WETLAND AND FISH AND WILDLIFE HABITAT Assessment and Groundwater Monitoring Report

M-51 INDUSTRIAL

JANUARY 2022



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JANUARY 10, 2022

PROJECT LOCATION

16329 51st Avenue Northeast Marysville, Washington 98271

PREPARED FOR

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PREPARED BY

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Executive Summary

Soundview Consultants LLC (SVC) is assisting Mowat Construction (Applicant) with wetland and fish and wildlife habitat assessments for the proposed industrial development of an approximately 75.83acre site located at 16329 51st Avenue Northeast in the City of Marysville, Washington. The subject property consists of four parcels situated in the Southwest ¹/₄, of Section 27, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Numbers 31052700200700, 31052700201000, 31052700301100, and 31052700300100).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, and other fish and wildlife habitat in the winter and spring of 2020, with formal groundwater monitoring conducted from late winter through early spring of 2020. Using current methodology, the site investigations identified seven offsite wetlands (Wetlands A-D, L, Y, and Z) within 150 feet of the subject property to the north and east. No wetlands were identified onsite. Offsite Wetlands A-D, Y and Z are Category III depressional or riverine wetlands with standard 75-foot buffers under Marysville Municipal Code (MMC) 22E.010.100.4, and offsite Wetland L is a Category IV depressional wetland with a standard 35-foot buffer width. One Type F stream (Edgecomb Creek) is located immediately offsite to the east and is subject to a standard 150-foot buffer per MMC 22E.010.220(a). The site investigation also identified three non-jurisdictional artificially excavated ditches (51st Avenue East Ditch, Ditch Z, and Ditch V); these three roadside and agricultural ditches are not regulated as streams under MMC 22E.010.210(1). No other potentially-regulated wetlands, fish and wildlife habitat, streams, or priority species were identified on or within 150 feet of the subject property.

SVC installed 24 groundwater monitoring observation wells on the subject property and performed groundwater monitoring during the winter and spring of 2020 on a weekly basis. Observations of water table elevations were compared with precipitation data to determine whether wetland hydrologic conditions were present on the subject property during the growing season. None of the monitoring wells revealed at least 14 consecutive days of water table at or above 12 inches below ground surface (bgs) during the growing season, the United States Army Corps of Engineers (USACE) standard for wetland hydrology (USACE, 2010).

The Applicant proposes clearing and grading actions as preparation for future industrial development on the subject property with associated infrastructure. The proposed clearing and grading/site layout is carefully planned to avoid impacts to the offsite wetland and stream buffers projected onsite. Appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures including silt and high-visibility construction fencing will be implemented throughout construction to minimize potential impacts from construction-related activities to the onsite critical areas.

The table below identifies the wetlands, stream, and ditches observed during the site investigation and summarizes the potential regulatory status by the City of Marysville, Washington State Department of Ecology (WSDOE), and USACE.

Wetland/ Waterbody	Size/Length (onsite)	Category ¹ or Type ²	Regulated under MMC 22E.010	Regulated under RCW 90.48	Regulated under Section 404 of the CWA
51 st Ave NE Ditch	1,300	N/A (non- typed)	No	No	No
Ditch Z	300	N/A (non- typed)	No	No	No
Ditch V	1,275	N/A (non- typed)	No	No	No
Wetland A	Offsite	III	Yes	Yes	Not Likely
Wetland B	Offsite	III	Yes	Yes	Not Likely
Wetland C	Offsite	III	Yes	Yes	Not Likely
Wetland D	Offsite	III	Yes	Yes	Not Likely
Wetland L	Offsite	IV	Yes	Yes	Likely
Wetland Y	Offsite	III	Yes	Yes	Likely
Wetland Z	Offsite	III	Yes	Yes	Likely
Edgecomb Creek	Offsite	F	Yes	Yes	Yes

Current Washington State Department of Ecology (WSDOE) wetland rating (Hruby, 2014) per MCC 22E.010.060.1. DNR Water Typing system per MMC 22A.020. 1.

2.

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting Mowat Construction (Applicant) with wetland and fish and wildlife habitat assessments for the proposed industrial development of an approximately 75.83-acre site located at 16329 51st Avenue Northeast in the City of Marysville, Washington. The subject property consists of four parcels situated in the Southwest ¹/₄, of Section 27, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Numbers 31052700200700, 31052700201000, 31052700301100, and 31052700300100).

The purpose of this Wetland and Fish and Wildlife 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 subject property and assess potential impacts to any such critical areas and/or species from the proposed project.

This report provides conclusions and recommendations regarding:

- Site description, project description, and area of assessment;
- Background research and identification of potentially-regulated critical areas within the vicinity of the proposed project;
- Identification and assessment of potentially-regulated wetlands and other aquatic features;
- Identification and assessment of potentially-regulated fish and wildlife habitat;
- Existing site map detailing identified critical areas and standard buffers;
- Documentation of impact avoidance and minimization measures; and
- Supplemental information necessary for local regulatory review.

Chapter 2. Proposed Project

2.1 Location

The subject property is located at 16329 51st Avenue Northeast in the City of Marysville, Washington (Figure 1). The subject property consists of four parcels situated in the Southwest ¹/₄, of Section 27, Township 31 North, Range 5 East, W.M (Snohomish County Tax Parcel Numbers 31052700200700, 31052700201000, 31052700301100, and 31052700300100).

To access the subject property from I-5 North from Everett, take Exit 206 to merge onto WA-531 East/172nd Street Northeast/Edgecomb Road and continue for 0.3 mile. Merge right onto WA-531/172nd Street Northeast/Edgecomb Road and continue for 1.2 miles. Turn right on 51rst Avenue Northeast/Shoultes Road and continue for 0.6 mile where the subject property will be on the left.



Figure 1. Vicinity Map.

2.2 Proposed Project

The proposed project consists of clearing and grading actions as preparation for a future industrial development on the subject property. The proposed clearing and grading/site layout is carefully planned to avoid impacts to the offsite wetland and stream buffers projected onsite. Appropriate best

management practices (BMPs) and temporary erosion and sediment control (TESC) measures including silt and high-visibility construction fencing will be implemented throughout construction to minimize potential impacts from construction-related activities to the onsite critical areas.

Chapter 3. Methods

SVC conducted multiple site investigations and weekly groundwater monitoring on the subject property to assess any potentially-regulated wetlands, streams, and other fish and wildlife habitat on or within 150 feet of the subject property. Groundwater monitoring was conducted on a weekly basis from January 8 to May 7, 2020 with additional hydrology data collected on June 2, 2020 at 22 of the 24 monitoring well locations. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic maps, National Resource Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington State Department of Natural Resources (DNR) water typing system, Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and Salmonscape mapping tools, Snohomish County and City of Marysville Geographic Information Systems (GIS) data, and various orthophotographic resources (Appendix B). Appendix A contains further details for the methods and tools used to prepare this report.

The initial site investigation in Winter of 2020 observed some areas of surface water in several locations on the subject property, and disturbance of soils and vegetation due to the ongoing agricultural practices on the site. Due to the highly disturbed conditions, soils and vegetation were not considered reliable indicators of wetland conditions across the entire subject property. Direct hydrologic monitoring was determined to be necessary to evaluate wetland presence on the subject property. The USACE provides a technical standard for monitoring hydrology. The regional hydrologic standard requires 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface during the growing season at a minimum frequency of 5 years out of 10 (50 percent or higher probability) (USACE, 2010).

To evaluate wetland hydrology according to this criterion, trained SVC staff set up twenty-four monitoring locations (MP-1 to MP-24) across the subject property. Monitoring locations were selected throughout the subject property. One monitoring well was installed at each monitoring location. Each monitoring well was constructed of a 5-foot length of 2-inch diameter polyvinyl chloride (PVC) pipe with narrow slits extending 24 inches from one end. Each monitoring well was capped at each end with the lower cap fixed and perforated and an upper inspection cap with tamper-resistant locking mechanism. Each monitoring well was installed to a depth of approximately 36 inches, surrounded by sand to 3 inches above the top slits. Each monitoring well was then packed with native soil and topped with a Bentonite seal (USACE, 2005). The monitoring wells at locations MP-1 through MP-24 were installed on January 7 and 8, 2020 (see Appendix C for a site map with monitoring well locations and Appendix F for photographs of representative monitoring wells installed throughout the subject property).

The USACE technical standard for water-table monitoring of potential wetland sites requires that water-level measurements be recorded daily starting 5 to 7 days before the first day of the growing season and continuing until the end of the growing season or until the minimum standard for wetland hydrology is met that year (USACE, 2005). Daily water level measurements were determined to not be feasible due to budget constraints or warranted as weekly monitoring events can provide adequate results. Water level measurements were collected to the nearest 0.25-inch from each monitoring well using a tape measurer on a weekly basis (every 6 to 8 days) from January 21, 2020 to May 7, 2020 by qualified SVC staff. Monitoring visits ended on May 7, 2020 following 8 consecutive site visits in

which water tables were recorded below 12 inches for 22 out of 24 wells (the other 2 wells were recorded at or above 12 inches only once during the 8 consecutive site visits).

