundary during site reconnaissance (Table 4, Figure 2). The oak has several live and dead branches, cavities, and has canopy connectivity with other trees in the vicinity but is not connected with other oaks. The oak location was mapped using a GPS system capable of submeter accuracy in ideal conditions. According to *CMC 16.61.010(3)(a)*, individual Oregon white oak trees with a twenty-inch DBH are considered a priority habitat.

Table 4. Oak Summary

Canopy Area	Diameter at Breast Height	Number of Trunks	Noteworthy Habitat Features
0.08 acres	52 inches	1	<ul style="list-style-type: none"> • Canopy is interconnected with adjacent trees, but not other oaks • Two large cavities

LIMITATIONS

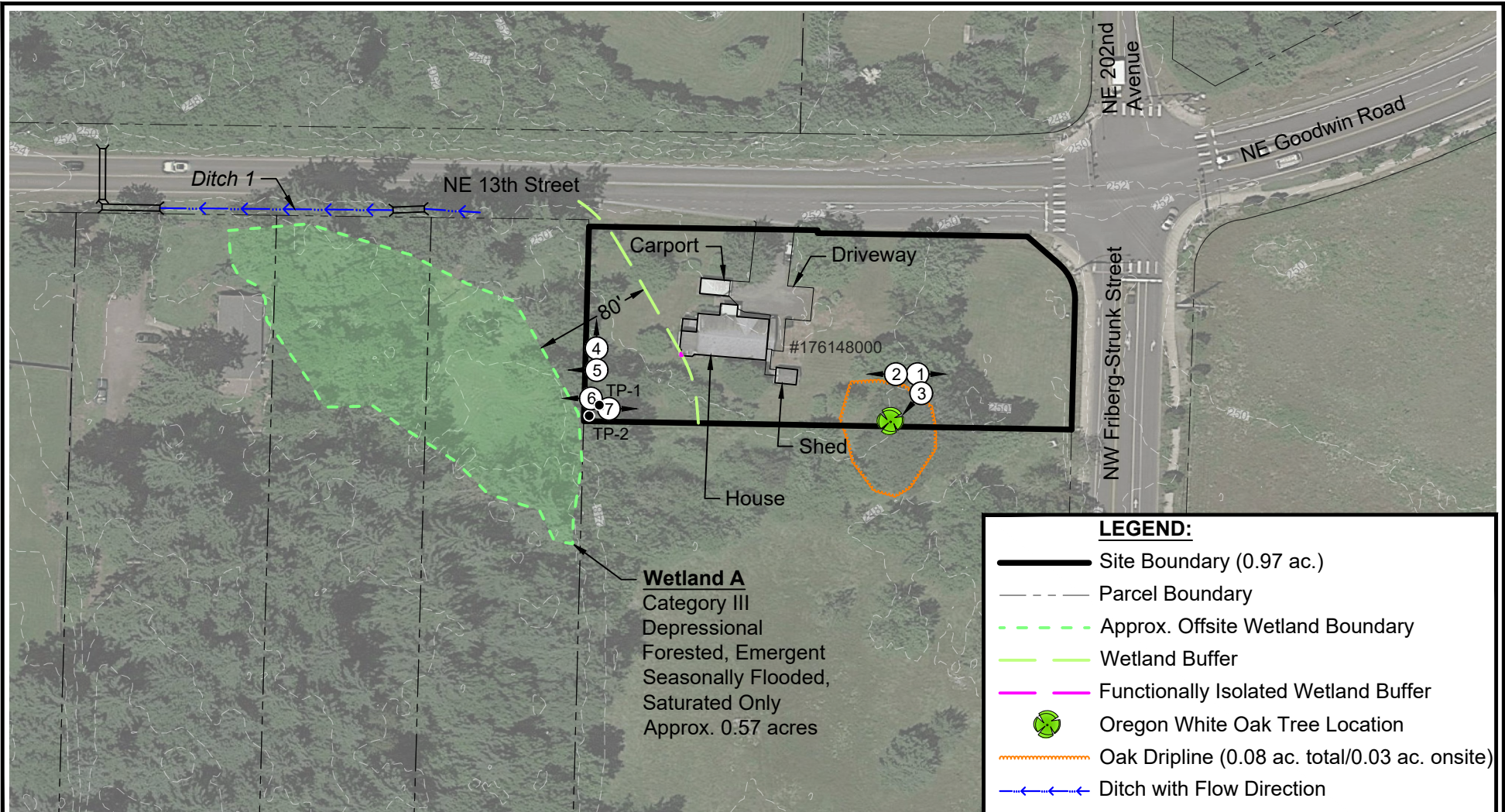
ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

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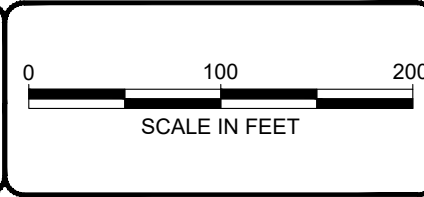
FIGURES AND PHOTOPLATES



LEGEND:

- Site Boundary (0.97 ac.)
- Parcel Boundary
- Approx. Offsite Wetland Boundary
- Wetland Buffer
- Functionally Isolated Wetland Buffer
- Oregon White Oak Tree Location
- Oak Dripline (0.08 ac. total/0.03 ac. onsite)
- Ditch with Flow Direction
- Culvert
- 1' Contours
- TP-1 ● Test Plot Location
- ① Photo Point Location

- NOTE(S):**
1. Aerial from Google Earth™ (6/17/2021).
 2. Photostations located using handheld GPS capable of submeter accuracy.
 3. Site boundary, oak tree location, and oak dripline surveyed by PLS Engineering, Inc.
 4. Parcel, ditch, and culvert data from Clark County GIS Department.
 5. Topography from 2013 Clark County Lidar provided by WDNR at <https://lidarportal.dnr.wa.gov>.

