

WETLAND DELINEATION AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

CENTENNIAL PARK

REVISED NOVEMBER 2022

JUNE 2019



**Soundview
Consultants**

Environmental Assessment
Planning + Land Use Solutions

WETLAND DELINEATION AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

CENTENNIAL PARK

REVISED NOVEMBER 11, 2022

JUNE 28, 2019

PROJECT LOCATION

DEVELOPMENT SITE:

67TH AVENUE NORTHEAST & 172ND STREET NORTHEAST/HIGHWAY 531
ARLINGTON, WASHINGTON 98223

MITIGATION SITE:

16430 51ST AVENUE NORTHEAST
ARLINGTON, WASHINGTON 98223

PREPARED FOR

WILLIAMS INVESTMENTS

2517 COLBY AVENUE,
EVERETT, WASHINGTON 98201

PREPARED BY

SOUNDVIEW CONSULTANTS LLC

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**Soundview
Consultants**

Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting Williams Investments (Applicant) with a Wetland Delineation and Fish and Wildlife Habitat Assessment Report for additional proposed parking stalls for a previously approved and constructed multi-family residential and retail commercial development of an 8.81-acre site located adjacent to 67th Avenue Northeast and 172nd Street Northeast/Highway 531 in the City of Arlington, Washington. The development site consists of one parcel situated in the Southwest ¼, of Section 23, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052300300800).

SVC investigated the development site for the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in the fall of 2018 and winter of 2019. Using current methodology, the site assessment identified one potentially-regulated wetland (Wetland A) and one relict stream channel (Edgecomb Creek) on the development site and one newly relocated stream (Edgecomb Creek) offsite to the south within 225 feet of the site. Wetland A is considered a Category IV wetland with a standard 40-foot buffer based on the low habitat score per Arlington Municipal Code (AMC) 20.93.830(b). Edgecomb Creek was previously located onsite but was successfully relocated offsite as part of a Washington State Department of Transportation (WSDOT) restoration project. The relict stream channel remains onsite and is classified as a Fish and Wildlife Habitat Conservation Area (FWHCA) subject to a 100-foot native growth protection easement and additional 50-foot management zone per AMC 20.93.440(a). The newly relocated Edgecomb Creek offsite to the south is considered a Type F-ESA water with an associated 150-foot buffer per AMC Table 20.93-3. No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species were identified within 225 feet of the development site. The aforementioned critical areas and classifications were approved under a prior development proposal (SEPA MDNS file No. PLN#543).

The Applicant previously constructed a permitted, phased, mixed land use development consisting of multi-family residential units and commercial retail space with associated infrastructure to provide additional housing and commercial space within the City of Arlington (SEPA MDNS file No. PLN#543). The project was carefully designed in order to avoid and minimize impacts to critical areas to the greatest extent feasible, and no direct or indirect wetland impacts were required. Since the completion of the project, resident and guest parking has become an issue due to limited parking availability within the development, thus prompting the Applicant and City to consider additional parking space onsite. The additional proposed parking is anticipated to result in direct impacts to low-functioning Wetland A. All necessary impacts, code analysis, and mitigation strategy will be outlined in a Mitigation Plan under separate cover.

The project includes offsite mitigation on a site within the same Quilceda Creek sub-basin as the development site. The 19.37-acre mitigation site is located at 16430 51st Avenue Northeast in the City of Arlington, Washington, approximately 1.25 miles to the southwest of the development site. The mitigation site consists of one parcel situated in the Northeast ¼ of Section 28, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052800100700). The mitigation site was investigated SVC in the summer of 2021 for potentially-regulated wetland, waterbodies, and/or priority habitat or species. The site investigations identified one potentially-regulated wetland (Wetland F) and one potentially-regulated stream (Hayho Creek) on the mitigation site. Wetland F is classified as a Category II wetland with a moderate habitat score of 7 points and is subject to a standard 110-foot buffer per AMC 20.93.830(a) table 20.93-4. Additionally, Hayho Creek, a Type F (fish-

bearing) stream without ESA-listed salmonids, was identified on the western boundary of the mitigation site, which is subject to a standard 100-foot buffer per AMC 20.93.730 Table 20.93-3.

The table below summarizes the identified critical areas on the development site and their regulatory status.

Wetland Name	Size Onsite	Category/ Type ¹	Regulated Under AMC Chapter 20.93	Regulated Under RCW 90.48	Regulated Under Clean Water Act
Development Site					
Wetland A	~ 21,823 SF	IV	Yes	Yes	Not Likely
Relict Edgecomb Creek Channel	N/A	N/A	Yes ²	Yes ²	Not Likely
Relocated Edgecomb Creek	Offsite	Type F/ESA	Yes	Yes	Yes
Mitigation Site					
Wetland F	6.54 AC	II	Yes	Yes	Likely
Hayho Creek	650 linear feet	Type F	Yes	Yes	Yes

1. Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per AMC 20.93.730 and AMC 20.93.800.

2. The relict channel is regulated by the local and state jurisdiction.

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- Appendix A — Methods and Tools
- Appendix B — Development Site Background Information
- Appendix C — Mitigation Site Background Information
- Appendix D — Existing Conditions Exhibits
- Appendix E — Data Forms
- Appendix F — Wetland Rating Forms
- Appendix G — Wetland Rating Maps
- Appendix H — Site Photographs
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Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting Williams Investments (Applicant) with a Wetland Delineation and Fish and Wildlife Habitat Assessment Report for additional proposed parking stalls for a previously approved and constructed multi-family residential and retail commercial development of an 8.81-acre site located adjacent to 67th Avenue Northeast and 172nd Street Northeast/Highway 531 in the City of Arlington, Washington. The development site consists of one parcel situated in the Southwest ¼, of Section 23, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052300300800). In addition to the proposed development mitigation actions are proposed at a 19.37-acre site located within the same sub-basin at 16430 51st Avenue Northeast in the City of Arlington, Washington. The mitigation site consists of one parcel situated in the Northeast ¼ of Section 28, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052800100700).

The purpose of this Wetland Delineation and Fish and Wildlife Habitat Assessment Report is to identify the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species that may be found on or near the development and mitigation site.

This report provides conclusions and recommendations regarding:

- Site description and areas of assessment;
- Background research, identification, and assessment of potentially-regulated wetlands and fish and wildlife habitat and/or species in the vicinity of the proposed project;
- Standard buffer recommendations, building setbacks, and development limitations;
- Existing site map detailing identified critical areas; and
- Supplemental information necessary for local, state, and federal regulatory review.

Chapter 2. Proposed Project Location

2.1 Location

Development Site

The development site is located adjacent to 67th Avenue Northeast and 172nd Street Northeast/Highway 531 in the City of Arlington, Washington (Figure 1). The development site consists of one tax parcel situated in the Southwest ¼, of Section 23, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052300300800).

To access the development site from I-5 North take Exit 206 for WA-531E/172nd Street Northeast/Edgecomb Road toward Lakewood/Smokey Point. Continue for approximately 2.3 miles, where the development site will be on the left at the intersection of 172nd Street Northeast and 67th Avenue Northeast.

Figure 1. Vicinity Map (Development site)



Mitigation Site

The proposed mitigation site consists of a 19.37-acre site located within the same sub-basin at the 16430 51st Avenue Northeast in the City of Arlington, Washington. (Figure 2). The mitigation site consists of one parcel situated in the Northeast ¼ of Section 28, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Number 31052800100700).

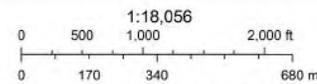
To access the mitigation site from I-5 North take Exit 206 for WA-531E/172nd Street Northeast/Edgecomb Road toward Lakewood/Smokey Point. Continue for approximately 0.7 miles and at the traffic circle take the first exit. Proceed for 0.2 miles and turn left onto 168th Street Northeast. Continue for 0.2 miles where the mitigation site will be located on the right.

Figure 2. Vicinity Map (Mitigation Site)



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 Offsite Mitigation Property



City of Arlington, City of Arlington, WA, Bureau of Land Management, Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Soundview Consultants

Chapter 3. Methods

SVC investigated, assessed, and delineated any potentially-regulated wetlands, waterbodies, and other fish and wildlife habitat on and within 225 feet of the development site in October and November 2018 and the mitigation site in July 2021. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic maps, the Natural Resource Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, Department of Natural Resources (DNR) water typing system, Snohomish County's public geographic information systems (GIS), local precipitation data, and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined in accordance with AMC 20.93.810, and as outlined in the U.S. Army Corps of Engineers' (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) as modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (USDA, 2018). Qualified wetland scientists marked boundaries of the onsite wetland with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected on the development site (DP-1 to DP-11) and mitigation site (DP-1a to DP-5a). Additional tests pits were excavated at regular intervals inside and outside of the wetland boundary to further confirm the delineations.

SVC classified all wetlands using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979; Federal Geographic Data Committee, 2013) classification systems. Following classification and assessment, all wetlands were rated and categorized using the *Washington State Wetlands Rating System for Western Washington* (Hruby, 2014) and the definitions established in AMC 20.93.800(a).

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.

Chapter 4. Background

4.1 Landscape Setting

Development Site

The development site is located in the City of Arlington in a mixed-use setting and is developed with a mixed-use multi-family and commercial development (Figure 2). The development site abuts 67th Avenue Northeast to the west with commercial properties beyond; 172nd Street Northeast/Highway 531 to the south; a church to the west; and single-family residential and undeveloped forested areas to the north. Topography on the eastern portion of the site slopes down approximately 20 feet to the center, and then remains flat at approximately 140 feet above mean sea level to the western property boundary (Appendix B1). The development site is within the Snohomish River Watershed (Water Resources Inventory Area 7).

Figure 3. Aerial Image of the Development Site



Mitigation Site

The 19.37-acre mitigation site is located approximately 1.25 miles southwest of the development site, in a mixed commercial, residential, and agricultural setting in the City of Arlington, Washington (Snohomish County Tax Parcel Number 31052800100700). The site is primarily undeveloped, consisting of emergent and scrub/shrub wetland habitat in the west portion of the property and agricultural fields in the east. In the southeast corner, is a residential property with a maintained lawn and associated infrastructure. To the north, the mitigation site borders a distribution warehouse. A commercial facility is located to the east, and undeveloped forested, shrub, and emergent areas are located to the south. Topography onsite is generally flat with elevations ranging from approximately 115 feet amsl to 120 feet amsl on the southwest portion of the site. A Snohomish County Contours

Map is provided in Appendix C1. The mitigation site is within the Snohomish River Watershed (Water Resources Inventory Area 7).

Figure 4. Aerial Image of the Mitigation Site.



4.3 Soils

Development site

The NRCS soil survey identifies two soil series on the development site: Everett gravelly sandy loam, 8 to 15 percent slopes, and Norma loam. A NRCS soil survey map is provided in Appendix B2. A description of the soil profiles is below.

Everett gravelly sandy loam, 8 to 15 percent slopes (18)

According to the NRCS survey, Everett gravelly sandy loam, 8 to 15 percent slopes, is a somewhat excessively drained soil formed in glacial outwash. Permeability is rapid, and water capacity is low. In a typical profile, the surface layer is dark brown very gravelly sandy loam about 12 inches thick. The upper part of the subsoil is brown very gravelly loamy sand about 5 inches thick. The lower part of the subsoil is a dark brown extremely gravelly sand to a depth of 60 inches or more. The subsoil is cemented in some locations. This soil is listed as non-hydric by NRCS.

Norma loam (39)

According to the NRCS survey, Norma loam is a deep, poorly drained soil formed in alluvium. In a typical profile, the surface layer is very dark gray loam about 10 inches thick. The subsoil is dark grayish brown sandy loam about 18 inches thick. The substratum is a dark gray sandy loam to a depth of 60 inches or more. This soil is listed as hydric by NRCS.

Mitigation site

The NRCS soil survey identifies three soil series on the development site: Custer fine sandy loam (13), Mukilteo Muck (34), and Norma loam (39). A NRCS soil survey map is provided in Appendix C2. A description of the soil profiles is below.

Custer fine sandy loam (13)

According to the NRCS survey, Custer fine sandy loam is a very deep, poorly drained soil formed in glacial outwash. In a typical profile, the surface layer is about 9 inches thick and consists of a dark grayish brown fine sandy loam. The upper subsoil is about 7 inches thick and consists of a loamy fine sand. The lower subsoil is about 19 inches thick and consists of gray and olive sand with iron-cemented concretions that form a discontinuous hardpan. Custer fine sandy loam is listed as 85 percent hydric by on the Snohomish County Hydric Soils list (NRCS, N.d.).

Mukilteo Muck (34)

According to the NRCS survey, Mukilteo muck is a very deep, poorly drained soil that is formed predominantly by sedges. Permeability is moderate and water capacity is high. In a typical profile, the surface layer is about 4 inches thick and consists of a dark reddish-brown muck. The next layer is dark reddish brown to black organic material about 31 inches thick, followed by a black organic layer about 19 inches thick. The bottom layer to a depth of 60 inches or greater consists of an olive gray fine sandy loam. Large amounts of woody material is common. Mukilteo muck is listed as hydric on the Snohomish County Hydric Soils list (NRCS, N.d.).

Norma loam (39)

According to the NRCS survey, Norma loam is a deep, poorly drained soil formed in alluvium. Permeability is moderately rapid and water capacity is moderate. In a typical profile, the surface layer is very dark gray loam about 10 inches thick. The subsoil is dark grayish brown sandy loam about 18 inches thick. The substratum is a dark gray sandy loam to a depth of 60 inches or more. Norma loam is listed as 100 percent hydric (NRCS, N.d.).

4.4 Stream and Wetland Inventories

Development Site

The USFWS NWI map (Appendix B3) identifies a potential riverine intermittent streambed seasonally flooded (R4SBC) watercourse along the southern property boundary in the same vicinity as the mapped DNR stream. The NWI also identifies a potential emergent wetland in the northeast corner of the site. The Snohomish County Critical Areas Inventory (Appendix B4) identifies a stream (Edgecomb Creek) along the southern parcel boundary (DNR and WDFW refer to this stream as Middle Fork Quilceda Creek). Snohomish County also identifies potential wetlands across the majority of the developed site that is based on remote sensing models. The DNR stream typing map (Appendix B7) identifies Middle Fork Quilceda Creek, a Type F (fish-bearing) stream, running east to west along the southern property boundary. No other potentially-regulated streams or wetlands are documented within 225 feet of the development site.

Mitigation Site

The USFWS NWI map (Appendix C3), WDFW PHS map (Appendix C4), and Snohomish County Critical Areas Inventory (Appendix C5) identify a small sliver of a wetland along western property boundary. The wetland continues offsite along the southern border of the mitigation site and west of the site towards the residential development. WDFW identifies a portion of this wetland complex as Quilceda Creek Wetlands. DNR Stream Typing (Appendix C6) and Snohomish County identify a Type Np (perennial, non-fish bearing) stream (Hayho Creek) that runs along the western property border. No other potentially-regulated streams or wetlands are documented within 225 feet of the mitigation site.

4.5 Priority Habitats and Species

Development Site

The WDFW PHS map (Appendix B4) identifies the potential presence of coho, Dolly Varden/bull trout, and fall chum in Middle Fork Quilceda Creek along the southern portion of the development site. The WDFW SalmonScape map (Appendix B6) lists the documented presence of coho and chum salmon; presumed presence of Dolly Varden/bull trout; and gradient accessible reaches for chinook salmon, pink salmon, and winter steelhead trout in the stream along the southern portion of the development site. No other priority habitats or species are documented within 225 feet of the development site.

Mitigation Site

The WDFW SalmonScape (Appendix C7) map identifies Hayho Creek along the west property boundary and lists the creek as gradient accessible for steelhead, coho, chinook, chum, and steelhead. The WDFW PHS map also identifies resident coastal cutthroat occurrence within Hayho Creek. No other priority habitats or species are documented within 225 feet of the mitigation site.

4.6 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) weather station at Seattle-Tacoma Airport in order to acquire precipitation values during and preceding the field investigations. A summary of data collected is provided in Table 1.

Table 1. Precipitation Summary¹.

Date	Day Of	Day Before	1 Week Prior	2 Weeks Prior	Last 30 days (Observed/Normal)	Year-to-Date ² (Observed/Normal)	Percent of Normal (month/year)
10/12/18	0.00	0.00	0.78	1.15	1.91/2.01	1.09/0.97	95/112
11/4/18	0.03	0.18	1.23	3.24	4.02/3.98	4.33/4.26	101/102
5/7/19	0.00	0.00	0.00	0.14	2.86/2.53	28.63/31.36	113/91
7/14/21	0.00	0.00	0.00	0.00	0.04/1.06	20.10/20.54	4/98

Notes:

1. Precipitation level provided in inches. Data obtained from the NOAA (<http://w2.weather.gov/climate/xmacis.php?wfo=sew>) for Seattle-Tacoma airport.
2. Year-to-date precipitation is the total for the water year from October 1st to the 2018 and 2019 onsite dates and for the calendar year from January 1st to the 2021 onsite date.

The first site visit to the development site was conducted in the beginning of the water year and shows that the precipitation levels were 112 percent of normal at that time for the water year and within

statistical normal for the previous 30 days (95 percent of normal). Precipitation levels during the second development site visit were also noted to be within the statistical normal range; however, significant rainfall was recorded (3.24 inches) in the two weeks leading up to the site investigation during the November site visit, and over 1 inch was recorded in the week prior. Precipitation levels were also within statistical normal for the water year (91 percent of normal) and for the previous 30 days (113 percent of normal) during the May development site visit, at the end of the water year. The mitigation site visit in July 2021 was within the statistical normal for the calendar year (98 percent of normal) and was less than the statistical normal for the prior 30 days (4 percent of normal). Given that the month of July is typically one of the driest times of year in the Pacific Northwest region, this precipitation data suggests that hydrologic conditions encountered during the time of the mitigation site investigation was relatively normal. Such conditions were considered in making professional wetland boundary determinations.

Chapter 5. Results

The site investigations in the fall of 2018 and winter of 2019 identified one potentially-regulated wetland (Wetland A) and one relict stream channel (Edgecomb Creek) on the development site and one newly relocated stream (Edgecomb Creek) offsite to the south within 225 feet of the site. Additionally, in the summer of 2021, one potentially-regulated wetland (Wetland F), and one potentially-regulated stream (Hayho Creek) were identified offsite, at the site proposed for mitigation. No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified in the vicinity of the development or mitigation sites.