The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010) states that growing season dates are needed in the event that recorded hydrologic data, such as water-table monitoring data must be analyzed. The regional supplement establishes two indicators for determining the start of the growing season: 1) aboveground growth and development of vascular plants, and 2) soil temperature as an indicator of microbial activity. The growing season has begun when the soil temperatures as measured at 12 inches below ground surface (bgs) is 41 °F or higher; the soil temperature should remain continuously at or above 41°F during the monitoring period (USACE, 2010). Vascular plant data and soil temperature data were not collected on the maintained site/field. Soil temperature data is available from the Washington State University (WSU) weather station in Snohomish located south of the subject property. The start of the growing season for 2020 was conservatively determined using data on daily minimum soil temperatures as measured at 8 inches bgs from the WSU Snohomish station. The start of the growing season on March 19, 2019 (Appendix G, Figure 1) is considered conservative because the WSU soil data was recorded at 8 inches bgs; soil temperatures at 12 inches bgs would likely not reach 41°F until a later time. Wetland hydrology was considered met during the monitoring period when water levels were observed to be within 12 inches of the surface or above the surface for at least 14 consecutive days during the growing season.

Opt 1: Long-term water table monitoring is often impractical in a regulatory context, and short-term studies may provide sufficient information to evaluate water tables if the normality of precipitation during the monitoring period is considered (USACE, 2005). Normal precipitation values are computed using three consecutive decades of data; the current climate normal datasets are based on 1981 to 2010 datasets (NCEI). Normal precipitation values are provided at select weather stations with long-term precipitation records. The NRCS Climate Analysis for Wetlands Tables (WETS Tables) provide 30th and 70th percentiles for total monthly precipitation values based on these long-term precipitation records. SVC also assesses the percent of normal precipitation prior to a site visit based on daily precipitation values to evaluate the impact of near-term precipitation events to groundwater systems. The normality of precipitation during the 2020 growing season was evaluated based on the WETS 30th and 70th percentile ranges and the percent of normal precipitation based on daily precipitation values. The normality of precipitation during the monitoring period was assessed using data from collected by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service at the Arlington weather station.

Onsite wetland presence/absence and offsite wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and 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). PVC-tubing was labeled (MP-1 to MP-24) and marked the groundwater monitoring stations as well as formal sampling locations where detailed data was collected (DP-1 to DP-24). 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 (DP-25 and DP-33) outside of the well monitoring locations.

SVC classified all offsite wetlands using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979) classification systems. Following classification and assessment, WSDOE-trained scientists rated and categorized all offsite wetlands using the *Washington State Wetlands Rating System for Western Washington* (Hruby, 2014) and the definitions established in MMC 22E.010.060.

Ordinary high water mark (OHW) determinations were made using WSDOE's method detailed in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al., 2016) and definitions established in Revised Code of Washington (RCW) 90.58.030(2)(b) and Washington Administrative Code (WAC) 173-22-030(11). To mark the banks of potentially regulated waters, blue surveyor's flagging was alpha-numerically labeled and tied to vegetation or lath. Surface water features were classified using the DNR water typing system as outlined in WAC 222-16-030 and the guidelines established in MMC 22E.010.210(1).

The fish and wildlife habitat assessment was conducted during the same site visit 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

The subject property is located in an agricultural setting in the City of Marysville (Figure 2). The subject property consists of large fields that have been maintained for agricultural purposes, paved and gravel driveways, and associated barn structures. The subject property abuts a Copart auto auction development consisting of an office and large parking area to the north and is bound by agricultural development to the east and south. To the west, the subject property is bound by 51st Avenue Northeast and a mobile home park surrounded by agricultural development beyond that. Topography on the subject property is generally flat, with an approximate elevation of 114 feet above mean sea level (amsl). A Snohomish County contours map is provided in Appendix B1. The subject property is located within Water Resource Inventory Area (WRIA) 7 - Snohomish.

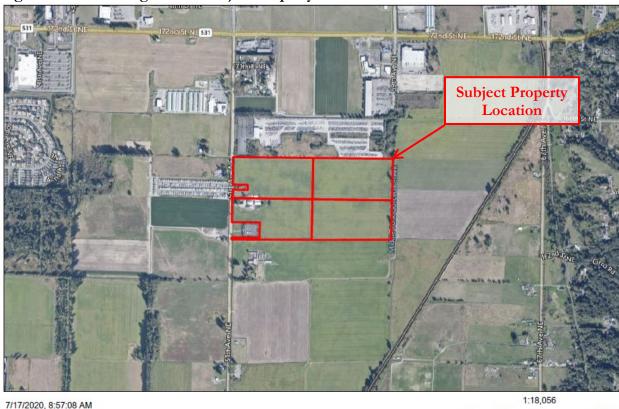
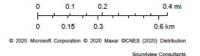


Figure 2. Aerial Image of the Subject Property.

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4.2 Vegetation

The subject property is currently maintained for agricultural use and consists of hay fields dominated by an herbaceous community of meadow fescue (*Schedonorus pratensis*), tall fescue (*Schedonorus* arundinaceus), and orchard grass (Dactylis glomerate), common velvet grass (Holcus lanatus), bentgrass (Agrostis sp.), with patches of non-native, invasive reed canarygrass (Phalaris arundinacea).

4.3 Soils

The NRCS Soil Survey of Snohomish County, Washington identifies two soil series on the subject property: Custer fine sandy loam (13) and Norma loam (39). A soil map is provided in Appendix B2. Below is a detailed description of the soil profiles.

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 hydric on the Snohomish County Hydric Soils list (NRCS, 2020).

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. Norma loam is listed as hydric on the Snohomish County Hydric Soils list (NRCS, 2020).

4.4 Critical Area and Priority Habitat Inventories

The City of Marysville critical areas map (Appendix B3) Snohomish County critical areas inventory (Appendix B4), DNR water typing map (Appendix B5), the USFWS NWI map (Appendix B6), WDFW PHS and SalmonScape mapping tools (Appendices B8 and B7) identify one stream (Edgecomb Creek) running north-south along the eastern boundary of the subject property. WDFW documents the presence of coho salmon (*Oncorhynchus kisutch*), chum salmon (*Oncorhynchus keta*), and resident coastal cutthroat trout (*Oncorhynchus clarki*) as well as the modeled/presumed presence of bull trout (*Salvelinus malma*), Chinook salmon (*Oncorhynchus tshawytscha*), pink salmon (*Oncorhynchus gorbuscha*), and steelhead trout (*Oncorhynchus mykiss*) along this section of Edgecomb Creek.

The City of Marysville, Snohomish County, USFWS NWI, and WDFW identify a potential water that acts as a roadside ditch parallel to the western property boundary and on the east side of 51st Avenue Northeast. The City of Marysville also identifies a lateral non-regulated water that runs along the southern property boundary and connects to the roadside ditch on the east side of 51rst Avenue Northeast. The ditch on the east side of 51st Avenue Northeast is identified as a potential Type N water by DNR and a potential Type F water by Snohomish County. WDFW documents historical resident coastal cutthroat trout presence within this ditch; however, WDFW deregulated this ditch as a regulated water on January 16, 2009. In this approval, WDFW confirmed that the waterbody had "characteristics of an excavated ditch, did not carry natural runoff, and had no recorded history as a natural watercourse" (Brock, 2009). Refer to Chapter 5, Section 5.2 for more details regarding the ditch along 51st Avenue Northeast.

The City of Marysville critical areas inventory identifies a potential wetland along the lateral ditch connecting to 51st Avenue Northeast along the southern boundary of the subject property. The Snohomish County critical areas inventory also identifies potential wetlands throughout the site based on remote sensing models and within 150 feet of the project area. No other potential wetlands, waterbodies, or other habitat areas are identified on or within 150 feet of the subject property.

4.5 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) weather station in Arlington, Washington in order to obtain precipitation values during and preceding the site investigations. A summary of this data collected is provided in Table 1. Precipitation data for the monitoring well observations visits is provided in Appendix G.

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 (prior 30 days/year)
01/07/2020	0.31	0.87	3.64	4.05	8.04/5.84	18.42/18.75	138/98
01/08/2020	0.25	0.31	3.14	4.30	8.29/5.84	18.67/18.95	142/99
03/12/2020	0.00	0.02	1.37	3.05	5.63/4.04	35.05/28.50	139/123
05/07/2020	0.05	0.08	1.70	2.25	3.40/3.98	40.18/36.34	85/111
06/02/2020	0.02	0.00	1.42	3.14	4.77/3.61	44.09/39.38	132/112
06/03/2020	0.00	0.02	1.42	2.54	4.77/3.61	44.09/39.49	132/112

Table 1. Precipitation Summary¹.

Notes:

1. Precipitation volume in inches. Data obtained from the NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew) for Arlington weather station.

2. Year-to-date precipitation is the total for the water year from October 1st to the onsite date(s).

Precipitation levels during the initial site investigations and well installation dates in January 2020 were within the statistical normal range for the 2019/2020 water year (98 and 99 percent of normal), and higher than the statistical normal range for the 30 days prior (138 and 142 percent of normal). Additionally, almost 1 inch of rain was recorded the day before the January 7, 2020 site investigation, and over 3 inches of rain was recorded the week prior to both January 2020 site investigations. These precipitation data suggest hydrologic conditions encountered during these site investigations were likely exaggerated.

Precipitation levels were within the statistical normal for the water year (123 percent of normal) during the March 2020 investigation, but slightly elevated for the 30 days prior (139 percent of normal). These data suggest conditions onsite may have been slightly exaggerated.