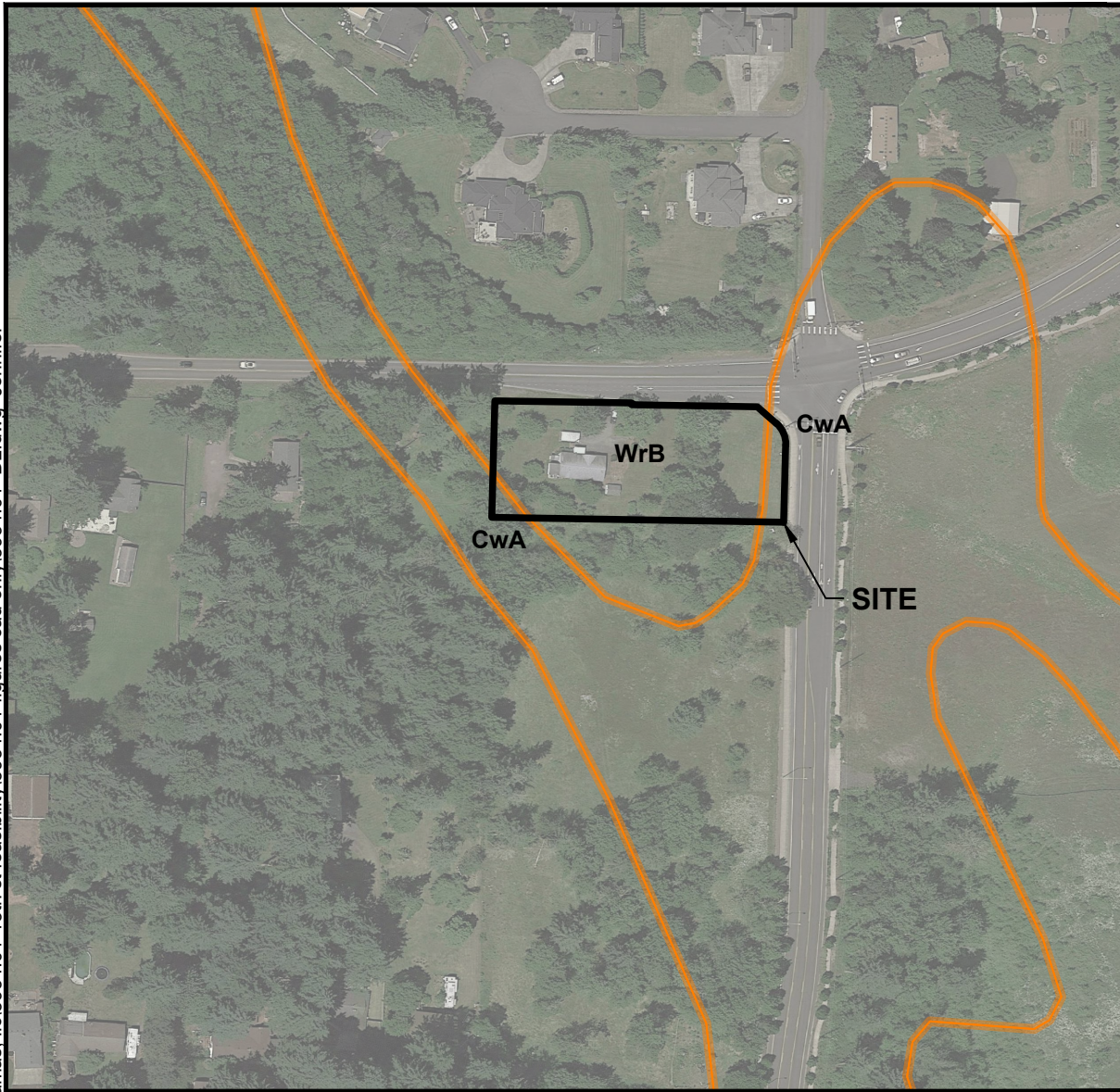


1157 3rd Ave., Suite 220A
 Longview, WA 98632
 Phone: (360) 578-1371
 Fax: (360) 414-9305
www.eco-land.com

DATE: 5/2/24
 DWN: JKJ
 REQ. BY: JB
 PRJ. MGR: JB
 CHK:
 PROJECT NO:
 3934.01

Figure 2
 EXISTING CONDITIONS
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

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LEGEND:

- Site Boundary
- NRCS Soil Boundary
- CwA** Cove silty clay loam, thin solum, 0 to 3 percent slopes. Hydric.
- WrB** Wind River gravelly loam, 0 to 8 percent slopes. Not hydric.

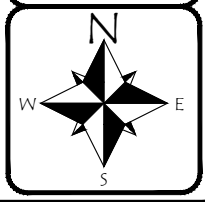
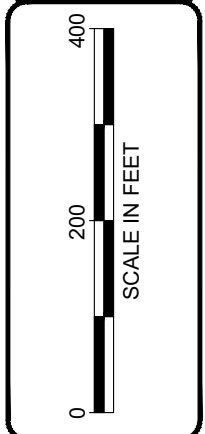
NOTE(S):

1. Map provided on-line by NRCS at web address:
<http://websoilsurvey.nrcs.usda.gov/app/>

Figure 3
NRCS SOIL SURVEY
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

DATE: 5/2/24
 DWN: JKJ
 REQ. BY: JB
 PRJ. MGR: JB
 CHK:
 PROJECT NO:
 3934.01

1157 3rd Ave., Suite 220A
 Longview, WA 98632
 Phone: (360) 578-1371
 Fax: (360) 414-9305
www.eco-land.com



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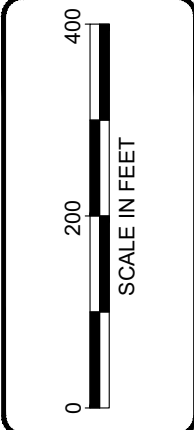
No mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:

-  Site Boundary
-  Wetlands
-  Riverine

NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address:
<https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>




**Ecological
Land Services**

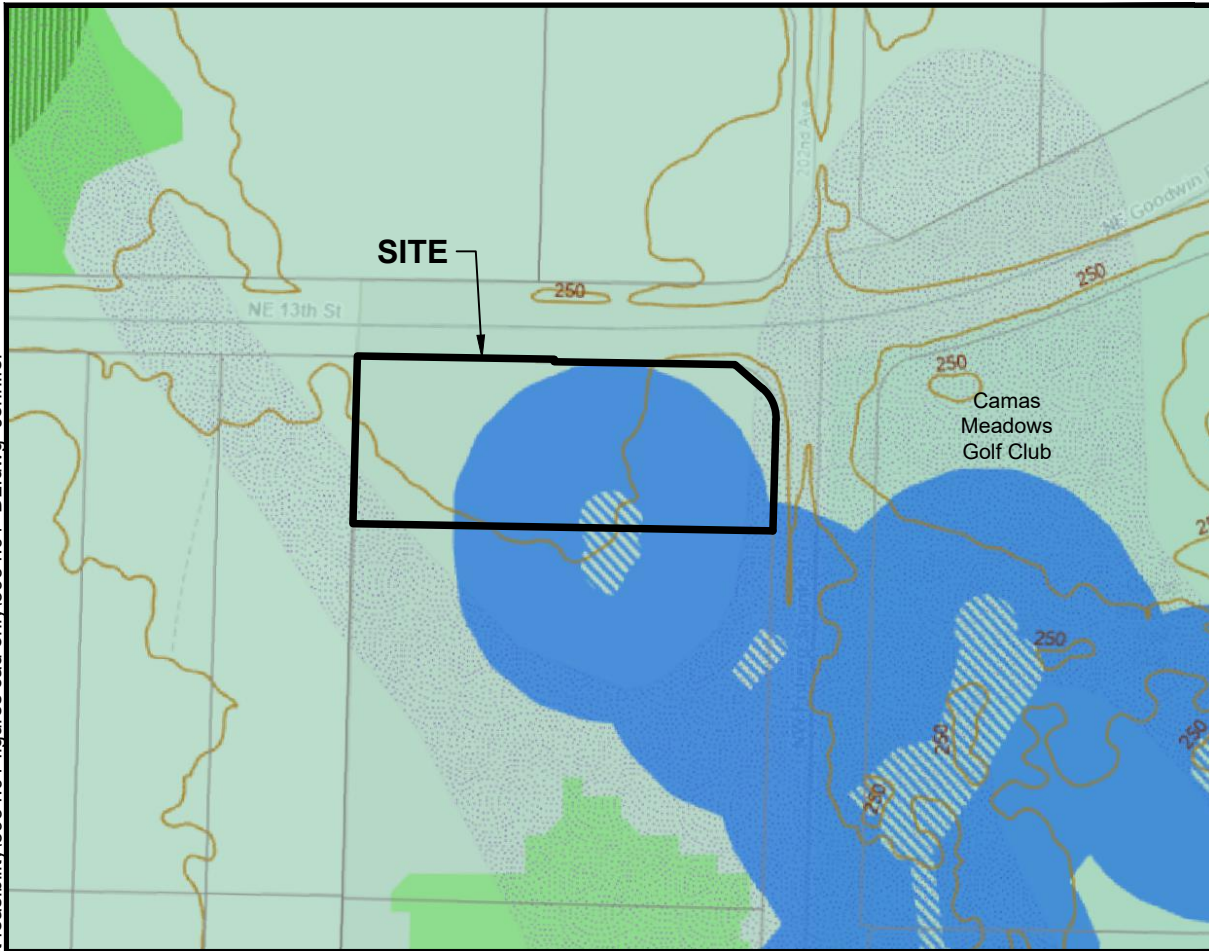
1157 3rd Ave., Suite 220A
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Phone: (360) 578-1371
Fax: (360) 414-9305
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DATE: 5/2/24
DWN: JKJ
REQ. BY: JB
PRJ. MGR: JB
CHK:
PROJECT NO:
3934.01

Figure 4

USFWS NATIONAL WETLANDS INVENTORY
13th Street Gas Station
PAK USA Camas, LLC
City of Camas, Clark County, Washington
Section 29, Township 2N, Range 3E, W.M.