5.1 Upland Characterization

Development Site

Vegetation in the undeveloped portions of the development site is dominated by grasses and forbs including orchard grass (*Dactylis glomerata*), colonial bentgrass (*Agrostis capillaris*), narrowleaf plantain (*Plantago lanceolata*), and common velvetgrass (*Holcus lanatus*). Forested cover is present on the southern site boundary following the relict stream channel. Dominant forest vegetation includes western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), and red alder (*Alnus rubra*) with an understory of red-osier dogwood (*Cornus alba*), salmonberry (*Rubus spectabilis*), salal (*Gaultheria shallon*), and western swordfern (*Polystichum munitum*).

Mitigation Site

The mitigation site is an agricultural field that at the time of the site visit was partially used to grow corn. The areas not in agricultural use were dominated by grasses, including velvet grass (*Holcus lanatus*), colonial bentgrass (*colonial bentgrass*), Kentucky bluegrass (*Poa pratensis*) and nonnative hairy cat's ear (*Hypochaeris radicata*).

5.2 Wetlands

One wetland (Wetland A) was identified and delineated on the development site. One wetland (Offsite Wetland F) was also identified offsite on the proposed mitigation site. The delineated wetlands contained indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Maps depicting the location and size of the wetlands are presented in Appendix D. Data forms are provided in Appendix E, wetland rating forms are provided in Appendix F, and wetland rating maps are provided in Appendix G. The wetland identified on the development site was approved as a Category IV wetland under the prior development proposal (SEPA MDNS file No. PLN#543). Table 2 below summarizes the wetlands identified during the site investigation.

Table 2. Wetland Summary

Wetland	Predominant Wetland Classification / Rating				Wetland Size Onsite (SF)	Standard Buffer Width (feet) ⁵
	Cowardin ¹	HGM ²	WSDOE ³	City of Arlington ⁴		
Development Site						
A	PSS/EMBC	Depressional	IV	IV	~21,823	40

Mitigation Site						
F	PFO/SS/EMBC	Depressional	II	II	6.54 AC	110

Notes:

1. Cowardin et al. (1979), Federal Geographic Data Committee (2013), or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub Shrub, PEM = Palustrine Emergent; Modifiers for Water Regime: B = Seasonally Saturated, C = Seasonally Flooded.
2. Brinson, M. M. (1993).
3. Current WSDOE rating (Hruby, 2014).
4. AMC 20.93.800 wetland classification Arlington rating according to Washington State Wetland Rating System for Western Washington (Hruby, 2014).
5. AMC 20.93.830(b) standard buffer widths.

Wetland A

Wetland A is approximately 21,823 square feet (0.50 acre) in size and is located on the northern portion of the development site, extending a little offsite to the north. Hydrology for Wetland A is provided by a seasonally-high water table, direct precipitation, surface runoff from adjacent uplands, and flow from a ditch that runs south to north through the wetland. Wetland vegetation is dominated by red alder saplings (*Alnus rubra*), salmonberry (*Rubus spectabilis*), and non-native invasive reed canarygrass (*Phalaris arundinacea*). The buffer surrounding Wetland A consists of fields and shrub areas that are degraded by non-native invasive species such as cutleaf blackberry (*Rubus laciniatus*) and Himalayan blackberry (*Rubus armeniacus*). Hydric soil indicator A4 (Hydrogen Sulfide) was observed. Wetland boundaries were determined by a transition to hydric soils. Wetland A is a Palustrine Scrub Shrub/Emergent, Seasonally Saturated, and Seasonally Flooded wetland (PSS/EMBC). Wetland A was previously approved as a Category IV depressional wetland (SEPA MDNS file No. PLN#543). Table 3 provides a summary of Wetland A.

Table 3. Wetland A Summary.

WETLAND A															
	<table border="1"> <tr> <td>Local Jurisdiction</td> <td>City of Arlington</td> </tr> <tr> <td>City of Arlington Rating</td> <td>IV</td> </tr> <tr> <td>Wetland Size (Onsite)</td> <td>~ 21,823 SF</td> </tr> <tr> <td>Cowardin Classification</td> <td>PSS/EMBC</td> </tr> <tr> <td>HGM Classification</td> <td>Depressional</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>DP-4</td> </tr> <tr> <td>Upland Data Sheet(s)</td> <td>DP-5</td> </tr> </table>	Local Jurisdiction	City of Arlington	City of Arlington Rating	IV	Wetland Size (Onsite)	~ 21,823 SF	Cowardin Classification	PSS/EMBC	HGM Classification	Depressional	Wetland Data Sheet(s)	DP-4	Upland Data Sheet(s)	DP-5
	Local Jurisdiction	City of Arlington													
	City of Arlington Rating	IV													
	Wetland Size (Onsite)	~ 21,823 SF													
	Cowardin Classification	PSS/EMBC													
	HGM Classification	Depressional													
	Wetland Data Sheet(s)	DP-4													
Upland Data Sheet(s)	DP-5														
Wetland Functions Summary															
<p>Water Quality (Scores 5 out of 9 points)</p>	<ul style="list-style-type: none"> • Low site potential to trap sediments and pollutants and remove nitrogen due to an unconstricted, permanently flowing outlet, greater than 50% cover of persistent, ungrazed vegetation and lack of seasonal ponding. • Low landscape potential to receive sediment and pollutants due to the lack of surrounding land uses that produce pollutants. • High societal value for water quality functions due to degraded waters within the sub-basin. 														
<p>Hydrologic (Scores 3 out of 9 points)</p>	<ul style="list-style-type: none"> • Low site potential to reduce flooding and erosion due to the limited storage depth during wet periods and the wetland is moderately sized compared to the upstream basin. • Low landscape potential to provide flood protection due to the less intensive land uses within the contributing basin • Low societal value for hydrologic functions due to the wetland discharging into a ditch 														
<p>Habitat (Scores 3 out of 9 points)</p>	<ul style="list-style-type: none"> • Low site potential to provide diverse and complex habitat as the wetland consists of two plant communities, two hydroperiods, moderate species richness, no interspersions, and a special habitat feature. • Low landscape potential to support habitat use due to the lack of accessible and undisturbed habitat and high intensity land uses within 1 kilometer. • Low societal value for habitat functions due to the lack of nearby WDFW Priority Habitats 														

Wetland F

Wetland F is approximately 6.54 acres in size on the mitigation site and is located throughout the western portion of the property. The wetland extends offsite to the northwest, west, south, and southeast. Hydrology for Wetland F is provided by a seasonally-high water table, direct precipitation, surface runoff from adjacent uplands, and seasonal flooding from Hayho Creek. Wetland vegetation on site is dominated spirea (*Spiraea douglasii*) and emergent species including colonial bentgrass (*Agrostis capillaris*), soft rush (*Juncus effusus*), and nonnative invasive reed canarygrass (*Pharlaris arundinacea*). Offsite, Wetland F is dominated by black cottonwood (*Populus balsamifera*), Pacific willow

(*Salix lasiandra*), Schouler’s willow (*Salix scouleriana*), Hooker’s willow (*Salix hookeriana*), Scoulers fumewort (*Cordalis scouleri*), hardhack (*Spiraea douglasii*), common velvetgrass, soft rush, Idaho fescue (*Festuca idahoensis*), and bird’s-foot trefoil (*Lotus corniculatus*). The onsite buffer surrounding Wetland F is degraded and consists of agricultural land. Hydric soil indicator A11 (Depleted Below Dark Surface) was observed at DP-1(a). Wetland boundaries were determined by a transition to wetland hydrology and hydric soils. Wetland F is a Palustrine Forested/Scrub-Shrub/Emergent, Seasonally Saturated, Seasonally Flooded wetland (PFO/SS/EMBC). Per AMC 20.93.800(b), Wetland F is a Category II depressional wetland. Table 4 summarizes Wetland F.

Table 4. Wetland F Summary.

WETLAND F															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Local Jurisdiction</td> <td>City of Arlington</td> </tr> <tr> <td>City of Arlington Rating</td> <td>II</td> </tr> <tr> <td>Wetland Size (Onsite)</td> <td>6.54 acres</td> </tr> <tr> <td>Cowardin Classification</td> <td>PFO/SS/EMBC</td> </tr> <tr> <td>HGM Classification</td> <td>Depressional</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>DP-1(a)</td> </tr> <tr> <td>Upland Data Sheet(s)</td> <td>DP-2(a)</td> </tr> </table>	Local Jurisdiction	City of Arlington	City of Arlington Rating	II	Wetland Size (Onsite)	6.54 acres	Cowardin Classification	PFO/SS/EMBC	HGM Classification	Depressional	Wetland Data Sheet(s)	DP-1(a)	Upland Data Sheet(s)	DP-2(a)
	Local Jurisdiction	City of Arlington													
	City of Arlington Rating	II													
	Wetland Size (Onsite)	6.54 acres													
	Cowardin Classification	PFO/SS/EMBC													
	HGM Classification	Depressional													
	Wetland Data Sheet(s)	DP-1(a)													
Upland Data Sheet(s)	DP-2(a)														
Wetland Functions Summary															
Water Quality (Scores 6 out of 9 points)	<ul style="list-style-type: none"> High site potential to trap sediments and pollutants and remove nitrogen due to an unconstricted, permanently flowing outlet, greater than 50% cover of persistent, ungrazed vegetation and seasonal ponding. Low landscape potential to receive sediment and pollutants due to the wetland receiving stormwater inputs and the lack of surrounding land uses that produce pollutants. High societal value for water quality functions due to degraded waters within the sub-basin. 														
Hydrologic (Scores 5 out of 9 points)	<ul style="list-style-type: none"> Moderate site potential to reduce flooding and erosion due to the limited storage depth during wet periods and the moderate size compared to the upstream basin. Moderate landscape potential to provide flood protection due to the intensive land uses within the contributing basin Moderate societal value for hydrologic functions due to surface flooding problems are in a sub-basin farther down gradient. 														
Habitat (Scores 4 out of 9 points)	<ul style="list-style-type: none"> High site potential to provide diverse and complex habitat as the wetland consists of three plant communities, three hydroperiods, high species richness, moderate interspersion, and five special habitat features. Low landscape potential to support habitat use due to the lack of accessible and undisturbed habitat and high intensity land uses within 1 kilometer. High societal value for habitat functions due to three of nearby WDFW Priority Habitats 														

5.3 Relict Edgecomb Creek Channel

The site investigations identified a relict stream channel associated with Edgecomb Creek on the southern portion of the site. The 2017, SR 531 Edgecomb Creek Fish Passage Project relocated this “ 330-foot section of channel between two culvert fish barriers that [had] non-functioning weirs that [posed] additional barriers to fish migration” (USFWS, 2016). Of this section of relocated stream, 275 feet were previously located on the development site and covered approximately 5,000 square feet of area.

As a result of the stream relocation, the relict channel no longer supports baseflow and appears to only convey stormwater from direct precipitation, overland flow from a nearby roadside ditch, and untreated runoff from SR 531. During the October 2018 site visit, no baseflow was noted in the relict channel, although pooled water was observed in scour holes and in the culvert itself. Similarly, during the November 2018 site visit, only shallow pools of water were observed in scoured areas despite recent heavy rainfall. Although the stream channel is abandoned, the culvert on the downstream reach is still in place, allowing for the stormwater that flows through the channel to enter Edgecomb Creek south of the development site. As untreated stormwater during storm events is the main hydrology source for the relict channel, the channel will likely accumulate large loads of sediment and debris from SR 531 and the roadside ditch over time, and the relict channel could begin to fill in. The relict channel does not provide fish habitat due to the lack of stream hydrology and habitat connectivity to downstream fish-bearing waters.

As the relict channel is not considered a typed stream, it is not subject to stream buffers under AMC 20.93.700 but is considered a FHWCA per AMC 20.93.400 as the channel previously provided habitat for salmonids.

5.4 Artificial Drainage Ditch

One ditch was identified on the development site which appears to be artificial and intentionally created due to its linear orientation along the northern property boundary. The ditch runs east to west along the northern parcel boundary and through Wetland A, and then continues offsite to the west into the City’s stormwater system at the intersection of 67th Avenue Northeast and Highland View Drive, as documented in the City’s stormwater infrastructure inventory. The ditch appears to be stormwater fed and is lined with vegetation. Given that the ditch is likely a manmade feature and lacks natural stream criteria per WAC 222-16-030, no buffer is warranted. This ditch was approved as a non-regulated water during the previously constructed project (SEPA MDNS file No. PLN#543).

5.5 Offsite Edgecomb Creek

The WSDOT completed the Edgecomb Creek restoration project in order to improve fish passage of the stream. Edgecomb Creek has been relocated offsite to the south of the development site. The new reach of the channel is located entirely south of SR 531, eliminating the roadway crossings, and therefore, also eliminating the need for the culverts which may present barriers to fish passage. The relocation project has resulted in an increase of 650 linear feet of new stream channel, restored habitat features, and unimpeded access to upstream spawning habitat. The project has provided an overall benefit to the function of the stream by removing these fish barriers. Edgecomb Creek is considered a Type F-ESA water due to the documented presence of ESA-listed salmonids.

5.6 Hayho Creek

The mitigation site investigation identified an onsite stream (Hayho Creek) along the entire western boundary of the property. Hayho Creek appears to be artificially channelized through the subject property, and the onsite portion was observed to be flowing during the site assessment in July 2021. Hayho Creek originates approximately 250 feet west of the subject property. The creek’s origin point is adjacent to single-family residential and commercial developments. The creek continues to flow south from the subject property through a straight channel for approximately 2.85 miles before meandering to the southeast and joining with the Quilceda Creek Middle Fork. The onsite buffer area is partially degraded, consisting of a narrow band of trees and agricultural land. DNR classifies the portions of Hayho Creek near or on the subject property as Type Np (non-fish-bearing). However, WDFW SalmonScope identifies the creek as gradient accessible for steelhead, coho, chinook, chum, and steelhead. The WDFW PHS map also identifies resident coastal cutthroat occurrence within Hayho Creek. Due to the modeled presence of salmonids by WDFW and lack of downstream barriers to fish passage, Hayho Creek is likely a Type F (fish-bearing) stream per AMC 20.93.700. A summary of Hayho Creek is provided in Table 5 below.

Table 5. Hayho Creek Summary.

STREAM INFORMATION SUMMARY		
	Feature Name	Hayho Creek
	WRIA	23 – Upper Chehalis
	Local Jurisdiction	City of Arlington
	DNR Stream Type	Type Np
	Local Stream Rating	Type F
	Buffer Width	100 feet
	Fish Use	Gradient accessible to steelhead, coho, chinook, chum, and steelhead, and coastal cutthroat.

Chapter 6. Regulatory Considerations

The site investigations in fall of 2018 identified and delineated one potentially-regulated wetland (Wetland A) and one relict stream channel on the development site, and one regulated stream channel offsite to the south within 225 feet of the site. The summer 2021 site investigation on the mitigation site identified one potentially-regulated wetland (Wetland F) and one regulated stream channel (Hayho Creek). No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified on or adjacent to the development or mitigation sites during the site investigations.

6.1 Local Critical Areas Requirements

6.1.1 Wetland Buffers

AMC 20.93.800(a) has adopted the 2014 *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). With this system, Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. Category IV wetlands are those that generally provide low levels of function and score less than 16 points. Wetland A on the development site is classified as a Category IV wetland and Wetland F on the mitigation site is classified as a Category II wetland. Under AMC 20.93.830, the standard buffer for a Category IV wetland is 40 feet and for a Category II wetland with a moderate habitat score of 7 points is 110 feet, assuming the implementation of all minimization measures listed in ACM 20.93.830(a) table 20.93-4 (table 6 below).

Table 6. Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> •Parking lots •Warehouses •Manufacturing •Residential •Parks 	<ul style="list-style-type: none"> •Direct lights away from critical areas and buffers •Day use only regulations preventing the need for lights •Timer on lights
Noise	<ul style="list-style-type: none"> •Manufacturing •Residential 	<ul style="list-style-type: none"> •Locate activity that generates noise away from wetlands •Seasonal limitations on hours of operation
Toxic runoff*	<ul style="list-style-type: none"> •Parking lots •Roads •Manufacturing •Residential areas •Application of agricultural pesticides •Landscaping 	<ul style="list-style-type: none"> •Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered •Establish covenants limiting use of pesticides within 150 ft of critical area or buffer •Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> •Parking lots •Roads •Manufacturing •Residential areas •Commercial •Landscaping 	<ul style="list-style-type: none"> •Retrofit stormwater detention and treatment for roads and existing adjacent development •Prevent channelized flow from lawns that directly enters the buffer

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Change in water regime	<ul style="list-style-type: none"> •Impermeable surfaces •Lawns •Tilling •Forest and forest duff removal 	<ul style="list-style-type: none"> •Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns •Retain minimum forest and forest duff
Pets and human disturbance	<ul style="list-style-type: none"> •Residential areas •Parks 	<ul style="list-style-type: none"> •Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract
Dust	<ul style="list-style-type: none"> •Construction sites 	<ul style="list-style-type: none"> •Use best management practices to control dust
Disruption of corridors or connections	<ul style="list-style-type: none"> •Roads •Residential •Commercial •Manufacturing •Landscaping •Stormwater 	<ul style="list-style-type: none"> •Maintain connection to offsite areas that are undisturbed •Restore corridors or connections to offsite habitats by replanting
<p>* These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.</p>		

6.1.2 Stream Buffers

The relocated offsite Edgecomb Creek channel is considered a Type F-ESA water with documented Coho and Chum presence according to the WDFW SalmonScape inventory, and therefore requires a standard 150-foot buffer per AMC Table 20.93-3. However, SR 531 intersects the buffer associated with offsite Edgecomb Creek, entirely interrupting the buffer from projecting onto the development site, therefore, no buffer associated with Edgecomb Creek should be located on the development site.

Hayho Creek was identified on the west boundary of the mitigation site and is considered a Type Np water by DNR Stream Typing. However, WDFW PHS map identifies resident coastal cutthroat trout occurrence within Hayho Creek, with only modeled presence of ESA-listed salmonids. As such, Hayho Creek is considered a Type F (fish-bearing) without ESA-listed salmonids stream per AMC 20.93.700. Per AMC Table 20.93-3, the stream is subject to a 100-foot buffer.

6.1.3 Fish and Wildlife Habitat Conservation Area

The relict Edgecomb Creek channel on the development site was previously utilized by salmonid species and therefore is considered FHWCA under AMC 20.93.400. The relict channel is subject to a 100-foot native growth protection easement and additional 50-foot management zone per AMC 20.93.440(a).

6.2 State and Federal Considerations

On December 2, 2008, in a memorandum from the Environmental Protection Agency (EPA) and USACE, joint guidance is provided that describes waters that are to be regulated under Section 404 of the Clean Water Act (USACE, 2008). This memorandum was amended on February 2, 2012, where the EPA and USACE issued a final guidance letter on waters protected by the Clean Water Act (CWA).