Precipitation levels were within normal for both the water year and 30 days prior (111 and 85 percent of normal) for the May 2020 site visit. These data suggest conditions onsite were normal.

Precipitation levels during the follow-up investigations in June 2020 were within the statistical normal range for the water year (105 percent of normal), and greater than the statistical normal range for the 30 days prior (148 and 146 percent of normal). These precipitation data suggest hydrologic conditions

encountered during these site investigations may have been exaggerated. Such conditions were considered when making professional wetland boundary determinations.

Chapter 5. Results

Groundwater monitoring from early January to May 7, 2020 observed water table elevation responses to precipitation during the growing season with additional hydrology data collected on June 2, 2020 at 22 of the 24 monitoring well locations. None of the 24 groundwater monitoring locations met the USACE standard for wetland hydrology, and no potentially-regulated wetlands are located onsite. However, the site investigations in the spring of 2020 did identify three artificially excavated ditches (51rst Avenue East Ditch and Ditches Z and V), one offsite Type F stream (Edgecomb Creek), seven potentially-regulated offsite wetlands (Wetlands A - D, L, Y, and Z). No other potentially-regulated wetlands, fish and wildlife habitat, streams, or priority species were identified on or within 150 feet of the subject property. Additional offsite wetlands are located further than 150 feet to the east of the subject property.

5.1 Groundwater Monitoring

2020 Growing Season

Daily minimum soil temperature from the WSU Snohomish weather station indicates that the soil temperature fluctuated above and below 41°F during January, February, and early March 2020. Soil temperatures rose and remained above 41°F at a depth of 8 inches bgs beginning on March 19 (Appendix G, Figure 1), and this date was determined to be the start of the growing season for 2020 in the vicinity of the subject property following the guidance provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010).

Precipitation

Daily precipitation observed at the Arlington weather station ranged from 0.00 inch to 1.69 inches during the monitoring period between January 8 and May 7, 2020. Additional precipitation occurred between the end of the monitoring period on May 7, 2020 and delineation investigations on June 2 and June 3, 2020. Daily precipitation during this mid and late May period ranged from 0.00 inch to 1.33 inches (Appendix G – Table 5). During the 7 days prior to the April 2, 2020 monitoring date, 1.46 inches of precipitation accumulated, the greatest 7-day accumulation prior to a monitoring date during the growing season.

During the monitoring period between January 8 and May 7, 2020, the prior 30 days of precipitation ranged from 39 to 230 percent of normal. The prior 30 days of precipitation was above or near the normal from the January 8 to March 26 monitoring dates (ranging from 78 to 230 percent of normal). The prior 30 days of precipitation dropped below normal from the April 2 to May 7 monitoring dates (ranging from 39 to 67 percent of normal) due to a relatively dry April in which only 1.96 inches of precipitation accumulated. Substantial precipitation (5.58 inches) accumulated during May, and the prior 30 days of precipitation during the June 2, 2020 site investigation was 132 percent of normal (Appendix G – Table 2).

The varying near-term precipitation conditions are also summarized by the WETS Table 30th and 70th percentiles for total monthly precipitation from the Arlington weather station. Monthly precipitation accumulations during January and February were above normal with monthly precipitation returning to normal during March. Monthly precipitation accumulation during April was below normal;

however, the substantial precipitation during May resulted in a monthly precipitation accumulation above the normal (Appendix G – Table 1). The long-term precipitation conditions were relatively stable and near normal with the water year percent of normal ranging from 99 to 125 percent of normal throughout the monitoring period (Appendix G – Table 2).

Groundwater Levels

During the January to May monitoring period, the water table levels gradually declined with intermittent increases in water table level occurring response to precipitation (Appendix G – Figure 2). However, the water table observed during the monitoring visits did not consistently rise from the previous monitoring visit with precipitation accumulations greater than 1 inch during the prior 7 days. On the March 12 monitoring visit, the water table at all well locations had fallen from levels observed the week before despite 1.37 inches during the 7 days prior to the monitoring visit (Appendix G – Table 4). These observations suggest that rapid draining may occur on the subject property fields. Actively managed drain tiles are present throughout the site, running north to south, and in the eastern portion of the site, running east to west. The tiles appear to convey groundwater to the south into Ditch V. The drain tiles likely contribute to rapid draining on the subject property.

During the January and February monitoring visits the groundwater levels at all wells either remained above or fluctuated above and below 12 inches bgs. These high groundwater levels are consistent with rainy season conditions and the above normal precipitation accumulation observed during January and February 2020. On and following the March 19 monitoring visit, the groundwater levels at all wells dropped below 12 inches bgs. The only two observations of groundwater levels above 12 inches bgs following March 19 are at Well 14 on April 2and Well 23 on April 23. Groundwater levels on June 2, 2020 were observed well below 12 inches bgs at all wells (ranging from 16.5 to 30.5 inches bgs) (Appendix G – Table 3). Following the start of the growing season on March 19, 2020, none of the wells met the USACE wetland hydrology criterion of at least 14 consecutive days of water table levels at or above 12 inches.

The early growing season was relatively dry with the prior 30 days of precipitation accumulation below normal for all April monitoring visits. However, intermittent precipitation events did occur in April with 1.46 inches of precipitation occurring during the 7 days prior to the April 2 monitoring visit and 1.09 inches of precipitation occurring during the 7 days prior to the April 23 monitoring visit. These intermittent precipitation events brought the prior 30 days of precipitation accumulation to near normal (67% and 64% percent of normal for the April 2 and April 23 monitoring visits respectively) (Appendix G – Table 2). As described above, the water table levels were below 12 inches bgs for 23 out of the 24 wells on each of the April 2 and April 23 monitoring visits. Precipitation increased in May with 5.58 inches accumulating during the month, and the prior 30 days of precipitation percent of normal was 85% and 132% for the May 7 monitoring visit and June 2 follow-up visit, respectively. The water table levels were below 13.5 inches bgs for all well locations on May 7 and below 16.5 inches bgs for all well locations on June 2. These observations of water table levels below 12 inches following intermittent precipitation events in April and high precipitation in May support the conclusion that no wetland hydrology was observed at any of the monitoring well locations.

5.2 Onsite Ditches

Ditch Z

An intentionally created, artificially excavated, linear agricultural drainage ditch (Ditch Z) was identified in the western portion of the site, following the fence line of the residential property located along 51st Avenue East and connecting to the 51rst Avenue East Ditch. Ditch Z is a historical agricultural ditch, which has largely been abandoned and is unmaintained aside from occasional mowing. The ditch is approximately 1 to 2 feet wide on average. The channel is loosely defined with areas of sediment deposits and dense vegetation. Dominant vegetation within the ditch includes Himalayan blackberry (*Rubus armeniacus*), common velvet grass, reed canary grass, creeping buttercup (Ranunculus repens), orchard grass, and bittersweet nightshade (Solanum dulcamara). Per MMC 22A.020.200 stream definition, "[s] treams do not include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, storm water runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse". As this ditch does not appear to be a relocated stream channel, and was artificially and intentionally created for irrigation purposes, it is not anticipated to be Additionally, given the narrow channel width, loss of definition, and artificial and regulated. intentional creation, the ditch would likely not meet the WAC 22-60-030 stream definition.

51st Avenue East Ditch (Ditch Y)

The site investigation identified an onsite ditch (51st Avenue East Ditch) parallel to 51st Avenue Northeast on the western property boundary. The ditch is approximately 1,300 feet (0.25 mile) long adjacent to the subject property. The ditch begins at a culvert at the northwest corner of the site and continues offsite to the south. Algal mats were observed in the ditch, and the ditch channel is vegetated with non-native, invasive reed canarygrass, indicating slower and more stagnant flows. WDFW deregulated the ditch on January 16, 2009. In this approval, WDFW confirmed that the waterbody had "characteristics of an excavated ditch, did not carry natural runoff, and had no recorded history as a natural watercourse" (Brock, 2009). In 2010 WDFW issued a Hydraulic Project Approval (HPA) to install a fish passage screen barrier along the 51st Avenue East Ditch. This fish passage screen barrier was designed by WDFW and installed by October 1, 2010 to prohibit fish from the Middle Fork of Quilceda Creek from entering the de-regulated ditch (Bails, 2010). The 51st Avenue East Ditch was considered to be a dead-end roadside ditch that only carried seasonal flows and caused fish to become stranded (Otak, 2009). On May 19, 2020, SVC observed this fish passage screen barrier along the 51st Avenue East Ditch south of the subject property near Timberbrook Drive; the fish screen barrier is located near the mapped confluence of Edgecomb Creek and Olaf Strad creek that forms the Middle Fork of Quilceda Creek. The USACE issued an Approved Jurisdiction Determination (AJD) on July 30, 2020 on the 51st East Ditch, and determined the ditch is nonjurisdictional (NWS-2020-571); therefore, this ditch is not regulated federally. The 51st Avenue East Ditch lacks natural stream characteristics (i.e. bed and bank) as it is an excavated roadside ditch and contains a mucky bottom with mats of vegetation including reed canarygrass. As such, the 51st Avenue East Ditch does not meet the definition of a typed waterbody according to WAC 222-16-030 and is not regulated as a stream under MMC 22E.010.210.1.

