

TECHNICAL MEMORANDUM

DATE: April 26, 2021
TO: James Hobbs Jr., PE
FROM: Trey Parry, PWS
SUBJECT: Arlington HP Pipeline Project Phase 2 - Draft Wetland and Stream Delineations
CC: Rebecca Cushman
PROJECT NUMBER: 554-2402-029
PROJECT NAME: Arlington HP Pipeline Project Phase 2

INTRODUCTION

The purpose of this technical memorandum is to describe the findings of wetland and stream investigations conducted for submittal to Cascade Natural Gas Corporation. The objective of the field effort was to locate, delineate, and characterize wetlands and streams to support permit applications and construction plans for the proposed replacement of the existing 4-inch-diameter pipeline. Other critical and sensitive areas, as defined by the City of Arlington Municipal Code (AMC) 20.93, are not addressed in this report.

Project Description and Location

Parametrix conducted a wetland and stream delineation to determine the presence and location of wetlands and streams in the Arlington HP Pipeline Phase 2 Project area. The project area is approximately 1.18 miles long, beginning approximately 700 feet west of the intersection of 207th Street Northeast and Stillaguamish Avenue on the east end to the intersection of Kent Prairie Road and 71st Avenue Northeast on the west end (Figure 1). The study area is located within and defined as the road right-of-way and the preexisting utility easement through public and private parcels. The project area is in the city of Arlington (City), Washington in Sections 11 and 14 of Township 31 North, Range 05 East, Willamette Meridian, within the Arlington East and West U.S. Geological Survey (USGS) quadrangles (USGS 2021).

Regulatory Overview

Wetlands and streams in the project area are subject to federal, state, and the City of Arlington regulations. At the federal level, wetlands and streams are regulated under the Clean Water Act (CWA), which regulates placement of fill in waters of the United States. The U.S. Army Corps of Engineers (Corps) is responsible for issuing permits under Section 404 of the CWA and the Washington State Department of Ecology (Ecology) is responsible for issuing water quality certification under Section 401 of the CWA. Through the implementation of horizontal directional drilling (HDD) techniques, the project will avoid impacts on waters of the United States near Kruger Creek and Portage Creek; therefore, a permit from the Corps and the Ecology will not be required under Sections 404 and 401 of the CWA.

Activities that use, divert, obstruct, or change the flow of a water of the state, including some wetlands, typically require a Hydraulic Project Approval (HPA) issued by the Washington State Department of Fish and Wildlife (WDFW). Work near waters of the state, including the use of HDD techniques to install the 6-inch HP pipeline, will be performed in accordance with the provisions of the HPA issued for this project, which we anticipate will be required for HDD below a stream within city limits. In addition, the construction contractor will have to develop a stormwater pollution prevention plan (SWPPP) to ensure compliance with the Construction Stormwater General

Permit issued by Ecology. Any discharge of dewatering water, if present, would be handled in accordance with the County and Washington State Department of Ecology standards.

The City designates and protects wetlands and streams under the Arlington Municipal Code (AMC) 20.93. This chapter of City code also describes the requirements for the identification, rating, and categorizing of wetlands and streams.

METHODS

Wetland and stream assessments were based on a review of existing information, previously mapped wetlands and streams, soil mapping, and other geographic and weather data, followed by field assessments, during which wetlands and streams were delineated. The methods for these assessments are described in the sections below.

Review of Existing Information

Prior to conducting fieldwork, project biologists reviewed maps and materials including, but not limited to:

- Aerial photography of the project study area (Google Earth 2021)
- Climate data for Snohomish County as measured at the Everett Snohomish County AP Weather Station (Applied Climate Information System [ACIS] 2021; Attachments A-1 and A-2)
- National Wetlands Inventory (NWI) online interactive mapper (U.S. Fish and Wildlife Service [USFWS] 2021; Attachment A-3)
- City of Arlington and Snohomish County critical area and stream mapping (City of Arlington 2015; Snohomish County 2021a; Attachments A-4 and A-5)
- U.S. Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) Web Soil Survey (USDA, NRCS 2021b; Attachment A-6)
- Washington Department of Natural Resources (WDNR) water type maps (WDNR 2021a; Attachment A-7)
- Statewide integrated fish distribution web map (NWIFC 2021; Attachment A-8).
- Priority Habitats and Species (PHS) data (WDFW 2021b; Attachment A-9)
- StreamNet Mapper (StreamNet 2021)
- Washington Wetlands of High Conservation Value Map (WDNR 2021b)
- Washington State Water Quality Atlas for water quality standards (303d mapping) and improvement projects (Total Maximum Daily Loads [TMDLs]) (Ecology 2021)
- Environmentally critical area codes for the city of Arlington (AMC 20.93)

Field Investigation

Following the review of existing information, Parametrix biologists conducted a field assessment of wetlands and streams within the project study area. Field investigations were conducted on March 29 and April 1, 2021, by three field biologists: Trey Parry (Professional Wetland Scientist [PWS] #3344), Josh Wozniak (PWS #1478), and Kaylee Moser (Wetland Professional in Training).

Wetland Identification and Delineation

Project biologists used the methods specified in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the indicators specified in the Regional Supplement to the Corps of

Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010) to delineate on-site wetlands. Wetlands are defined as 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. An area must have at least one positive indicator of wetland vegetation, soils, and hydrology to be considered a wetland. Wetland determination data forms from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010) were completed for each wetland (Appendix B).

Vegetation

The dominant plants and their wetland indicator statuses were evaluated to determine whether the vegetation was hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants must be facultative, facultative wetland, or obligate, based on the plant indicator status category as defined by the USFWS (Reed 1988, 1993).

Scientific and common plant names follow generally accepted nomenclature. Most names are consistent with the PLANTS Database (USDA, NRCS 2021a) and the National Wetland Plant List version 3.4 (Lichvar et al. 2018). During the field investigations, dominant plant species were observed and recorded on data forms for each sampling point (Appendix B). Lichvar et al. (2018) was also used to assign plant indicator status to recorded plant species.

Soils

Soils were examined by excavating sample plots to depths of 16 inches or more to observe soil profiles, colors, and textures. The depths of the sample plots ranged between 16 and 20 inches deep. Munsell color charts (Munsell 2015) were used as objective standards to describe soil colors.

Generally, an area must have hydric soils to be a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper layer. Biological activities in saturated soil result in reduced oxygen concentrations that produce a preponderance of organisms using anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as field indicators of hydric soil (Corps 2010). Typically, low-chroma colors are formed in the soil matrix. Bright-colored redoximorphic features form within the matrix under a fluctuating water table. Other important hydric soil indicators include organic matter accumulations in the surface horizon, reduced sulfur odors, and organic matter staining in the subsurface.

Hydrology

The project study area was examined for evidence of hydrology. An area is considered to have wetland hydrology when soils are ponded or saturated consecutively for 12.5 percent of the growing season. Primary indicators of hydrology include, but are not limited to, surface inundation, sediment deposits, high water table, and saturated soils. Secondary indicators of hydrology include drainage patterns, watermarks on vegetation, and water-stained leaves.

Wetland Classification, Rating, and Buffers

Delineated wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Federal Geographic Data Committee [FGDC] 2013; Cowardin et al. 1979). Hydrogeomorphic (HGM) classifications were assigned to wetlands using methods established in a HGM Classification System for Wetlands (Brinson 1993). Wetlands were rated according to Arlington City code (AMC 20.93.800) and the Washington State Wetland Rating System for Western Washington: 2014 Update (Hruby 2014). Wetland Rating

Forms are provided in Attachment C. Buffer widths assigned to wetlands in the project area reflect requirements of the City code (AMC Table 20.93-4). The delineated wetlands and sample plot locations were surveyed using a Trimble GeoX handheld global positioning system unit capable of sub-meter accuracy.

Stream Identification and Delineation

The ordinary high water line of streams in the project area were identified in the field using the definitions, methods, and standards established in Determining the Ordinary High Water Mark for Shorelines Management Act Compliance in Washington State (Stockdale et al. 2016) and the definition of ordinary high water in Washington Administrative Code (WAC) 220-110-020 (69). The delineated streams were surveyed using a Trimble GeoX handheld global positioning system unit capable of sub-meter accuracy.

Stream Classification and Buffers

Delineated streams were classified according to City code (AMC 20.93.800). Fish presence or absence was investigated using the review of existing information described in the review of existing methods above or visual observation of fish. Buffer widths assigned to streams in the project area reflect requirements of the City code (AMC Table 20.93-3).

RESULTS

Review of Existing Information

Characteristics of the project study area based on a review of existing information are described below.

Landscape Setting

The project study area is in the Puget Sound lowlands within Water Resource Inventory Area (WRIA) 5. WRIA 5 consists of the Stillaguamish River Basin, which drains a 1,774 square kilometer watershed on the west slope of the North Cascades (University of Washington 2021). The terrain within the upper extent of the watershed includes rugged, mountainous terrain with streams and tributaries flowing through steep-walled drainages. The lower extent of the watershed includes broad floodplains that start near the project area and extend to the Puget Sound (Ecology 2007). The Stillaguamish River watershed consists primarily of public forest lands. However, in and around the project area, the land use generally transitions to agricultural usage with high density rural development in the immediate project vicinity (Ecology 2007). The elevation of the project area ranges from approximately 110 to 140 feet above sea level. The location is approximately 10 miles inland of Puget Sound and as close as 1.3 mile from the South Fork of the Stillaguamish River.

Climate, Precipitation, and Growing Season

The project study area occurs in the Puget Sound lowlands. According to Climate Analysis for Wetlands Tables (WETS) with a period of record from 1991 to 2021 (ACIS 2021), the average daily mean temperature in the project vicinity is 51.4 degrees Fahrenheit (°F), falling within an average daily mean temperature range of 40.3 to 64.5 °F.

The Regional Delineation Supplement Version 2.0 (Corps 2010) recommends using methods described in Chapter 19 in the Engineering Field Handbook (USDA, NRCS 2015) to determine whether precipitation occurring in the full 3 months prior to the site visit was normal, drier than normal, or wetter than normal. Actual rainfall is compared to the normal range of the 30-year average. When considering the 3 months prior to March and April 2021, wetter than normal conditions were present prior to March 2021, and normal conditions were present prior to April 2021 (Appendix A-1). Moderate precipitation was recorded in the 10 days preceding the March 29 and April 1, 2021, field work (Appendix A-2).

Field work was completed within the growing season. According to WETS, with a period of record from 1991 to 2021 (ACIS 2021), the growing season (28 °F or greater) in the vicinity of Arlington, Washington, demonstrates a 50 percent probability of occurring between February 4 and December 13 (312 days). All three wetland indicators (hydrophytic plants, evidence of hydrology, and hydric soils) were readily observed during the growing season.

Soils

Two soil types were identified and mapped within the project study area:

- Everett very gravelly sandy loam (Hydric Rating: 0)
- Norma loam (Hydric Rating: 100)

The Norma series consists of deep, poorly drained soils formed in old alluvium in depressions on glacial till plains and drainageways. This soil type is the only mapped soil within the project area that typically has hydric soil conditions (USDA, NRCS 2021b).

The Everett soil series typically does not have hydric soil conditions. The Everett series consists of very deep, excessively drained soils formed in outwash terraces within glacial drift plains (USDA, NRCS 2021b).

Wetlands

Two wetlands have been previously mapped by the National Wetland Inventory, City of Arlington, and Snohomish County PDS Map Portal (Attachments A-3, A-4, A-5; USFWS 2021; City of Arlington 2015; Snohomish County 2021). The first wetland is mapped along the Kruger Creek riparian corridor, upstream of the Kruger Creek and Portage Creek confluence near the intersection of Olympic Place and Jensen Farm Lane. This wetland is recorded as an excavated palustrine emergent wetland with persistent vegetation and a seasonally flooded water regime (PEM1Cx). The second wetland is mapped within the Portage Creek riparian corridor and is located downstream of the Kruger Creek and Portage Creek confluence near Highway 9. This wetland is recorded as a palustrine scrub-shrub wetland with a seasonally flooded water regime (PSSC).

Streams

Two streams have been identified within the project study area (Attachment A-4, A-5, A-6; WDNR 2021a; City of Arlington 2015; Snohomish County 2021b; StreamNet 2021; NWIFC 2021). Kruger Creek (LLID 1221268481835) is in the northern extent of the project area and is mapped as a Type F perennial stream. Kruger Creek generally flows from the northeast to the southwest before hitting the confluence of Portage Creek to the west of Olympic Place and to the east of Highway 9. Portage Creek (LLID 1222452481960) is in the middle of the project area and flows through the project area from the east to west, eventually drain to the Stillaguamish. Portage Creek is mapped as a Type F perennial stream (WDNR 2021a; NWIFC 2021). Both Kruger Creek and Portage Creek are mapped to host Cutthroat (*Oncorhynchus clarki*), resident coastal cutthroat, Coho (*O. kisutch*) (WDFW 2021a; WDFW 2021b).

The water quality for Portage Creek and Kruger Creek is generally poor. Portage Creek is mapped as a Category 4A water for bacteria and both Portage Creek and Kruger Creek are within an approved temperature and multiparameter (bacteria, dissolved oxygen, pH, mercury, and arsenic) total maximum daily load for temperature (Ecology 2021).

Field Investigation

Parametrix biologists identified and delineated three wetlands (Wetlands A, B, and C) and two streams (Kruger Creek and Portage Creek) within the project study area (Figure 2). Outside of the project study area, the boundaries and characteristics of the wetlands and streams were estimated using field observations, aerial imagery, and the review of existing information described in the methods section. No other waters (i.e.,

potentially jurisdictional ditches and tributaries) were identified. Summaries of the wetlands and streams are provided in Tables 1 and 2, respectively. General background information is provided in Attachment A; wetland determination forms are provided in Attachment B; wetland rating forms are provided in Attachment C; and representative color photographs are provided in Attachment D. General characteristics of wetlands and streams are discussed in the sections below.

Wetlands

Table 1. Summary of Wetlands in the Project Area

Wetland	USFWS Classification ^a	HGM Classification ^b	Ecology Rating (2014) ^c	Local Jurisdiction Category ^d	Buffer Width (feet) ^e
A	PFO/PSS/PEM	Riverine	II	II	105
B	PFO/PSS/PEM	Riverine	II	II	105
C	PFO/PSS/PEM	Riverine	II	II	105

^a FGDC 2013; Cowardin et al. 1979

^b Brinson 1993

^c Hruby 2014

^d AMC 20.93.800

^e AMC Table 20.93-4

PFO = palustrine forested; PSS = palustrine scrub-shrub; PEM = palustrine emergent

Wetland A

Wetland A is a riverine wetland with palustrine forested, scrub-shrub, and emergent habitats (Brinson 1993; FGDC 2013). The wetland is located to the southwest of 210th Place Northeast and to the northeast of Olympic Place (Figure 2). The wetland extent is highly confined by surrounding development. The northwest, southwest, and west boundaries are marked by Olympic Place road fill and a concrete retaining wall. The northern and southern boundary are marked by a steep embankment and an abrupt change vegetation, soils, and hydrology. The wetland extends upstream and offsite to the northeast.

The forested stratum within Wetland A is dominated by red alder (*Alnus rubra*), western red cedar (*Thuja plicata*), and Sitka spruce (*Picea sitchensis*). The sapling and shrub stratum is dominated by red alder, redosier dogwood (*Cornus sericea*), cluster rose (*Rosa pisocarpa*), and Himalayan blackberry (*Rubus armeniacus*). The herbaceous stratum is dominated by reed canarygrass (*Phalaris arundinacea*).