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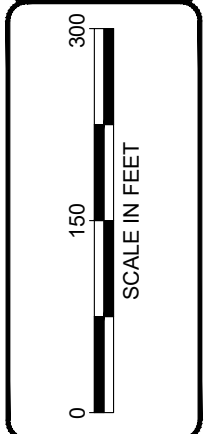
- Site Boundary
- Slopes and Geologic Hazards Group
- Contour Lines
- Contour Lines - 10 ft
- Soils and Wetlands Inventory
- Hydric Soils
- Potential Wetlands Presence
- Permitted Wetland

- Priority Habitats and Species Group
- Habitat
- Habitat Area
- Adjacent to Habitat Area
- Riparian Habitat
- Riparian Habitat Area
- Location Generalized Due to Sensitivity
- Habitat Area

Figure 5
CLARK COUNTY CRITICAL AREAS
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

DATE: 5/2/24
 DWN: JJK
 REQ. BY: JB
 PRJ. MGR: JB
 CHK:
 PROJECT NO:
 3934.01

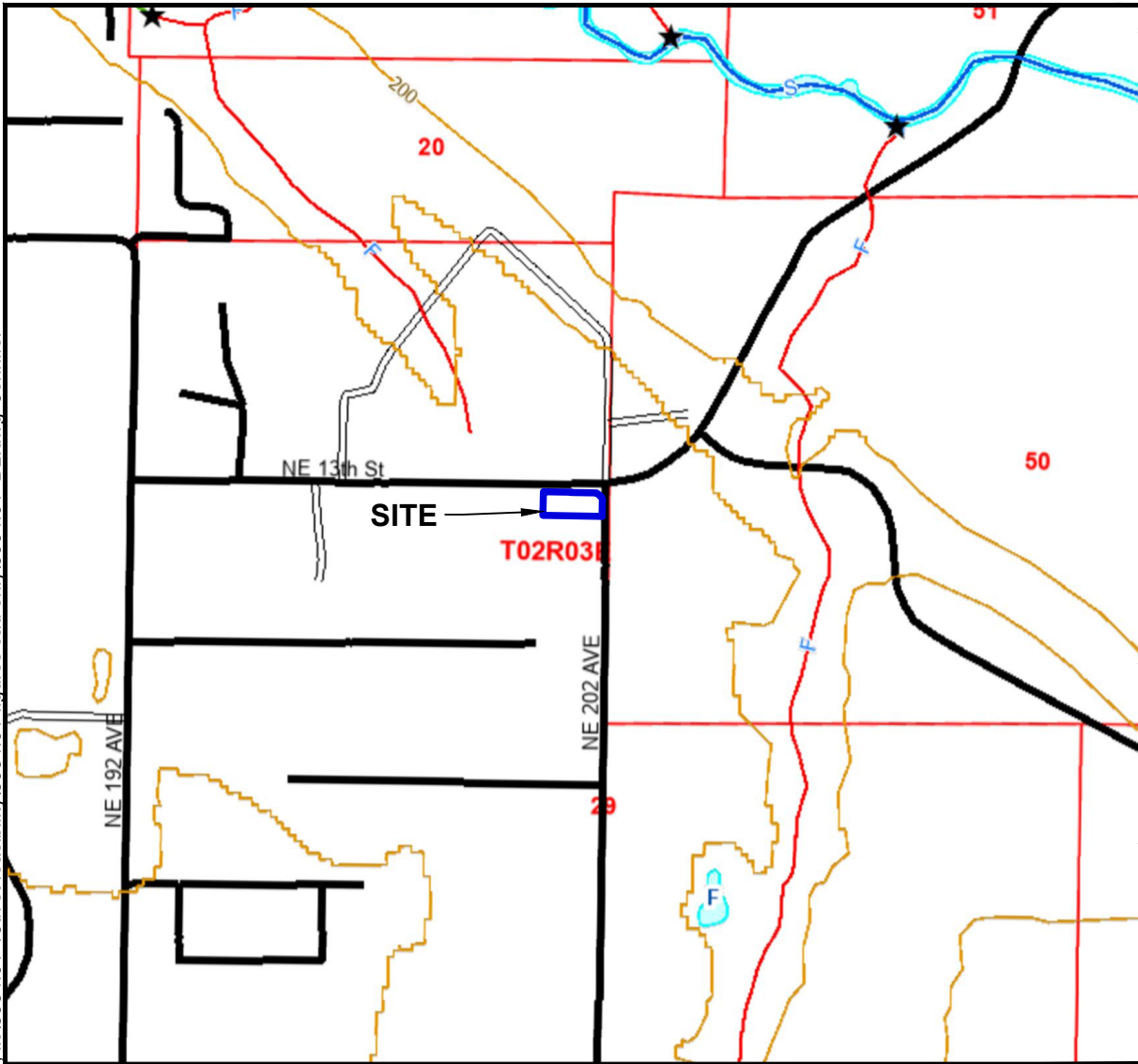
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NOTE(S):

1. Map provided on-line by Clark County at web address: <https://gis.clark.wa.gov/maponline/index.cfm?site=Environmental>

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No mapped streams indicated onsite by the Washington State Department of Natural Resources (DNR).

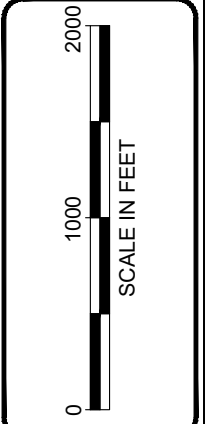
LEGEND:

- | | | |
|-------------------------|-----------------------------|-------------------------------------|
| Site Boundary | <u>Water Courses (FP)</u> | <u>DNR Roads</u> |
| <u>40-foot Contours</u> | Type S | Paved Road |
| 40 ft. Contours | Type F | Unpaved Road/Surface Unknown |
| | Type N, Np, Ns | <u>Unpaved Road/Surface Unknown</u> |
| | U, unknown | Water Type Breaks (FP) |
| | X, non-typed per WAC 222-16 | |
| | <u>WRIA Boundaries</u> | |
| | WRIA Boundaries | |

Figure 6
WDNR STREAM TYPE MAP
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

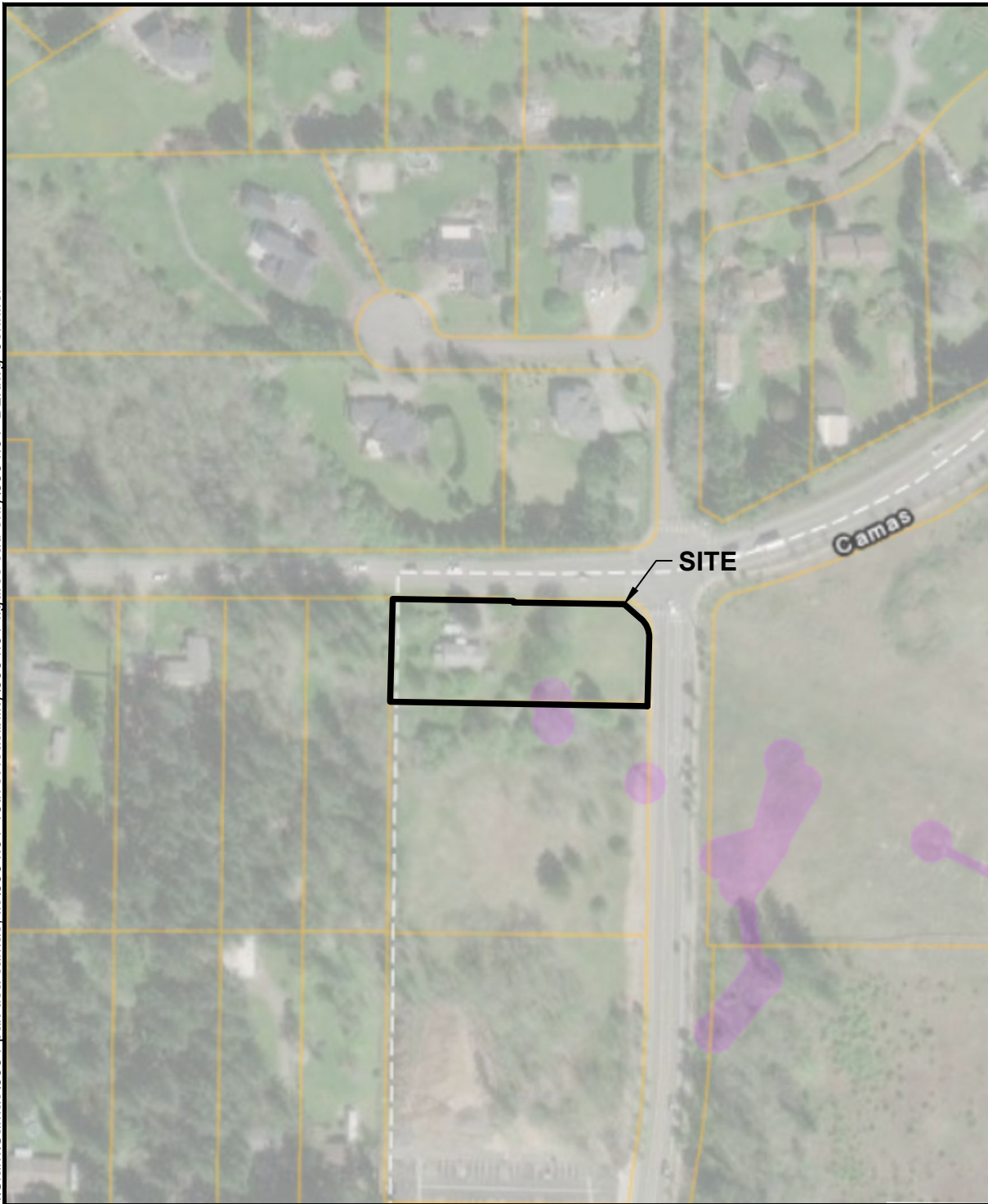
DATE: 5/2/24
 DWN: JKJ
 REQ. BY: JB
 PRJ. MGR: JB
 CHK:
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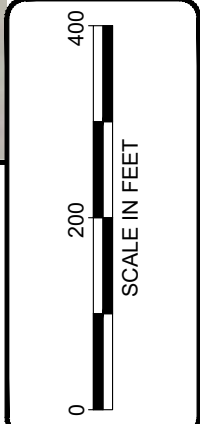
NOTE: Map provided on-line by Washington State Department of Natural Resources at web address: <http://fortress.wa.gov/dnr/app1/Fpars/viewer.htm>