Drainage Ditch V

An intentionally created, artificially excavated, linear agricultural drainage ditch (Ditch V) was identified along the southern boundary of the site. The ditch drains to the 51st Avenue East Ditch.

The City of Marysville maps this ditch as a non-regulated water. During the site visits, approximately 1 foot of stagnant water was observed in this ditch with lots of algal growth. The ditch is approximately 5 feet wide with vertical sides with non-native invasive reed canarygrass and Himalayan blackberry along the edges, outside of the ditch. The drainage ditch lacks water quality to support fish use, lacks a natural defined bed and bank, and therefore does not meet the definition of a typed waterbody according to WAC 222-16-030. Additionally, besides the ponded water present and minimal hydrophytic vegetation within the ditch, no hydric soils were observed that would indicate this ditch meets wetland delineation criteria. As such, Ditch V is not likely regulated as a stream per MMC 22E.010.210.1 or as a wetland under MMC 22E.010.060.

5.3 Offsite Wetlands

A total of seven offsite wetlands (Wetlands A-D, L, Y, and Z) were identified within 150 feet of the project area. A map depicting the location of each wetland is presented in Appendix C. The identified offsite wetlands to the north (Wetlands A – D) contained a predominance of hydrophytic vegetation. Hydric soils and hydrology were assumed for these offsite wetlands based on available soils mapping, low points observed on aerial imagery and topographic mapping, and visual observations. Wetlands A – D were previously identified during wetland assessment in support of development proposed on the adjacent site to the north in the early 2000s (Aqua-Terr Systems, 2001 and Wetland Resources, 2001). A draft major development permit for the adjacent site identified that the applicant would construct a solid, 8-foot-tall fence around the entire perimeter of this development, separating the development from the wetlands, stream, and associated buffers (City of Arlington, 2001). During the 2020 site investigations, SVC observed this fence separating Wetlands A-D from the development on the site north adjacent to the subject property. The identified offsite wetlands to the east (Wetlands L, Y, and Z) contained indicators of hydric soils, wetland hydrology, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Data forms documenting non-wetland conditions onsite are provided in Appendix D, and wetland rating forms are provided in Appendix E. Formal wetland rating maps are not included for the offsite wetlands. Table 4 below summarizes the wetlands identified during the site investigation.

Predominant Wetland Classification / Rating					Wetland	Standard
Wetland	Cowardin ¹	HGM ²	WSDOE ³	City of Marysville ⁴	Size Onsite (SF)	Buffer Width (feet) ⁵
Offsite A	PEM/SSA	Depressional	III	III	Offsite	75
Offsite B	PEMA	Depressional	III	III	Offsite	75
Offsite C	PEMA	Depressional	III	III	Offsite	75
Offsite D	PFOA	Depressional	III	III	Offsite	75
Offsite L	PEMA	Depressional	IV	IV	Offsite	35
Offsite Y	PSSC	Riverine	III	III	Offsite	75
Offsite Z	PEMA	Riverine	III	III	Offsite	75

Table 2.	Wetland	Summary
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Notes:

 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: A = Temporarily Flooded, C = Seasonally Flooded.

- 2. Brinson, M. M. (1993).
- 3. Current WSDOE rating (Hruby, 2014).
- MMC 22E.010.060.1 wetland classification. City of Marysville rating according to Washington State Wetland Rating System for Western Washington (Hruby, 2014).
- 5. MMC 22E.010.100.4 standard buffer widths.

Wetland A

Wetland A is approximately 19,600 square feet (0.45 acres) in size and is located offsite north of the subject property's northwest corner. Hydrology for Wetland A is provided by seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass, common velvetgrass, soft rush (*Juncus effusus*), creeping buttercup, black cottonwood (*Populus balsamifera*), and Himalayan blackberry. Wetland A is a Palustrine Emergent, Scrub-Shrub, Temporarily Flooded (PEM/SSA) wetland. Per MMC 22E.010.060.1, Wetland A is considered a Category III depressional wetland.

Wetland B

Wetland B is approximately 34,000 square feet (0.78 acre) in size and is located is located offsite north of the subject property's north-central area. Hydrology for Wetland B is provided by a seasonally-high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated reed canarygrass, common velvetgrass, creeping buttercup, and soft rush. Wetland B is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060.1, Wetland B is a Category III depressional wetland.

Wetland C

Wetland C is approximately 31,200 square feet (0.72 acres) in size and is located offsite north of the subject property's north-central area. Hydrology for Wetland C is provided by a seasonally-high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass, soft rush, common velvetgrass, and creeping buttercup. Wetland C is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060.1, Wetland C is a Category III depressional wetland.

Wetland D

Wetland D is approximately 10,300 square feet (0.24 acre) in size and is located offsite north of the subject property's north-central area. Hydrology for Wetland D is provided by a seasonally-high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by black cottonwood, Himalayan blackberry, and reed canarygrass. Wetland D is a Palustrine Forested, Temporarily Flooded wetland (PFOA). Per MMC 22E.010.060.1, Wetland D is a Category III depressional wetland.

Wetland L

Wetland L is 15,765 square feet (0.36 acre) in size and is located on the offsite to the east of the subject property. Hydrology for Wetland L is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat. Wetland L is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland L is a Category IV depressional wetland.

Wetland Y

Wetland Y is 662 square feet (0.02 acre) in size and is located offsite to the east of the subject property, along the east side of Edgecomb Creek. Hydrology for Wetland Y is provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and seasonal flooding from Edgecomb Creek. Wetland vegetation is dominated by hardhack, non-native invasive Himalayan blackberry, reed canarygrass, and climbing nightshade (*Solanum dulcamara*). Wetland Y is a Palustrine Scrub-Shrub, Seasonally Flooded wetland (PSSC). Per MMC 22E.010.060, Wetland Y is a Category III riverine wetland with a low habitat score of 5 points.

Wetland Z

Wetland Z is 483 square feet (0.01 acre) in size and is located offsite to the east of the subject property, along the west side of Edgecomb Creek. Hydrology for Wetland Z is provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek. Wetland vegetation is dominated by reed canarygrass, climbing nightshade, and fringed willowherb. Wetland Z is a Palustrine Emergent, Temporarily Flooded wetland (PEMA). Per MMC 22E.010.060, Wetland Z is a Category III riverine wetland with a low habitat score of 4 points.

5.4 Offsite Edgecomb Creek (Stream Z)

The site investigation identified an offsite stream, Edgecomb Creek, (flagged as Stream Z), that parallels the eastern property boundary. The channel is artificially ditched, and linear. This reach exhibited a silt/sand substrate bottom with an approximate 10-foot wide OHW. The stream morphology consists of all run habitat with no pools or riffles present. Dominant streambank vegetation in this reach consists of reed canarygrass, nightshade, and Himalayan blackberry.Lamprey, sculpin, and salmonids were observed in Edgecomb Creek during an April site visit. The City of Marysville, Snohomish County, WDFW SalmonScape, and DNR map identify Creek as providing fish habitat with documented coho salmon and cutthroat trout use. The WDFW SalmonScape also maps modeled presence of ESA-listed Chinook salmon and steelhead trout. A summary of Edgecomb Creek is provided in Table 5 below.

Offsite Voluntary Mitigation Site

Offsite swales connected to Edgecomb Creek were observed on eastern portion of the site north adjacent to the subject property. These swales are located within the Edgecomb Creek buffer. Review of documentation associated with the development on this north adjacent site indicates that these swales were constructed as a voluntary mitigation action for the fill of non-jurisdictional ditches (Brock, 2001; Davis, 2001, and Wetland Resources, 2001). The swales were designed to provide off-channel habitat that would receive water from Edgecomb Creek when the stream rose above OHW. In addition, the swales were designed to also serve as storage areas for stormwater (Brock, 2001). The conceptual mitigation plan description for the swales also described that native emergent plants would be installed in the bottom of the channels with native willows and dogwoods planted along the sides of the channels. During the SVC site investigations, this area was dominated by red alder and salmonberry. It is unclear if this area of hydrophytic vegetation supports hydric soils or hydrology, however, if it does, its creation is the result of a mitigative action. Per MMC 22A.020.240 "Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the

construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands". As this area was intentionally created from a nonwetland site and was not created to mitigate conversion of regulated wetlands, it would not be regulated as a wetland. Per MMC 22A.020.200, "Streams mean water contained within a channel, either perennial or intermittent, and classified according to locally appropriate stream classification system based on WAC 222-16-030. Streams also include open natural watercourses modified by man. Streams do not include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, stormwater runoff facilities, or other wholly artificial watercourses, except those that directly result from modification to a natural watercourse." MMC 22A.020.2000 also describes stream typing for streams "within the ordinary high water mark." The offsite swales are located outside the OHW and artificial channel of Edgecomb Creek; as such, these features are not likely regulated as part of Edgecomb Creek.