The soils within Wetland A were recorded to have three layers. The surface layer (0 to 3 inches) is black (10YR 2/1) loam. The second layer (3 to 7 inches) is black (10YR 2/1) gravelly silt loam with brown (7.5YR 4/4) redoximorphic concentrations. The third layer (7 to 16 inches) is black (10YR 2/1) gravelly silt loam. These soils meet the criteria for hydric soil indicator F6 (Redox Dark Surface).

The primary source of hydrology within Wetland A is a high groundwater table and overbank flooding of Kruger Creek. Additional hydrologic inputs include precipitation, overland flow, and road runoff from 210th Place Northeast. Water generally moves through the wetland from northeast to southwest before being conveyed under Olympic Place through a concrete box culvert.

Wetland A is rated as a Category II wetland with a low (5 points) level of habitat functions; thus, it would receive a buffer of 105 feet according to City code (AMC Table 20.93-4). Determination forms (SP-2 and SP-3) are provided in Attachment B, and a representative photograph is provided in Attachment D (Photograph 2).

Wetland B

Wetland B is riverine wetland associated with Kruger Creek and Portage Creek and has palustrine forested, scrub-shrub, and emergent habitats (Brinson 1993; FGDC 2013). Wetland B is located west of Olympic Place and east of SR 9 (Figure 2). The wetland extent is highly confined. The north and south boundary are marked by fill embankments to protect adjacent parcels from potential flooding. The west and eastern boundary are marked by the road fill prisms. All four boundaries have an abrupt change in vegetation, soils, and hydrology.

The forested stratum within Wetland B is dominated by red alder, western red cedar, black cottonwood (*Populus balsamifera*), and Pacific willow (*Salix lasiandra*). The sapling and shrub stratum is dominated by Pacific willow, red alder, redosier dogwood, and Himalayan blackberry. The herbaceous understory includes monoculture of reed canarygrass.

The soils within Wetland B were recorded to have three layers. The surface layer (0 to 6 inches) is black (10YR 2/1) silt loam. The second layer (6 to 12 inches) is black (10YR 2/1) silt loam with clay loam with brown (7.5YR 4/3) redoximorphic concentrations. The third layer (12 to 16 inches) was black (10YR 2/1) gravelly silt loam. These soils meet the criteria for hydric soil indicator F6 (Redox Dark Surface).

The primary source of hydrology within Wetland B is a high groundwater table and overbank flooding of Kruger Creek and Portage Creek. Additional hydrologic inputs include precipitation, overland flow, and road runoff from Olympic Place. Water generally moves through Wetland B from the northeast to southwest before being conveyed under State Route (SR) 9 through a concrete box culvert.

Wetland B is rated as a Category II wetland with a low (5 points) level of habitat functions; thus, it would receive a buffer of 105 feet according to City code (AMC Table 20.93-4). Determination forms (SP-4 and SP-5) are provided in Attachment B, and a representative photograph is provided in Attachment D (Photograph 3).

Wetland C

Wetland C is riverine wetland with palustrine forested, scrub-shrub, and less than a 0.25 acre of emergent habitats. (Brinson 1993; FGDC 2013). Wetland C is located within the city of Arlington to the west of SR 9 and east of 67th Avenue Northeast (Figure 2). The wetland extent is confined by fill and industrial areas. The northern and southern boundary abruptly change to upland conditions adjacent to paved and compacted industrial areas. The western boundary is marked by a railroad crossing with gravel fill. The eastern boundary is marked by SR 9.

The forested stratum within Wetland C is dominated by red alder, western red cedar, black cottonwood, and Pacific willow. The sapling and shrub stratum is dominated by Pacific willow, red alder, redosier dogwood, and Himalayan blackberry. The herbaceous understory includes reed canarygrass, stinging nettles (*Urtica dioica*), paleyellow iris (*Iris pseudacorus*) and is densely intertwined with climbing nightshade (*Solanum dulcamara*).

The soils within Wetland C were recorded to have three layers and a strong hydrogen sulfide odor. The surface layer (0 to 5 inches) is black (10YR 2/1) silt loam. The second layer (5 to 11 inches) is dark gray (2.5Y 4/1) sandy loam with dark brown (7.5YR 3/4) and very dark gray (10YR 3/1) redoximorphic concentrations. The third layer (11 to 16 inches) is very dark greenish (10Y 3/1) sandy loam with very dark brown (10YR 2/2) concentrations. These soils meet the criteria for hydric soil indicators A4 (Hydrogen Sulfide), Depleted Below Dark Surface (A11), and F3 (Depleted Matrix).

The primary source of hydrology within Wetland C is a high groundwater table and overbank flooding of Portage Creek. Additional hydrologic inputs include precipitation, overland flow, and road runoff from SR 9. Water generally moves through the wetland from east to west before being conveyed under a railroad prism through what appears to be an undersized corrugated metal pipe.

Wetland C is rated as a Category II wetland with a low (5 points) level of habitat functions; thus, it would receive a buffer of 105 feet according to City code (AMC Table 20.93-4). Determination forms (SP-7 and SP-8) are provided in Attachment B and a representative photograph is provided in Attachment D (Photograph 4).

Streams

There are two streams in the project area, as summarized in Table 2 and described in the sections below.

Table 2. Summary of Streams in the Project Area

Stream	Stream Width (feet) ^a	Stream Type ^b	Flow Duration	Standard Buffer (feet) ^c
Kruger Creek	25 to 50	Type F	Perennial	100
Portage Creek	15 to 20	Type F	Perennial	100

^a As measured within the project area

^b AMC 20.93.700

^c AMC Table 20.93-3

Kruger Creek

Kruger Creek is a perennial stream with mapped fish use. The stream generally flows from east to west and is conveyed under Olympic Place Road through a concrete box culvert (Figure 2). The stream has poor habitat and lacks key habitat features including deep pool and riffle complexes, although the stream does have vegetated stream banks, evidence of buffer enhancement, and some woody material. Kruger Creek discharges to Portage Creek approximately 200 feet downstream of the project area and eventually drains to the Stillaguamish River. Kruger Creek is mapped as a Type F stream without Endangered Species Act (ESA) species (WDFW 2020; WDNR 2020). Thus, Kruger Creek would receive a standard buffer of 100 feet according to City code (AMC Table 20.93-3). The stream buffer is generally contained and mapped within the extent of the slightly larger wetland buffer (Figure 2). Representative photographs are provided in Attachment D (Photographs 2 and 3).

Portage Creek

Portage Creek is a perennial stream with mapped fish use. Similar to Kruger Creek, Portage Creek generally flows from east to west and is conveyed under SR 9 through a concrete box culvert (Figure 2). The stream has poor habitat and lacks key habitat features, including deep pool and riffle complexes. However, the stream does have vegetated stream banks dominated by non-native woody vines and native shrubs as well as some woody material. Portage Creek drains to the Stillaguamish River. Portage Creek is mapped as a Type F stream without ESA species (WDFW 2018; WDNR 2018). Thus, Portage Creek would receive a standard buffer of 100 feet according to City code (AMC Table 20.93-3). The stream buffer is generally contained and mapped within the extent of the slightly larger wetland buffer (Figure 2). A representative photograph is provided in Attachment D (Photograph 4).

Other Waters

There are two ditches located adjacent to 207th Street Northeast and SR 9 that do not meet the definition of a water of the US and are assumed to be non-jurisdictional. Both ditches lack relatively permanent flow, were excavated in uplands, do not relocate a tributary, and function to convey stormwater runoff from the roadway surface down gradient. The ditch adjacent to 207th Street Northeast was investigated for wetland conditions. Determination forms (SP-1, SP-9, and SP-10) for these areas are provided in Attachment B and a representative photograph is provided in Attachment D (Photograph 1).

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Figures



FILE: PS2402029F-01 LAYOUT: F1 PATH: U:\PSO\Projects\Clients\2402-CascadeNaturalGas\54-2402-029_ArlingtonHPPhase2\CADD\FIGURES PLOTTED BY: purgubut DATE: Tuesday, April 20, 2021 4:41:15 PM

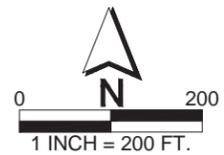
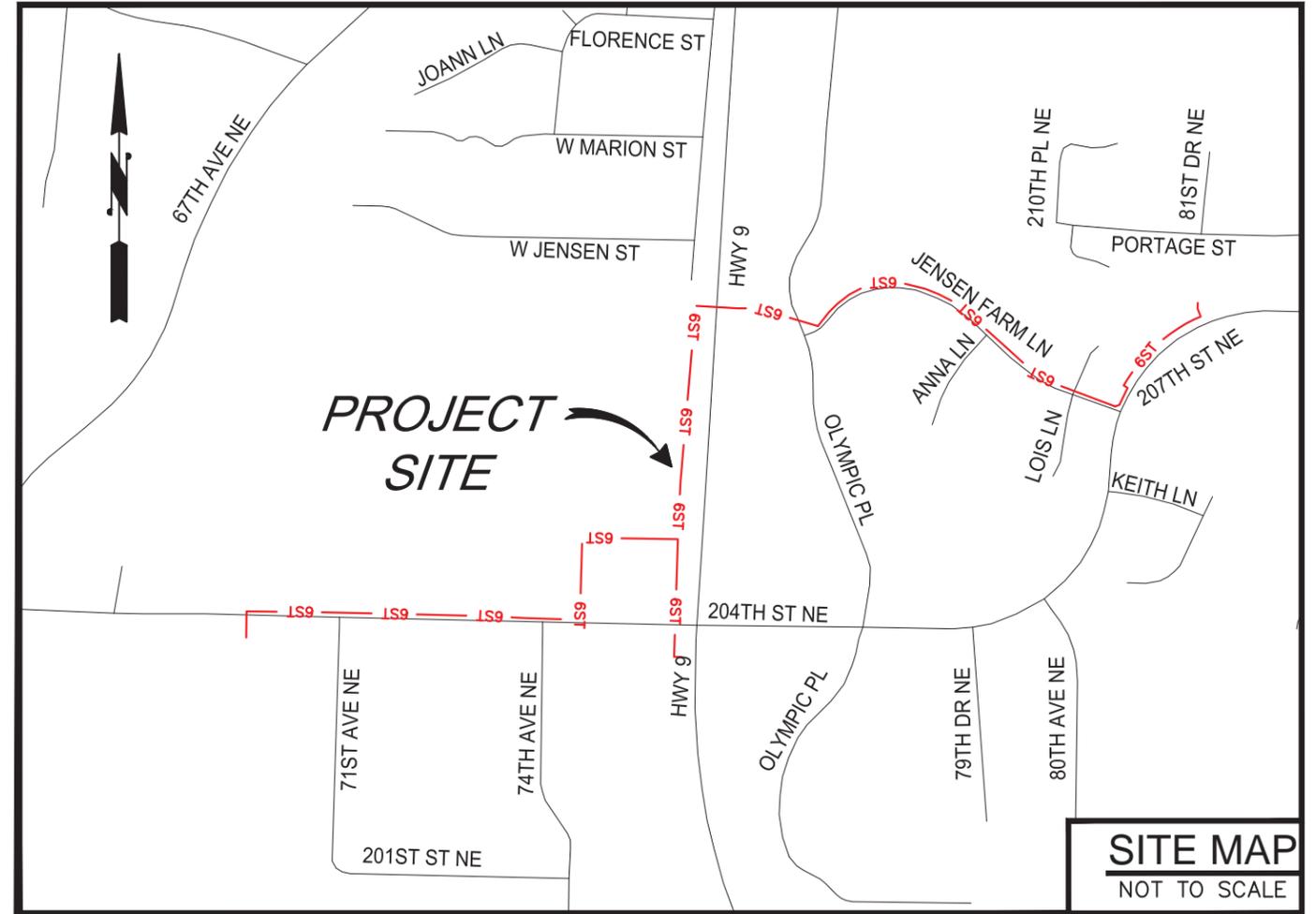
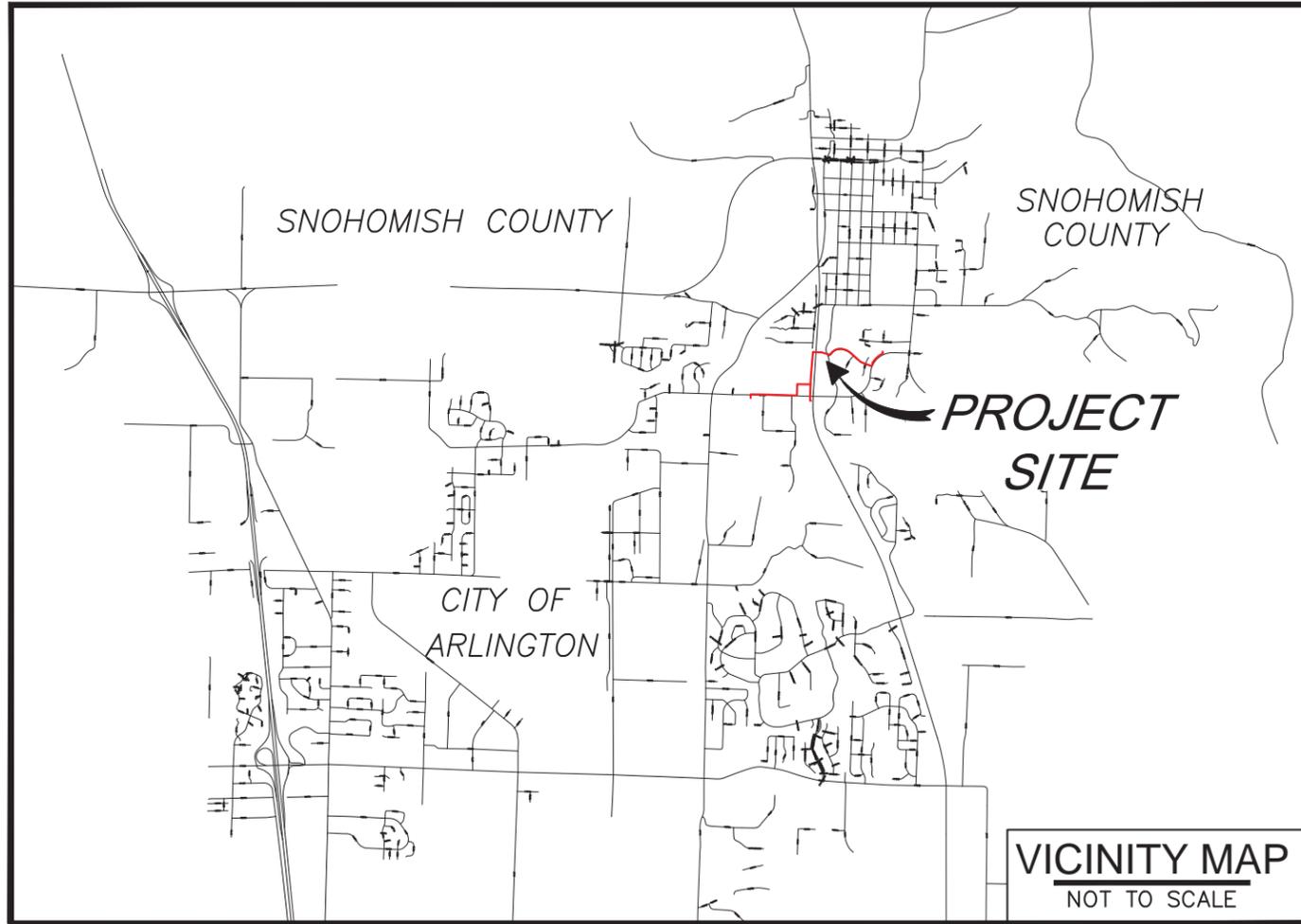
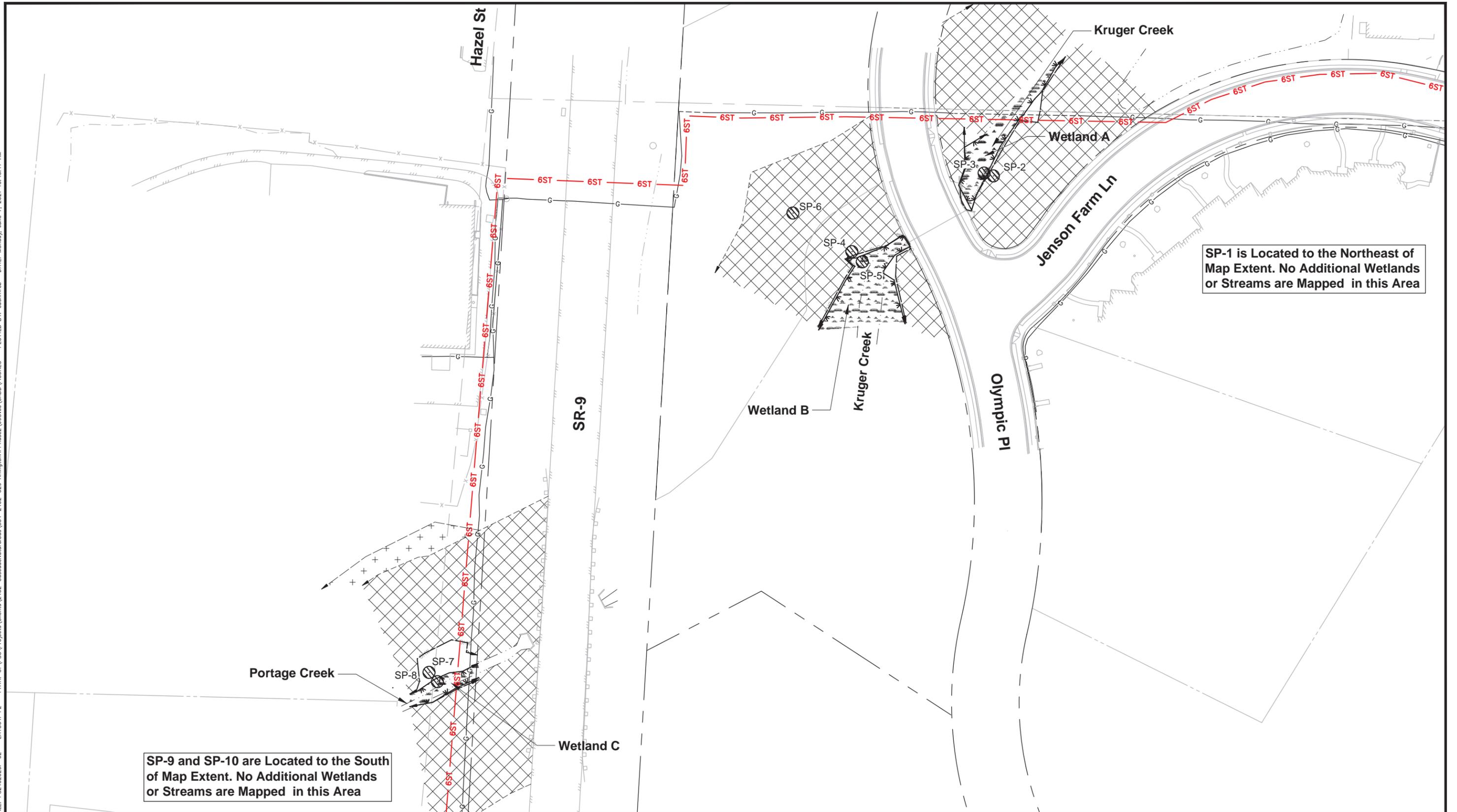