The 2012 guidance describes the following waters where jurisdiction would be asserted: 1) traditional navigable waters, 2) interstate waters, 3) wetlands adjacent to traditional navigable waters, 4) non-navigable tributaries of traditional navigable waters that are relatively permanent meaning they contain water at least seasonally (e.g. typically three months and does not include ephemeral waters), and 5) wetlands that directly abut permanent waters. The regulated waters are those associated with naturally occurring waters and water courses and not artificial waters (i.e. stormwater pond outfalls).

The development site wetland (Wetland A) is a small depressional wetland that receives water primarily from direct precipitation and surface runoff from adjacent upland areas. An artificially constructed ditch was identified within Wetland A along the northern property boundary; this ditch is identified as the wetland outlet and enters the City's stormwater system as documented in the City's stormwater infrastructure inventory. Therefore, the wetland and ditch are not hydrologically connected to any tributaries in the area and are not likely considered regulated under Section 404 of the Clean Water Act. However, Wetland A is considered a natural water regulated by the Washington State Department of Ecology under the Revised Code of Washington 90.48.

Wetland F is associated with Hayho Creek that eventually connects to the Quilceda Creek, a Type S waterway. As such, the wetland and stream found on the site are likely regulated as water of the United States (WOTUS) and are subject to federal regulation. These wetlands are assumed to be federally regulated to expedite the permitting process. In addition, the identified critical areas are considered natural waters that are likely regulated by the WSDOE through the Revised Code of Washington (RCW) 90.48.

Chapter 7. Closure

The findings and conclusions documented in this report have been prepared for specific application to the Centennial Park project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

The critical area determinations by Soundview Consultants LLC are based on conditions present at the time of the site inspection and considered preliminary until the presence or absence and location of critical areas are validated by the jurisdictional agencies. Validation of the critical area determinations by the regulating agencies provides a certification, usually written, that the critical area boundaries or lack thereof verified are the boundaries that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.

Since critical areas are dynamic communities affected by both natural and human activities, changes in critical area determinations and/or boundaries may be expected; therefore, critical area determinations cannot remain valid for an indefinite period of time. Local agencies typically recognize the validity of critical area determinations for a period of 5 years after completion of a wetland delineation and fish and wildlife habitat assessment report. Development activities on a site 5 years after the completion of this report may require revision of the critical area determinations and/or delineations. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

Chapter 8. References

- Arlington Municipal Code (AMC). 2022. *Chapter 20.93 — Critical Area Ordinance*. Website: <https://www.arlingtonwa.gov/DocumentCenter/View/8106/Chapter-2093-Critical-Area-Ordinance>. Current through October 25th, 2022.
- Brinson, M. M. 1993. *A hydrogeomorphic classification for wetlands*, Technical Report WRP-DE-4. U.S. Army Corps of Engineer Waterways Experiment Station. Vicksburg, MS.
- Cowardin, L.M., V. Carter, F. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish & Wildlife Service. Washington D.C.
- Debose A., and Klungland, M.W. 1983. *Soil Survey of Snohomish County Area, Washington*. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1*, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Federal Geographic Data Committee. 2013. *Classification of wetlands and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Hitchcock, C.L. & A. Cronquist, Ed. by D. Giblin, B. Ledger, P. Zika, and R. Olmstead. 2018. *Flora of the Pacific Northwest, 2nd Edition*. U.W. Press and Burke Museum. Seattle, Washington.
- Hruby, T. 2014. *Washington State Wetland Rating System for Western Washington – Revised*. Washington State Department of Ecology Publication # 14-06-29.
- Munsell® Color, 2000. *Munsell® Soil Color Charts*. New Windsor, New York.
- Natural Resources Conservation Services (NRCS). N.d. *Soil Data Access Hydric Soils List (Soil Data Access Live)*. Website: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html
- NRCS. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils
- Sheldon, D., T. Hruby, P. Johnson, K. Harper, A. McMillan, T. Granger, S. Stanley, and E. Stockdale. 2005. *Wetlands in Washington State - Volume 1: A Synthesis of the Science*. Washington State Department of Ecology. Publication #05-06-006. Olympia, Washington. March, 2005.
- U.S. Army Corps of Engineers (USACE). 2008. *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*. EPA/USACE. December 2, 2008.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Ver 2.0)*, ed. J.S. Wakeley, Lichvar, R.W. and Noble, C.V. ERDC/EL TR-10-3. Vicksburg, MSS: U.S. Army Engineer Research and Development Center.

USACE and Environmental Protection Agency (EPA). 2012. *Guidance on Identifying Waters Protected by the Clean Water Act*. EPA/USACE. February 17, 2012

USACE. 2020. *National Wetland Plant List, version 3.5*. <http://wetland-plants.usace.army.mil/>.

Appendix A — Methods and Tools

Table A-1. Methods and tools used to prepare the report.

Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf	Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Core of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)	http://www.usace.army.mil/CECW/Documents/cecw/reg/west_mt_finalsupp.pdf	U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013	Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C. Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf	Brinson, M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	https://fortress.wa.gov/ecy/publications/documents/1406029.pdf	Hruby, T. (2014). <i>Washington State Wetland Rating System for Western Washington: 2014 Update.</i> (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
Wetland Indicator Status	2020 National Wetland Plant List	http://wetland-plants.usace.army.mil/	USACE. 2020. <i>National Wetland Plant List, version 3.5.</i> http://wetland-plants.usace.army.mil/ .
Stream Classification	Department of Natural Resources (DNR) Water Typing System	http://www.stage.dnr.wa.gov/forestpractices/watertyping/	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.

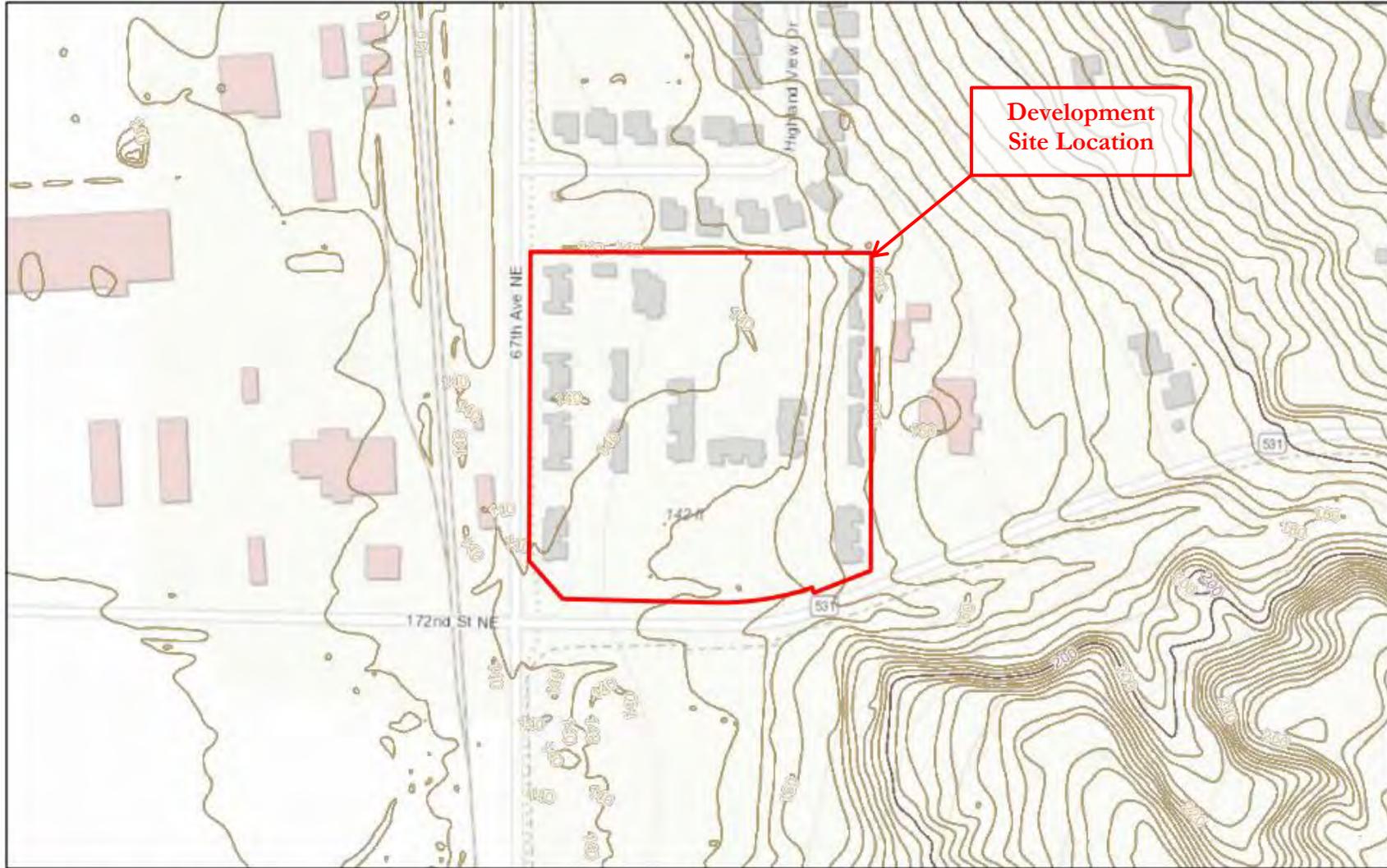
Parameter	Method or Tool	Website	Reference
Stream Delineation	Determining the OHW	https://fortress.wa.gov/ecy/publications/documents/1606029.pdf	Anderson, P.S., S. Meyer, P. Olson, and E. Stockdale. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Publication No. 16-06-029. Final Review Draft. Shorelands and Environmental Assistance Program, Washington State Department of Ecology. Olympia, Washington.
Plant Names	USDA Plant Database	http://plants.usda.gov/	Website
	Flora of the Pacific Northwest	http://www.washington.edu/uwpress/search/books/HITFLC.html	Hitchcock, C.L. & A. Cronquist, Ed. by D. Giblin, B. Ledger, P. Zika, and R. Olmstead. 2018. <i>Flora of the Pacific Northwest, 2nd Edition</i> . U.W. Press and Burke Museum. Seattle, Washington.
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda.gov/app/	Website GIS data based upon: Debose A., and Klungland, M.W. 1983. Soil Survey of Snohomish County Area, Washington. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
	Soil Data Access Hydric Soils List	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html	Natural Resources Conservation Service. N.d. Soil Data Access Hydric Soils List (Soil Data Access Live).
	Soil Color Charts		Munsell® Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
	Field Indicators of Hydric Soils in the U.S. Version 8.2	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf	United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils
Threatened and Endangered Species	Washington Natural Heritage Program	http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences	Washington Natural Heritage Program. Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	http://wdfw.wa.gov/hab/p_hspage.htm	Priority Habitats and Species (PHS) Program. Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife (WDFW).
	NOAA fisheries species list and maps	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm and	Website

Parameter	Method or Tool	Website	Reference
		http://www.nmfs.noaa.gov/pr/species/	
	USFWS species lists by County	http://www.fws.gov/westwafwo/se/SE_List/Endangered_Species.asp	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/salmonscape/	Website
Report Preparation	Arlington Municipal Code	https://www.arlingtonwa.gov/DocumentCenter/View/8106/Chapter-2093-Critical-Area-Ordinance	AMC Chapter 20.93 Critical Areas Ordinance

Appendix B — Development Site Background Information

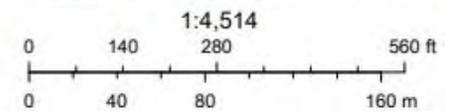
This appendix includes a USGS Topographic Map (B1); NRCS soil survey map (B2); USFWS NWI map (B3); Snohomish County critical areas inventory (B4); WDFW PHS map (B5); WDFW SalmonScape map (B6); and DNR stream typing map (B7).

Appendix B1 – USGS Topographic Map



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 Snohomish_Parcels_Query result



Appendix B2 – NRCS Soil Survey Map



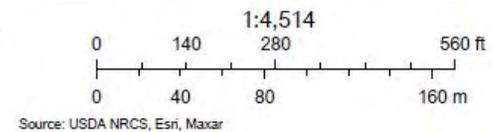
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Snohomish_Parcels_Query result

USA Soils Map Units

18: Everett very gravelly sandy loam, 8 to 15 percent slopes

39: Norma loam

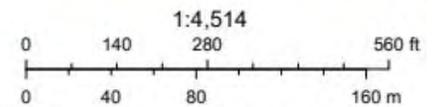


Appendix B3 – USFWS NWI Map



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|--|---|---|
| Snohomish_Parcels_Query result | Estuarine and Marine Wetland | Freshwater Pond |
| Wetlands | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Deepwater | Freshwater Forested/Shrub Wetland | Other |



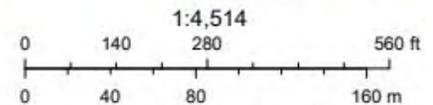
U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov, © 2022 Microsoft Corporation © 2022 Maxar

Appendix B4 – Snohomish County Wetland Inventory



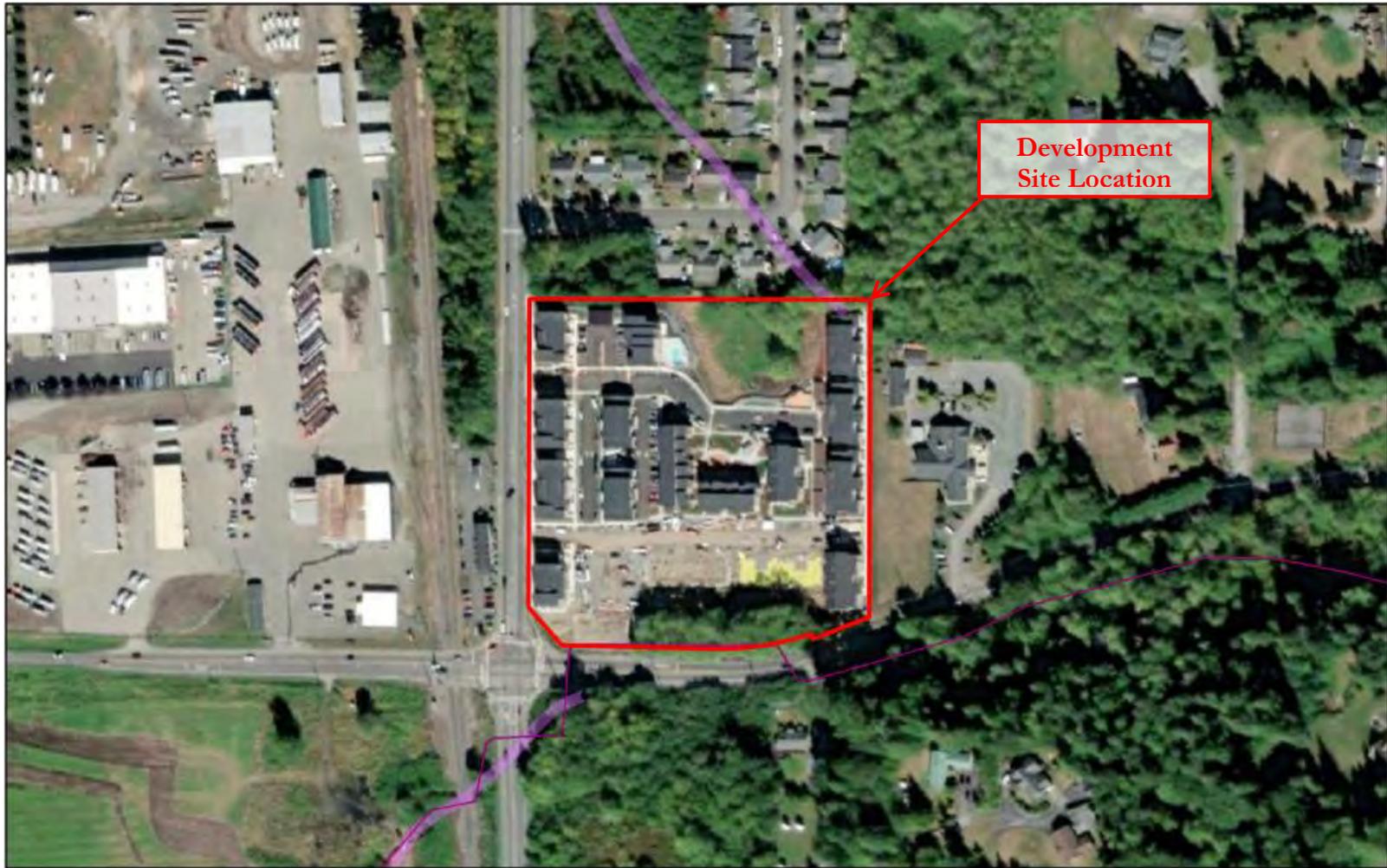
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- Snohomish_Parcels_Query result
- Remote Sensing-based Wetland Model
- Planning Development and Services Wetland Inventory
- Tulalip Wetlands Moderate
- Critical
- Snohomish County Wetland Inventory
- High



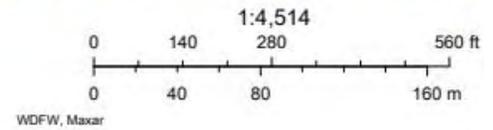
© 2022 Microsoft Corporation © 2022 Maxar © CNES (2022) Distribution Airbus DS © 2022 TomTom

Appendix B5 – WDFW PHS Map



9/27/2022, 1:13:56 PM

- PHS Public Lines
- PHS Public Polygon Outlines
- AS MAPPED
- AS MAPPED
- PHS Public Polygons
- AS MAPPED
- Snohomish_Parcels_Query result



Soundview Consultants

Occurrence Name	Federal Status	State Status	Sensitive Location
Fall Chum	N/A	N/A	No
Dolly Varden/ Bull Trout	N/A	N/A	No
Coho	Candidate	N/A	No
Coho	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No

PHS Species/Habitats Details:

Fall Chum	
Scientific Name	<i>Oncorhynchus keta</i>
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221442481498, Fish Name: Chum Salmon, Run Time: Fall, Life History: Anadromous
Source Record	32755
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