Table 5. Stream Summary Eugecomb Creek (Onsite).					
STREAM INFORMATION SUMMARY					
A A A A A A A A A A A A A A A A A A A		Feature Name	Edgecomb Creek		
		WRIA	7 – Snohomish		
	A MAG	WA Stream Catalog #	1,221,617,481,051		
		Local Jurisdiction	City of Marysville		
P 2 A A		DNR Stream Type	Type F (Fish-Bearing)		
1/X AS		Local Stream Rating	Type F		
1100 the		Buffer Width	150 feet		
		Documented Fish Use	Coho salmon and cutthroat trout		
Location of Feature	Edgecomb Creek is locat boundary.	ted offsite adjacent to the s	subject property's eastern		
	Edgecomb Creek originat	tes from a pasture located o	n hillslopes to the east of		
Connectivity (where	the subject property, disc	harges into the Middle For	k of Quilceda Creek, and		
water flows from/to)	then discharges into the r	main stem of Quilceda Cree	ek. Quilceda Creek drains		
	into Ebey Slough at the m	nouth of the Snohomish Riv	ver.		
	The onsite buffer area co	onsists of relatively narrow	riparian vegetation strips		
Riparian/Buffer	dominated by shrubs and non-native invasive species (e.g. Himalayan blackberry and reed canarygrass) and is also degraded due to the adjacent				
Condition					
	agricultural fields.				

Table 3. Stream Summary – Edgecomb Creek (Offsite).

5.5 Offsite Stormwater Features

Intentionally and artificially excavated, non-wetland, stormwater ponds were identified on the site north adjacent to the subject property. All the stormwater treatment areas appear to be associated with industrial developments to the north. Per MMC 22A.020.240, wetlands do not include "*irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities*". While these stormwater ponds do support hydrophytic vegetation in several areas, they also appear to have been artificially and intentionally excavated due to the unnatural sharp edges, intentional rectangular shape, and steep sides that are all distinctive of manmade conditions. Review of historic aerial imagery in Google Earth corroborates the artificial nature of these features on the site north adjacent to the subject property as these features were constructed sometime between 1990 and 2005 from agricultural fields. In addition, the stormwater ponds appear to have been created out of uplands; prior to their construction, no evidence of potential inundation or ground saturation or distinct changes in vegetation were present in these areas that would indicate the presence of potential wetlands. Review of Wetland Resource, Inc's *Airpark Industries Development Arlington WA. – Wetland Review WRI# 01175* dated August 10, 2001 and the draft major development permit for the north adjacent development (Arlington, 2001) indicates that no wetland fill was proposed, further

supporting the determination that these stormwater features were constructed from uplands. As such, the stormwater treatment areas are likely non-regulated.

6.1 Local Critical Areas Requirements

6.1.1 Stream Buffers

Per MMC 22E.010.210(1), streams shall be classified according to the water type system as provided by WAC 222-16-030 as amended. Per MMC 22E.010.210(b), a Type F stream is a stream segment that is not a Type S (shoreline) and is presumed to be used by salmonid fish. Edgecomb Creek is considered a Type F stream due to documented salmonid use. Per MMC 22E.010.220(a), Type F streams are subject to a standard 150-foot buffer. Per MMC 22E.010.380, a 15-foot building and structure setback is required from the edge of critical area buffers. Per MMCE.010.220(2) buffer enhancement shall be required where the existing buffer area plantings provide minimal vegetative cover and cannot provide minimum water quality or habitat functions. The existing buffer is entirely vegetated and provides the minimum necessary water quality and habitat functions. The proposed project avoids all impacts to the onsite stream buffer. During the proposed clearing and grading, BMPs and TESC measures, including silt fencing and high visibility construction fencing, will be used to minimize impacts to water quality and provide protection against erosion.

6.1.2 Wetland Buffers

MMC 22E.010.060.1 has adopted the 2014 wetland rating system. Category III wetlands generally provide moderate levels of functions and score between 16 and 19 points. Category IV wetlands generally provide low levels of function and score less than 16 points on the revised wetland rating system (Hruby, 2014). Offsite Wetlands A, B, C, D, Y, and Z are Category III depressional or riverine wetlands, and offsite Wetland L is a Category IV depressional wetland. Under MMC 22E.010.100.4 the standard buffer for a Category III wetland is 75 feet, and the standard buffer for a Category IV wetland is 35 feet. Per MMC 22E.010.380, a 15-foot building and structure setback is required from the edge of critical area buffers. Due to the proximity of the offsite Wetlands L, Y, and Z are encompassed within the Edgecomb Creek buffer. The proposed project avoids all impacts to these onsite buffers. During the proposed clearing and grading, BMPs and TESC measures, including silt fencing and high visibility construction fencing, will be used to minimize impacts to water quality and provide protection against erosion.

The proposed project area is bounded by private properties and 51st Avenue Northeast to the west. Per MMC 22E.010.100(5)(b)(iv), wetland buffers may be reduced such that the reduced buffer width reflects the buffer functions that can be delivered to the wetland when the subject property is separated from the wetland by preexisting, intervening, and lawfully created structures, public roads, or other substantial preexisting intervening improvements. The Snohomish County wetland inventory maps potential wetlands on agricultural land west of 51st Avenue Northeast. 51st Avenue Northeast is an approximately 50-foot-wide improved public right-of-way that separates this agricultural land to the west from the subject property. Buffer functions for any potential wetland located west of the road would be interrupted by the road, which generally severs hydrologic and habitat connections.

6.2 State and Federal Considerations

6.2.1 State Requirements

All identified offsite wetlands and Edgecomb Creek are likely to be regulated as Waters of the State under the Revised Code of Washington (RCW) 90.48. No direct impacts to these offsite features are proposed.

The 51st Avenue East Ditch and its onsite lateral ditches (Ditch V and Z) are not regulated by the state as they are artificially constructed, do not convey natural water, and are not associated with a historical channel nor do they meet water typing criteria. WDFW deregulated the 51st Avenue East Ditch as a regulated water on January 16, 2009 (Brock, 2009). Following the state's formal and legal decision to deregulate and not assert jurisdiction over the artificially constructed 51st Avenue East ditch, WDFW issued a Hydraulic Project Approval (HPA #119699-1) for installation of a fish screen in the 51st Avenue East ditch, downgradient of the review area and closer to its confluence with Quilceda Creek, to prohibit fish from entering the nonregulated ditch. Once preliminary local approvals are obtained and the SEPA status is defined, coordination with WDFW is recommended to verify that an HPA is not required for the proposed future industrial development project.

6.3.2 Federal Requirements

The Federal Register published "The Navigable Waters Protection Rule: Definition of "Waters of the United States"" on April 21, 2020. The Navigable Waters Protection Rule is the second step in reviewing and revising the definition of Waters of the United States (WOTUS) as intended by the Executive Order "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States Rule." The Navigable Waters Protection Rule (NWPR) became effective June 22, 2020.

Under the final NWPR, the agencies interpret the term WOTUS to encompass: 1) the territorial seas and traditional navigable waters; 2) perennial and intermittent tributaries that contribute surface water flow to such waters; 3) certain lakes, ponds, and impoundments of jurisdictional waters; and 4) wetlands adjacent to other jurisdictional waters.

Under the final Navigable Waters Protection Rule, adjacent wetlands are subject to a different jurisdictional test than tributaries, lakes, ponds, and impoundments of jurisdictional wetlands. "Adjacent wetlands" are wetlands that: 1) abut a territorial seas or traditional navigable water, tributary, or a lake, pond, or impoundment of jurisdictional water; 2) are inundated from flooding from a territorial sea or traditional navigable water, or tributary, or from another jurisdictional lake, pond, or impoundment in a typical year; 3) are physically separated from a territorial seas, traditional navigable water, tributary, or a lake, pond, or impoundment of jurisdictional water only by a berm, bank, dune, or similar natural feature; or 4) are physically separated from a territorial sea or traditional navigable water, a tributary, or a lake, pond or impoundment of a jurisdictional water only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrological surface connection to the territorial seas or traditional navigable water in a typical year.

The 51^{st} Avenue East Ditch and Ditches V and Z likely meet the definition of non-jurisdictional waters as the following exclusion under 40 CFR.328.3(b) applies: *(b)(5) Ditches that are not waters identified*

in paragraph (a)(1) or (2) of this definition, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this definition that do not satisfy the conditions of paragraph (c)(1) of this definition. The ditches meet the definition of a "ditch" under 40 CFR 328.3(c)(2); are not subject to tidal ebb and flow; and do not meet the definition of a "tributary" under 40 CFR 328.3(c)(12). The proposed project will impact the 51^{st} Avenue East Ditch and Ditches V and Z; an AJD request has issued by the USACE and the ditch is non-jurisdictional (NWS-2020-571). No direct impacts are proposed to the offsite wetlands and streams.