Figure 1
Arlington HP Pipeline Project Phase 2
Vicinity Map

FILE: PS2402029F-02 LAYOUT: F2 PATH: U:\PSO\Projects\Clients\2402-CascadeNaturalGas\554-2402-029_ArlingtonHPPhase2\995vcs\CADD\FIGURES PLOTTED BY: cshmrab DATE: Monday, June 7, 2021 10:45:17 AM



SP-9 and SP-10 are Located to the South of Map Extent. No Additional Wetlands or Streams are Mapped in this Area

SP-1 is Located to the Northeast of Map Extent. No Additional Wetlands or Streams are Mapped in this Area

Legend:

-  Delineated Wetland Boundary
-  OHWM
-  Proposed Gas Pipeline
-  Existing Gas Pipeline
-  Sample Plot
-  Right of Way
-  Wetland Area
-  Wetland Buffer
-  Stream Buffer

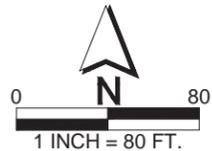


Figure 2
Arlington HP Pipeline Project Phase 2
Wetlands and Streams

Attachment A
Existing Information



ATTACHMENT A-1: COMPARISON OF OBSERVED AND NORMAL PRECIPITATION

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

Table A-1.1. Monthly precipitation data for Arlington, Washington, prior to March 2021

Month	Long-term rainfall records ^a			Rain fall ^a	Condition dry, wet, normal ^b	Condition Value	Month weight value	Product of previous two columns	
	3 yrs. in 10 less than	Average	3 yrs. in 10 more than						
1st prior month	Feb	2.18	2.93	3.43	3.61	Wet	3	3	9
2nd prior month	Jan	2.65	3.95	4.73	6.52	Wet	3	2	6
3rd prior month	Dec	3.29	4.51	5.31	4.62	Normal	2	1	2
							Sum		17

Table A-1.2. Monthly precipitation data for Arlington, Washington, prior to April 2021

Month	3 yrs. in 10 less than	Average	3 yrs. in 10 more than	Rain fall ^a	Condition dry, wet, normal ^b	Condition Value	Month weight value	Product of previous two columns	
1st prior month	March	2.75	3.62	4.22	2.23	Dry	1	3	3
2nd prior month	Feb	2.18	2.93	3.43	3.61	Wet	3	2	6
3rd prior month	Jan	2.65	3.95	4.73	6.52	Wet	3	1	3
							Sum		12

^a ACIS 2021

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

Note:	If sum is	Condition value:
	6 - 9 then prior period has been drier than normal	Dry (D) = 1
	10 - 14 then period has been normal	Normal (N) = 2
	15 - 18 then period has been wetter than normal	Wet (W) = 3

Conclusions: Wetter than normal precipitation conditions were present prior to the March 2021 field visits and normal precipitation conditions were present prior to the April 2021 field visit.

ATTACHMENT A-2: DAILY PRECIPITATION FOR 10 DAYS PRECEDING FIELDWORK, ARLINGTON, WASHINGTON

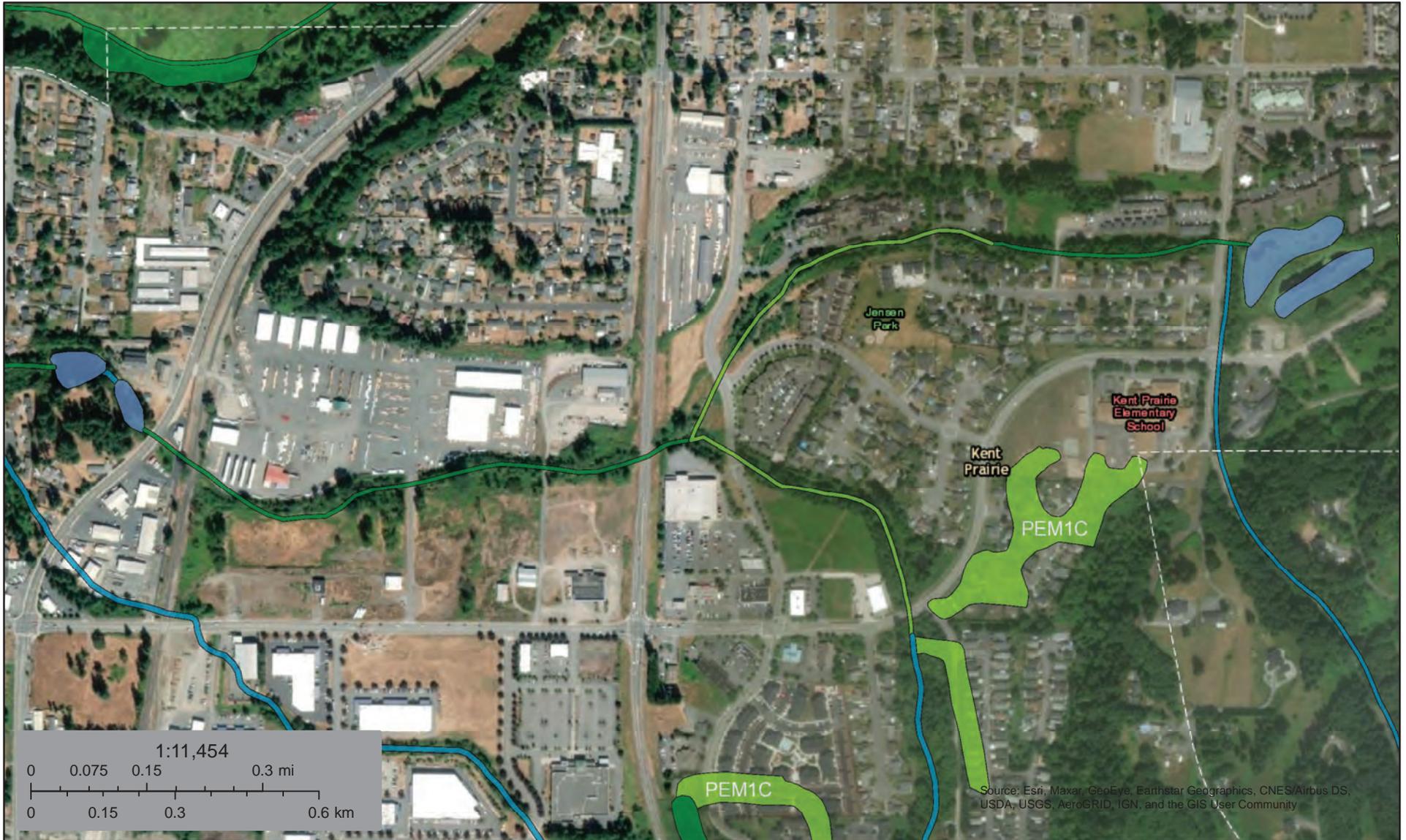
To determine whether light, moderate, or heavy precipitation occurred in the 10 days prior to field work, the 10-day total is compared to one-third of the monthly average precipitation for the month evaluated (ACIS 2021).

Table A-2.1. Daily precipitation data preceding the March 29 and April 1, 2021 Field Work.

Date (2021)	Daily Precipitation (inches) ^a
Mar 19	0.07
Mar 20	0.12
Mar 21	0.05
Mar 22	0.06
Mar 23	0.00
Mar 24	0.15
Mar 25	0.13
Mar 26	0.00
Mar 27	0.00
Mar 28	0.27
Mar 29	0.01
Mar 30	0.00
Mar 31	0.00
Apr 1	0.00
Sum	0.86

^a ACIS 2021

Conclusions: Moderate precipitation was recorded in the 10 days preceding field work for March 29 and April 1, 2021.



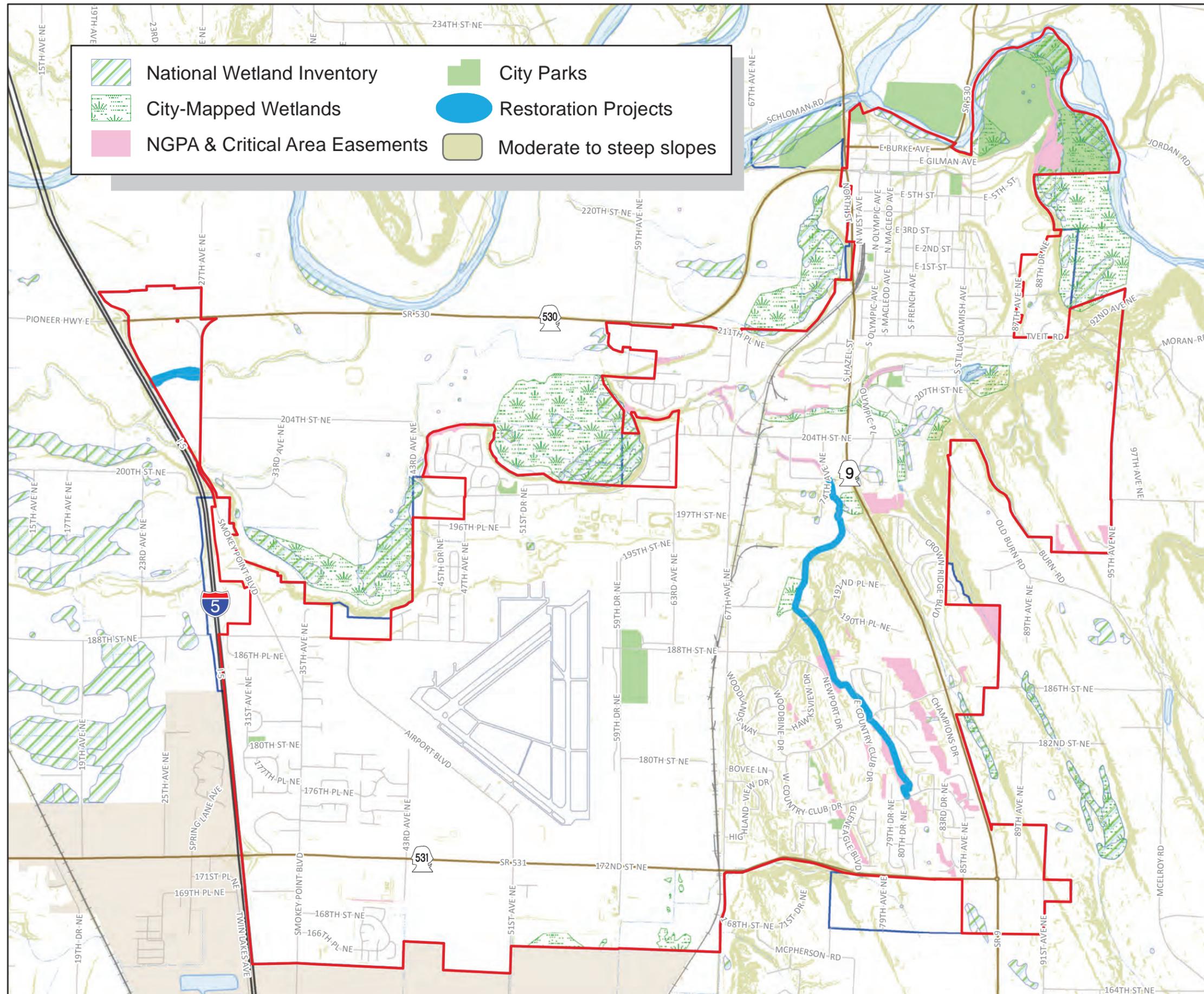
March 26, 2021

Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Attachment A-4: City of Arlington
Wetland and Streams

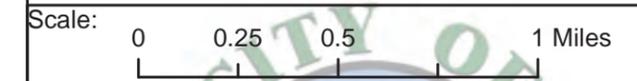


Legend

- Arlington City Limits
- Arlington UGA
- State Highway
- State Route
- Streets
- Airport
- Rail line
- Rest area
- City of Marysville



Waterbodies and streams provided by Snohomish County FTP site, downloaded February 2015.