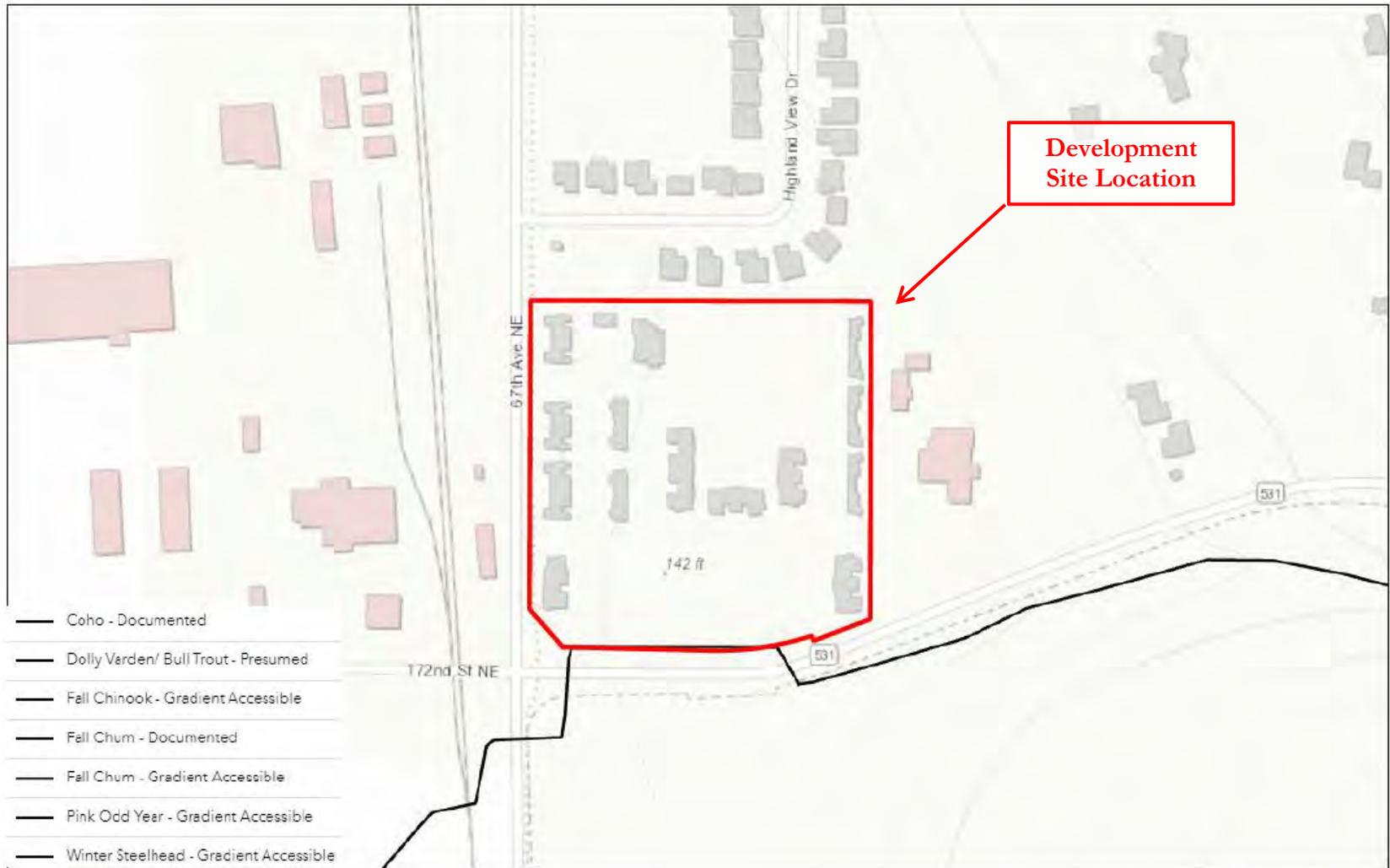
Dolly Varden/ Bull Trout	
Scientific Name	<i>Salvelinus malma/S. confluentus</i>
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221442481498, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	32759
Source Dataset	SWIFD
Federal Status	N/A
State 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	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Stock Name: Snohomish Coho, Run: Unspecified, Status: Healthy
Source Record	3080
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	Breeding Area
Accuracy	NA
Notes	LLID: 1221442481498, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	32757
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: PEM1C
Source Dataset	NWIWetlands
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

Appendix B6 – WDFW SalmonScape Map



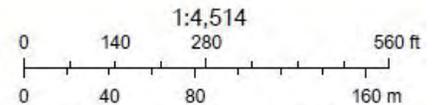
Development Site Location

- Coho - Documented
- Dolly Varden/ Bull Trout - Presumed
- Fall Chinook - Gradient Accessible
- Fall Chum - Documented
- Fall Chum - Gradient Accessible
- Pink Odd Year - Gradient Accessible
- Winter Steelhead - Gradient Accessible

9/27/2022, 1:45:47 PM

Snohomish_Parcels_Query result

— All SalmonScape Species



City of Arlington, WA, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA, WDFW

Appendix B7 – DNR Stream Typing Map

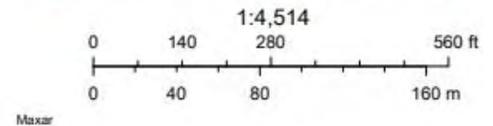


Development Site Location

9/27/2022, 1:10:00 PM

- Snohomish_Parcel_Query result
- Type N, Np, Ns
- Type F

DNR - Stream Typing - Watercourses (DNR)

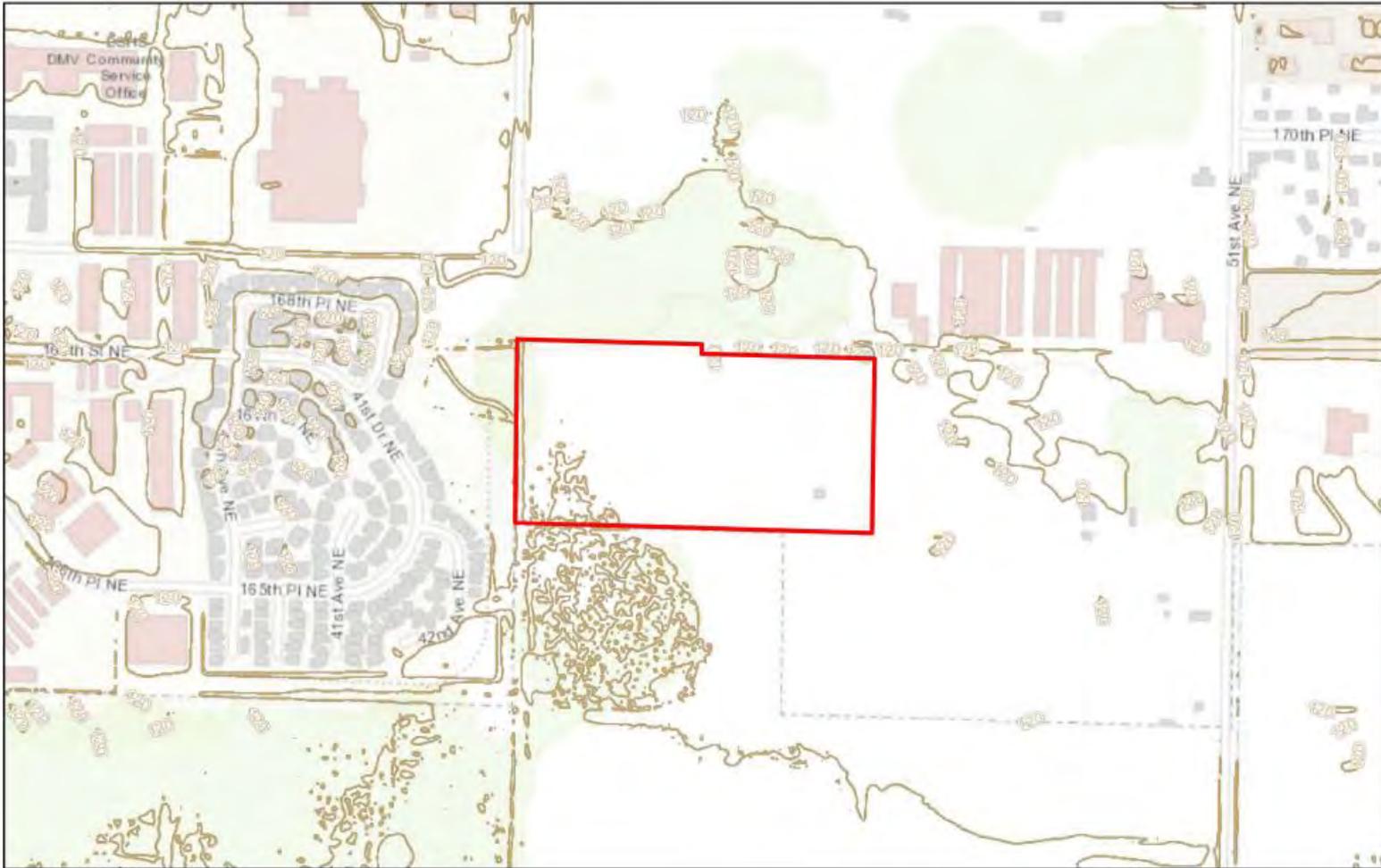


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Appendix C — Mitigation Site Background Information

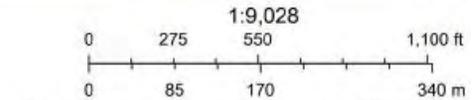
This appendix includes a Snohomish County Contours map (C1); NRCS soil survey map (C2); USFWS NWI map (C3); WDFW PHS map (C4); Snohomish County Critical Areas Inventory (C5); DNR stream typing map (C6), and WDFW SalmonScape map (C7).

Appendix C1 – Snohomish County Contours Map



11/9/2022, 2:46:06 PM

 Offsite Mitigation Property



City of Arlington, WA, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, METI/NASA, EPA, Soundview Consultants

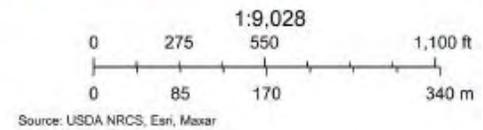
Appendix C2 – NRCS Soil Survey Map



11/9/2022, 2:57:13 PM

- Offsite Mitigation Property
- USA Soils Map Units

- 13 - Custer fine sandy loam
- 34 - Muckilteo muck
- 39 - Norma loam



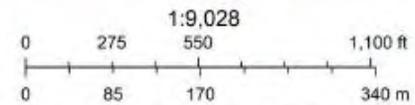
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Appendix C3 – USFWS NWI Map



11/9/2022, 2:48:52 PM

- | | | |
|--|---|---|
| Offsite Mitigation Property | Estuarine and Marine Wetland | Freshwater Pond |
| Wetlands | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Deepwater | Freshwater Forested/Shrub Wetland | Other |



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov, Maxar

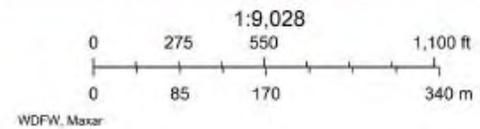
Soundview Consultants

Appendix C4 – WDFW PHS Map



11/9/2022, 3:06:16 PM

- PHS Public Lines
- PHS Public Polygon Outlines
- AS MAPPED
- PHS Public Polygons
- AS MAPPED
- Offsite Mitigation Property



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Priority Habitats and Species on the Web

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Resident Coastal Cutthroat	N/A	N/A	No
Wetlands	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No

PHS Species/Habitats Details:

Resident Coastal Cutthroat	
Scientific Name	<i>Oncorhynchus clarki</i>
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221633481096, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	34345
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/diversity/soc/soc.htm
Geometry Type	Lines

Wetlands	
Priority Area	Aquatic Habitat
Site Name	QUILCEDA CREEK WETLANDS.
Accuracy	1/4 mile (Quarter Section)
Notes	VARIOUS WETLANDS IN THE QUILCEDA CREEK DRAINAGE.
Source Record	902737
Source Dataset	PHSREGION
Source Name	MULLER, TED
Source Entity	WA Dept. of Fish and Wildlife
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: PFOAd
Source Dataset	NWIWetlands
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: PSSCx
Source Dataset	NWIWetlands
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.htm
Geometry Type	Polygons

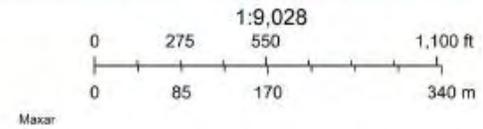
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents 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.

Appendix C5 – Snohomish County Critical Areas Inventory



11/9/2022, 2:52:44 PM

- Offsite Mitigation Property
- Remote Sensing-based Wetland Model
- Planning Development and Services Wetland Inventory
- Moderate
- Critical
- Snohomish County Wetland Inventory
- High



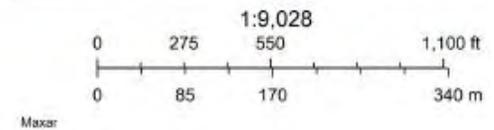
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Appendix C6 – DNR Stream Typing Map



11/9/2022, 2:50:26 PM

 Offsite Mitigation Property DNR - Stream Typing - Watercourses (DNR)
 Type N, Np, Ns



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Appendix C7 – WDFW SalmonScape Map



11/9/2022, 2:40:40 PM

- Offsite Mitigation Property
- All SalmonScape Species

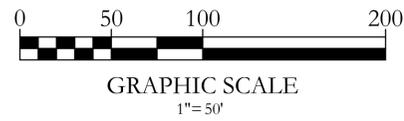
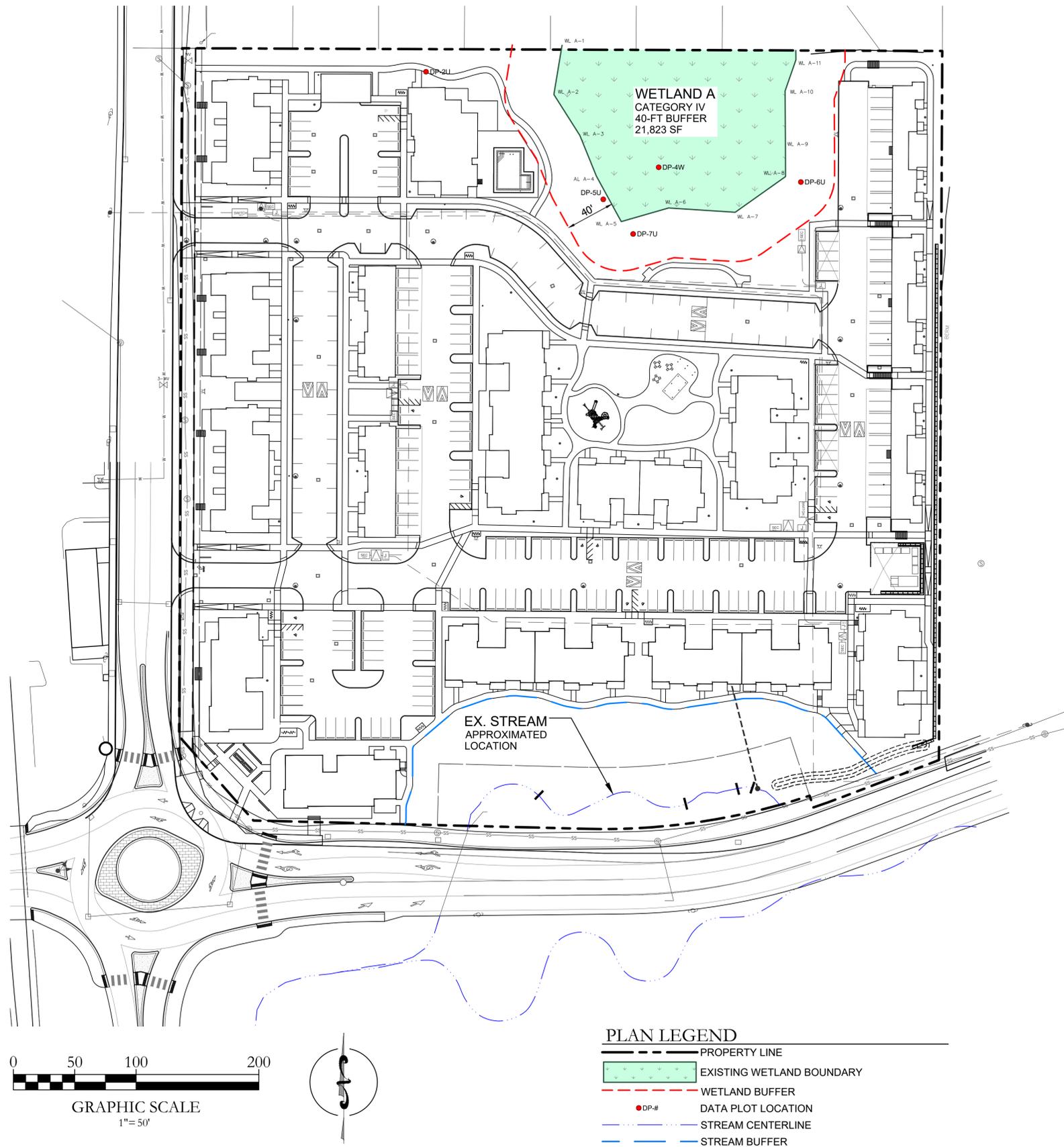
1:9,028

0 275 550 1,100 ft

0 85 170 340 m

City of Arlington, WA, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, METI/NASA, EPA, Soundview Consultants

Appendix D — Existing Conditions Exhibits



PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND BOUNDARY
- WETLAND BUFFER
- DP-# DATA PLOT LOCATION
- STREAM CENTERLINE
- STREAM BUFFER

VICINITY MAP



SOURCE: ESRI (ACCESSED 11/8/2022)



SOURCE:

LOCATION

THE SW ¼ OF SECTION 23,
TOWNSHIP 31N, RANGE 05E, WM

APPLICANT/OWNER

NAME: WILLIAMS INVESTMENTS
ADDRESS: 2517 COLBY AVENUE
EVERETT, WA 98201
CONTACT: RYAN KILBY & MISTY KILBY
E-MAIL: RYAN@WILLIAMSINVEST.COM
MISTY@WILLIAMSINVEST.COM

ENVIRONMENTAL CONSULTANT

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE
GIG HARBOR, WA 98355
(253) 514-8952

SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	EXISTING CONDITIONS (ONSITE)
2	PROPOSED SITE PLAN & IMPACTS (ONSITE)
3	EXISTING & PROPOSED CONDITIONS (OFFSITE)

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Environmental Assessment • Planning • Land Use Solutions
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2907 HARBORVIEW DRIVE
GIG HARBOR, WASHINGTON 98335
WWW.SOUNDVIEWCONSULTANTS.COM