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- LEGEND:**
-  Site Boundary
 -  Parcel Boundary
 -  Oak Woodland - Habitat Feature
- By Township
Caves or Cave-rich Areas

NOTE: Map provided on-line by Washington State Department of Fish & Wildlife at web address: <http://apps.wdfw.wa.gov/phsontheweb/>




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REQ. BY: JB
PRJ. MGR: JB
CHK:
PROJECT NO:
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Figure 7
WDFW PRIORITY HABITAT AND SPECIES
13th Street Gas Station
PAK USA Camas, LLC
City of Camas, Clark County, Washington
Section 29, Township 2N, Range 3E, W.M.

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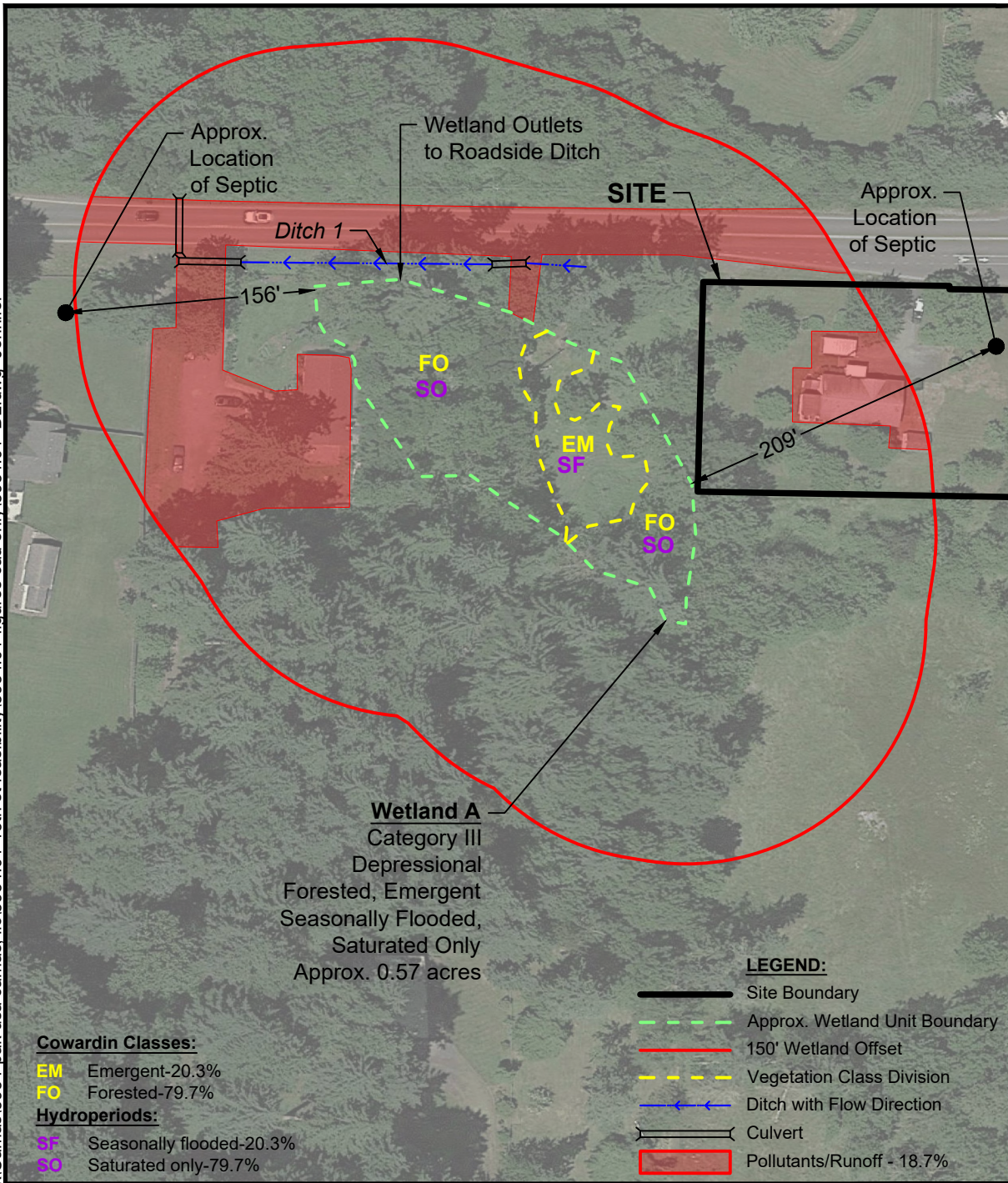
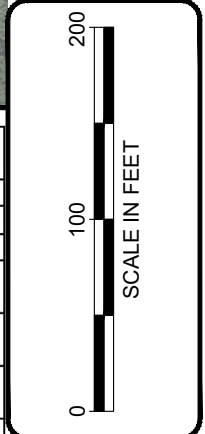


Figure 8
WETLAND RATING FORM-150' OFFSET
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

DATE: 5/2/24
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 REQ. BY: JB
 PRJ. MGR: JB
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Cowardin Classes:

- EM** Emergent-20.3%
- FO** Forested-79.7%

Hydroperiods:

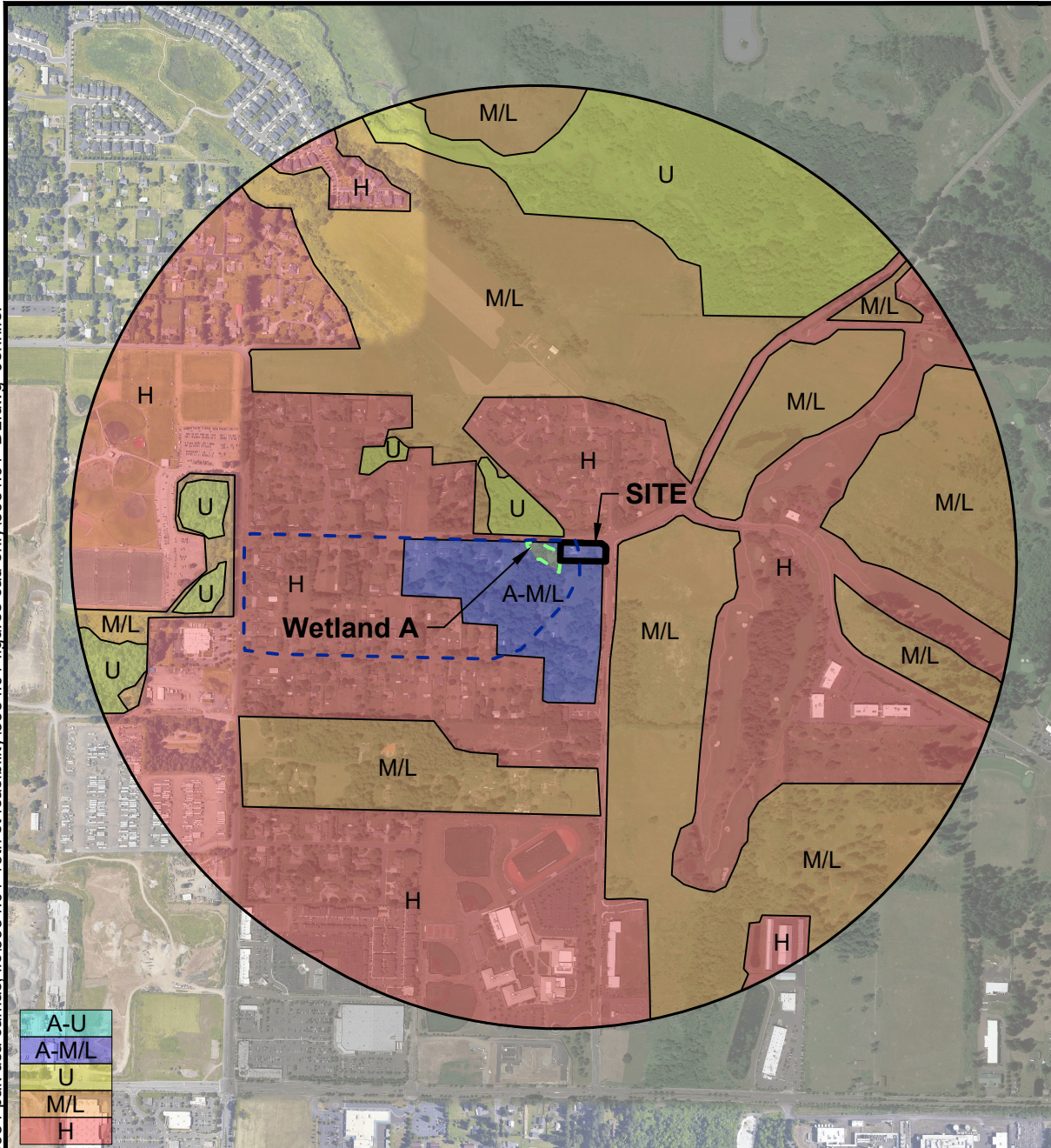
- SF** Seasonally flooded-20.3%
- SO** Saturated only-79.7%

LEGEND:

- Site Boundary
- Approx. Wetland Unit Boundary
- 150' Wetland Offset
- Vegetation Class Division
- Ditch with Flow Direction
- Culvert
- Pollutants/Runoff - 18.7%

Rating Question	Description	Wetland A
Depressional		
D 1.1, D 4.1	Location of Outlet	Wetland has an intermittently flowing stream or ditch.
D 1.3	Distribution of persistent plants	Wetland has persistent plants >1/2 the area.
D. 1.4	Area of seasonally flooded	Area seasonally ponded <1/4 of area.
D 2.2	Boundary of area w/in 150' of the wetland in land uses that generate pollutants	>10% area within 150' in land use that generate pollutants.
D 5.2	Boundary of area w/in 150' of the wetland in land uses that generate excess runoff	>10% area within 150' in land use that generate excess runoff.
D 4.3	Contributing Basin-Contribution of wetland to storage in the watershed	The area of the basin is 10 to 100 times the area of the unit.
D 5.3	Contributing Basin covered in intensive land uses	>25% of the contributing basin is covered with intensive land uses.
H 1.1	Cowardin Plant Classes	Emergent, Forested
H 1.2	Hydroperiods	Seasonally flooded, Saturated only
H 1.4	Interspersion of habitats	Low interspersion of habitats

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A-U
A-M/L
U
M/L
H

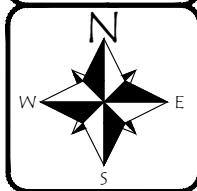
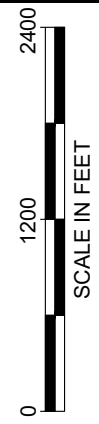
Figure 9
WETLAND RATING FORM-1 km OFFSET
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

DATE: 5/2/24
 DWN: JKJ
 REQ. BY: JB
 PRJ. MGR: JB
 CHK:
 PROJECT NO:
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LEGEND: Site Boundary Approx. Wetland Unit Boundary Contributing Basin 77x area of Wetland A	H2.1 Accessible Habitat		H2.2 Undisturbed Habitat	
	A-U A-U (0.0%)	U U (9.0%)		
	A-M/L A-M/L (2.9%)	M/L M/L (37.7%)		
	H2.3 Land Use Intensity		H H (50.4%)	



H 2.1. Accessible Habitat Equation

$$\% \text{ [A-U] habitat } \mathbf{0.0\%} + [(\% \text{ [A-M/L] intensity land uses})/2] \mathbf{1.5\%} = \mathbf{1.5\%}$$

H 2.2. Total Undisturbed Habitat Equation

$$\% \text{ [A-U] } + \% \text{ [U] habitat } \mathbf{9.0\%} + [(\% \text{ [A-M/L] } + \% \text{ [M/L] land uses})/2] \mathbf{20.3\%} = \mathbf{29.3\%}$$

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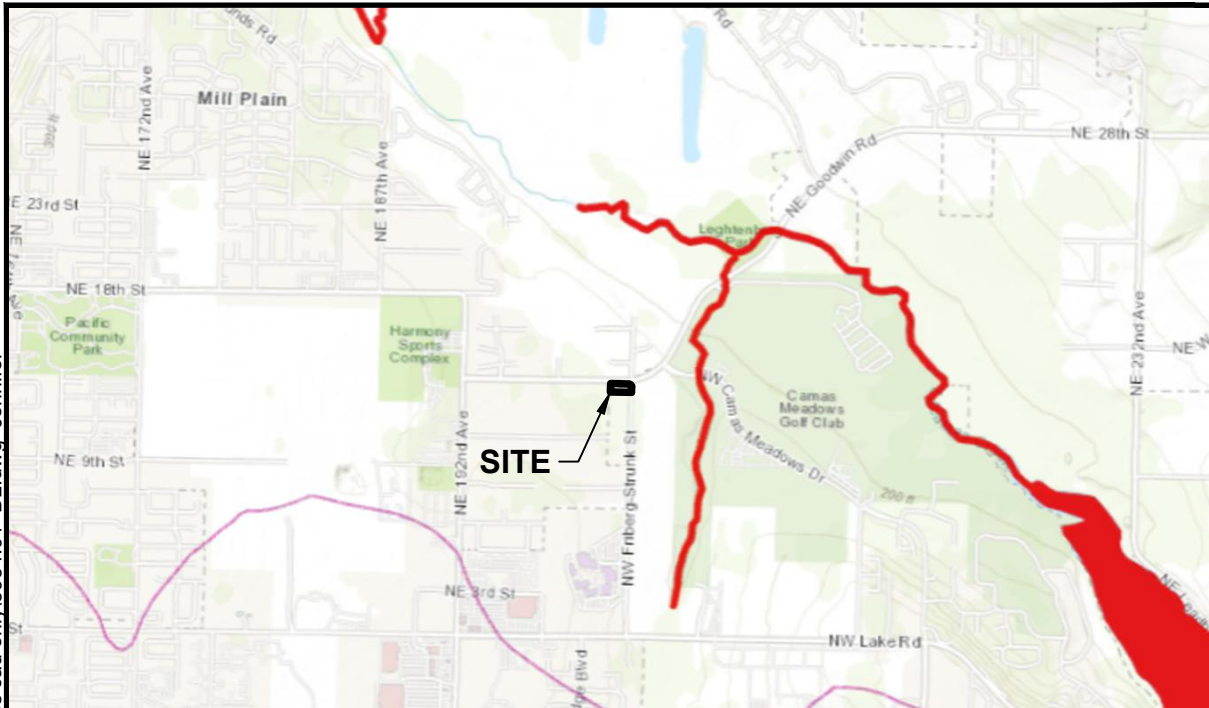


Figure 10
WETLAND RATING FORM-303(d) and TMDLs
 13th Street Gas Station
 PAK USA Camas, LLC
 City of Camas, Clark County, Washington
 Section 29, Township 2N, Range 3E, W.M.