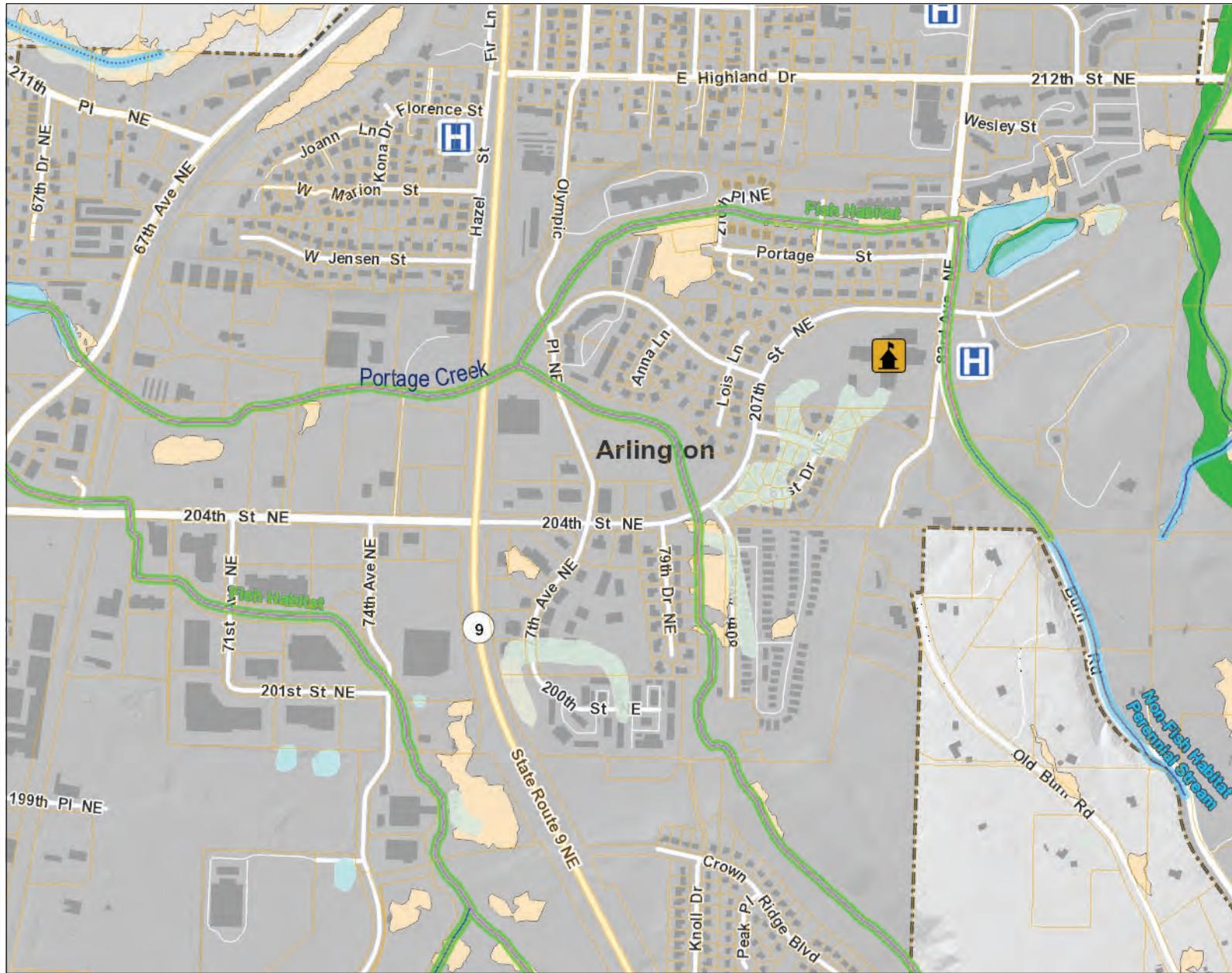


Date: 5/28/2015

File: Figure2.18_11x17_15

Cartographer: kdh

Maps and GIS data are distributed "AS-IS" without warranties of any kind, either express or implied, including but not limited to warranties of suitability for a particular purpose or use. Map data are compiled from a variety of sources which may contain errors and users who rely upon the information do so at their own risk. Users agree to indemnify, defend, and hold harmless the City of Arlington for any and all liability of any nature arising out of or resulting from the lack of accuracy or correctness of the data, or the use of the data presented in the maps.



- Legend**
- Snohomish County Tax Parcels
 - Bulltrout Distribution**
 - Known
 - Presumed
 - Chinook Distribution**
 - Known
 - Presumed
 - Snohomish County Streams**
 - Shoreline of Statewide Significance
 - Fish Habitat
 - Non-fish Habitat Perennial
 - Non-fish Habitat Seasonal
 - Unknown, Untyped
 - Snohomish County Water Bodies**
 - Shoreline of Statewide Significance
 - Fish Habitat
 - Non-fish Habitat Perennial
 - Non-fish Habitat Seasonal
 - Unknown, Untyped
 - National Wetland Inventory**
 - No Data
 - Estuarine and Marine Deepwater
 - Estuarine and Marine Wetland
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Lake
 - Other
 - Riverine
 - Snohomish County Wetland Inventory**
 - Tulip Wetlands**
 - Critical
 - High
 - Moderate
 - Planning Development and Services Wetland Inventory

1: 10,000

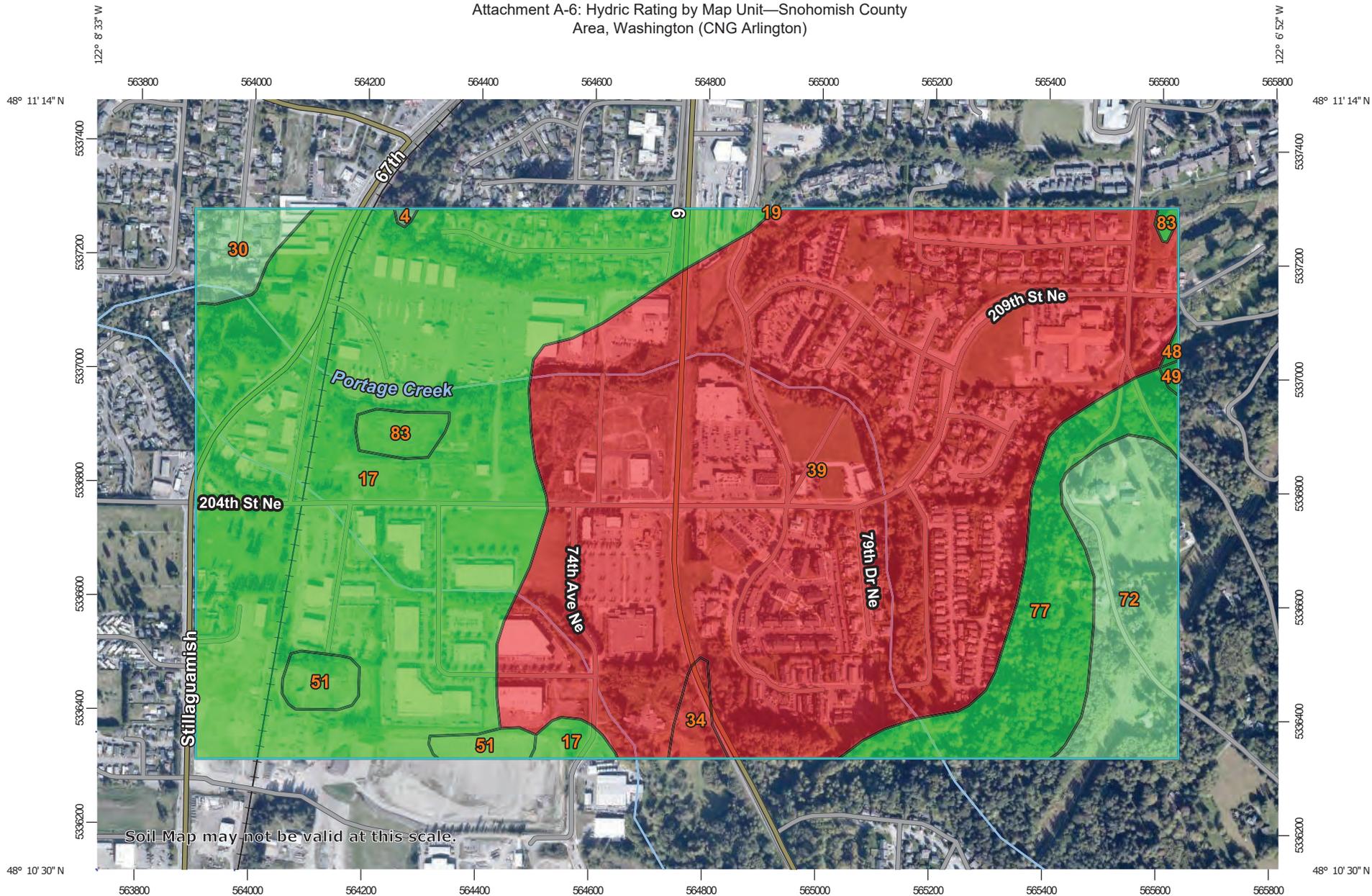


Projection: NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet
Planning and Development Services, Snohomish County

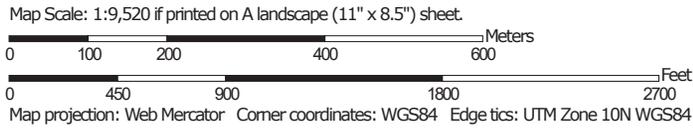
All maps, data, and information set forth herein ("Data"), are for illustrative purposes only and are not to be considered an official citation to, or representation of, the Snohomish County Code. Amendments and updates to the Data, together with other applicable County Code provisions, may apply which are not depicted herein. Snohomish County makes no representation or warranty concerning the content, accuracy, currency, completeness or quality of the Data contained herein and expressly disclaims any warranty of merchantability or fitness for any particular purpose. All persons accessing or otherwise using this Data assume all responsibility for use thereof and agree to hold Snohomish County harmless from and against any damages, loss, claim or liability arising out of any error, defect or omission contained within said Data. Washington State Law, Ch. 42.56 RCW, prohibits state and local agencies from providing access to lists of individuals intended for use for commercial purposes and, thus, no commercial use may be made of any Data comprising lists of individuals contained herein.

Notes
This map was automatically generated using Geocortex Essentials.

Attachment A-6: Hydric Rating by Map Unit—Snohomish County Area, Washington (CNG Arlington)



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 22, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

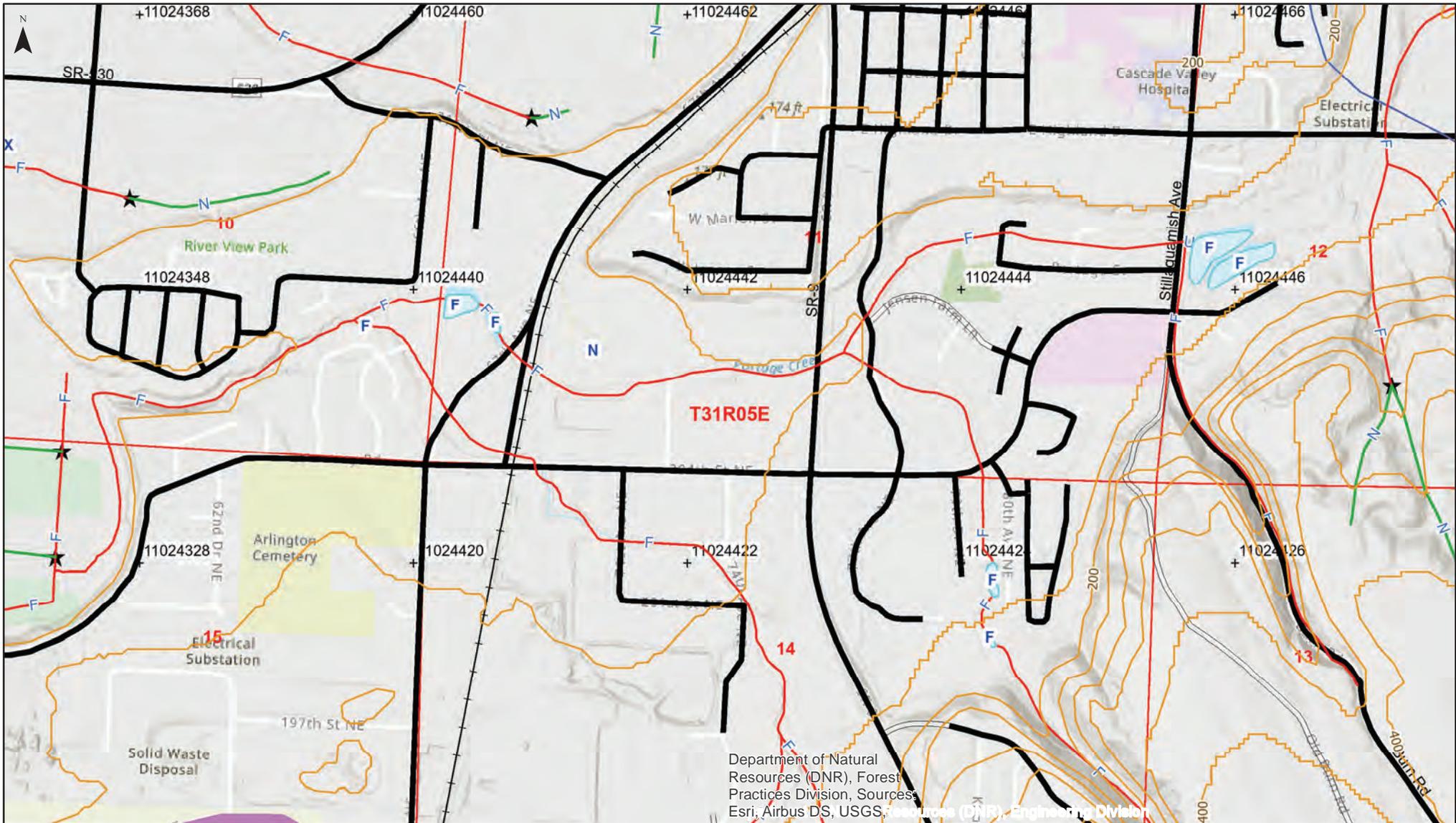
Date(s) aerial images were photographed: Sep 26, 2018—Oct 16, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4	Alderwood-Everett gravelly sandy loams, 25 to 70 percent slopes	15	0.2	0.1%
17	Everett very gravelly sandy loam, 0 to 8 percent slopes	0	142.3	34.3%
19	Everett very gravelly sandy loam, 15 to 30 percent slopes	0	0.0	0.0%
30	Lynnwood loamy sand, 0 to 3 percent slopes	5	5.8	1.4%
34	Mukilteo muck	100	2.6	0.6%
39	Norma loam	100	206.4	49.7%
48	Pastik silt loam, 8 to 25 percent slopes	0	0.3	0.1%
49	Pastik silt loam, 25 to 50 percent slopes	0	0.3	0.1%
51	Pits	0	5.1	1.2%
72	Tokul gravelly medial loam, 0 to 8 percent slopes	5	23.5	5.7%
77	Tokul-Winston gravelly loams, 25 to 65 percent slopes	0	25.4	6.1%
83	Water	0	3.3	0.8%
Totals for Area of Interest			415.1	100.0%

Attachment A-7: Forest Practices Activity Map



Department of Natural Resources (DNR), Forest Practices Division, Sources: Esri, Airbus DS, USGS, Washington State Department of Natural Resources (DNR), Engineering Division