CENTENNIAL PARK
67TH AVENUE AND
172ND ST NE/HWY 531
ARLINGTON, WA 98223
SNOHOMISH COUNTY
PARCEL NUMBER:
31052300300800

DATE: 11/8/2022

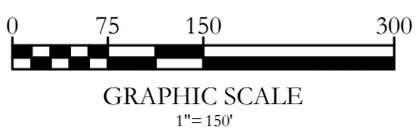
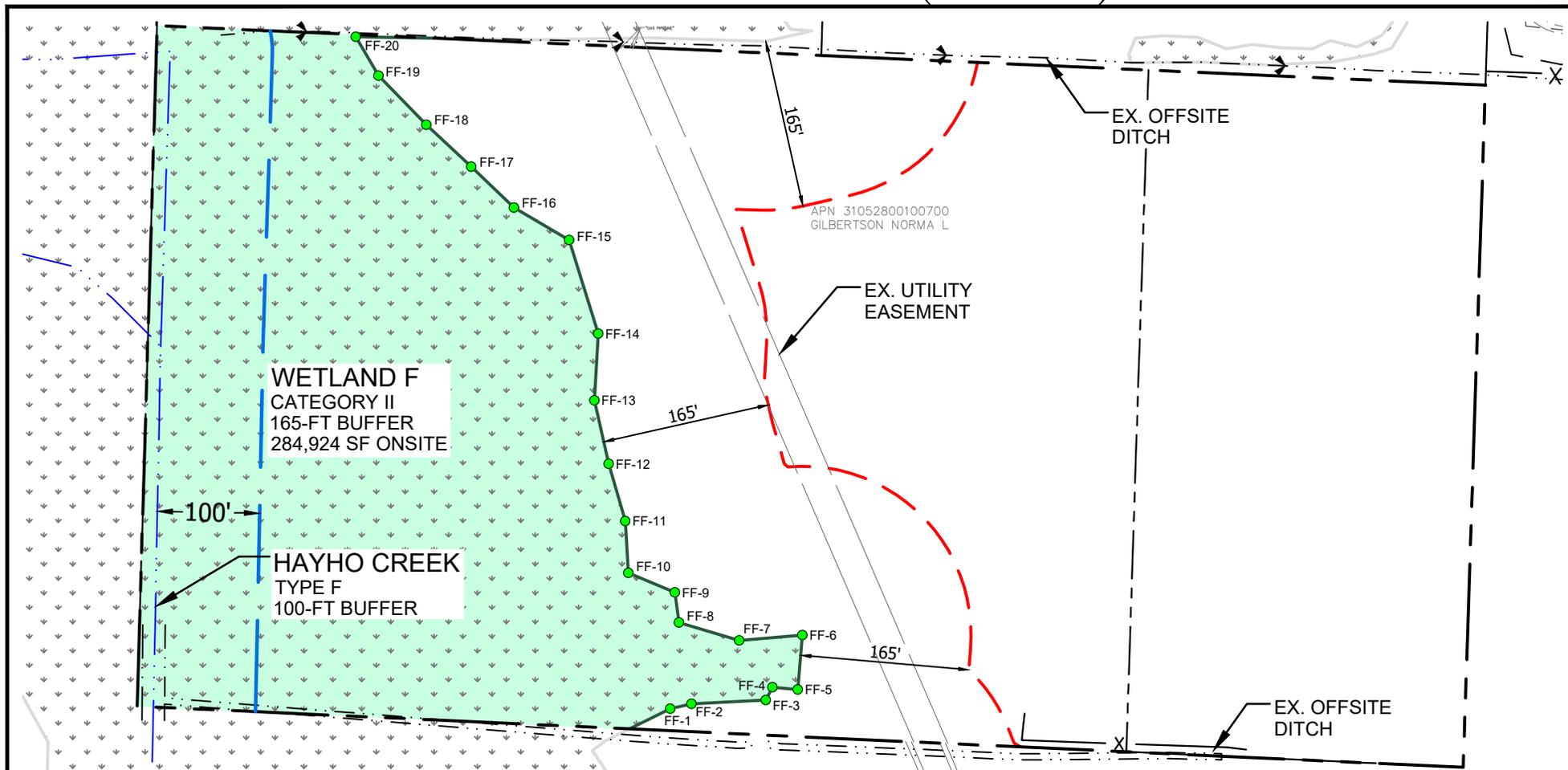
JOB: 1778.0001

BY: MW

SCALE: AS SHOWN

SHEET: 1

CENTENNIAL PARK - EXISTING CONDITIONS (OFFSITE)



PLAN LEGEND	
	PROPERTY LINE
	EXISTING WETLAND BOUNDARY
	WETLAND BUFFER
	WETLAND FLAG LOCATION
	DITCH CENTERLINE

67TH AVENUE NE AND 172ND STREET NE/HWY 531 ARLINGTON, WASHINGTON 98223	
THE SW ¼ OF SECTION 23, TOWNSHIP 31N, RANGE 05E, W.M.	
SNOHOMISH COUNTY PARCEL NUMBER: 31052300300800 (ONSITE) & 31052800100700 (OFFSITE)	
LAT: 48.152878° N	LON: -122.139137° W

REFERENCE #	
APPLICANT: WILLIAMS INVESTMENTS	
PROPOSED PROJECT: PROPOSED PARKING STALLS FOR PREVIOUSLY CONSTRUCTED MULTI-FAMILY RESIDENTIAL AND RETAIL DEVELOPMENT	
IN: --	NEAR: --

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GIG HARBOR, WASHINGTON 98335
WWW.SOUNDVIEWCONSULTANTS.COM

P. 253.514.8952
F. 253.514.8954

DATE: 11/10/2022
JOB: 1778.0001
BY: MW
SCALE: AS SHOWN
SHEET: 5

S:\CURRENT\1778 Williams Investments\1778.0001 Centennial Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A
 - Current Base DWG\1778.0001 (2022-11) base.dwg
 Plotted November 11, 2022

Appendix E — Data Forms

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-1U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): A2 Lat: 48.15232781 Long: -122.13997093 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">Not all three wetland criteria met; only hydrophytic vegetation. Data collected in the southwest corner of the site.</p>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. <u>Rubus armeniacus</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>2</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				
1. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>95</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>5</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation criteria met through dominance test.

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-2U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): A2 Lat: 48.15270064 Long: -122.13943818 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Not all three wetland criteria met, only hydrophytic vegetation. Data collected in the western portion of the site in a field.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. <u>Rubus armeniacus</u>	<u>1</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>1</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				
1. <u>Plantago lanceolata</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Agrostis capillaris</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Ranunculus repens</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: **Hydrophytic vegetation criteria met through dominance test.**

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-3U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15
 Subregion (LRR): A2 Lat: 48.15356159 Long: -122.13967423 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria met, only hydrophytic vegetation. Data collected in the northern portion of the site in a drainage.</u>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Remarks: <u>Hydrophytic vegetation criteria met through dominance test.</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/18
 Applicant/Owner: Williams Investment State: WA Sampling Point: DP-4W
 Investigator(s): Matthew Murphy, Erin Harker Section, Township, Range: 23 / 31N / 5E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): A2 Lat: 48.153484 Long: -122.13886242 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <p align="center">All three wetland criteria met. Data collected in northern portion of the site in Wetland A.</p>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Remarks: Hydrophytic vegetation criteria met through dominance test.	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-5U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): A2 Lat: 48.15338214 Long: -122.13902839 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">Not all three wetland criteria met, only hydrophytic vegetation. Data collected west of Wetland A boundary.</p>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Remarks: <p align="center">Hydrophytic vegetation criteria met through dominance test.</p>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-6U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 20
 Subregion (LRR): A2 Lat: 48.1535363 Long: -122.13832539 Datum: WGS 84
 Soil Map Unit Name: Everett gravelly sandy loam, 8 to 15 percent slopes NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">Not all three wetland criteria met, only hydrophytic vegetation. Data collected east of Wetland A boundary.</p>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft</u>)					
1. <u>Alnus rubra</u>	<u>20</u>	<u>Yes</u>	<u>FAC</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)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
_____	<u>20</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
Herb Stratum (Plot size: <u>5 ft</u>)					
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____	<u>100</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: Hydrophytic vegetation criteria met through dominance test.

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 10/12/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-7U
 Investigator(s): Erin Harker Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.15328337 Long: -122.13887554 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">Not all three wetland criteria met; only hydrophytic vegetation. Data collected southwest of Wetland A boundary.</p>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	Dominance Test worksheet:
1. _____	_____	_____	_____	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)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u>)				
1. <u>Rubus armeniacus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>10</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) <small>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</small>
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation criteria met through dominance test.

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 11/4/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-8U
 Investigator(s): Jon Pickett Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.152198 Long: -122.13838064 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria met; only hydrophytic vegetation and hydrology. Data collected north of the relict stream channel.</u>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft</u>)					
1. <u>Thuja plicata</u>	<u>20</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. <u>Alnus rubra</u>	<u>15</u>	Yes	FAC		
3. _____					
4. _____					
	<u>35</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					
1. <u>Rubus armeniacus</u>	<u>40</u>	Yes	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. <u>Sambucus racemosa</u>	<u>10</u>	No	FACU		
3. <u>Lonicera involucrata</u>	<u>10</u>	No	FAC		
4. _____					
5. _____					
	<u>60</u>	= Total Cover			
Herb Stratum (Plot size: <u>5 ft</u>)					
1. <u>Phalaris arundinacea</u>	<u>40</u>	Yes	FACW		
2. <u>Urtica dioica</u>	<u>15</u>	Yes	FAC		
3. <u>Equisetum arvense</u>	<u>10</u>	No	FAC		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	<u>65</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1. _____					
2. _____					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>35</u>					

Remarks: Hydrophytic vegetation criteria met through dominance test.

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 11/4/2018
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-9U
 Investigator(s): Jon Pickett Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.152120 Long: -122.13842892 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p style="text-align: center;">Not all three wetland criteria met, only hydrophytic vegetation. Data collected north of the relict stream channel.</p>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft</u>)					
1. <u>Alnus rubra</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)	
2. <u>Thuja plicata</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>		
3. _____					
4. _____					
	<u>55</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					
1. <u>Rubus armeniacus</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. <u>Rubus spectabilis</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>		
3. _____					
4. _____					
5. _____					
	<u>45</u>	= Total Cover			
Herb Stratum (Plot size: <u>5 ft</u>)					
1. <u>Moss sp.</u>	<u>5</u>		<u>NI</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	<u>5</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1. <u>Hedera helix</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>		
2. _____					
	<u>10</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>95</u>					

Remarks: Hydrophytic vegetation criteria met through dominance test.

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 5/7/2019
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-10U
 Investigator(s): Jon Pickett Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.152830 Long: -122.13840503 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria met, only hydrophytic vegetation. Data collected in eastern-central portion of the property in a forested area.</u>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. <u>Alnus rubra</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>70</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)				
1. <u>Rubus armeniacus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	<u>10</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft</u>)				
1. <u>Phalaris arundinacea</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Equisetum arvense</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	
3. <u>Juncus sp.*</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	<u>103</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>-3</u>				_____
Remarks: <u>Hydrophytic vegetation criteria met through dominance test. *Could not be identified to species level, assumed FAC for scoring purposes.</u>				

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

Project/Site: 1778.0001 - Centennial Park City/County: Arlington / Snohomish Sampling Date: 5/7/2019
 Applicant/Owner: Williams Investments State: WA Sampling Point: DP-11U
 Investigator(s): Jon Pickett Section, Township, Range: 23 / 31N / 05E
 Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.153032 Long: -122.13839143 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Not all three wetland criteria met, only hydrophytic vegetation. Data collected in eastern-central portion of the property in a forested area.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. <u>Alnus rubra</u>	<u>75</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>75</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft</u>)				
1. <u>Equisetum arvense</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____	<u>55</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
_____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>40</u>				

Remarks: **Mosses 5% of herbaceous stratum. Hydrophytic vegetation criteria met through dominance test.**

SOIL

Sampling Point: DP-11U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2/2	100	-	-	-	-	SaLo	Sandy loam
8-15	10YR 4/4	60	-	-	-	-	SaLo	Gravelly sandy loam, dual matrix
	10YR 3/2	40	-	-	-	-	SaLo	Gravelly sandy loam, dual matrix

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

Project/Site: 1778.0003 / 51st Avenue NE City/County: Arlington / Snohomish Sampling Date: 7/14/2021
 Applicant/Owner: Williams Investments / Ryan Kilby State: WA Sampling Point: DP-1
 Investigator(s): Rachael Hyland Section, Township, Range: 28, 31N, 05E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): A2 Lat: 48.147075 Long: -122.17029993 Datum: WGS 84
 Soil Map Unit Name: Norma loam NWI classification: N / A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <p align="center">All three wetland criteria met. Data collected in Wetland F on the southwest portion of the subject property.</p>	

VEGETATION – Use scientific names of plants.

	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>10 ft</u>)				
1. <u>Holcus lanatus</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ranunculus repens</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Anthoxanthum odoratum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5. <u>Poa pratensis</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>114</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>-14</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation criteria met through the Dominance Test.

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

Project/Site: 1778.0003 / 51st Avenue NE City/County: Arlington / Snohomish Sampling Date: 7/14/2021
 Applicant/Owner: Williams Investments / Ryan Kilby State: WA Sampling Point: DP-2
 Investigator(s): Rachael Hyland Section, Township, Range: 28, 31N, 05E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1
 Subregion (LRR): A2 Lat: 48.147388 Long: -122.16997369 Datum: WGS 84
 Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">No wetland criteria met. Data collected upland of Wetland F on the south central portion of the subject property.</p>	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>10 ft</u>)				
1. <u>Holcus lanatus</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Pteridium aquilinum</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Ranunculus repens</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	
4. <u>Taraxicum officianale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
5. <u>Poa pratensis</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
6. <u>Anthoxanthum odoratum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
7. <u>Plantago lanceolata</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>145</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>% Bare Ground in Herb Stratum</u> <u>-45</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 80 x 3 = 240
 FACU species 65 x 4 = 260
 UPL species 0 x 5 = 0
 Column Totals: 145 (A) 500 (B)
 Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 No hydrophytic vegetation criteria met.

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

Project/Site: 1778.0003 / 51st Avenue NE City/County: Arlington / Snohomish Sampling Date: 7/14/2021
 Applicant/Owner: Williams Investments / Ryan Kilby State: WA Sampling Point: DP-3
 Investigator(s): Rachael Hyland Section, Township, Range: 28, 31N, 05E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): A2 Lat: 48.148116 Long: -122.17024798 Datum: WGS 84
 Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Not all three wetland criteria met; only hydrophytic vegetation observed. Data collected upland of Wetland F on the northwest portion of the subject property.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>10 ft</u>)				
1. <u>Agrostis capillaris</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Poa pratensis</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Juncus effusus</u>	<u>15</u>	<u>No</u>	<u>FACW</u>	
4. <u>Holcus lanatus</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
5. <u>Anthoxanthum odoratum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
6. <u>Taraxicum officianale</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
7. <u>Alopecurus pratensis</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>145</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>-45</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: Hydrophytic vegetation criteria met through the Dominance Test.	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0 - 9	10YR 2/1	99	10YR 4/6	1	C	M	SiLo, ash	Silt loam with chunks of ash
9 - 15	10YR 2/1	98	7.5YR 2/2	2	C	PL	SiLo	Silt loam
15 - 17	2.5Y 4/3	80	10YR 4/6	20	C	M	SiLo, Ashy	Silt loam, Ashy
17 - 20	2.5Y 3/1	98	2.5Y 5/2	2	D	M	SiLo	Silt loam

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

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

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <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) |

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: None
 Depth (inches): --

Hydric Soil Present? Yes No

Remarks:

No hydric soil criteria met. Soils from 15-17 inches are too bright and as such soil layers below do not meet indicator A12. Soils from 0-15 inches lack distinct or prominent redox necessary to meet F6. While soils below 17 inches have distinct redox concentrations, distinct or prominent concentrations must be observed above 8 inches to meet indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): None
 Water Table Present? Yes No Depth (inches): None
 Saturation Present? Yes No Depth (inches): None
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

No wetland hydrology criteria met. No hydrology observed to a depth of 24 inches.

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

Project/Site: 1778.0003 / 51st Avenue NE City/County: Arlington / Snohomish Sampling Date: 7/14/2021
 Applicant/Owner: Williams Investments / Ryan Kilby State: WA Sampling Point: DP-4
 Investigator(s): Rachael Hyland Section, Township, Range: 28, 31N, 05E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): A2 Lat: 48.147512 Long: -122.16798517 Datum: WGS 84
 Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">No wetland criteria met. Data collected on centrally on the eastern portion of the subject property.</p>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>10 ft</u>)				
1. <u>Poa pratensis</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Hypochaeris radicata</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Trifolium pratense</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
4. <u>Schedonorus pratensis</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
5. <u>Dactylis glomerata</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	
6. <u>Holcus lanatus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
7. <u>Agrostis capillaris</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>170</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>-70</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 70 x 3 = 210
 FACU species 100 x 4 = 400
 UPL species 0 x 5 = 0
 Column Totals: 170 (A) 610 (B)
 Prevalence Index = B/A = 3.59

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: **No hydrophytic vegetation criteria met.**

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0 - 4	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
4 - 13	10YR 3/2	99	7.5YR 4/4	1	C	M	SaLo	Sandy loam
13 -15	20YR 4/3	92	7.5YR 4/6	8	C	M	LoSa	Loamy sand
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<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)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<input type="checkbox"/> Restrictive Layer (if present): Type: <u>None</u> Depth (inches): <u>--</u>			Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Remarks: No hydric soil criteria met. Redox concentrations must be present in 2 percent or greater of any matrix layer to meet any indicator F6.								

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"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
Field Observations:		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology criteria met.			

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

Project/Site: 1778.0003 / 51st Avenue NE City/County: Arlington / Snohomish Sampling Date: 7/14/2021
 Applicant/Owner: Williams Investments / Ryan Kilby State: WA Sampling Point: DP-5
 Investigator(s): Rachael Hyland Section, Township, Range: 28, 31N, 05E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): A2 Lat: 48.148421 Long: -122.16742505 Datum: WGS 84
 Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p style="text-align: center;">No wetland criteria met. Data collected on the northeast corner of the subject property, south of Offsite Wetland B.</p>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>10 ft</u>)				
1. <u>Poa pratensis</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Schedonorus arundinaceus</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Trifolium pratense</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
4. <u>Hypochaeris radicata</u>	<u>15</u>	<u>No</u>	<u>FACU</u>	
5. <u>Dactylis glomerata</u>	<u>15</u>	<u>No</u>	<u>FAC</u>	
6. <u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
7. <u>Holcus lanatus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>125</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>-25</u>				
Remarks: <p style="text-align: center;">No hydrophytic vegetation criteria met.</p>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 50 x 3 = 150
 FACU species 75 x 4 = 300
 UPL species 0 x 5 = 0
 Column Totals: 125 (A) 450 (B)
 Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 3/2	100	-	-	-	-	MeLo	Medium loam
10 - 17	10YR 4/3	50	-	-	-	-	SaLo, mixed	Sandy loam, mixed matrix
10 - 17	10YR 3/3	50	-	-	-	-	SaLo, mixed	Sandy loam, mixed matrix
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<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)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<input type="checkbox"/> Restrictive Layer (if present): Type: <u>None</u> Depth (inches): <u>--</u>			Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Remarks: No hydric soil criteria met.								