Assessed Waters/Sediment

Water

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

Sediment

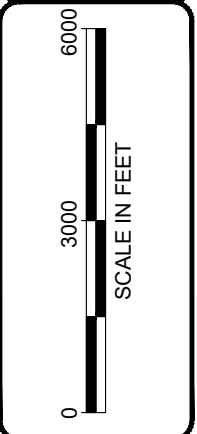
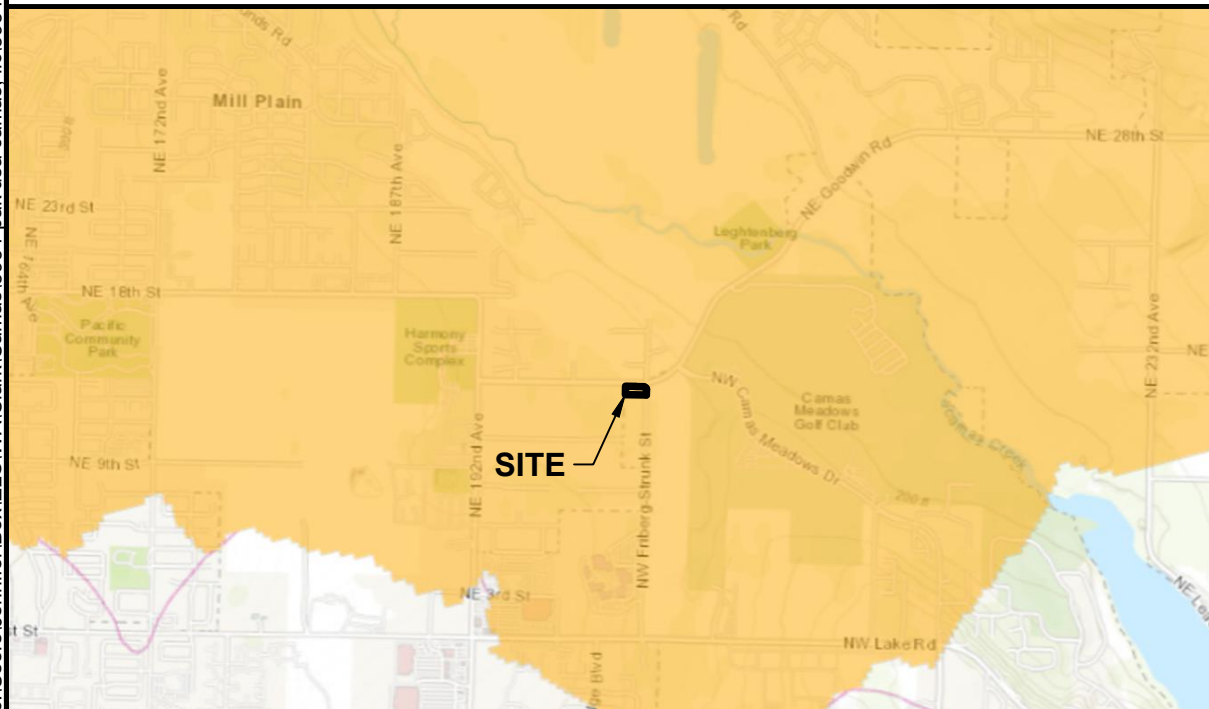
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins

- 12 Digit HUC Boundary

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WQ Improvement Projects

- Approved
- In Development

NOTE(S):

1. Map provided on-line by Washington State Department of Ecology at web address: <https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?>





Photo 1 was taken facing east and shows general conditions onsite.



Photo 2 was taken facing west and shows general conditions onsite. The oak is visible on the left.



Photo 3 shows the onsite Oregon white oak.



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PROJ.#: 3934.01

Photoplate 1
13th Street Gas Station
Camas, WA
Section 29, Township 2N, Range 3E, W.M.



Photo 4 was taken facing north at TP-1 and shows general conditions onsite.



Photo 5 was taken facing west.



Photo 6 was taken facing west at TP-1.



Photo 7 was taken facing east at TP-1 and shows general conditions onsite.



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Photoplate 2
13th Street Gas Station
Camas, WA
Section 29, Township 2N, Range 3E, W.M.

APPENDIX A

ROUTINE DETERMINATION METHOD AND PLANT INDICATOR RATING DEFINITIONS

ROUTINE DETERMINATION METHOD

The Routine Determination Method is defined according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987); *Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). The Routine Determination Method examines three parameters – vegetation, soils, and hydrology – to determine if wetlands exist in a given area. Hydrology is critical in determining what is a wetland, but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for a long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

VEGETATION INDICATOR STATUS

The indicator status, following the scientific names of plant species, indicates the likelihood of the species to be found in wetlands according to the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012). Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) - occur almost always under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands, but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands.
- **FACU** (facultative upland) - usually occur in non-wetlands, but occasionally found in wetlands.
- **UPL** (obligate upland) - occur almost always under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

APPENDIX B

WETLAND DETERMINATION DATA FORMS

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

Project/Site: 13th Street Gas Station City/County: Camas/Clark Sampling Date: 08/29/2023
 Applicant/Owner: PAK USA Camas, LLC State: WA Sampling Point: TP-1
 Investigator(s): J. Blake Section, Township, Range: S29, T2N, R3E
 Landform (hillslope, terrace, etc.): Floodplains Local relief: (concave, convex, none): Convex Slope (%): 0-3%
 Subregion (LRR): LRR MLRA2 Lat: 45.6318544 Long: -122.4669931 Datum: NAD83
 Soil Map Unit Name: Cove silty clay loam, thin solum, 0 to 3 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: TP-1 is located in the southwest corner of the site in an area with mapped hydric soils. TP-1 does not meet all three wetland indicators and is therefore in uplands. Hydrologic conditions were not typical for this time of year, as antecedent rainfall was determined to be drier than normal for the two months prior to the site visit.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
Tree Stratum (Plot size: <u>30</u> ft radius)				Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
1. <u>Malus spp.*</u>	20%	yes	FAC	
2. <u>Fraxinus latifolia</u>	20%	yes	FACW	
3. <u>Robinia pseudoacacia</u>	20%	yes	FACU	
4. <u>Crataegus monogyna</u>	15%	yes	FAC	Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1= _____ FACW species _____ x 2= _____ FAC species _____ x 3= _____ FACU species _____ x 4= _____ UPL species _____ x 5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A= _____
50% = <u>38</u> 20% = <u>15</u>	75%	=Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15</u> ft. radius)				
1. _____	%			
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
50% = _____ 20% = _____	%	=Total Cover		
Herb Stratum (Plot size: <u>5</u> ft radius)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 – Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Festuca spp.*</u>	93%	yes	FAC	
2. <u>Iris spp.*</u>	5%	no	FACW	
3. <u>Rubus ursinus</u>	2%	no	FACU	
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
8. _____	%			
9. _____	%			
10. _____	%			
11. _____	%			
50% = <u>50</u> 20% = <u>20</u>	100%	=Total Cover		
Woody Vine Stratum (Plot size: <u>15</u> ft radius)				
1. <u>Rubus armeniacus</u>	5%	yes	FAC	
2. _____	%			
50% = <u>3</u> 20% = <u>1</u>	5%	=Total Cover		
% Bare Ground in Herb Stratum <u>0</u> %				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: *Festuca spp.** and *Malus spp.** indicator statuses assumed FAC. *Iris spp.** indicator status assumed FACW.

SOIL

Sampling Point: TP-1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/3	100%		%			Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Minerals (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: Hardpan
Depth (inches): 6

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (Inches): _____
 Water Table Present? Yes No Depth (Inches): _____
 Saturation Present? Yes No Depth (Inches): _____
 (Includes Capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks: Hydrologic conditions were not typical for this time of year, as antecedent rainfall was determined to be drier than normal for the two months prior to the site visit.