Chapter 7. Closure

The findings and conclusions documented in this report have been prepared for specific application to this 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. Due to such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

Wetland and OHW status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the estimated offsite wetland boundaries and flagged OHW boundaries are validated by the jurisdictional agencies. Validation of the wetland and OHW boundaries and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the wetland and OHW determination and boundaries verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

As wetlands and aquatic areas are dynamic communities affected by both natural and human activities, changes in boundaries may be expected; therefore, delineations cannot remain valid for an indefinite period of time. Regulatory agencies typically recognize the validity of wetland and OHW delineations for a period of 5 years after completion of an assessment report. Development activities on a site five years after the completion of this assessment report may require reassessment of the wetland and OHW boundaries. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

Chapter 8. References

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Appendix A — Methods and Tools

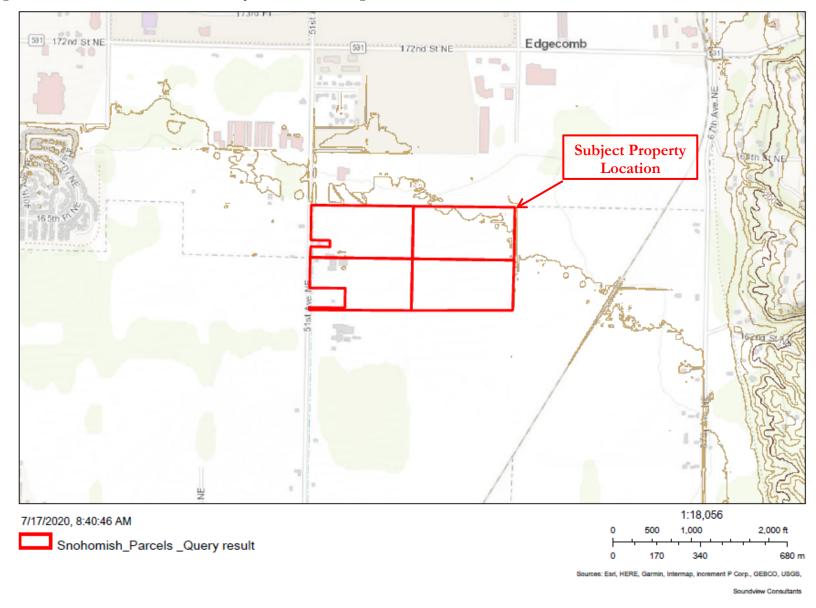
Table A-1.	Methods and tools used to prepare the report.					
Parameter	Method or Tool	Website	Reference			
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/e lpubs/pdf/wlman87.pdf	Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical 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/C ECW/Documents/cecwo/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/nwi/Pub s_Reports/Class_Manual/class _titlepg.htm	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.			
	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/p ublications/documents/140602 9.pdf	Hruby, T. (2014). Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.			
	Marysville Municipal Code	https://www.codepublishing.c om/WA/Marysville/	Most current wetland rating system adopted per MMC 22E.010.060.1			
Wetland Indicator Status	2016 National Wetland Plant List	https://www.fws.gov/wetlands /documents/National- Wetland-Plant-List-2016- Wetland-Ratings.pdf	Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. <i>The National Wetland Plant List: 2016 metland ratings</i> . Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X			
Stream Delineation	Determining the OHW	https://fortress.wa.gov/ecy/p ublications/documents/160602 9.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.			
Stream Classification	Department of Natural Resources Water Typing System	Forest Practices Water Typing: http://www.stage.dnr.wa.gov/f orestpractices/watertyping/	Washington Administrative Code (WAC) 222-16- 030. DNR Water typing system.			
Plant Names	USDA Plant Database	http://plants.usda.gov/	Website			
	Flora of the Pacific Northwest	http://www.washington.edu/u wpress/search/books/HITFL C.html	Hitchcock , C.L. and A. Cronquist. 2018. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.			
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda. gov/app/WebSoilSurvey.aspx	Website GIS data based upon: Debose, A. and M. Klungland. 1983. Soil Survey of Snohomish County Area, Washington. United States Department of Agriculture, Soil Conservation Service, in cooperation with the Washington Agricultural Experiment Station.			

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

Parameter	Method or Tool	Website	Reference
	Soil Color Charts		Munsell® Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
Field Indicators of Hydric Soils		https://www.nrcs.usda.gov/In ternet/FSE_DOCUMENTS/n rcs142p2_053171.pdf	NRCS. 2018. Field Indictors of Hydric Soils in the United States, Version 8.2. L.M. Vasialas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
	Soil Data Access Hydric Soils List	https://www.nrcs.usda.gov/In ternet/FSE_DOCUMENTS/n rcseprd1316620.html	NRCS. N.d. Soil Data Access Hydric Soils List (Soil Data Access Live).
Threatened and Endangered Species	Washington Natural Heritage Program	http://data- wadnr.opendata.arcgis.com/dat asets/wnhp-current-element- occurrences	Washington Natural Heritage Program (Data published 07/19/17). 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/phsp age.htm	Priority Habitats and Species (PHS) Program (Data requested 01/25/18). 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/ES A-Salmon-Listings/Salmon- Populations/Index.cfm and http://www.nmfs.noaa.gov/pr /species/	Website
	USFWS species lists by County	http://www.fws.gov/westwaf wo/se/SE_List/endangered_S pecies.asp	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/ salmonscape/	Website
Report Preparation	Marysville Municipal Code	https://www.codepublishing.c om/WA/Marysville/	MMC Chapter 22E.010 Critical Areas

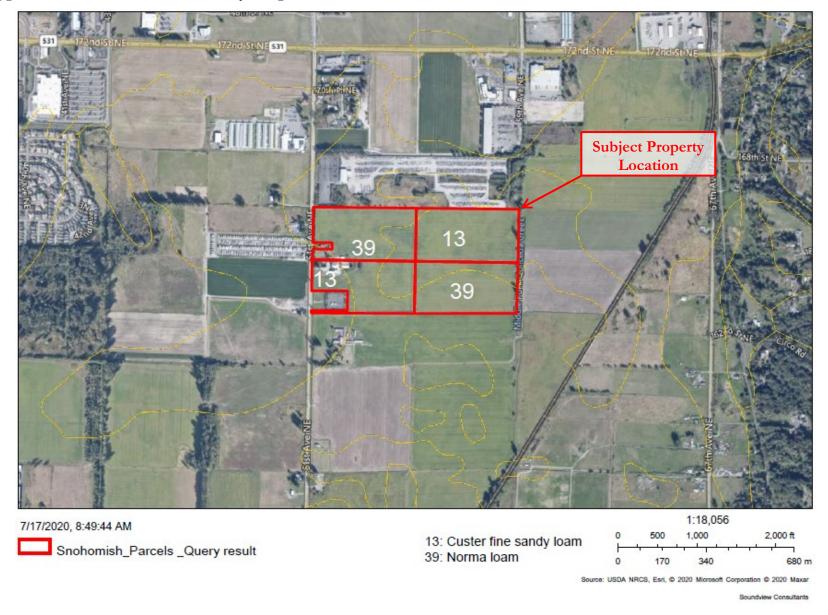
Appendix B — Background Information

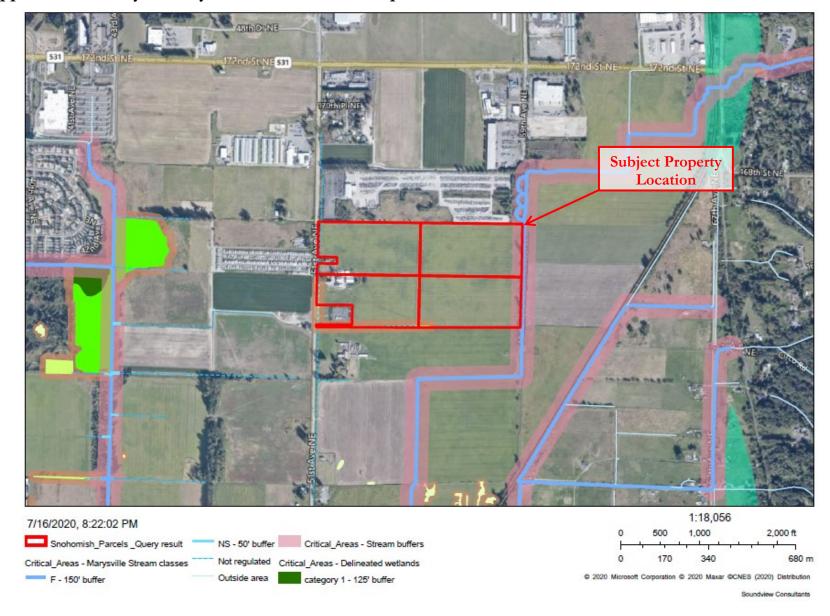
This appendix includes a Snohomish County Contours Map (B1); NRCS Soil Survey Map (B2); Marysville Critical Areas Map (B3); Snohomish Critical Areas Map (B4); DNR Stream Typing Map (B5) USFWS NWI map (B6); WDFW SalmonScape Map (B7); and WDFW PHS Map (B8).