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"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
Field Observations:		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology criteria met. No hydrology observed to a depth of 17 inches.			

Appendix F — Wetland Rating Forms

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 10/12/18
 Rated by Erin Harker, Jon Pickett Trained by Ecology? Yes No Date of training _____
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map _____

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	L	L	L	
Value	H	L	L	TOTAL
Score Based on Ratings	5	3	3	11

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number A

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 figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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	

Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number A

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

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0 0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0 0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0 0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0 0
Total for D 2	0 Add the points in the boxes above

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	3
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	3

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		0
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why <u>Wetland discharges into ditch</u>	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

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

Wetland name or number A

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.*

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

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*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

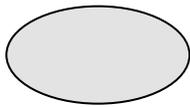
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

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

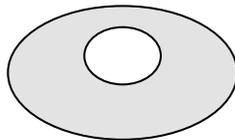
1

H 1.4. Interspersion of habitats

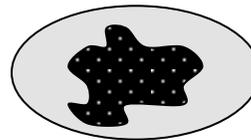
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



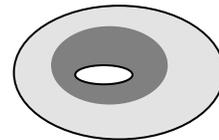
None = 0 points



Low = 1 point

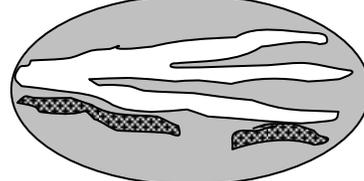
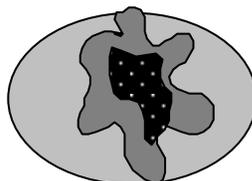
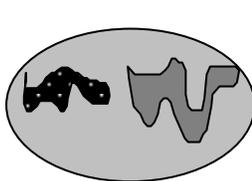


Moderate = 2 points



0

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



Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><input 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)</p> <p><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>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	1
<p>Total for H 1</p>	4

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: <input type="text" value="0.88"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="3.10"/> /2] = <u>2.43</u> %</p> <p>If total accessible habitat is:</p> <p>> 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>< 10% of 1 km Polygon points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: <input type="text" value="2.51"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="34.89"/> /2] = <u>19.955</u> %</p> <p>Undisturbed habitat > 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p>Undisturbed habitat < 10% of 1 km Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>> 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>	-2
<p>Total for H 2</p>	-1

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

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

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

Wetland name or number A

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.

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Estuarine wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><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</p> <p style="text-align: right;"><input type="checkbox"/> Yes –Go to SC 1.1 <input checked="" type="checkbox"/> No= Not an estuarine wetland</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2</p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><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)</p> <p><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 unmowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3</p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV</p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?</p> <p style="text-align: center;">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Contact WNHP/WDNR and go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV</p> <p>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?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV</p>	
<p>SC 3.0. Bogs</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2</p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog</p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No – Go to SC 3.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog</p>	

Wetland name or number A

<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"> — 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. — 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"> — 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 — 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"> — 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). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — 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"> — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — 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)? <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? <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? <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>	

Wetland name or number A

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Wetland name or number F

RATING SUMMARY – Western Washington

Name of wetland (or ID #): F Date of site visit: 06/21/18
 Rated by Richard Peel, Rachael Hyland Trained by Ecology? Yes No Date of training 6/29/16
 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map Esri Arc GIS

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H	M	H	
Landscape Potential	M	M	L	
Value	H	M	H	TOTAL
Score Based on Ratings	8	6	7	21

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number F

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 figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and 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	

Wetland name or number F

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number F

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	1
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		4
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > 1/2 of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	3
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is > 1/4 total area of wetland Area seasonally ponded is < 1/4 total area of wetland	points = 4 points = 2 points = 0	4
Total for D 1		Add the points in the boxes above 12

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2		Add the points in the boxes above 1

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number F

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	3
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	6

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	2

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		1
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	1

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

Wetland name or number F

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.*

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4

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*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

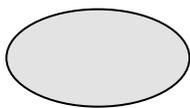
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

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

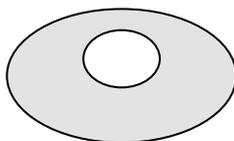
2

H 1.4. Interspersion of habitats

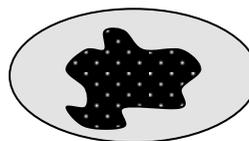
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



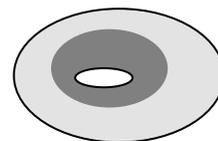
None = 0 points



Low = 1 point

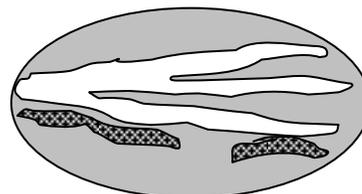
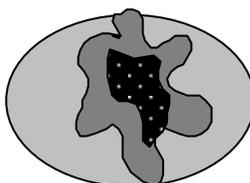
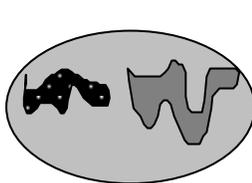


Moderate = 2 points



2

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



Wetland name or number F

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><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)</p> <p><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>)</p> <p><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>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		5
Total for H 1	Add the points in the boxes above	15

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: <input type="text" value="4.91"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="0.57"/> /2] = <input type="text" value="5.195"/> %</p> <p>If total accessible habitat is:</p> <p>> 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>< 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: <input type="text" value="7.39"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="4.47"/> /2] = <input type="text" value="9.625"/> %</p> <p>Undisturbed habitat > 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p>Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		0
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>> 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>		-2
Total for H 2	Add the points in the boxes above	-2

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> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><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> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>		2

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

Wetland name or number F

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.

Wetland name or number F

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Estuarine wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><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</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2</p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><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 type="checkbox"/> No = Category II</p>	
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3</p> <p>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 a WHCV</p> <p>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 go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV</p> <p>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 checked="" type="checkbox"/> No = Not a WHCV</p>	
<p>SC 3.0. Bogs</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2</p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog</p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <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.</p> <p>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog</p>	

Wetland name or number F

<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"> — 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. — 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"> — 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 — 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"> — 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). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — 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"> — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — 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)? <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? <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? <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>	

Wetland name or number F

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Appendix G — Wetland Rating Maps

CENTENNIAL PARK - WETLAND RATING MAP



Cowardin Map

-  330' Boundary
-  Emergent
-  Scrub-Shrub
-  Site Boundary

0 75 150 300 Feet

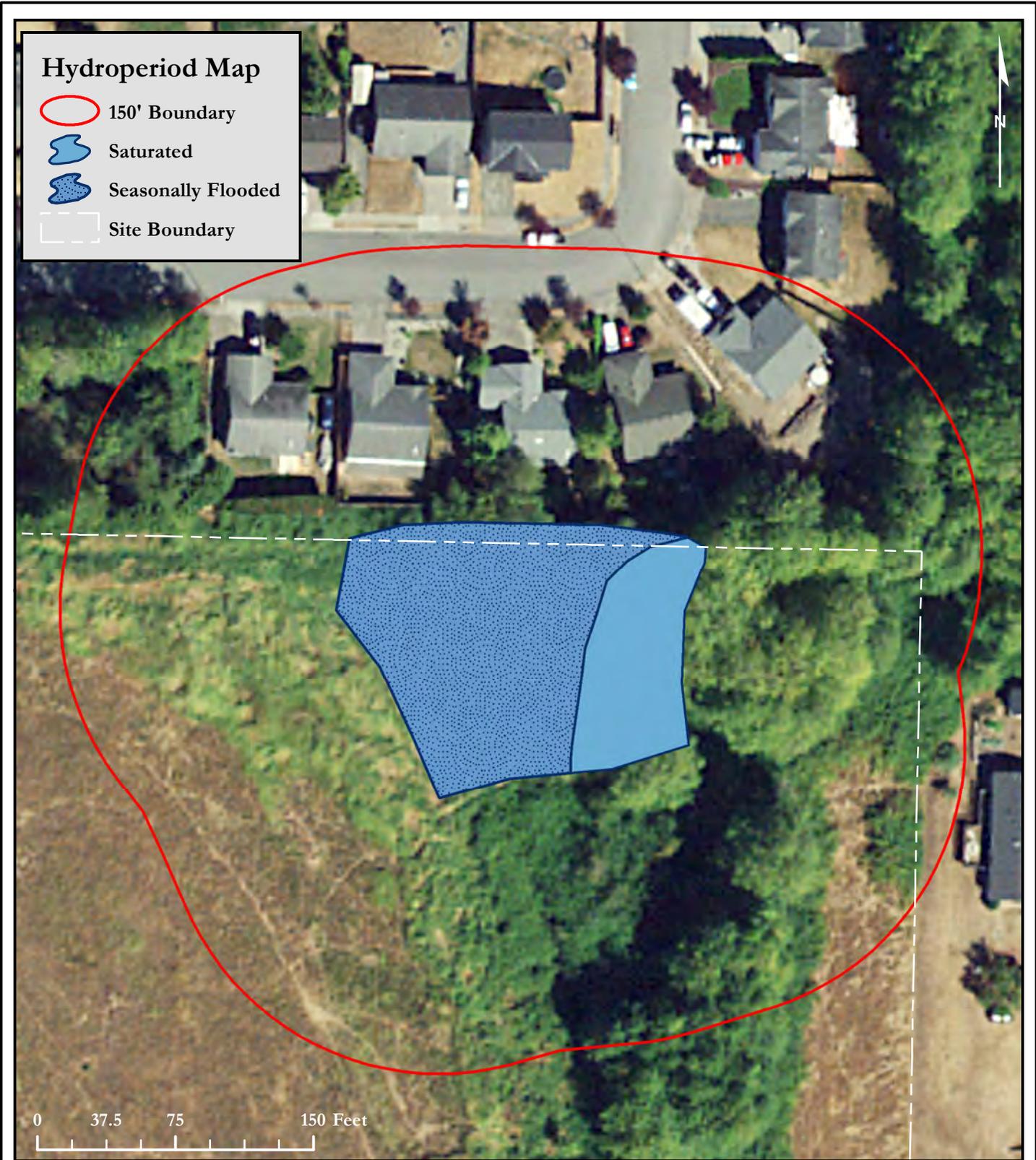


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CENTENNIAL PARK
 67TH AVE NE & 172ND ST NE/HWY 531
 ARLINGTON, WA 98223
 SNOHOMISH COUNTY PARCEL NUMBERS:
 31052300300800

DATE: 1/3/2019
JOB: 1778.0001
BY: DLS
SCALE: 1" = 125'
FIGURE NO. 1 of 5

CENTENNIAL PARK - WETLAND RATING MAP



Hydroperiod Map

- 150' Boundary
- Saturated
- Seasonally Flooded
- Site Boundary

0 37.5 75 150 Feet



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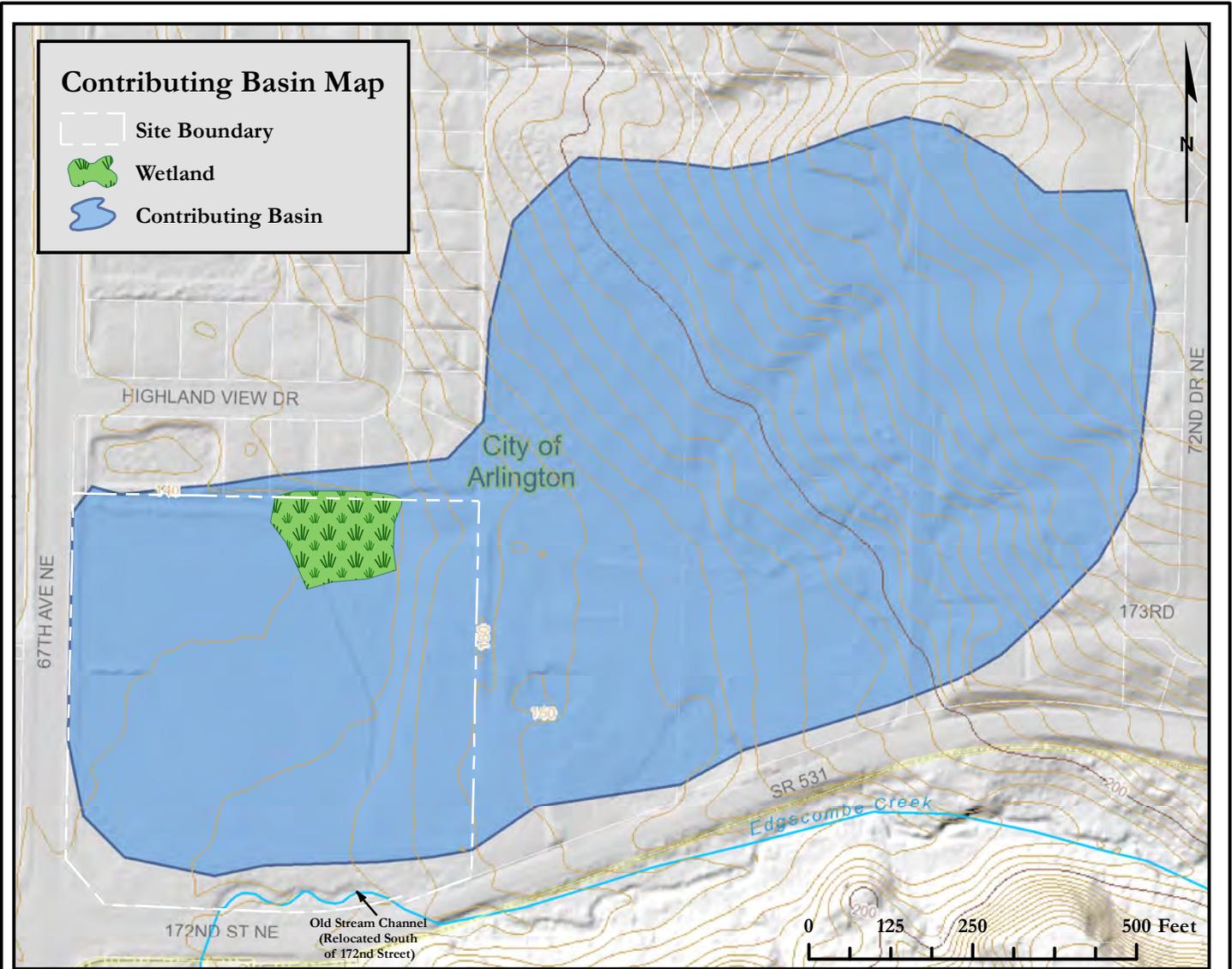
CENTENNIAL PARK

67TH AVE NE & 172ND ST NE/HWY 531
 ARLINGTON, WA 98223

SNOHOMISH COUNTY PARCEL NUMBERS:
 31052300300800

DATE: 1/3/2019
JOB: 1778.0001
BY: DLS
SCALE: 1" = 75'
FIGURE NO. 2 of 5

CENTENNIAL PARK - WETLAND RATING MAP



D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	1,211,949
	Area of Wetland A (SF)	23,130
	Percent of Wetland A within Contributing Basin	1.908%
D.5.0		
D.5.3		
	Area of Contributing Basin	1,211,949
	Area of Intensive Human Land Uses	30,464
	Percent of Intensive Human Land Use within Contributing Basin	3%

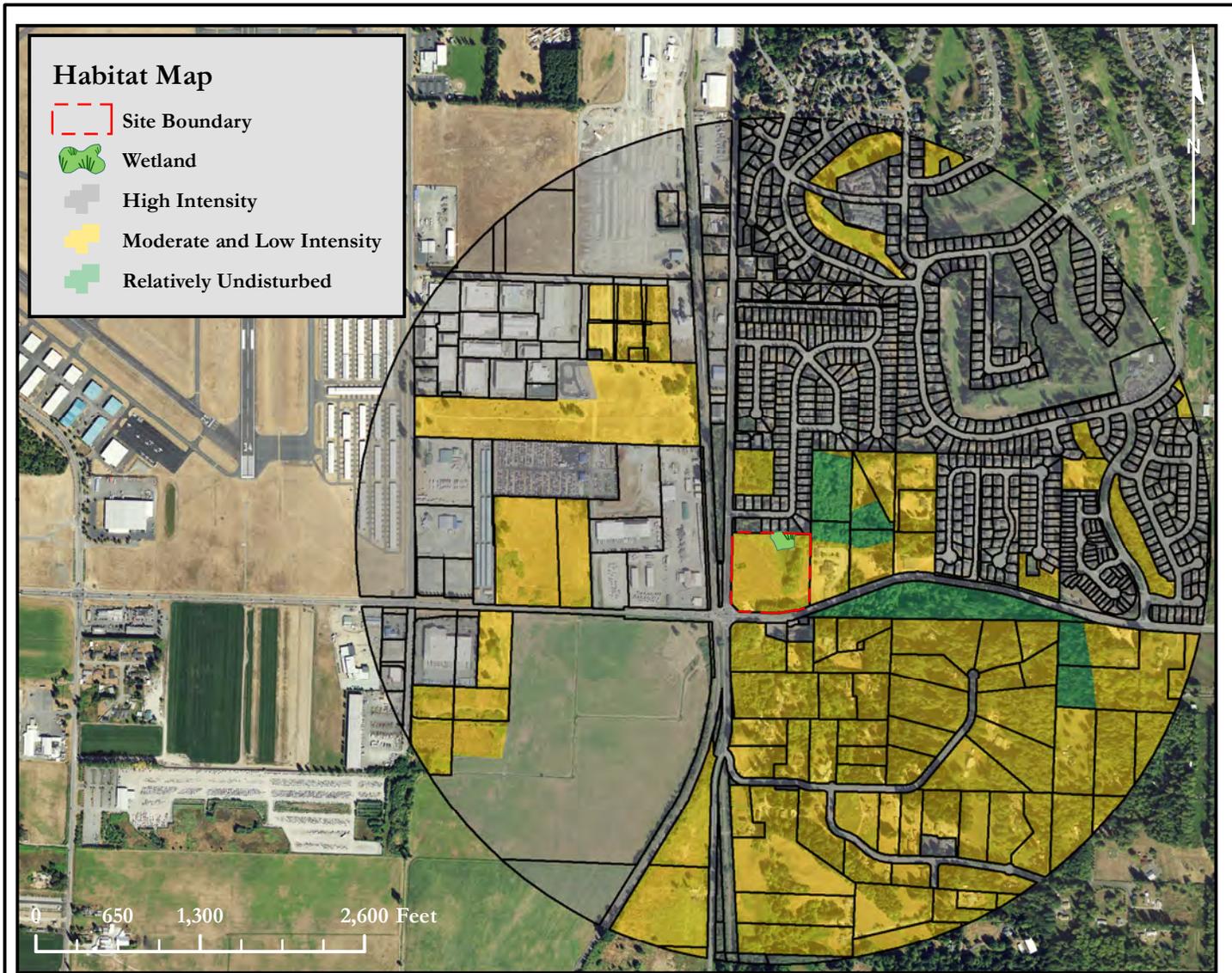


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 ARLINGTON, WA 98223
 SNOHOMISH COUNTY PARCEL NUMBERS:
 31052300300800