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

Project/Site: 13th Street Gas Station City/County: Camas/Clark Sampling Date: 04/02/2024
 Applicant/Owner: PAK USA Camas, LLC State: WA Sampling Point: TP-2
 Investigator(s): AJ Rendleman Section, Township, Range: S29, T2N, R3E
 Landform (hillslope, terrace, etc.): Floodplains Local relief: (concave, convex, none): Convex Slope (%): 0-3%
 Subregion (LRR): LRR MLRA2 Lat: 45.631925 Long: -122.466933 Datum: NAD83
 Soil Map Unit Name: Cove silty clay loam, thin solum, 0 to 3 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: TP-2 is located in the southwest corner of the site in an area with mapped hydric soils, just southwest of TP-1. TP-2 does not meet all three wetland indicators and is therefore in uplands. Hydrologic conditions were typical for this time of year, as antecedent rainfall was determined to be normal.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30</u> ft radius)					
1. <u>Robinia pseudoacacia</u>	65%	yes	FACU	Dominance Test Worksheet Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC <u>66</u> (A/B)	
2. <u>Fraxinus latifolia</u>	20%	yes	FACW		
3. _____	%				
4. _____	%				
50% = <u>43</u> 20% = <u>17</u>	85%	=Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15</u> ft. radius)					
1. _____	%			Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1= _____ FACW species _____ x 2= _____ FAC species _____ x 3= _____ FACU species _____ x 4= _____ UPL species _____ x 5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A= _____	
2. _____	%				
3. _____	%				
4. _____	%				
5. _____	%				
50% = ____ 20% = ____	%	=Total Cover			
Herb Stratum (Plot size: <u>5</u> ft radius)					
1. <u>Festuca spp*</u>	100%	yes	FAC		
2. _____	%				
3. _____	%				
4. _____	%				
5. _____	%				
6. _____	%				
7. _____	%				
8. _____	%				
9. _____	%				
10. _____	%				
11. _____	%				
50% = <u>50</u> 20% = <u>20</u>	100%	=Total Cover			
Woody Vine Stratum (Plot size: <u>15</u> ft radius)					
1. _____	%				
2. _____	%				
50% = ____ 20% = ____	%	=Total Cover			
% Bare Ground in Herb Stratum <u>0</u> %				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

SOIL

Sampling Point: TP-2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/3	100%		%			Silty clay loam	
10-16	10YR 4/2	80%	10YR 4/6	20%	C	M	Silty clay loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Minerals (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (min. of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:	Wetland Hydrology Present?
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): _____	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>13</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>15</u> (Includes Capillary fringe)	

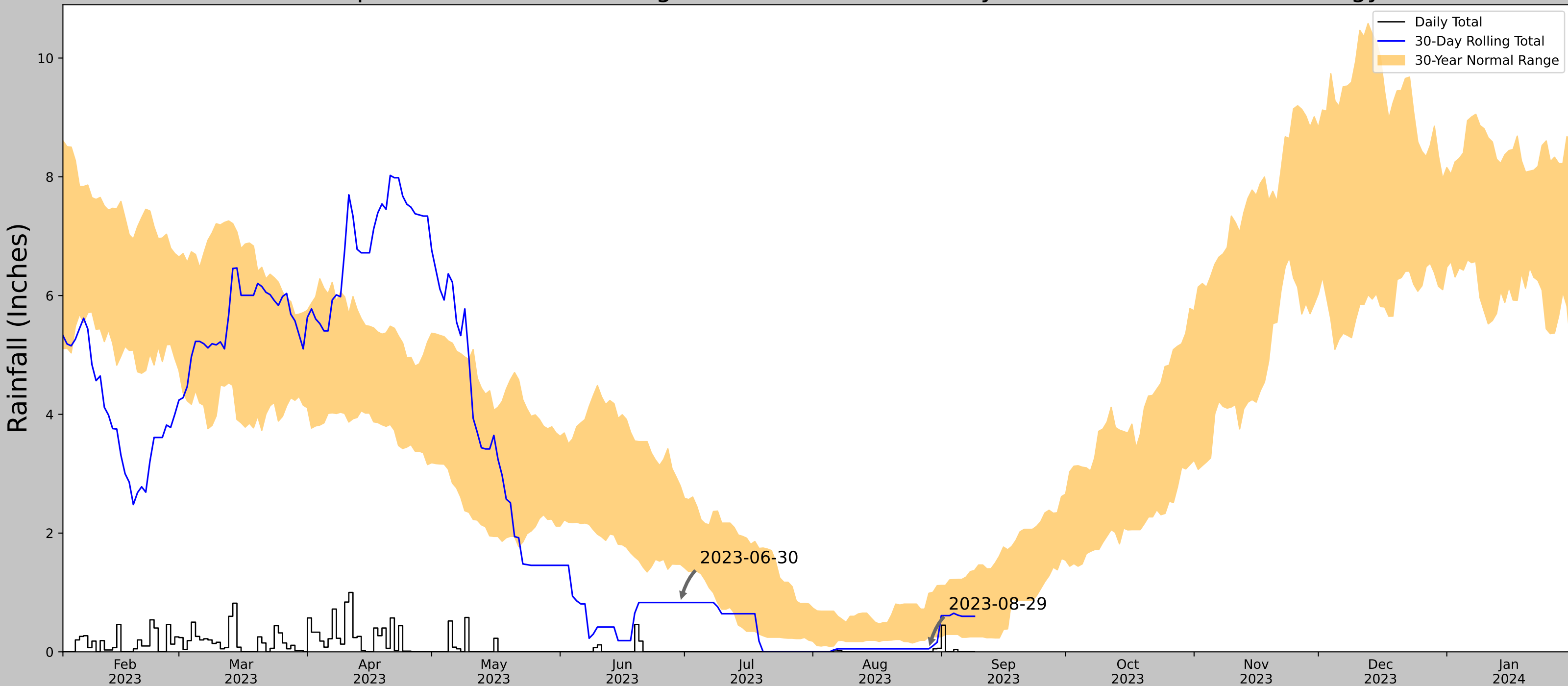
Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Although the water table and saturation were present in the test pit, they were present too deep in the soil profile to meet wetland hydrologic indicators. Hydrologic conditions were typical for this time of year, as antecedent rainfall was determined to be normal.

APPENDIX C


PRECIPITATION INFORMATION

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	45.632018, -122.467297
Observation Date	2023-08-29
Elevation (ft)	253.44
Drought Index (PDSI)	Severe drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-08-29	0.253543	0.986221	0.051181	Dry	1	3	3
2023-07-30	0.24252	0.814961	0.0	Dry	1	2	2
2023-06-30	1.475197	2.795276	0.830709	Dry	1	1	1
Result							Drier than Normal - 6



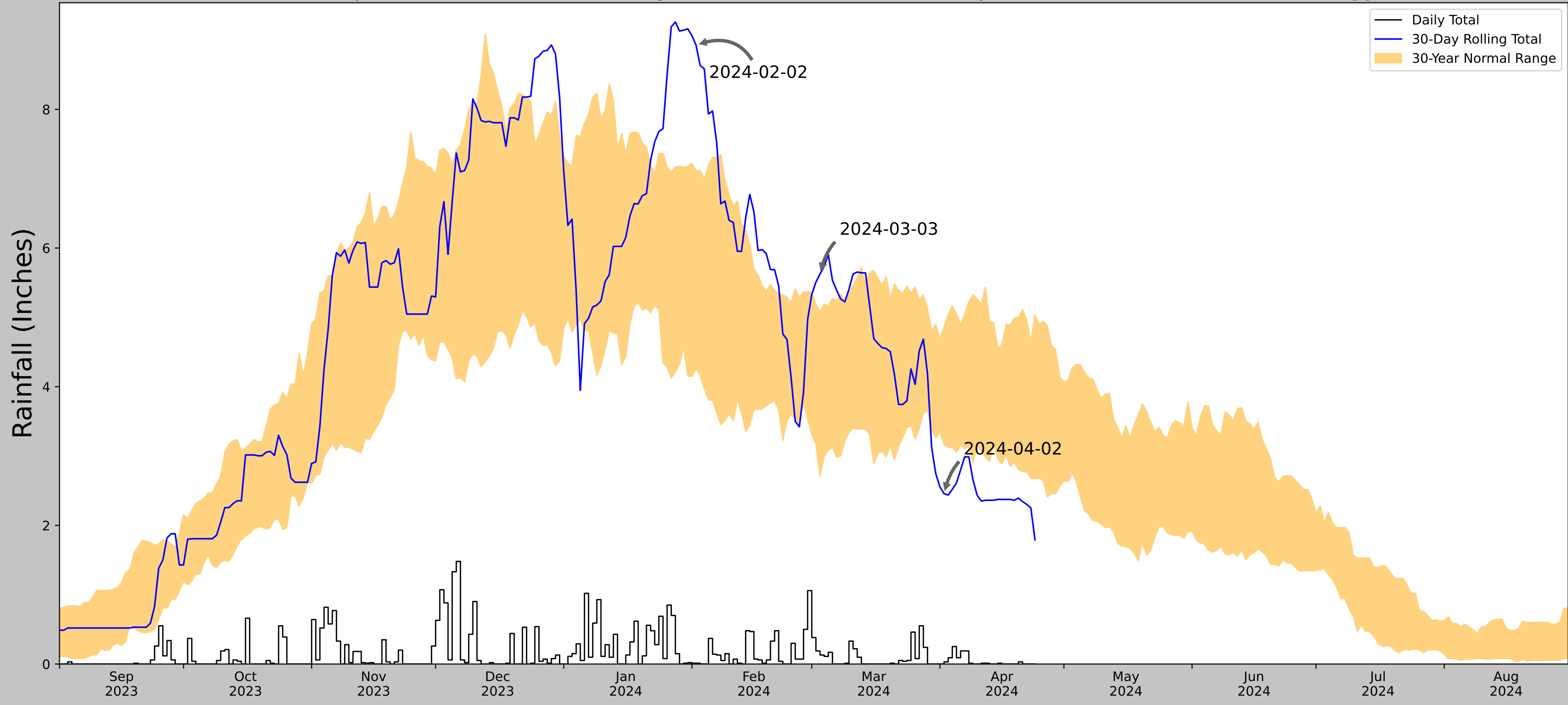
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BATTLE GROUND	45.7717, -122.5286	284.121	10.094	30.681	4.852	11318	69
BATTLE GROUND 0.8 N	45.794, -122.5443	316.929	1.716	32.808	0.828	0	1
BATTLE GROUND 1.2 NE	45.7958, -122.5275	361.877	1.666	77.756	0.879	0	20
VANCOUVER 4 NNE	45.6775, -122.6514	220.144	8.8	63.977	4.523	4	0
MERWIN DAM	45.955, -122.5625	224.081	12.769	60.04	6.513	31	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	45.631925, -122.466933
Observation Date	2024-04-02
Elevation (ft)	253.44
Drought Index (PDSI)	Moderate drought (2024-03)
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-02	3.166142	4.859449	2.456693	Dry	1	3	3
2024-03-03	2.711811	5.079528	5.625984	Wet	3	2	6
2024-02-02	4.261417	7.114173	8.925197	Wet	3	1	3
Result							Normal Conditions - 12