Map Symbols	
	Harvest Boundary
	Road Construction
	Stream
	RMZ / WMZ Buffers
	Rock Pit
	Landing
	Waste Area
	Clumped WRTS/GRTS
	Existing Structure

Additional Information

Legal Description
S15 T31.0N R05.0E, S14 T31.0N R05.0E
S13 T31.0N R05.0E, S11 T31.0N R05.0E
S12 T31.0N R05.0E, S10 T31.0N R05.0E



Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

0 0.25 Miles

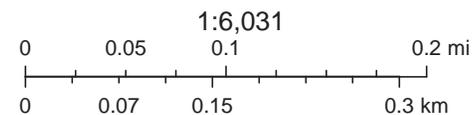
Date: 3/26/2021 Time: 10:43:26 AM

Attachment A-8: SWIFD Web Map



3/31/2021, 2:35:02 PM

- | | | |
|------------------------|-------------------------|-----------------|
| Hydro: DNR Water Types | Water Type Unknown | Tribal Lands |
| — Type F Waters | ● USGS/WDFW River Miles | ■ Reservation |
| — Type N Waters | | ■ Disputed Area |

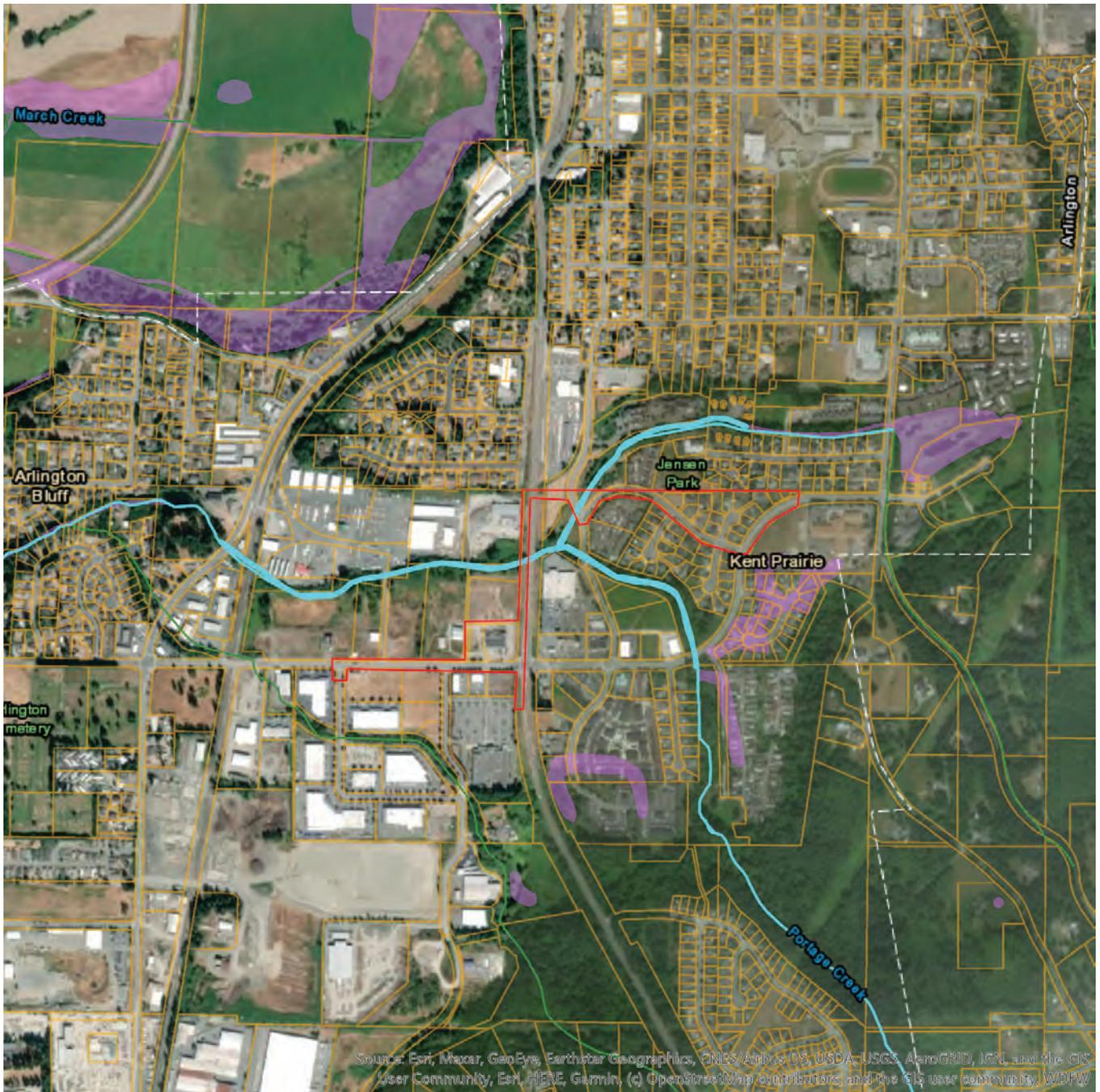


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

NWIFC SSHAIP



Attachment A-9: Priority Habitats and Species on the Web



Report Date: 04/08/2021

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Generalized Location
Coho	N/A	N/A	No
Coho	Candidate	N/A	No
Cutthroat	Not Warranted	N/A	No
Resident Coastal Cutthroat	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No

PHS Species/Habitats Details:

Coho	
Scientific Name	<i>Oncorhynchus kisutch</i>
Priority Area	Breeding Area
Site Name	Portage Creek
Accuracy	NA
Notes	LLID: 1222452481960, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	38279
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	<i>Oncorhynchus kisutch</i>
Priority Area	Occurrence
Accuracy	NA
Notes	LLID: 1221268481834, Stock Name: Stillaguamish Coho, Run: Unspecified, Status: Healthy
Source Record	3060
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Cutthroat	
Scientific Name	<i>Oncorhynchus clarki</i>
Priority Area	Occurrence
Site Name	Portage Creek
Accuracy	NA
Notes	LLID: 1222452481960, Stock Name: Stillaguamish Coastal Cutthroat, Run: Unspecified, Status: Healthy
Source Record	7340
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Not Warranted
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	<i>Oncorhynchus clarki</i>
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221268481834, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	30948
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	<i>Oncorhynchus kisutch</i>
Priority Area	Occurrence
Site Name	Portage Creek
Accuracy	NA
Notes	LLID: 1222452481960, Stock Name: Stillaguamish Coho, Run: Unspecified, Status: Healthy
Source Record	3060
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	<i>Oncorhynchus kisutch</i>
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221268481834, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	30951
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	<i>Oncorhynchus clarki</i>
Priority Area	Occurrence/Migration
Site Name	Portage Creek
Accuracy	NA
Notes	LLID: 1222452481960, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	38273
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1Cx
Source Dataset	NWIIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PSSC
Source Dataset	NWIIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

Attachment B
Determination Forms



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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-1
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): swale / ditch Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.184116 Long: -122.121230 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 1 is located at the outlet of a roadside swale/ditch adjacent to 207th Street NE. This ditch is presumed to drain the adjacent road and elementary school runoff. There is no paired sample point.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 2 </u> (A)	
1. <u>none</u>						Total Number of Dominant Species Across All Strata: <u> 2 </u> (B)
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
		<u>0%</u> = Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 100% </u> (A/B)
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)					
1. <u>none</u>					Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>	
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
5. <u> </u>						
		<u>0%</u> = Total Cover				
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.	
1. <u>Poa pratensis</u>		<u>70%</u>	<u>Yes</u>	<u>FAC</u>		
2. <u>Ranunculus repens</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>		
3. <u>Trifolium species</u>		<u>5%</u>	<u>No</u>	<u>FAC*</u>		
4. <u>Lamium amplexicaule</u>		<u>5%</u>	<u>No</u>	<u>NOL</u>		
5. <u> </u>						
6. <u> </u>						
7. <u> </u>						
8. <u> </u>						
9. <u> </u>						
10. <u> </u>						
11. <u> </u>						
		<u>100%</u> = Total Cover				
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	
1. <u>none</u>						
2. <u> </u>						
		<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u> 0% </u>						

Remarks:
 Trifolium is assumed to be facultative.



SOIL							Sampling Point:	SP-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 ³	Remarks
0-13	10YR 2/1	100					SIL	
13-16	10YR 3/1	95	10YR 4/6	5	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.
³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 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 type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (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): Type: <u>n/a</u> Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum 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"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

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

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

Remarks:
 No hydrology despite the heavy rainfall within the past 24 hours.

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-2
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.184179 Long: -122.127263 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample point 2 is located upslope of Wetland A and the OHWM of Kruger Creek. This is the paired sample point to SP-3.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3x1m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 2 </u> (A) Total Number of Dominant Species Across All Strata: <u> 2 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 100% </u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
Sapling/Shrub Stratum (Plot size: <u>r=2x1m</u>)		<u>0%</u> = Total Cover			
1. <u>Rubus armeniacus</u>		<u>100%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
Herb Stratum (Plot size: <u>r=1x1m</u>)		<u>100%</u> = Total Cover			
1. <u>Phalaris arundinacea</u>		<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
Woody Vine Stratum (Plot size: <u>r=2x1m</u>)		<u>10%</u> = Total Cover			
1. <u>none</u>					
2. <u> </u>					
% Bare Ground in Herb Stratum <u>50%</u>		<u>0%</u> = Total Cover			

Remarks:



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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-3
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.184204 Long: -122.127306 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: PEM1Cx
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 3 is located within Wetland A at the toe of slope and below the OHWM of Kruger Creek. This is the paired sample point to SP-2.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3x1m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2x1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Rubus armeniacus</u>		10%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		10% = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1x1m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Phalaris arundinacea</u>		100%	Yes	FACW	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		100% = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2x1m</u>)				
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-4
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.183990 Long: -122.127857 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 4 is located on a fill prism near the toe of slope to the north of and above the OHWM of Kruger Creek. This fill prism separates Wetland B and Kruger Creek from the land parcel to the north. This sample point is the paired sample point to SP-5.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
<u>Sampling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>Rubus armeniacus</u>		100%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		100% = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				
1. <u>Phalaris arundinacea</u>		40%	Yes	FACW	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		40% = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-5
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.183955 Long: -122.127768 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: PEM1Cx
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 5 is located within Wetland B on the stream terrace of Kruger Creek. The boundaries of Wetland B are marked and confined by two fill prisms. This is the paired sample point to SP-4.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
1. <u>none</u>						Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
		<u>0%</u> = Total Cover				
<u>Sampling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)					
1. <u>none</u>					Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> <u>5</u> - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.	
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
5. <u> </u>						
		<u>0%</u> = Total Cover				
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)					
1. <u>Phalaris arundinacea</u>		<u>100%</u>	<u>Yes</u>	<u>FACW</u>		
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
5. <u> </u>						
6. <u> </u>						
7. <u> </u>						
8. <u> </u>						
9. <u> </u>						
10. <u> </u>						
11. <u> </u>						
		<u>100%</u> = Total Cover				
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)					
1. <u>none</u>					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	
2. <u> </u>						
		<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>						

Remarks:

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-6
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): None
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.184108 Long: -122.128079 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 6 is located in the upland grass field located approximately 100 feet upslope and to the west of Wetland B and Kruger Creek. There is no paired sample point.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. <u>none</u>	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
		0% = Total Cover			
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>none</u>	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
		0% = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				
1. <u>Dactylis glomerata</u>	_____	60%	Yes	FACU	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. <u>Poa pratensis</u>	_____	15%	No	FAC	
3. <u>Vicia species</u>	_____	10%	No	FACU*	
4. <u>Taraxacum officinale</u>	_____	10%	No	FACU	
5. <u>Plantago lanceolata</u>	_____	5%	No	FACU	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	
9. _____	_____	_____	_____	_____	
10. _____	_____	_____	_____	_____	
11. _____	_____	_____	_____	_____	
		100% = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>none</u>	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
		0% = Total Cover			
% Bare Ground in Herb Stratum		0%			

Remarks:
 Vicia is assumed to be FACU.

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-7
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): none Slope (%): None
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.182941 Long: -122.129288 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: PSSC
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 7 is located on the stream terrace of Portage Creek and is located within Wetland C. This is the paired sample point to SP-8.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 3 </u> (A) Total Number of Dominant Species Across All Strata: <u> 4 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 75% </u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)		<u>0%</u> = Total Cover			
1. <u>Symphoricarpos albus</u>		<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>		<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
Herb Stratum (Plot size: <u>r=1m</u>)		<u>25%</u> = Total Cover			
1. <u>Phalaris arundinacea</u>		<u>40%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Urtica dioica</u>		<u>5%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
Woody Vine Stratum (Plot size: <u>r=2m</u>)		<u>45%</u> = Total Cover			
1. <u>Solanum dulcamara</u>		<u>50%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>					
% Bare Ground in Herb Stratum		<u>0%</u>			

Remarks:



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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 3/29/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-8
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.182965 Long: -122.129329 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 8 is located above Wetland C and the defined channel of Portage Creek but is positioned below the OHWM of the creek. This is the paired sample point to SP-7.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 2 </u> (A)
1.	<u>Frangula purshiana</u>	<u>40%</u>	<u>Yes</u>	<u>FAC</u>	
2.	<u>Picea sitchensis</u>	<u>30%</u>	<u>Yes</u>	<u>FAC</u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 67% </u> (A/B)
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>70%</u> = Total Cover			Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>Symphoricarpos albus</u>	<u>90%</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Rubus armeniacus</u>	<u>10%</u>	<u>No</u>	<u>FAC</u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>100%</u> = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1.	<u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				
1.	<u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum		<u>0%</u>			

Remarks:

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 4/1/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-9
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.181444 Long: -122.129150 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 9 is located in a roadside swale between an industrial fill pad and Highway 9. There is no paired sample point.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0%</u> = Total Cover			
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Rubus armeniacus</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>20%</u> = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Phalaris arundinacea</u>		<u>100%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		<u>100%</u> = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>none</u>					
2. <u> </u>					
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum		<u>0%</u>			

Remarks:



ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2402-029

US Army Corps of Engineers
 Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	SP-9
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):								
Depth	Matrix		Redox Features				Texture ³	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 2/1	100					L	
7-14	10YR 2/1	98	10YR 3/3	2	C	M	L	
14-16	10YR 2/1	70	10YR 3/6	5	C	M	L	Mixed matrix
14-16	10YR 3/3	25						Mixed matrix

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.
³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 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 type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum 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"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

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

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

Remarks:

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

Project/Site: Arlington HP Phase 2 City/County: Arlington/Snohomish Sampling Date: 4/1/2021
 Applicant/Owner: CNGC State: WA Sampling Point: SP-10
 Investigator(s): Trey Parry and Kaylee Moser Section, Township, Range: S11, T31N, R5E
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 48.180388 Long: -122.129225 Datum: WGS-84
 Soil Unit (Name-ID-Hydric Rating): Norma Loam - 39 - Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Precipitation:
 According to the Everett Snohomish County AP weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:
 Sample Point 10 is located in a roadside swale between an industrial fill pad and Highway 9. There is no paired sample point.