DATE: 1/3/2019
JOB: 1778.0001
BY: DLS
SCALE: 1" = 250'
FIGURE NO. 3 of 5

CENTENNIAL PARK - WETLAND RATING MAP



H.2.0 Wetland A		
H.2.1		
	Abutting Undisturbed Habitat	0.88%
	Abutting Moderate & Low Intensity Land Uses	3.10%
	Accessible Habitat	2.43%
H.2.2		
	Undisturbed Habitat	2.51%
	Moderate & Low Intensity Land Uses	34.89%
	Undisturbed Habitat in 1 KM Polygon	19.96%
H.2.3		
	High Intensity Land Use in 1 KM Polygon	62.60%

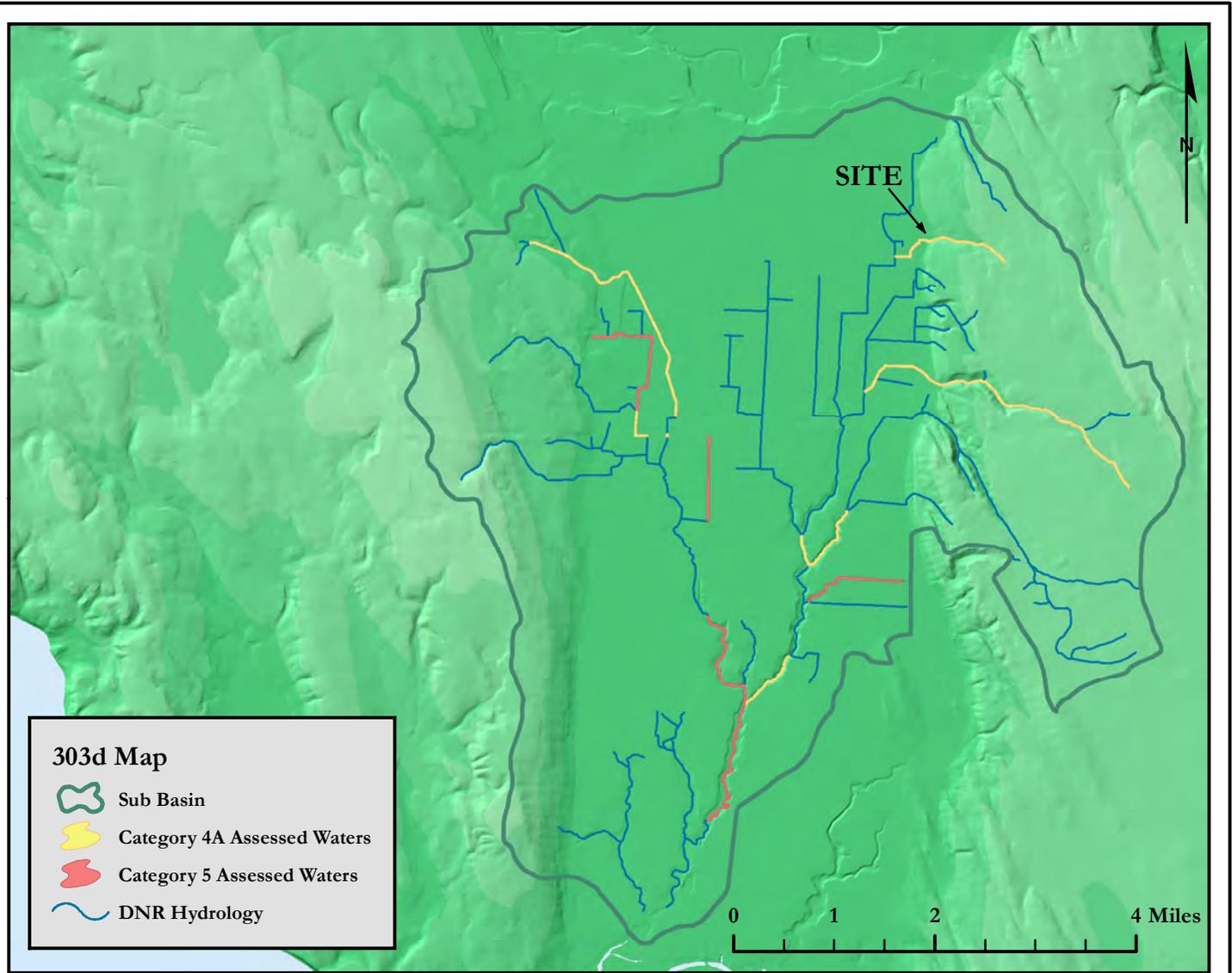


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BY: DLS
SCALE: 1" = 1,300'
FIGURE NO. 4 of 5

CENTENNIAL PARK - WETLAND RATING MAP



303d Map

- Sub Basin
- Category 4A Assessed Waters
- Category 5 Assessed Waters
- DNR Hydrology

LISTING ID	CATEGORY	PARAMETER	MEDIA	WATERBODY	WATERBODY TYPE
47512 5		Dissolved Oxygen	Water	UNNAMED CREEK (TRIB TO QUILCEDA CREEK, W.F.)	Rivers/Streams
45266 4A		Bacteria	Water	QUILCEDA CREEK, W.F.	Rivers/Streams
7299 5		Dissolved Oxygen	Water	QUILCEDA CREEK, W.F.	Rivers/Streams
47492 5		Dissolved Oxygen	Water	UNNAMED CREEK (TRIB TO QUILCEDA CREEK)	Rivers/Streams
46286 4A		Bacteria	Water	QUILCEDA CREEK	Rivers/Streams
7307 4A		Bacteria	Water	QUILCEDA CREEK, M.F.	Rivers/Streams
71215 5		pH	Water	QUILCEDA CREEK, W.F.	Rivers/Streams
71213 5		pH	Water	QUILCEDA CREEK, W.F.	Rivers/Streams
7306 4A		Bacteria	Water	QUILCEDA CREEK	Rivers/Streams
7304 4A		Bacteria	Water	QUILCEDA CREEK	Rivers/Streams
71212 5		pH	Water	UNNAMED CREEK (TRIB TO QUILCEDA CREEK, W.F.)	Rivers/Streams
71221 5		pH	Water	UNNAMED DITCH (TRIB TO QUILCEDA CREEK, W.F.)	Rivers/Streams
7305 4A		Bacteria	Water	QUILCEDA CREEK	Rivers/Streams
7302 5		Dissolved Oxygen	Water	QUILCEDA CREEK	Rivers/Streams
47506 5		Dissolved Oxygen	Water	UNNAMED DITCH (TRIB TO QUILCEDA CREEK, W.F.)	Rivers/Streams
7298 4A		Bacteria	Water	QUILCEDA CREEK, M.F.	Rivers/Streams
47502 5		Dissolved Oxygen	Water	QUILCEDA CREEK, W.F.	Rivers/Streams
9806 4A		Bacteria	Water	QUILCEDA CREEK, M.F.	Rivers/Streams
74184 4A		Bacteria	Water	QUILCEDA CREEK, W.F.	Rivers/Streams

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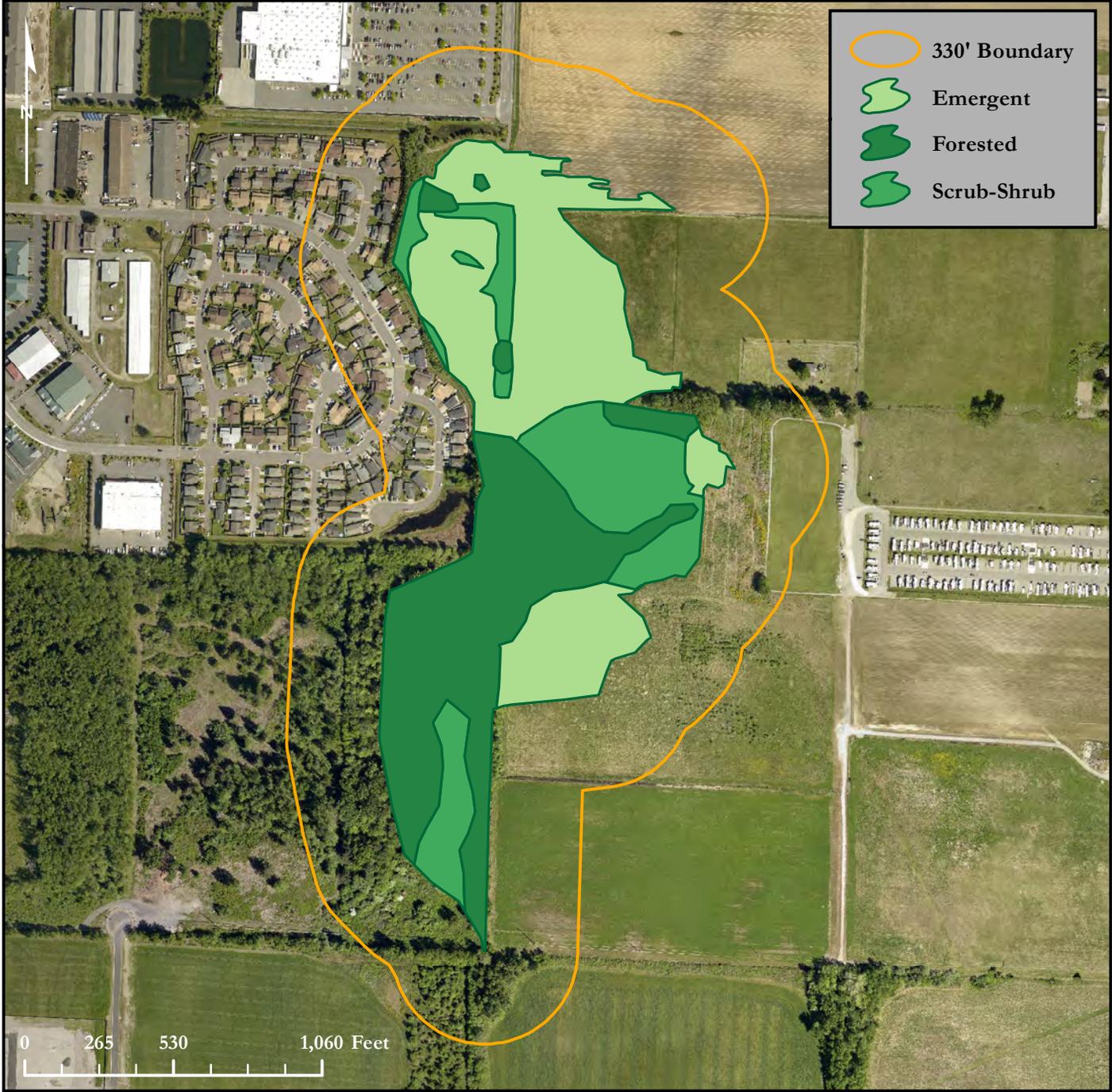
CENTENNIAL PARK

67TH AVE NE & 172ND ST NE/HWY 531
 ARLINGTON, WA 98223

SNOHOMISH COUNTY PARCEL NUMBERS:
 31052300300800

DATE: 1/3/2019
JOB: 1778.0001
BY: DLS
SCALE: 1" = 2 mi
FIGURE NO. 5 of 5

COWARDIN MAP



	330' Boundary
	Emergent
	Forested
	Scrub-Shrub

H.1.0		
H.1.1	Presence Cowardin Classes in Wetland F	
	Percent of Emergent Class	41.9%
	Percent of Scrub-Shrub Class	21.5%
	Percent of Forested Class	35.0%



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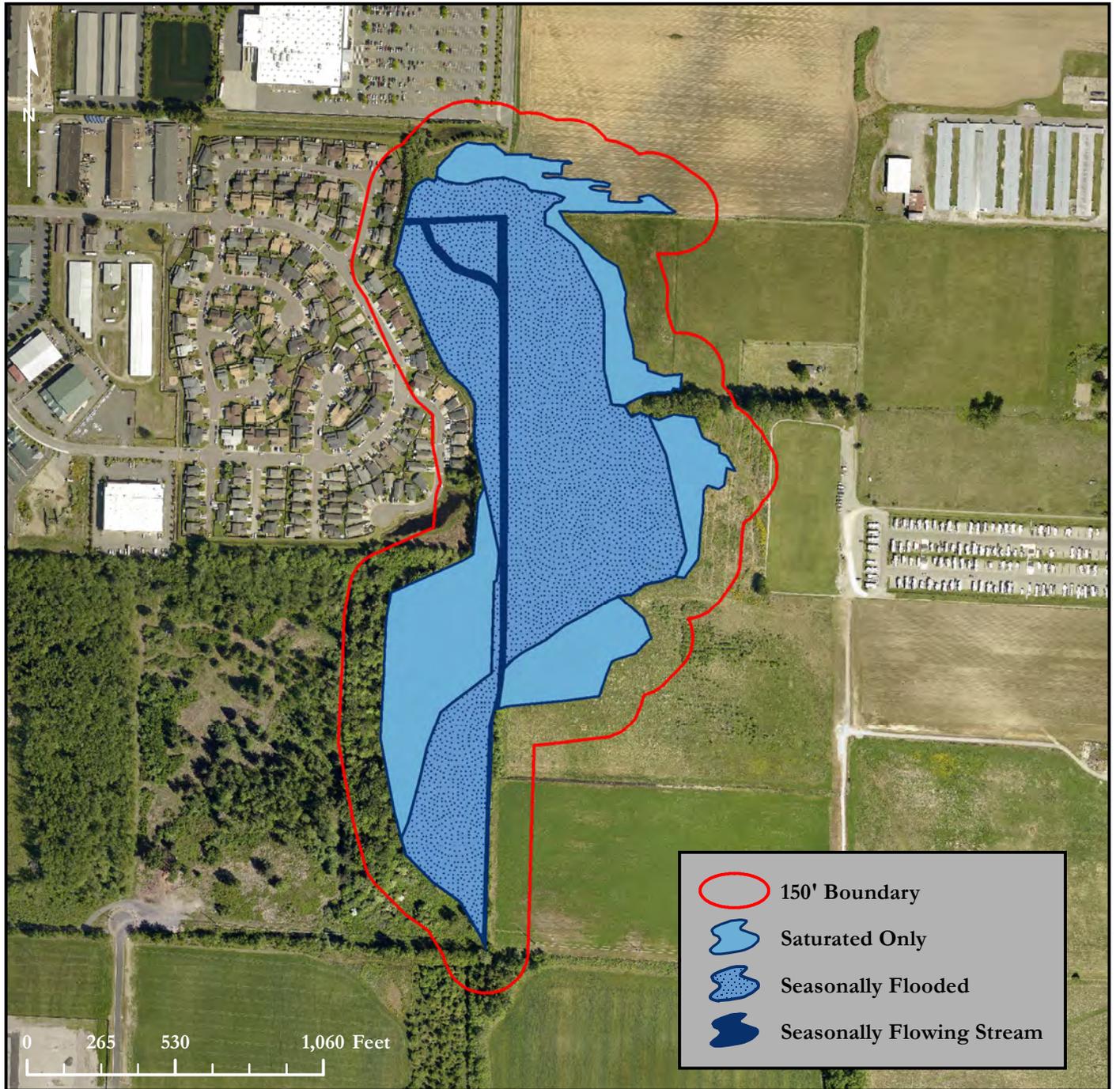
OFFSITE WETLAND MITIGATION

16430 51ST AVE NE
 ARLINGTON, WA 98223

SNOHOMISH COUNTY PARCEL NUMBER:
 31052800100700

DATE: 11/10/2022
JOB: 1779.0001
BY: DS
SCALE: 1" = 540'
FIGURE NO. 1 of 5

HYDROPERIOD MAP



-  150' Boundary
-  Saturated Only
-  Seasonally Flooded
-  Seasonally Flowing Stream

H.1.0		
H.1.1	Presence Hydroperiod Classes in Wetland F	
	Percent of Seasonally Flooded or Inundated	62.2%
	Percent of Saturated Only	32.8%
	Percent of Seasonally Flowing Stream	3.2%



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OFFSITE WETLAND MITIGATION

16430 51ST AVE NE
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SNOHOMISH COUNTY PARCEL NUMBER:
 31052800100700