Figure and tables made by the
Antecedent Precipitation Tool
 Version 1.0
 Written by Jason Deters
 U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORTLAND WFO	45.5608, -122.5383	20.997	6.005	232.443	4.098	10000	90
PORTLAND 4.6 ENE	45.5548, -122.5645	139.108	1.334	118.111	0.758	4	0
PORTLAND INTL AP	45.5958, -122.6092	21.982	4.196	0.985	1.892	1348	0

APPENDIX D

WETLAND RATING FORM FOR WESTERN WASHINGTON

Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A

Date of site visit: August 29, 2023

Rated by: Julianne Blake

Trained by Ecology? X Yes No

Date of training: June 2022

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Y X N

NOTE: Form is not complete without the required figures (figures can be combined).

Source of base aerial photo/map: Google Earth

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

1. Category of wetland based on FUNCTIONS

 Category I – Total score = 23 - 27

 Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<u>L</u>	H	M	<u>L</u>	H	M	<u>L</u>	
Landscape Potential	<u>H</u>	M	L	<u>H</u>	M	L	H	M	<u>L</u>	
Value	<u>H</u>	M	L	<u>H</u>	M	L	H	<u>M</u>	L	TOTAL
Score Based on Ratings	7			7			4			18

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<u>Not Applicable</u>

Wetland A

Maps and figures required to answer questions correctly for Western WashingtonDepressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	8
Hydroperiods	D 1.4, H 1.2	8
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	8
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	8
Map of the contributing basin	D 4.3, D 5.3	9
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	9
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	10
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	10

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland A

HGM Classification of Wetlands in Western Washington

For questions 1-7, 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 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

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

___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe (Lacustrine Fringe)**

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

___ The wetland is on a slope (slope can be very gradual),

___ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

___ The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

Wetland A

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- The overbank flooding occurs at least once every 2 years.

NO – go to 6

YES – The wetland class is Riverine

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

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

NO – go to 7

YES – The wetland class is Depressional

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

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

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland A

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	2
D 1.2. <u>The soil 2 in. below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed plants > 95% of area Wetland has persistent, ungrazed plants > ½ of area Wetland has persistent, ungrazed plants ≥ 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	3
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ≥ ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	0
Total for D 1	Add the points in the boxes above	5

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	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? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	3

Rating of Landscape Potential If score is: X 3 or 4 = H 1 or 2 = M 0 = L *Record the rating on the first page*




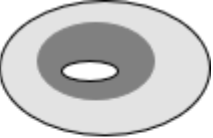


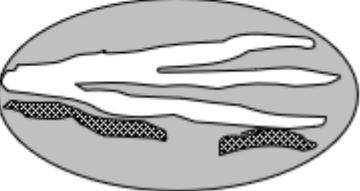
D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.)	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	4

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

Wetland A

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. <u>Contribution of the wetland to storage in the watershed:</u> Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	3
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	5
Rating of Site Potential If score is: <u> </u> 12-16 = H <u> </u> 6-11 = M <u> X </u> 0-5 = L <i>Record the rating on the first page</i>		
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	3
Rating of Landscape Potential If score is: <u> X </u> 3 = H <u> </u> 1 or 2 = M <u> </u> 0 = L <i>Record the rating on the first page</i>		
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. Is <u>the unit in a landscape that has flooding problems</u>? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met.</u>		
The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately downgradient of unit.	points = 2	2
• Surface flooding problems are in a sub-basin farther downgradient.	points = 1	
• Flooding from groundwater is an issue in the sub-basin.	points = 1	
• The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
• There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	2
Rating of Value If score is: <u> X </u> 2-4 = H <u> </u> 1 = M <u> </u> 0 = L <i>Record the rating on the first page</i>		

Wetland A

<p>These questions apply to wetlands of all HGM classes.</p> <p>HABITAT FUNCTIONS - Indicators that site functions to provide important habitat</p>	
<p>H 1.0. Does the site have the potential to provide habitat?</p>	
<p>H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.</p> <p> <input type="checkbox"/> Aquatic bed 4 structures or more: points = 4 <input checked="" type="checkbox"/> Emergent 3 structures: points = 2 <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) 1 structure: points = 0 </p> <p><i>If the unit has a Forested class, check if:</i></p> <p> <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon </p>	1
<p>H 1.2. Hydroperiods</p> <p>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).</p> <p> <input type="checkbox"/> Permanently flooded or inundated 4 or more types present: points = 3 <input checked="" type="checkbox"/> Seasonally flooded or inundated 3 types present: points = 2 <input type="checkbox"/> Occasionally flooded or inundated 2 types present: points = 1 <input checked="" type="checkbox"/> Saturated only 1 type present: points = 0 </p> <p> <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Intermittently or seasonally flowing stream in, or adjacent to, the wetland </p> <p> <input type="checkbox"/> Lake Fringe wetland 2 points <input type="checkbox"/> Freshwater tidal wetland 2 points </p>	1
<p>H 1.3. Richness of plant species</p> <p>Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle</p> <p>If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0</p>	2
<p>H 1.4. Interspersion of habitats</p> <p>Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are High = 3 points</p>	1

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<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (dbh > 4 in.) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)</p>		1
Total for H 1	Add the points in the boxes above	6

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. <i>Calculate:</i> % relatively undisturbed habitat <u>0.0</u> + [(% moderate and low intensity land uses)/2] <u>1.5</u> = <u>1.5</u> % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Total habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % relatively undisturbed habitat <u>9.0</u> + [(% moderate and low intensity land uses)/2] <u>20.3</u> = <u>29.3</u> % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>		-2
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M X < 1 = L *Record the rating on the first page*

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

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

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WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). [Priority Habitat and Species List](#).¹³³ This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

- **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. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **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.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>

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- X **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
 - **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.
 - **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.
 - **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>

Wetland A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p>	
<p>SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt</p>	
<p>Yes – Go to SC 1.1 No = Not an estuarine wetland</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2</p> <p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are <i>Spartina</i>, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II</p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p>
<p>SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?¹³⁵ Yes = Category I No – Go to SC 2.2</p> <p>SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,¹³⁶ Go to SC 2.3 No = Not a WHCV</p> <p>SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = Category I No = Not a WHCV</p>	<p>Cat. I</p>
<p>SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES, you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2</p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = Not a bog</p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Category I bog No – Go to SC 3.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Category I bog No = Not a bog</p>	<p>Cat. I</p>

¹³⁵ <https://www.dnr.wa.gov/NHPdata>

¹³⁶ https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