VEGETATION

<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0%</u> = Total Cover			
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>Rubus armeniacus</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>20%</u> = Total Cover			
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				
1. <u>Phalaris arundinacea</u>		<u>100%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		<u>100%</u> = Total Cover			
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				
1. <u>none</u>					
2. <u> </u>					
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum		<u>0%</u>			

Remarks:



Attachment C

Rating Forms



RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 3/29/2021

Rated by Trey Parry, PWS Trained by Ecology? Yes No Date of training Sep-16

HGM Class used for rating Riverine & Fresh Water Tidal 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 ESRI

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 23 - 27
- X** Category II - Total score = 20 - 22
- Category III - Total score = 16 - 19
- Category IV - Total score = 9 - 15

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

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, 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 unit is found (from web)	D 3.3	

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 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 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 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 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 another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Water Quality Functions - Indicators that the site functions to improve water quality**

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover > $\frac{3}{4}$ area of wetland	points = 8	2
Depressions cover > $\frac{1}{2}$ area of wetland	points = 4	
Depressions present but cover < $\frac{1}{2}$ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin classes)		
Trees or shrubs > $\frac{2}{3}$ area of the wetland	points = 8	8
<input checked="" type="checkbox"/> Trees or shrubs > $\frac{1}{3}$ area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > $\frac{2}{3}$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $\frac{1}{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous < $\frac{1}{3}$ area of the 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	0
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?		1
Other Sources <u>Heavy use by waterfowl in the headwater lake.</u>	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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	1
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (<i>answer YES if there is a TMDL for the drainage in which the unit is found</i>)	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	3

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

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 2 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" 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 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

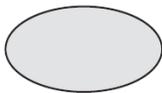
H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 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, Canadian thistle*

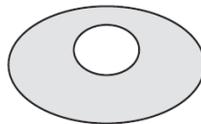
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



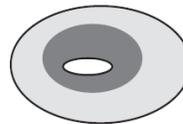
None = 0 points



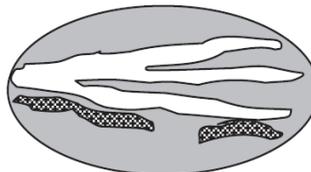
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3 points



2

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 	4
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Total for H 1	Add the points in the boxes above	11
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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 the habitat function of the site?

<p>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>If 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
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<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>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</p>	1
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<p>H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>	-2
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Total for H 2	Add the points in the boxes above	-1
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Rating of Landscape Potential If Score is: 4 - 6 = 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?

<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></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <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 <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 <p>Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1 Site does not meet any of the criteria above points = 0</p>	1
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Rating of Value If Score is: 2 = H 1 = M 0 = L Record the rating on the first page

WDFW Priority Habitats

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*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- 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) 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.
- 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.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- 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.

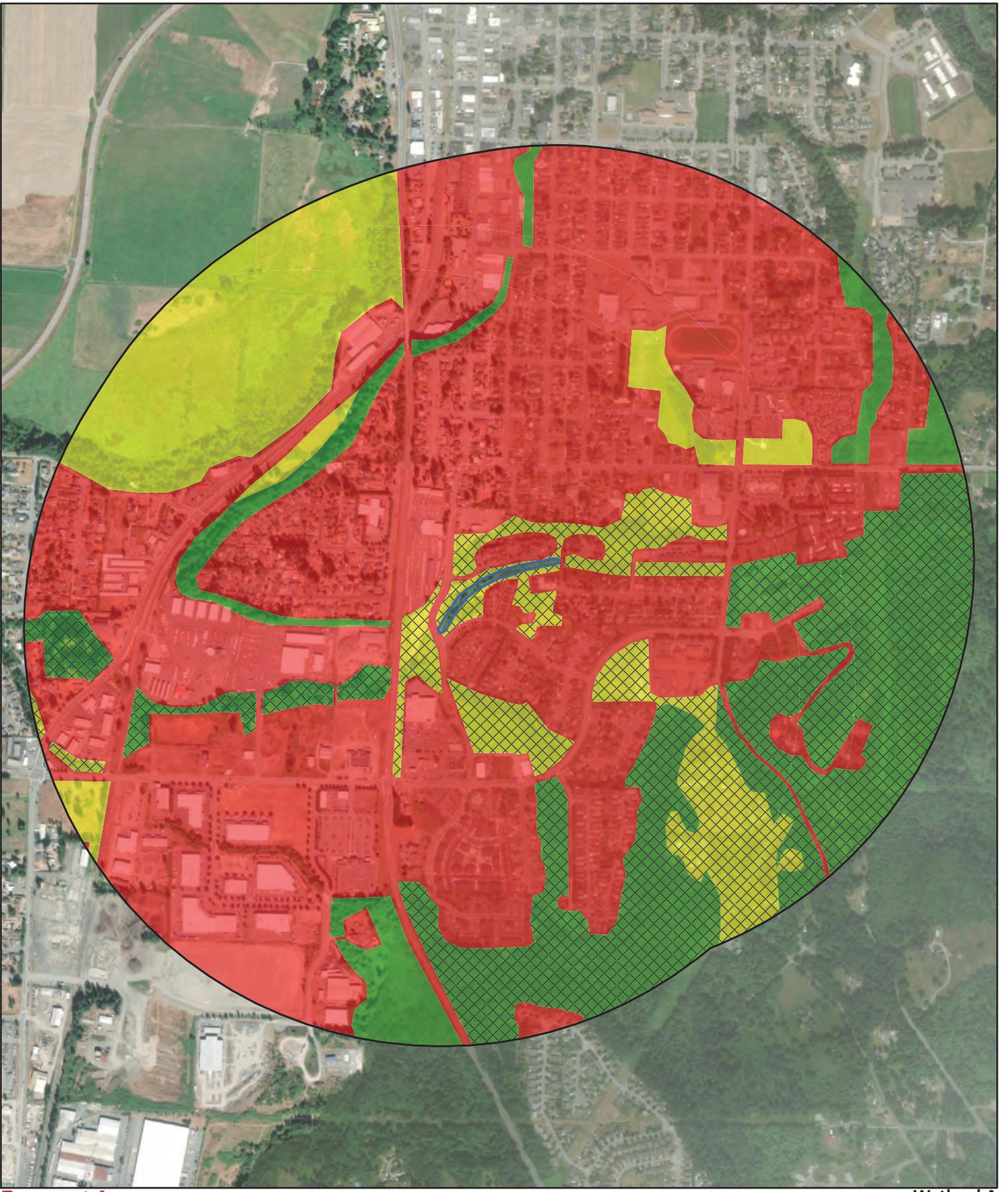
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

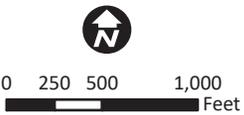
Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
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? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> 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 page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
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>	
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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - Go to SC 3.2	
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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 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 4 are present, the wetland is a bog.	
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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. <input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks <input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). <input type="checkbox"/> 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. <input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²) <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103 <input type="checkbox"/> Grayland-Westport: Lands west of SR 105 <input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Date: 4/9/2021 Author: worshahv Path: U:\PSC\Projects\Clients\2402-CascadiaNaturalGas\54-2402-029_ArlingtonHPPhase03\GIS\MapDocs\CNG_Arlington_LandUse.aprx



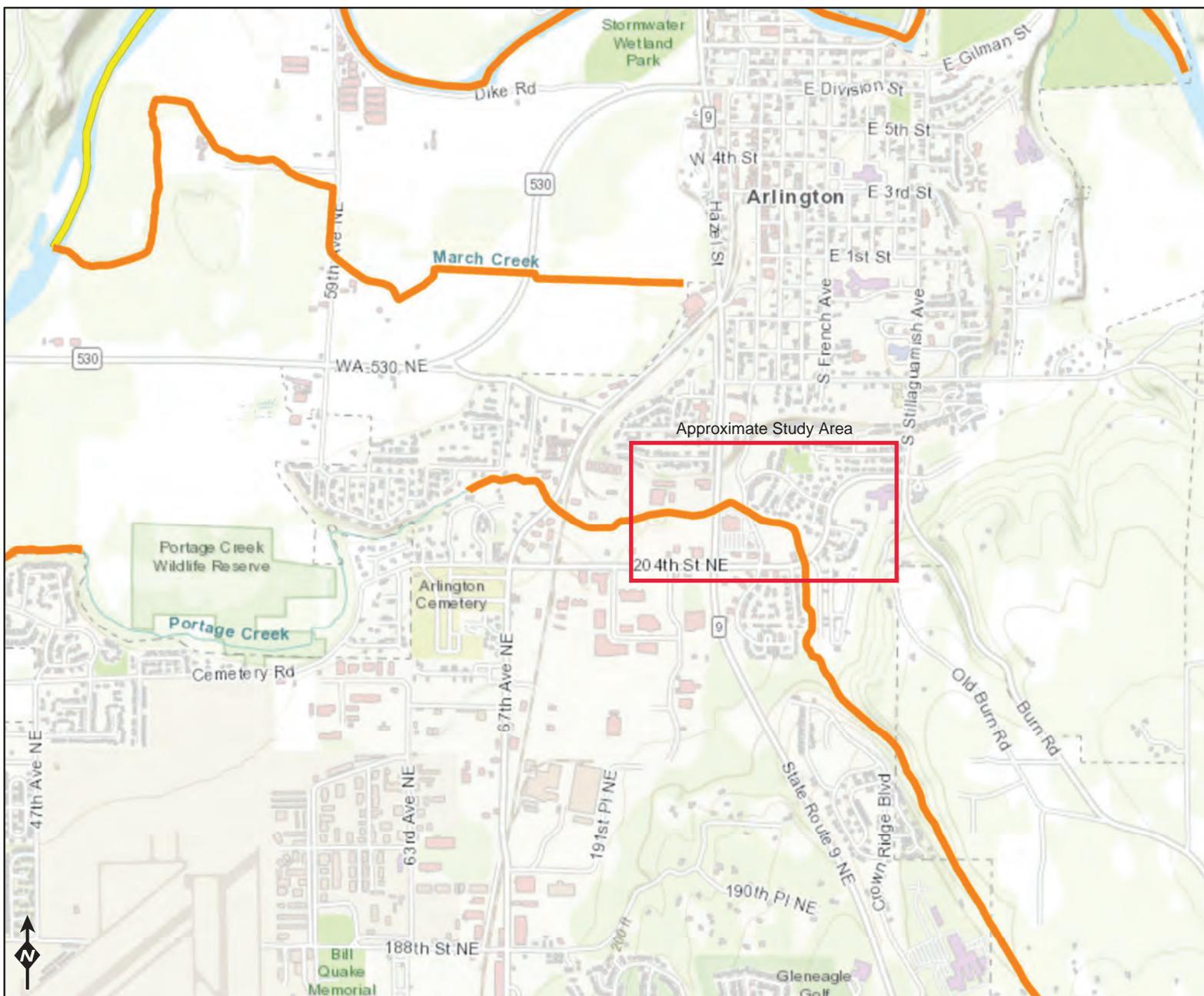
Parametrix



-  Approximate Wetland Boundary
-  1-km Polygon
-  Accessible habitat

- Land Use Intensity**
-  Undisturbed
 -  Low/moderate
 -  High

Wetland A
 Land Use Intensity
 and Habitat Accessibility
CNG Arlington
 Arlington, WA



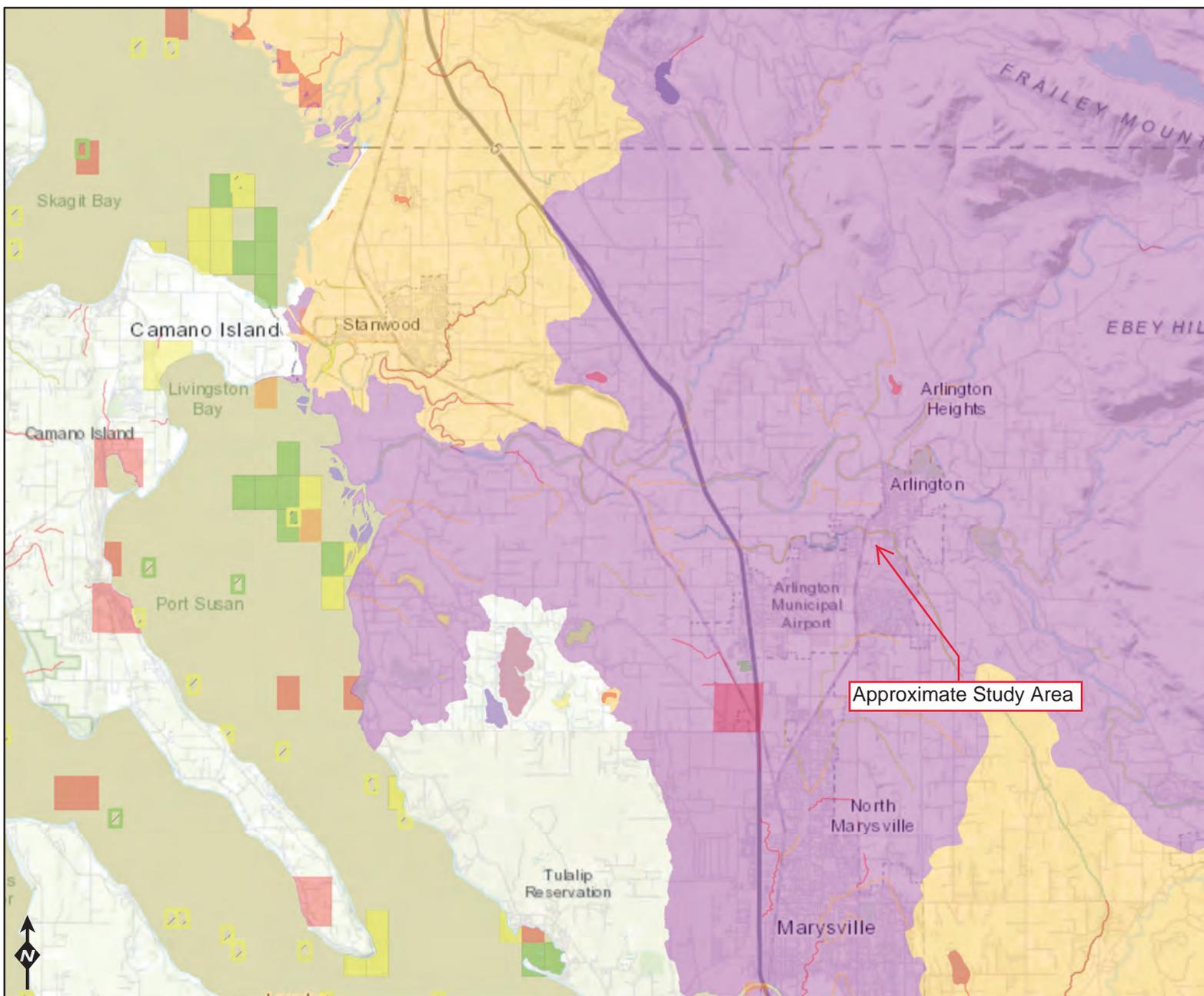
Assessed Water/Sediment

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



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

WQ Improvement Projects

- Approved
- In Development

RATING SUMMARY – Western Washington

Name of wetland (or ID #): B Date of site visit: 3/29/2021

Rated by Trey Parry, PWS Trained by Ecology? Yes No Date of training Sep-16

HGM Class used for rating Riverine & Fresh Water Tidal 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 ESRI

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 23 - 27
- X Category II - Total score = 20 - 22
- Category III - Total score = 16 - 19
- Category IV - Total score = 9 - 15

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

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, 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 unit is found (from web)	D 3.3	

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 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 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 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 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 another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Water Quality Functions - Indicators that the site functions to improve water quality**

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover > $\frac{3}{4}$ area of wetland	points = 8	2
Depressions cover > $\frac{1}{2}$ area of wetland	points = 4	
Depressions present but cover < $\frac{1}{2}$ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin classes)		
Trees or shrubs > $\frac{2}{3}$ area of the wetland	points = 8	6
<input checked="" type="checkbox"/> Trees or shrubs > $\frac{1}{3}$ area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > $\frac{2}{3}$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $\frac{1}{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous < $\frac{1}{3}$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	8

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	0
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?		1
Other Sources <u>Heavy use by waterfowl in the upstream and headw</u>	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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	1
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (<i>answer YES if there is a TMDL for the drainage in which the unit is found</i>)	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	3

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

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides:

Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).