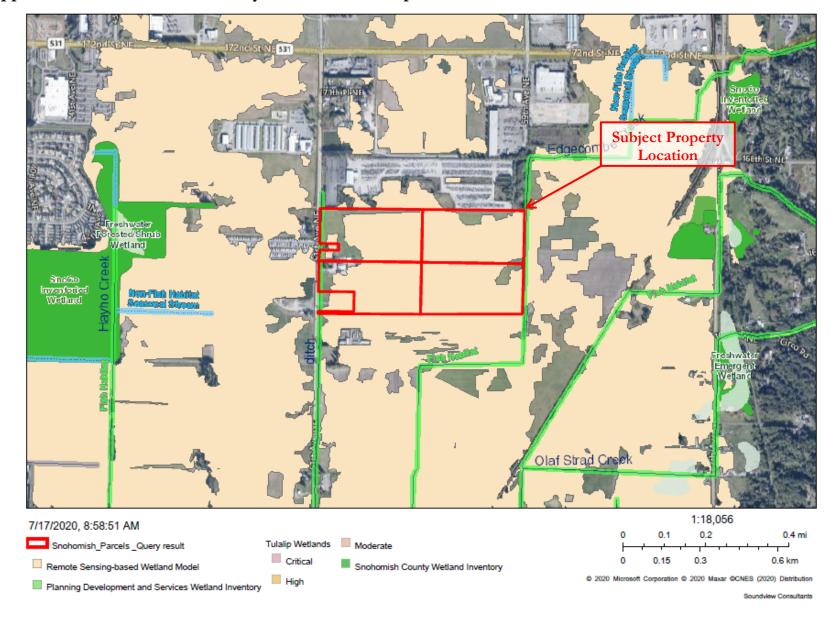
Appendix B1 – Snohomish County Contours Map

Appendix B2 – NRCS Soil Survey Map



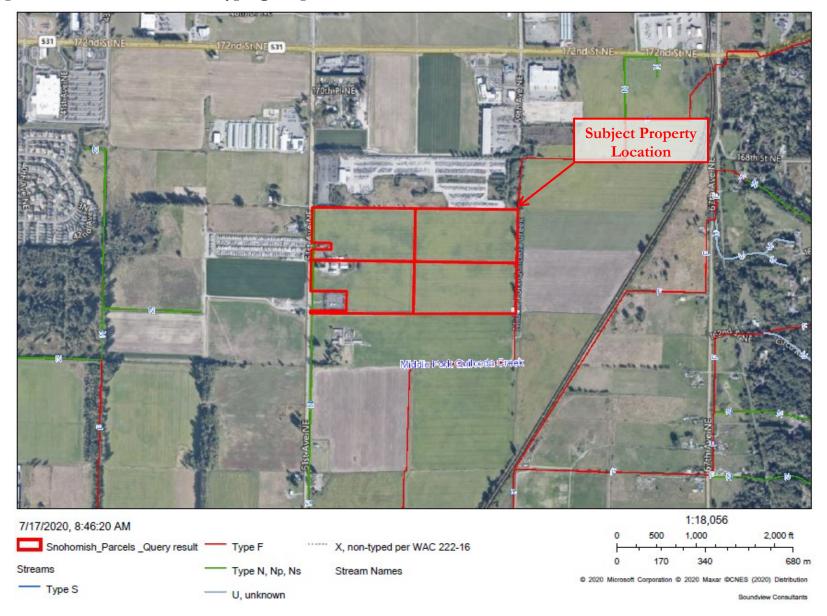


Appendix B3 – City of Marysville Critical Areas Map

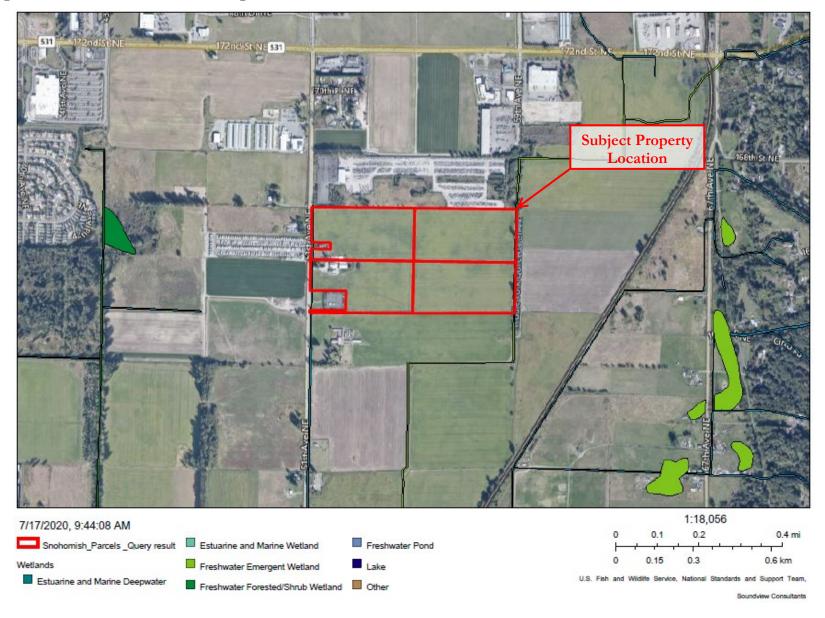


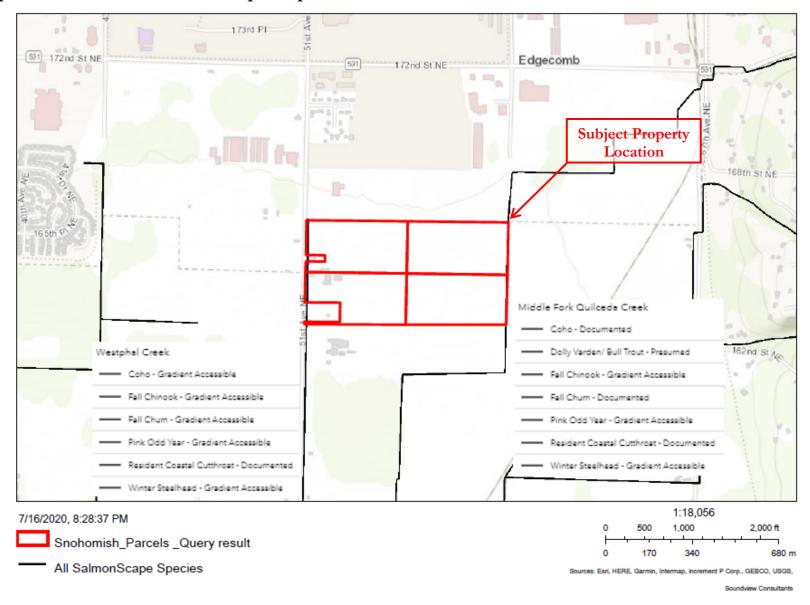
Appendix B4 – Snohomish County Critical Areas Map

Appendix B5 – DNR Stream Typing Map



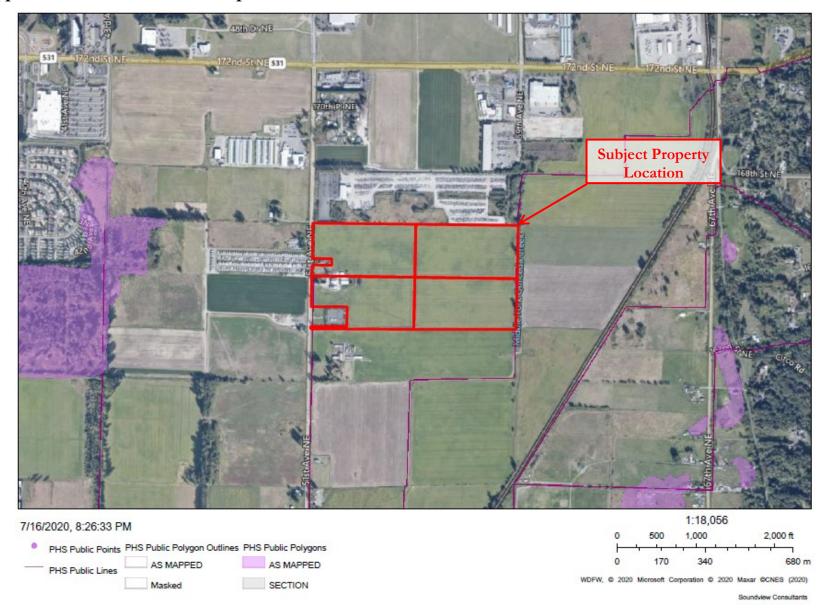
Appendix B6 – USFWS NWI Map





Appendix B7 – WDFW SalmonScape Map

Appendix B8 – WDFW PHS Map





PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Generalized Location
Resident Coastal Cutthroat	N/A	N/A	No
Coho	Candidate	N/A	No
Fall Chum	N/A	N/A	No
Coho	N/A	N/A	No
Dolly Varden/ Bull Trout	N/A	N/A	No

PHS Species/Habitats Details:

Resident Coastal Cutthroat	
Scientific Name	Oncorhynchus clarki
Priority Area	Occurrence/Migration
Site Name	Westphal Creek
Accuracy	NA
Notes	LLID: 1221551481276, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	33304
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	Oncorhynchus kisutch
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	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Fall Chum	
Scientific Name	Oncorhynchus keta
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Chum Salmon, Run Time: Fall, Life History: Anadromous
Source Record	33706
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	Oncorhynchus clarki
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	33703
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	Oncorhynchus kisutch
Priority Area	Breeding Area
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	33710
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	Salvelinus malma/S. confluentus
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	33711
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

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.