DATE: 11/10/2022

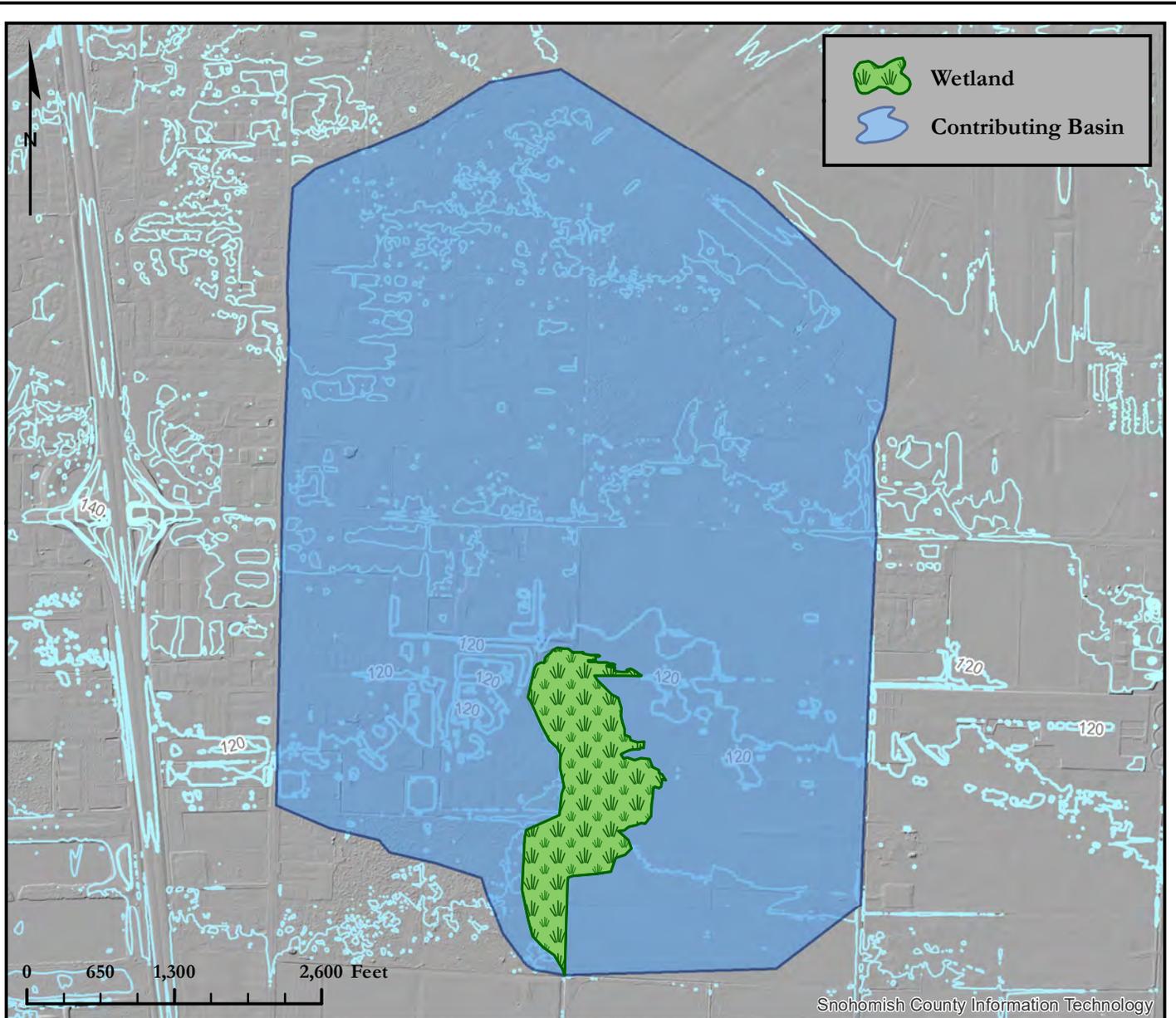
JOB: 1778.0001

BY: DS

SCALE: 1" = 540'

FIGURE NO. 2 of 5

CONTRIBUTING BASIN MAP



D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	35,412,266
	Area of Wetland F (SF)	1,747,911
	Percent of Wetland F within Contributing Basin	4.9%
D.5.0		
D.5.3		
	Area of Contributing Basin	35,412,266
	Is the Percent of Intensive Human Land Use within Contributing Basin >25%	Yes



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OFFSITE WETLAND MITIGATION

16430 51ST AVE NE
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SNOHOMISH COUNTY PARCEL NUMBER:
 31052800100700

DATE: 11/10/2022

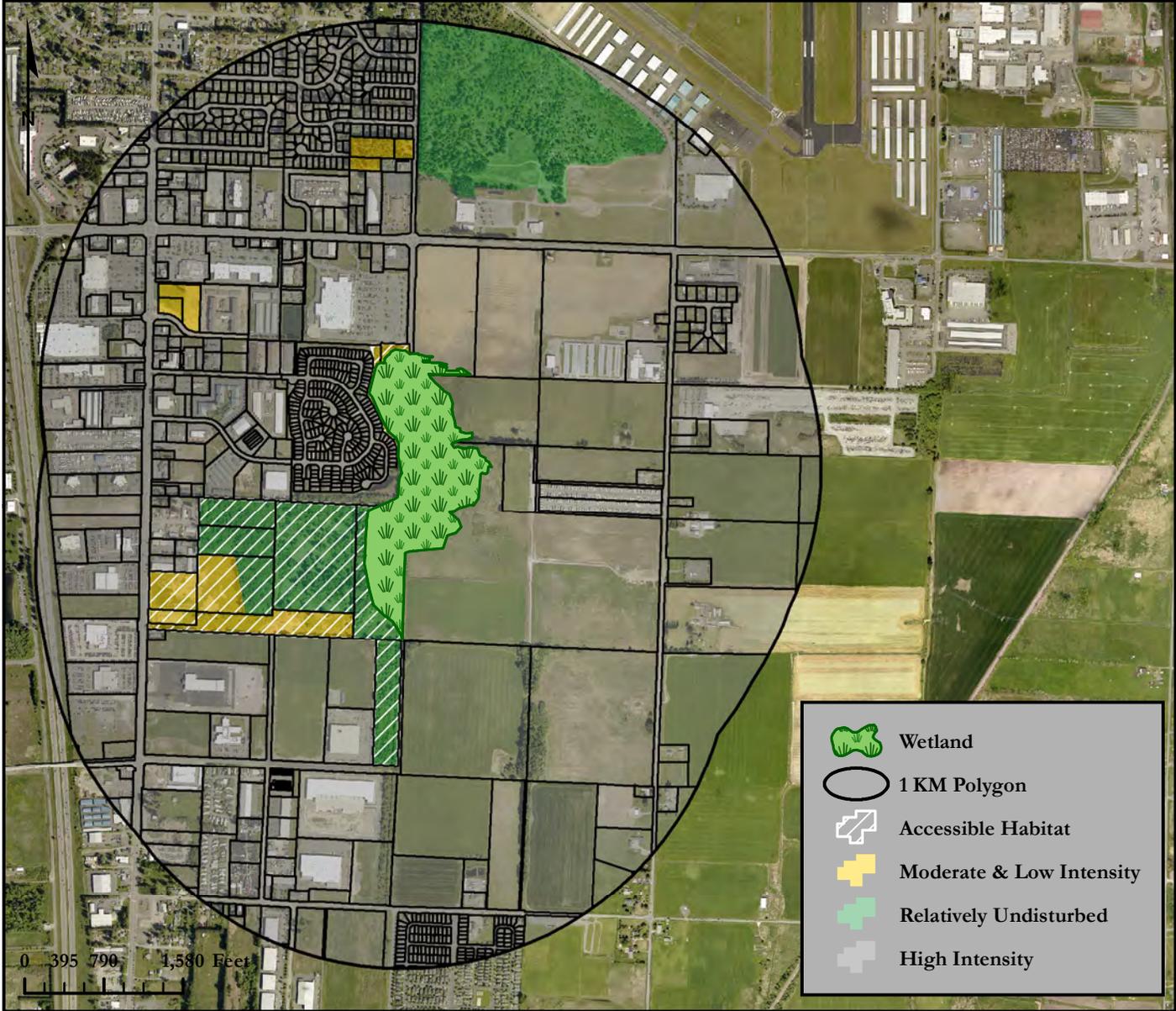
JOB: 1778.0001

BY: DS

SCALE: 1" = 1,400'

FIGURE NO. **3** of 5

HABITAT MAP



H.2.1		Wetland F	
	Abutting Undisturbed Habitat		3.67%
	Abutting Moderate & Low Intensity Land Uses		2.08%
	Accessible Habitat		4.71%
H.2.2			
	Undisturbed Habitat		9.20%
	Moderate & Low Intensity Land Uses		2.63%
	Undisturbed Habitat in 1 KM Polygon		10.51%
H.2.3			
	High Intensity Land Use in 1 KM Polygon		88.17%



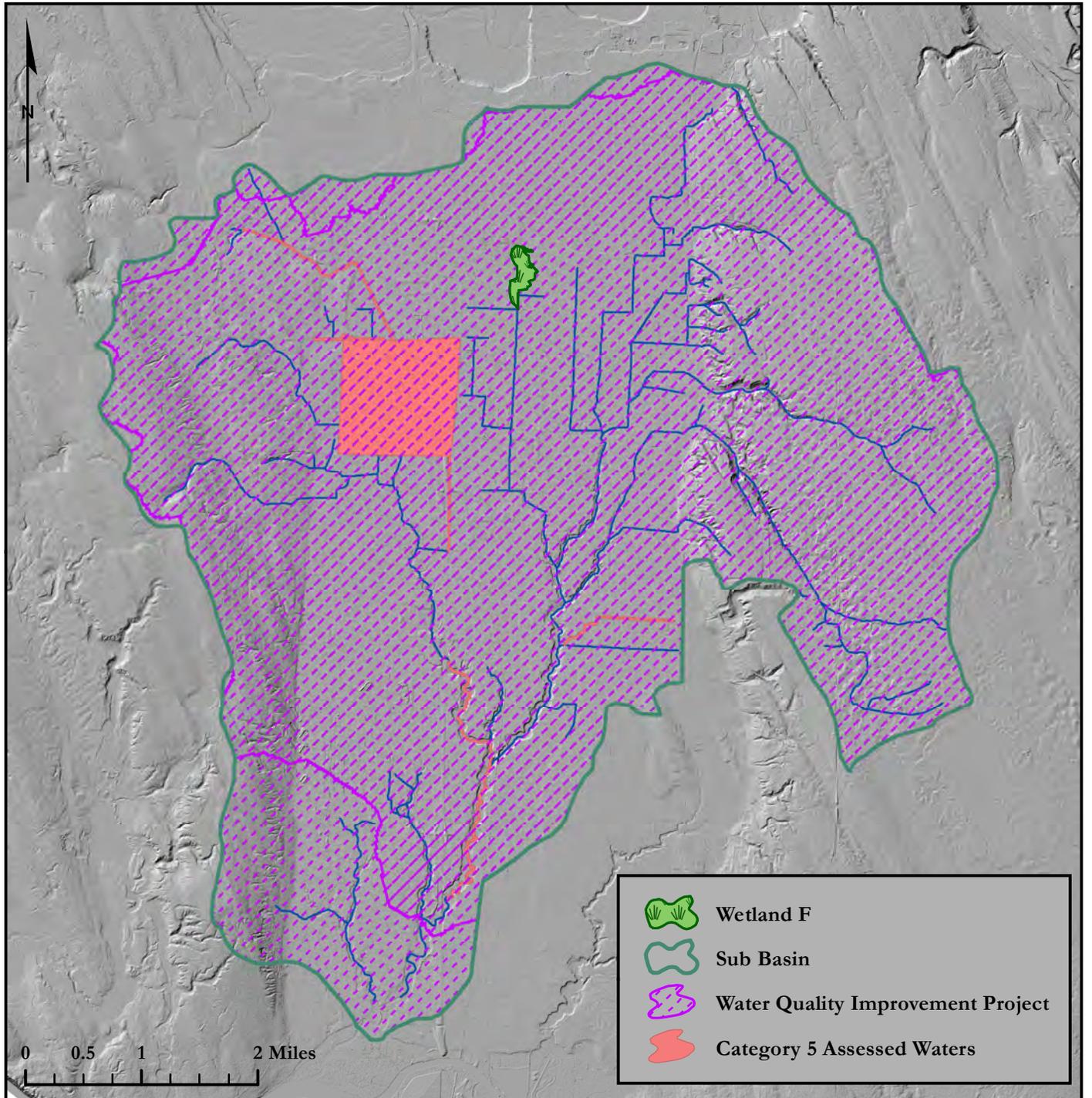
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OFFSITE WETLAND MITIGATION

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SNOHOMISH COUNTY PARCEL NUMBER:
 31052800100700

DATE: 11/10/2022
 JOB: 1778.0001
 BY: DS
 SCALE: 1" = 1,600'
 FIGURE NO. 4 of 5



Name	Pollutants	TMDL ID	WRIA	Year Approved
Snohomish River Tributaries Bacteria TMDL	Bacteria	34	7	2001
Stillaguamish River Watershed Temperature TMDL	Temperature	73	5	2006
Snohomish River Estuary Multiparameter TMDL	Ammonia-N, CBOD, Dissolved Oxygen	48	7	2002
Stillaguamish River Watershed Multiparameter TMDL	Bacteria, Dissolved Oxygen, pH, Mercury, Arsenic	75	5	2006



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OFFSITE WETLAND MITIGATION

16430 51ST AVE NE
 ARLINGTON, WA 98223

SNOHOMISH COUNTY PARCEL NUMBER:
 31052800100700

DATE: 11/10/2022
 JOB: 1778.0001
 BY: DS
 SCALE: 1" = 1 mi
 FIGURE NO. 5 of 5

Appendix H — Site Photographs

General site conditions in the northwest portion of the mitigation site on 07/14/21 (facing west).



General site conditions in the southeast portion of the mitigation site on 07/14/21 (facing southeast).



General site conditions in the east portion of the mitigation site on 07/14/21 (facing west).



General site conditions in the southwest portion of the mitigation site on 07/14/21 (facing east).



Appendix I — Qualifications

All field inspections, jurisdictional wetland boundary delineations, habitat assessments, and supporting documentation, including this ***Wetland Delineation and Fish and Wildlife Habitat Assessment Report*** prepared for the ***Centennial Park*** project site were prepared by, or under the direction of, Jon Pickett of SVC. In addition, the site investigations were performed by Erin Harker and Rachael Hyland, report preparation was completed by Rachael Hyland, and general project oversight and quality control was completed by Kyla Caddey.

Jon Pickett

Associate Principal

Professional Experience: 10+ years

Jon Pickett is an Associate Principal and Senior Scientist with a diverse background in environmental and shoreline compliance and permitting, wetland and stream ecology, fish and wildlife biology, mitigation compliance and design, and environmental planning and land use due diligence. Jon oversees a wide range of large-scale industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use entitlement projects from feasibility through mitigation compliance. Jon performs wetland, stream, and shoreline delineations and fish & wildlife habitat assessments; conducts code and regulation analysis and review; prepares reports and permit applications and documents; provides environmental compliance recommendation; and provides restoration and mitigation design.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science and Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mountains, Valleys, & Coast and Arid West Regional Supplements) and regularly performs wetland, stream, and shoreline delineations. Jon is a Whatcom County Qualified Wetland Specialist and Wildlife Biologist and is a Pierce County Qualified Wetland Specialist. He has been formally trained by WSDOE in the use of the Washington State Wetland Rating System 2014, How to Determine the Ordinary High-Water Mark (Freshwater and Marine), Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

Rachael Hyland, PWS, Certified Ecologist

Senior Environmental Scientist

Professional Experience: 9 years

Rachael Hyland is a Senior Environmental Scientist with extensive wetland and stream delineation and regulatory coordination experience. Rachael has a background in wetland and ecological habitat assessments in various states, most notably Washington, Connecticut, Massachusetts, Rhode Island, and Ohio. She has experience in assessing wetland, stream, riparian, and tidal systems, as well as complicated agricultural and disturbed sites. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects. She also has extensive knowledge of bats and their associated habitats and white nose syndrome (*Pseudogymnoascus destructans*), a fungal disease affecting bats which was recently documented in Washington.

Rachael earned a Bachelor of Science degree in Ecology and Evolutionary Biology from the University of Connecticut, with additional ecology studies at the graduate level. Rachael is a Professional Wetland Scientist (PWS #3480) through the Society of Wetland Scientists as well as a Certified Ecologist through the Ecological Society of America. She has completed 40-hour wetland delineation training for Western Mountains, Valleys, & Coast and Arid West Regional Supplement, in addition to formal training for the Northcentral and Northeast supplement, and experience with the Midwest, Eastern Mountains and Piedmont, and Atlantic and Gulf Coast supplements. She has also received formal training from the Washington State Department of Ecology in the Using the Revised 2014 Wetland Rating System for Western Washington, How to Determine the Ordinary High Water Mark, Navigating SEPA, Selecting Wetland Mitigation Sites Using a Watershed Approach, and Wetland Classification. Rachael has also received training from the Washington State Department of Transportation in Biological Assessment Preparation for Transportation Projects and is listed by WSDOT as a junior author for preparing Biological Assessments.

Kyla Caddey, PWS, Certified Ecologist

Senior Environmental Scientist

Professional Experience: 8 years

Kyla Caddey is a Senior Environmental Scientist with a diverse background in stream and wetland ecology, wildlife ecology and conservation, wildlife and natural resource assessments and monitoring, and riparian habitat restoration at various public and private entities. Kyla has field experience performing in-depth studies in both the Pacific Northwest and Central American ecosystems which included various environmental science research and statistical analysis. Kyla has advanced expertise in federal- and state-listed endangered, threatened, and sensitive species surveys and assessment of aquatic and terrestrial systems throughout the Puget Sound region. She has completed hundreds of wetland delineations and has extensive knowledge and interest in hydric soil identification. As the senior writer, she provides informed project oversight and performs final quality assurance / quality control on various types of scientific reports for agency submittal, including: Biological Assessments/Evaluations; Wetland, Shoreline, and Fish and Wildlife Habitat Assessments; Mitigation Plans, and Mitigation Monitoring Reports. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; prepares scientific reports; and provides environmental permitting and regulatory compliance assistance to support a wide range of commercial, industrial, and multi-family residential land use projects.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has also completed additional coursework in Comprehensive Bird Biology from Cornell University. Ms. Caddey is a Certified Professional Wetland Scientist (PWS #3479) through the Society of Wetland Scientists and Certified Ecologist through the Ecological Society of America. She has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), is a Pierce County Qualified Wetland Specialist and Wildlife Biologist, and is a USFWS-approved Mazama pocket gopher survey biologist. Kyla has been formally trained through the Washington State Department of Ecology, Coastal Training Program, and the Washington Native Plant Society in winter twig and grass, sedge, and rush identification for Western WA; Using the Credit-Debit Method in Estimating Wetland Mitigation Needs; How to Determine the Ordinary High Water Mark; Using Field Indicators for Hydric Soils; How to Administer Development Permits in Washington Shorelines; Puget Sound Coastal Processes; and Forage Fish Survey

Techniques. Additionally, she has received formal training in preparing WSDOT Biological Assessments.

Erin Harker

Staff Wetland Scientist

Professional Experience: 3 years

Erin Harker is a Staff Wetland Scientist with diverse ecological experience in both field and laboratory settings in the Pacific Northwest. She has gained hands-on experience involving research on water quality, salmon runs, amphibian surveys, restoration project performance, and marine mammal hydro-acoustics. Erin is proficient in collecting and analyzing environmental data; riparian restoration and wetland mitigation monitoring principles and techniques; analyzing local, state, and federal environmental code and regulations; and technical writing. Erin has additional experience engaging students and volunteers in a suite of environmental curriculums. She currently performs wetland, ordinary high water, and forensic delineations, in addition to assisting clients through the various stages of land use planning by conducting environmental code analysis; preparing environmental assessments, mitigation reports, and biological evaluations; and completing permit applications.

Erin graduated from Western Washington University with a Bachelor of Science degree in Environmental Science with a Marine Ecology focus. She has received 40-hour Wetland Delineation Training through the USACE and formal training through the WSDOE and Coastal Training Program in conducting forage fish surveys; using the credit-debit system for estimating wetland mitigation needs, determining the ordinary high water mark; Puget Sound coastal processes; conducting eelgrass delineations; using the 2014 wetland rating system; using field indicators for hydric soils; and administering permits in the shoreline jurisdiction.