If the ratio is more than 20	points = 9	4
If the ratio is 10 - 20	points = 6	
If the ratio is 5 - < 10	points = 4	
If the ratio is 1 - < 5	points = 2	
If the ratio is < 1	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 > 1/3 area OR emergent plants > 2/3 area	points = 7	7
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 4	
Plants do not meet above criteria	points = 0	

Total for R 4 Add the points in the boxes above **11****Rating of Site Potential** If score is: 12 - 16 = H 6 - 11 = M 0 - 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 1 or 2 = M 0 = 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 wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	1
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 **1****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

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 2 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" 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 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

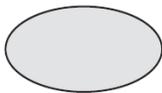
H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 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, Canadian thistle*

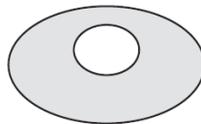
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



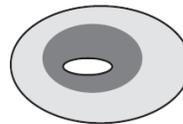
None = 0 points



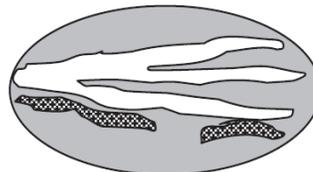
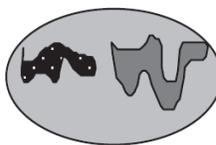
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3 points



2

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input checked="" 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 	5
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Total for H 1	Add the points in the boxes above	12
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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 the habitat function of the site?

<p>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>If 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
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<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>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</p>	1
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<p>H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>	-2
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Total for H 2	Add the points in the boxes above	-1
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Rating of Landscape Potential If Score is: 4 - 6 = 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?

<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></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <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 <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 <p>Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1 Site does not meet any of the criteria above points = 0</p>	1
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Rating of Value If Score is: 2 = H 1 = M 0 = L Record the rating on the first page

WDFW Priority Habitats

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*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- 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) 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.
- 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.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- 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.

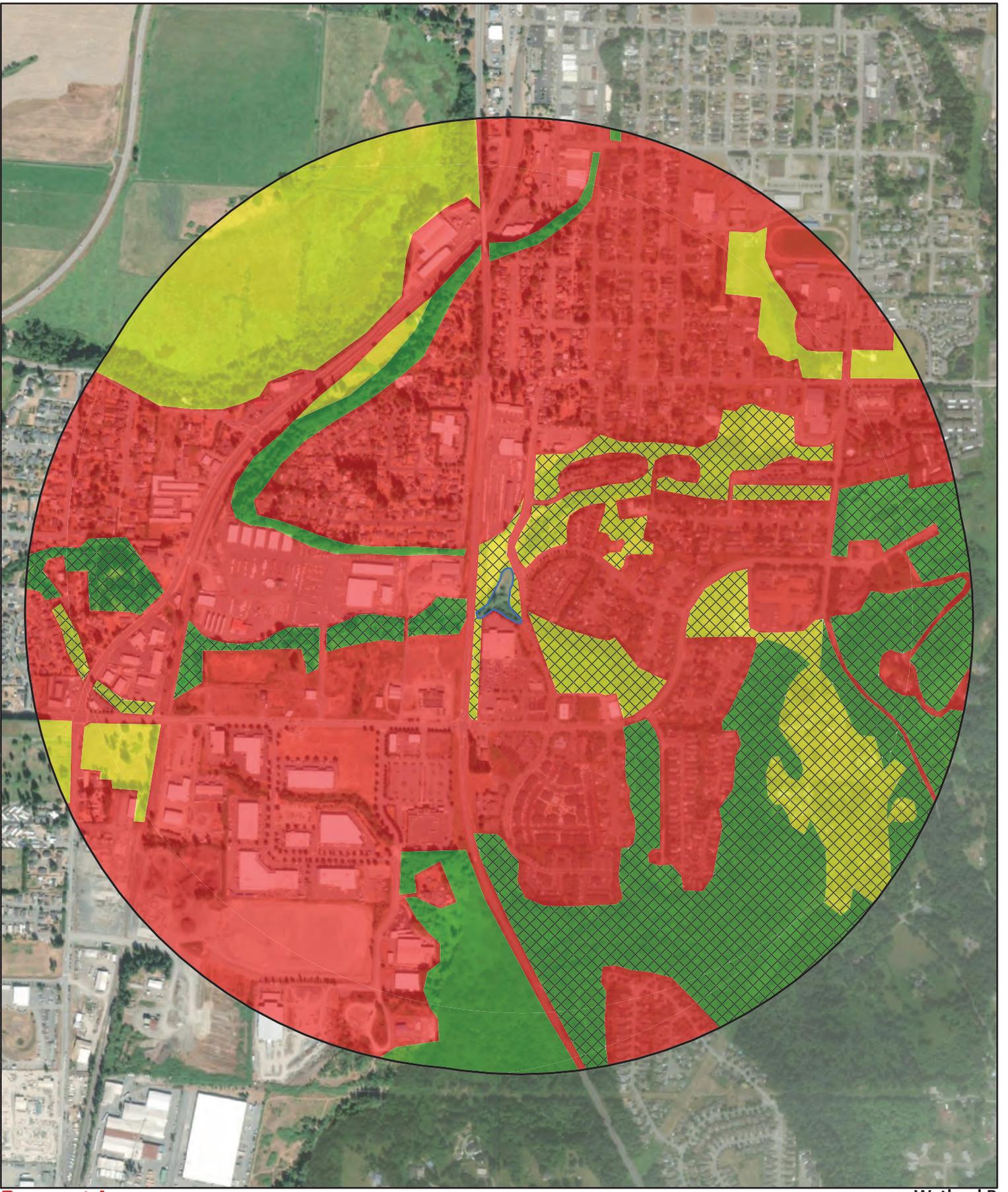
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

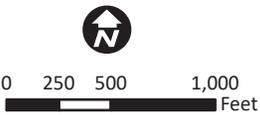
Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
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? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> 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 page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
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>	
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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - Go to SC 3.2	
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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 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 4 are present, the wetland is a bog.	
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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. <input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks <input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p style="text-align: center;"><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). <input type="checkbox"/> 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. <input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²) <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103 <input type="checkbox"/> Grayland-Westport: Lands west of SR 105 <input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p style="text-align: center;"><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Date: 4/9/2021 Author: worshahv_Path_U:\PSC\Projects\Clients\2409-CascadeNaturalGas\5.4-2409-009_Arlington\HPPhase\GIS\MapDocs\CNG_Arlington_LandUse\CNG_Arlington_LandUse.aprx



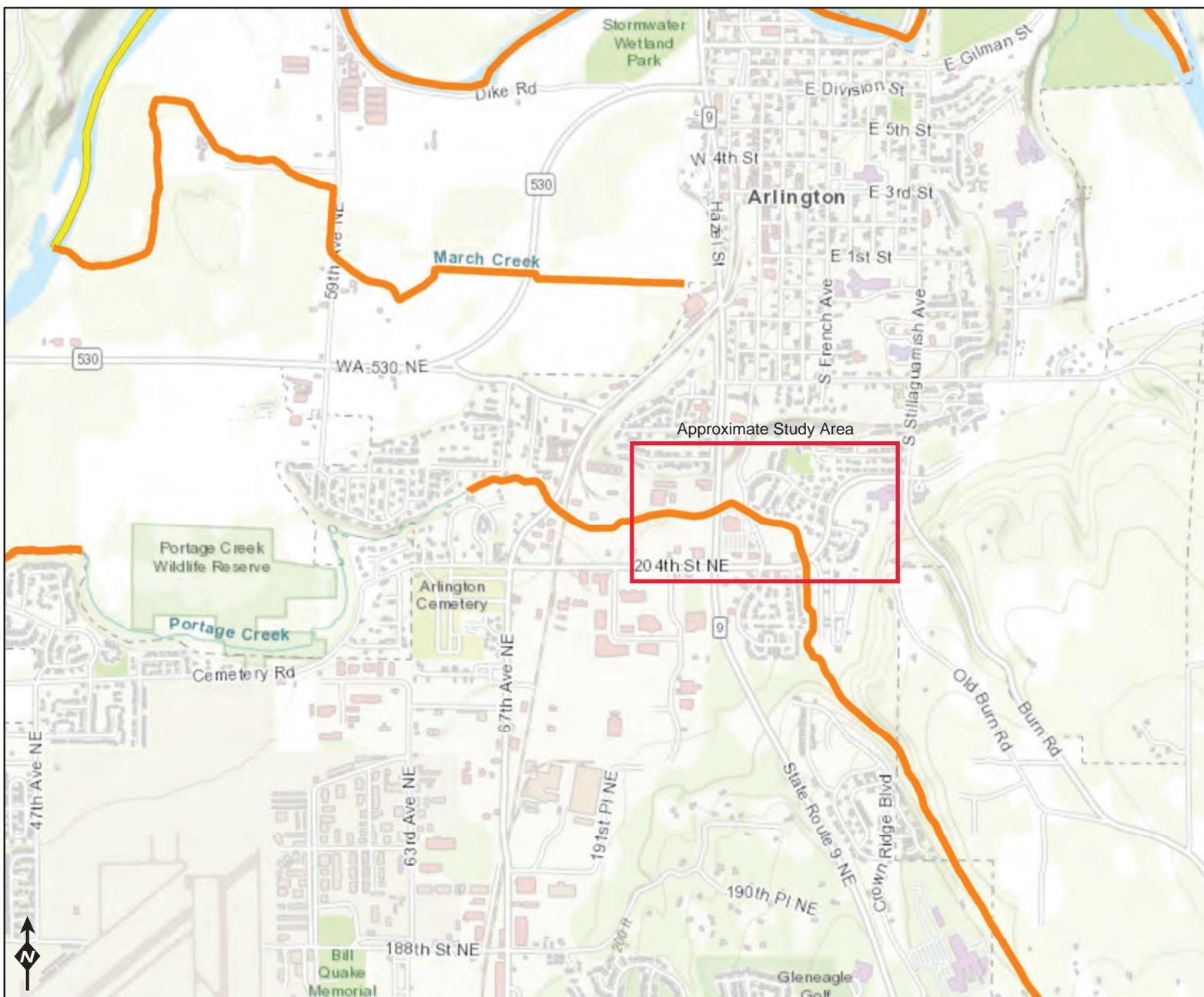
Parametrix



-  Approximate Wetland Boundary
-  1-km Polygon
-  Accessible habitat

- Land Use Intensity**
-  Undisturbed
 -  Low/moderate
 -  High

Wetland B
 Land Use Intensity
 and Habitat Accessibility
CNG Arlington
 Arlington, WA



Assessed Water/Sediment

Water

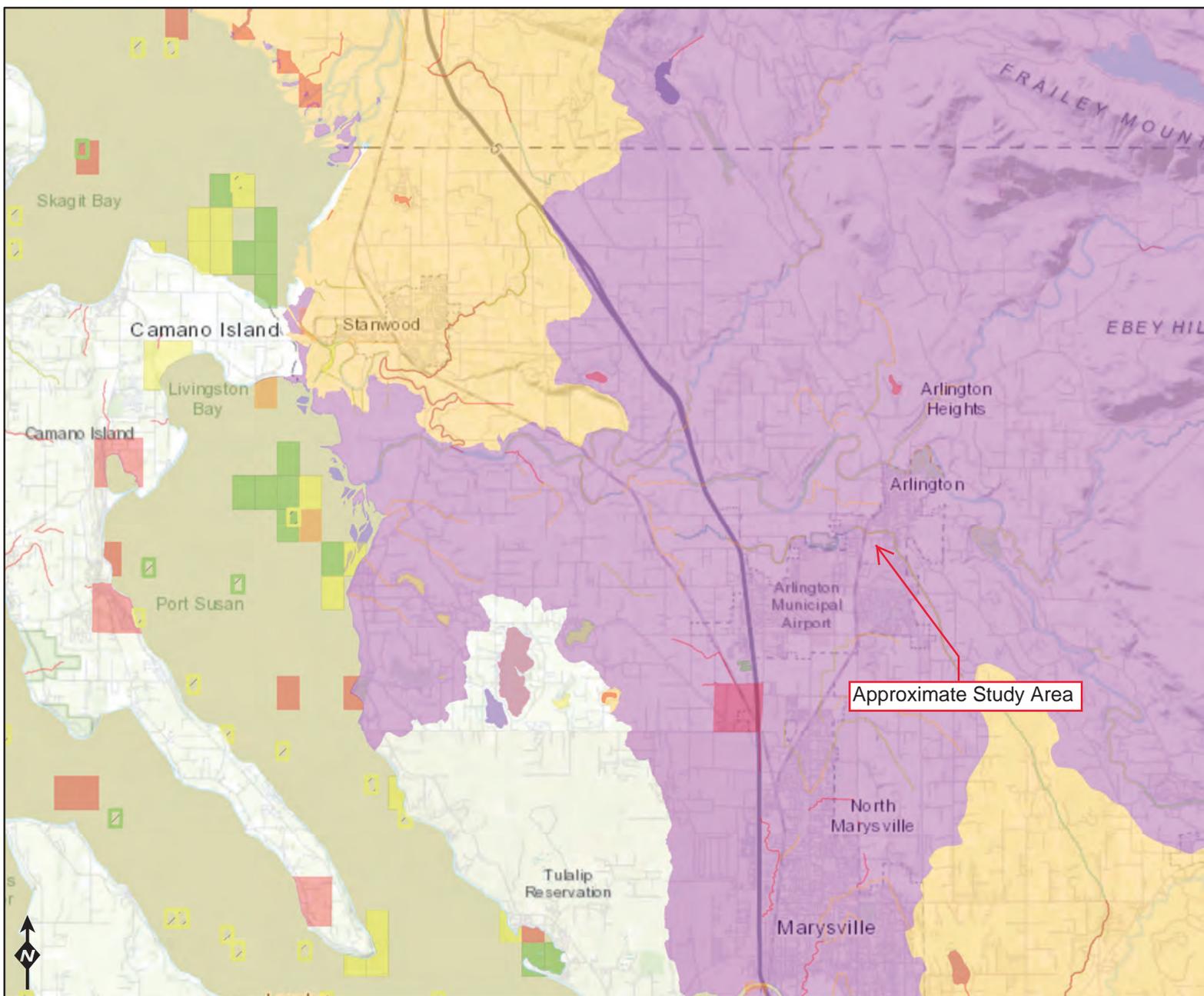
-  Category 5 - 303d
-  Category 4C
-  Category 4B
-  Category 4A
-  Category 2
-  Category 1

Sediment

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

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





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

WQ Improvement Projects

- Approved
- In Development

RATING SUMMARY – Western Washington

Name of wetland (or ID #): C Date of site visit: 3/29/2021

Rated by Trey Parry, PWS Trained by Ecology? Yes No Date of training Sep-16

HGM Class used for rating Riverine & Fresh Water Tidal 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 ESRI

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

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 23 - 27
- X Category II - Total score = 20 - 22
- Category III - Total score = 16 - 19
- Category IV - Total score = 9 - 15

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

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, 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 unit is found (from web)	D 3.3	

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 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 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 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 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 another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Water Quality Functions - Indicators that the site functions to improve water quality**

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover > $\frac{3}{4}$ area of wetland	points = 8	2
Depressions cover > $\frac{1}{2}$ area of wetland	points = 4	
Depressions present but cover < $\frac{1}{2}$ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin classes)		
Trees or shrubs > $\frac{2}{3}$ area of the wetland	points = 8	6
<input checked="" type="checkbox"/> Trees or shrubs > $\frac{1}{3}$ area of the wetland	points = 6	
<input type="checkbox"/> Herbaceous plants (> 6 in high) > $\frac{2}{3}$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $\frac{1}{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous < $\frac{1}{3}$ area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above	8

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	0
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?		1
Other Sources <u>Garbage in stream/wetland.</u>	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. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	1
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	3

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

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i>		
If the ratio is more than 20	points = 9	1
If the ratio is 10 - 20	points = 6	
If the ratio is 5 - < 10	points = 4	
If the ratio is 1 - < 5	points = 2	
If the ratio is < 1	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are <u>NOT Cowardin</u> classes).</i>		7
Forest or shrub for > 1/3 area OR emergent plants > 2/3 area	points = 7	
Forest or shrub for > 1/10 area OR emergent plants > 1/3 area	points = 4	
Plants do not meet above criteria	points = 0	
Total for R 4 Add the points in the boxes above		8

Rating of Site Potential If score is: 12 - 16 = H 6 - 11 = M 0 - 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 1 or 2 = M 0 = L Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	1
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		1

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

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 2 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" 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 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

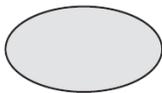
H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 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, Canadian thistle*

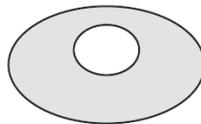
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



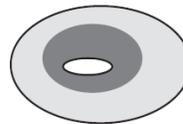
None = 0 points



Low = 1 point

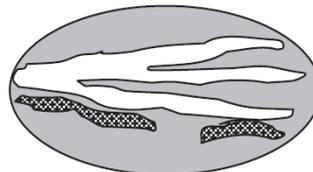


Moderate = 2 points



1

All three diagrams in this row are **HIGH** = 3 points



<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 	4
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Total for H 1 Add the points in the boxes above **10**

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 the habitat function of the site?

<p>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>If 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. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: _____ % undisturbed habitat + (_____ % moderate & low intensity land uses / 2) =</p> <p>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</p>	1
--	---

<p>H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>	-2
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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 < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?

<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></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <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 <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 <p>Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1 Site does not meet any of the criteria above points = 0</p>	1
--	---

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

WDFW Priority Habitats

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*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- 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) 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.
- 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.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- 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.

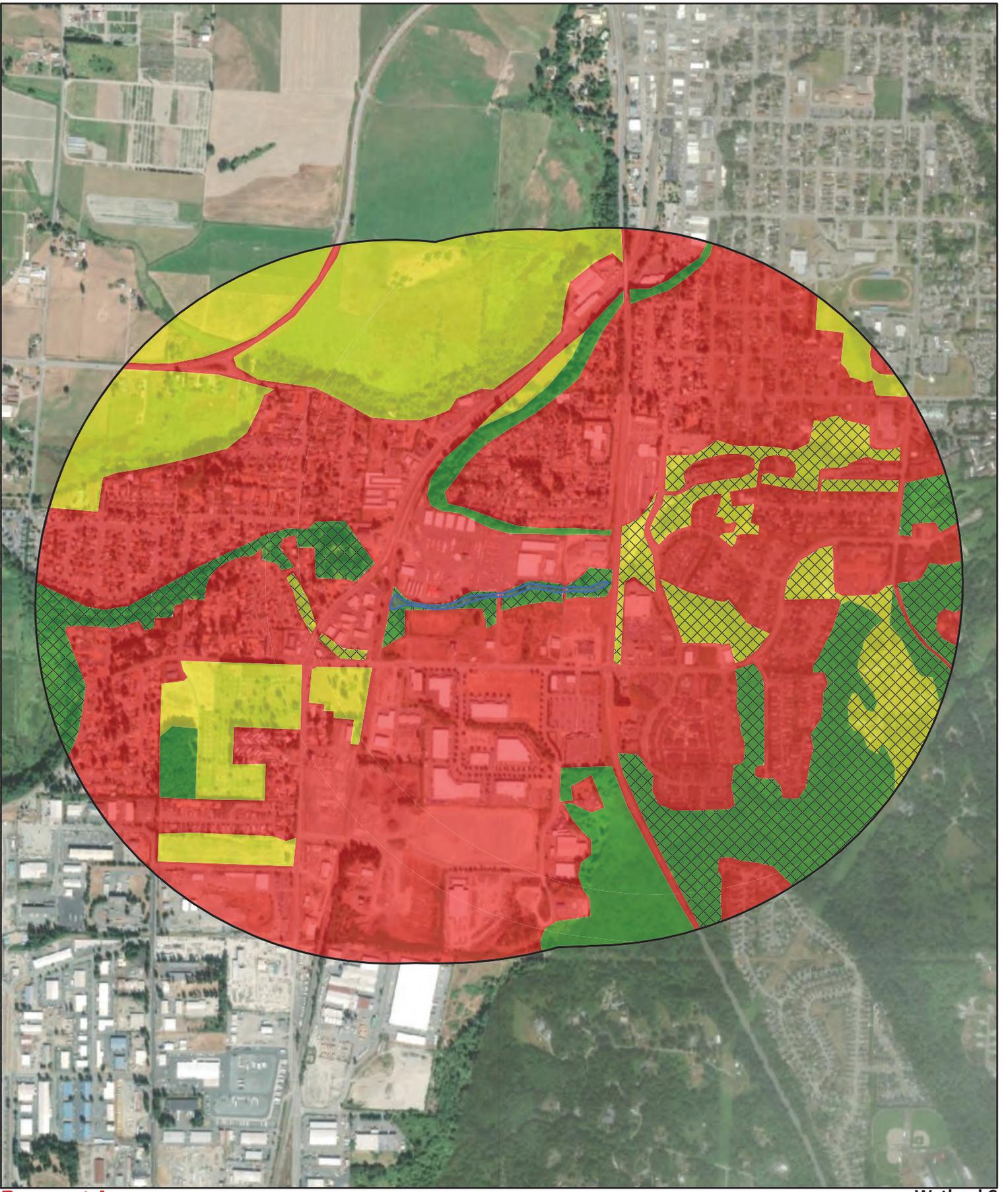
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

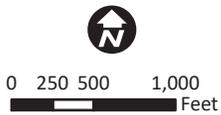
Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
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? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> 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 page 25) <input type="checkbox"/> 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. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
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> 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - Go to SC 3.2 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog 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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 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 4 are present, the wetland is a bog. 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? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. <input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks <input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). <input type="checkbox"/> 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. <input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²) <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103 <input type="checkbox"/> Grayland-Westport: Lands west of SR 105 <input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Date: 4/9/2021 Author: worshahv_Path.LI\PSO\Projects\Clients\2402-CascadiaNaturalGas\54-2402-009_ArlingtonHPPhase\GIS\MapDocs\CNG_Arlington_LandUse.aprx



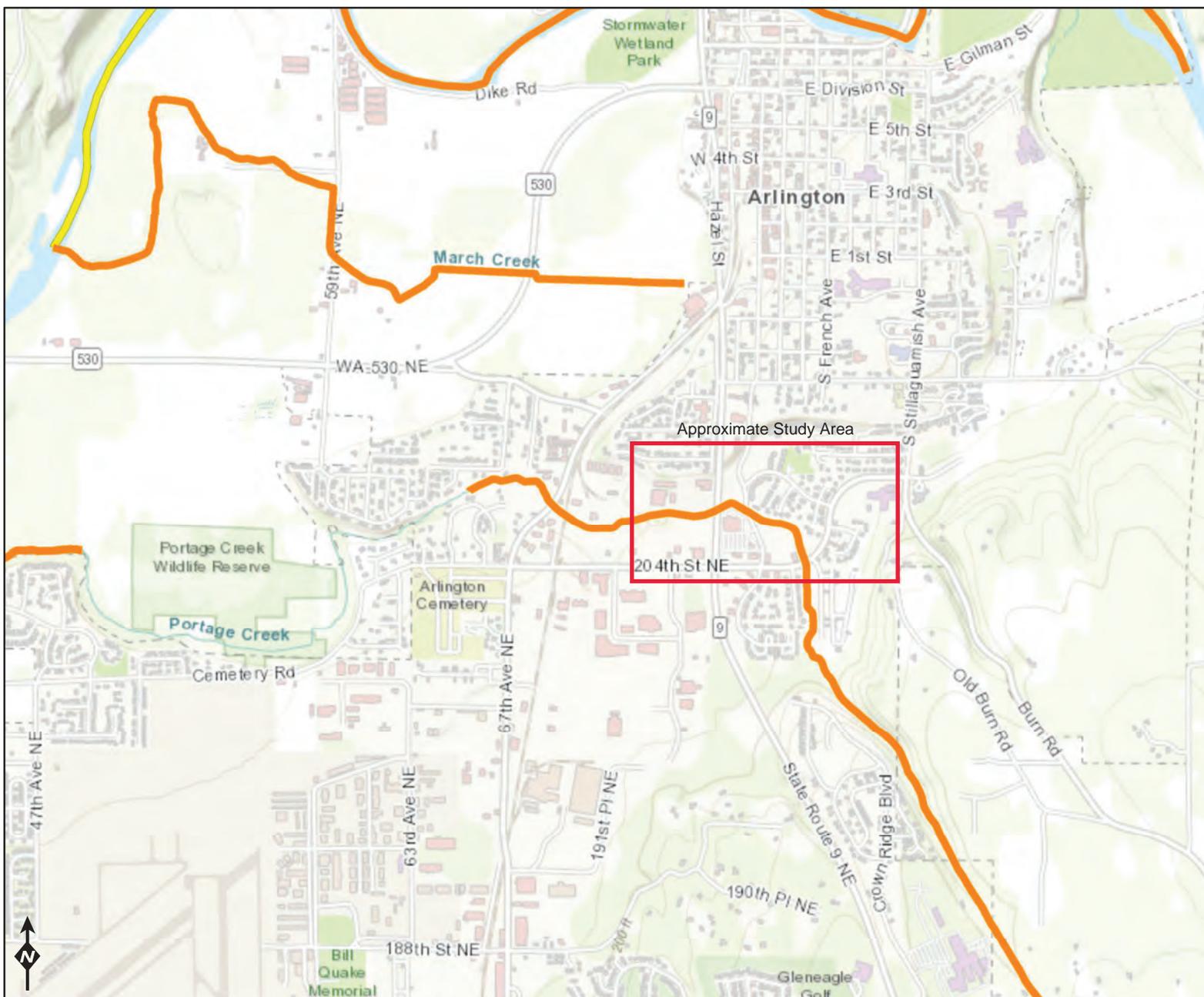
Parametrix



-  Approximate Wetland Boundary
-  1-km Polygon
-  Accessible habitat

- Land Use Intensity**
-  Undisturbed
 -  Low/moderate
 -  High

Wetland C
 Land Use Intensity
 and Habitat Accessibility
CNG Arlington
 Arlington, WA



Assessed Water/Sediment

Water

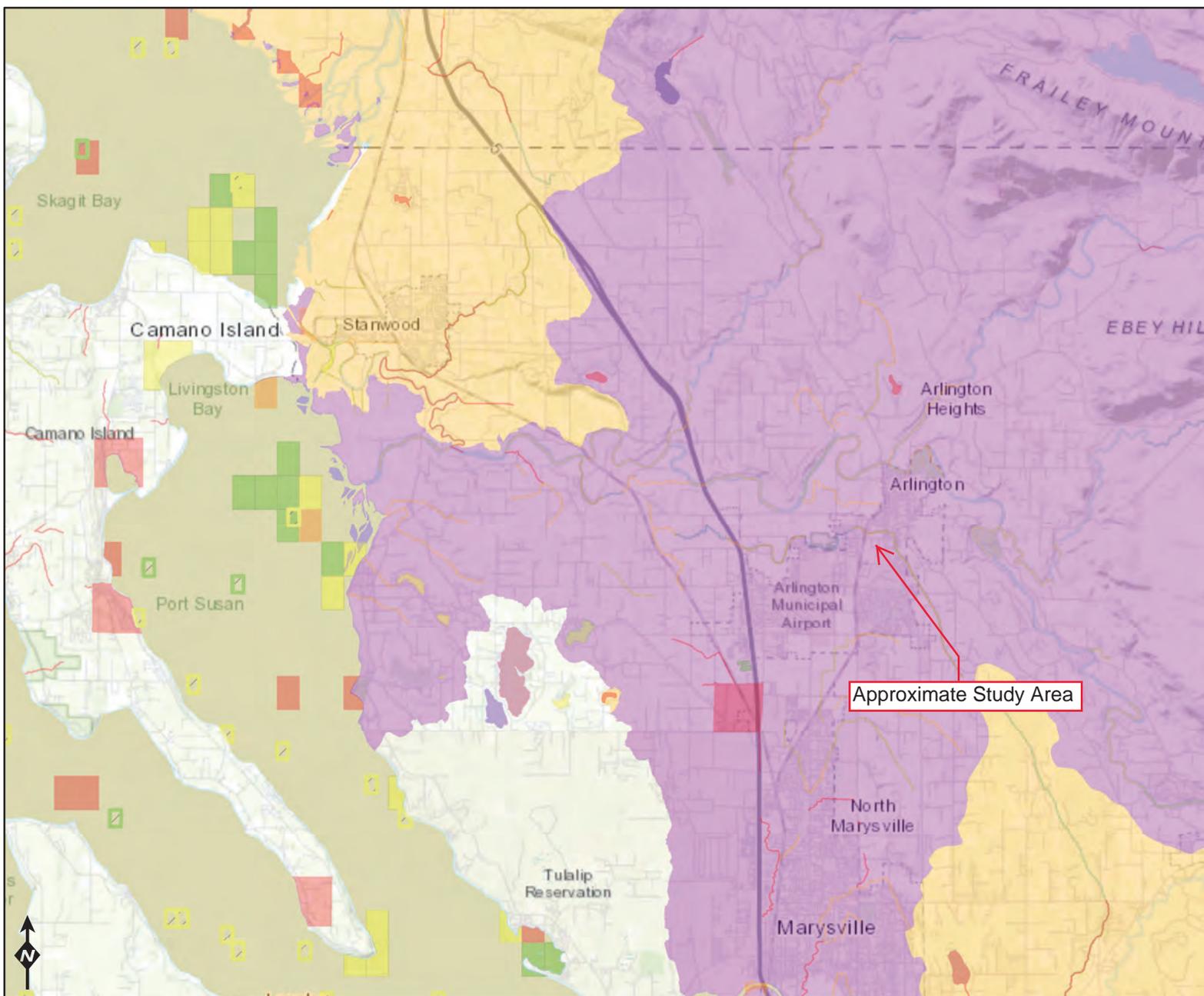
-  Category 5 - 303d
-  Category 4C
-  Category 4B
-  Category 4A
-  Category 2
-  Category 1

Sediment

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

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





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

WQ Improvement Projects

- Approved
- In Development

Attachment D
Photographs





Photograph 1: Representative upland conditions as photographed approximately 700 feet west of the intersection of 207th Street Northeast and Stillaguamish Avenue.



Photograph 2: Wetland A and Kruger Creek facing upstream to the northeast from the intersection of Olympic Place and Jensen Farm Lane.



Photograph 3: Wetland B and Kruger Creek photographed facing downstream of the intersection of Olympic Place and Jensen Farm Lane toward the confluence with Portage Creek near SR 9.



Photograph 4: Wetland C and Portage Creek photographed facing downstream to the west of SR 9.



Photograph 5: Representative upland conditions as photographed to the west of SR 9 and north of 204th Street Northeast.