M-51 INDUSTRIAL - EXISTING CONDITIONS





M-51 INDUSTRIAL 16329 51ST AVE NE

MARYSVILLE, WA 98271-7513 SNOHOMISH COUNTY PARCEL NUMBERS:

\$NOHOMISH COUNTY PARCEL NUMBERS: 31052700200700, 31052700201000, 31052700301100, & 31052700300100

DATE:	7/21/2020
JOB:	2021.0001
BY: D	LS
SCALE:	1 " = 280 '
FIGURE	NO. 1

Appendix D — Data Sheets

Project/Site: 2021.0001 - M-51 Industrial	City/County	<u>Harysville / Snohomish</u>	_ Sampling Date: 01/07/2020
Applicant/Owner: Mowat Construction		State: WA	_ Sampling Point: DP-1/MP-1
Investigator(s): Rachael Hyland		Section, Township, Range: 27 / 3	1N / 05E
Landform (hillslope, terrace, etc.): Valley Floor			Slope (%): 0
Subregion (LRR): <u>A2</u>			
Soil Map Unit Name: Custer fine sandy loam		NWI classifi	cation: N/A
Are climatic / hydrologic conditions on the site typical			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances" pr	esent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling	g point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes 🗌 N		Sompled Area	
Hydric Soil Present? Yes		e Sampled Area n a Wetland? Yes	
Wetland Hydrology Present? Yes 🗌 N	No 🗵		
Remarks:	west portion of the site south of he	are at groundwater monitoring plot MP	Hydrology monitoring indicates that

No wetland criteria met. Data collected in southwest portion of the site, south of barn at groundwater monitoring plot MP-1. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.

VEGETATION – Use scientific names of plants.

	Absolute	Dominon	t Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)	% Cover				
				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
					_ (A)
2				Total Number of Dominant	
3			·	Species Across All Strata: 2	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover	That Are OBL, FACW, or FAC: 50%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					(/
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	<u>.</u>
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	Cover	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	40	Yes	FAC	Column Totals: (A)	
2. Taraxacum officinale	25	Yes	FACU		(2)
3. Cerastium arvense	10	No	FACU	Prevalence Index = B/A =	_
4. Trifolium repens	5	No	FAC	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
				☐ Dominance Test is >50%	
6 7				□ Prevalence Index is $\leq 3.0^{1}$	
8				Morphological Adaptations ¹ (Provide supp	orting
				data in Remarks or on a separate she	et)
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Exp	olain)
11	80			¹ Indicators of hydric soil and wetland hydrolog	ly must
Woody Vine Stratum (Plot size: 30 ft)	00	= Total C	Jover	be present, unless disturbed or problematic.	
1					
2				Hydrophytic	
L	0	= Total C		Vegetation Present? Yes ☐ No ⊠	
% Bare Ground in Herb Stratum <u>10</u>	<u> </u>				
Remarks:					

10% moss ground cover.

No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of combined hydric soils or hydrology.

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth Matrix Redox Features											
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	Text		Remarks	
0 - 12	2.5Y 3/1	100	-		-	-	-	Sal	_0	Sandy loam	
12 - 32	2.5Y 3/2	100	-		-	-	-	LoS	Sa	Loamy sand	
						·				·	
					·	· <u> </u>					
						· <u> </u>					
						·					
	oncentration, D=Dep						ed Sand G			cation: PL=Pore Lining, N	
Hydric Soil	Indicators: (Applic	able to all	LRR	s, unless other	wise note	ed.)			Indicato	ors for Problematic Hydr	ic Soils ³ :
Histosol	· · /		🗆 S	Sandy Redox (S	5)				🗌 2 cm	n Muck (A10)	
-	ipedon (A2)			Stripped Matrix (, ,					Parent Material (TF2)	
Black His				oamy Mucky M			t MLRA 1))		Shallow Dark Surface (T	F12)
_ , 0	n Sulfide (A4)	() , , , ,)		oamy Gleyed N					Othe	er (Explain in Remarks)	
	Below Dark Surface	e (A11)		Depleted Matrix					3 Indiante	are of budrophytic version	ion and
	rk Surface (A12) ucky Mineral (S1)			Redox Dark Sur Depleted Dark S	. ,	7)				ors of hydrophytic vegetat and hydrology must be pre	
	leyed Matrix (S4)			Redox Depressi		,)				s disturbed or problemati	
	Layer (if present):		<u> </u>		0.10 (1.0)				unioe		
Type: No											
Depth (inc	ches):							Hve	tric Soil	Present? Yes 🗌 N	o 🗵
Remarks:	•							i i ye			
No hydric s	soil criteria met.										
HYDROLO	GY										
	drology Indicators:										
-	cators (minimum of o		d cho	ock all that apply	A				Soco	ndary Indicators (2 or mor	co required)
_		ine require				- (DO) (-					
Surface V	()			Water-Stair			хсерт мட	KA		(ater-Stained Leaves (B9)	(WILRA 1, 2,
-	ter Table (A2)				, and 4B))				4A, and 4B)	
Saturatio	()			Salt Crust (,	(D40)				rainage Patterns (B10)	
Water Ma	. ,			Aquatic Inv		` '				ry-Season Water Table (C	
	t Deposits (B2)						Living Do	ata (Ca)		aturation Visible on Aerial	imagery (C9)
-	osits (B3) t or Crust (B4)					-	-	OIS(C3)	_	eomorphic Position (D2)	
	. ,			Presence o				C)		hallow Aquitard (D3)	
-	osits (B5)			 Recent Iror Stunted or 				,		AC-Neutral Test (D5)	
	Soil Cracks (B6) on Visible on Aerial Ir	magany (P	7)	Other (Expl			(LKK #	•)		aised Ant Mounds (D6) (L rost-Heave Hummocks (D	
	Vegetated Concave		,			liaiks)				IUSI-I leave I Iummuucks (L	7)
Field Obser	<u> </u>	Sunace (50)								
				Depth (inches	. None						
Surface Wat			0 🛛								
Water Table			∘ □	Depth (inches		<u> </u>					_
Saturation P (includes cap		es 🗶 N	o 🗌	Depth (inches): 12		Wet	land H	ydrolog	y Present? Yes 🗌 N	lo X
	corded Data (stream	gauge, m	onitori	ng well, aerial r	hotos, pre	evious in	spections)	, if avai	lable:		
	dwater is not su									eason.	
Remarks:				2			<u></u>	g.o			
	os of procipitation	recorded	l in th	o wook proco	ding the	sito invo	etidation	which	likolyr	esulted in exagerate	d bydrology

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicator A2 was observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	(City/County:	Marysvi	lle / Snohomish	Sampling	Date: 01/07	7/2020	
Applicant/Owner: Mowat Construction				State: WA	Sampling	Point: DP-2	2/MP-2	
Investigator(s): Rachael Hyland	5	Section, Township, Range: 27 / 31N / 05E						
				convex, none): <u>None</u>		Slope (%)	<u>.</u> 0	
Subregion (LRR): <u>A2</u>	Lat: <u>48.1</u>	44505		Long: <u>-122.159122</u>	48	Datum: W	GS 84	
Soil Map Unit Name: Norma Ioam		NWI classification: N/A						
Are climatic / hydrologic conditions on the site typical for this	s time of year	r?Yes 🗙	No 🗌 (If	no, explain in Remarks.)				
Are Vegetation, Soil, or Hydrology sign	nificantly dist	urbed?	Are "No	rmal Circumstances" pre	sent? Yes	🗙 No 🗌		
Are Vegetation, Soil, or Hydrology natu	rally problem	natic?	(If neede	d, explain any answers i	n Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing s	sampling	j point lo	cations, transects	, importa	Int feature	es, etc.	
Hydrophytic Vegetation Present? Yes ⋈ No □ Is the Sampled Area Hydric Soil Present? Yes ⋈ No □ within a Wetland? Yes □ No ⋈ Wetland Hydrology Present? Yes □ No ⋈ No ⋈ No ⋈ Remarks: Not all three wetland criteria met; lacking hydrology. Data collected east of barn at groundwater monitoring plot MP-2. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria. VEGETATION – Use scientific names of plants.								
		Dominant		Dominance Test work	sheet:			
Tree Stratum (Plot size: <u>30 ft</u>) 1.				Number of Dominant Sp That Are OBL, FACW, o		1	(A)	
2 3				Total Number of Domin Species Across All Stra		1	(B)	
4 Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)		= Total Co		Percent of Dominant Sp That Are OBL, FACW, o	becies or FAC:	100%	(A/B)	
1				Prevalence Index wor	ksheet:			
2		·		Total % Cover of:		Multiply by:		
3				OBL species			_	
4				FACW species	x 2	=		

2				Total % Cover of:	Multiply by:	
3				OBL species	x 1 =	_
4				FACW species	x 2 =	_
5				FAC species	x 3 =	_
	0	= Total	Cover	FACU species	x 4 =	_
Herb Stratum (Plot size: 10 ft)	400			UPL species	x 5 =	_
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals:	(A)	(B)
2	<u> </u>					
3				Prevalence Index =	B/A =	
4	<u> </u>			Hydrophytic Vegetation I	ndicators:	
5				Rapid Test for Hydroph	nytic Vegetation	
6				➤ Dominance Test is >50	0%	
7				☐ Prevalence Index is ≤3	.0 ¹	
8			<u> </u>	Morphological Adaptati data in Remarks or	ions ¹ (Provide support on a separate sheet)	ing
9				U Wetland Non-Vascular	Plants ¹	
10			·	Problematic Hydrophyt	ic Vegetation1 (Explain	า)
11 Woody Vine Stratum (Plot size: 30 ft)	100	= Total (Cover	¹ Indicators of hydric soil an be present, unless disturbe	, ,,	nust
<u> </u>						
2				Hydrophytic Vegetation		
% Bare Ground in Herb Stratum 0	0	= Total (Cover	Present? Yes 🗵	No 🗌	
Remarks: Hydrophytic vegetation criteria met th	rough dor	ninance	test.			

SOIL

Drefile Deer	rintion: (Decerit	a ta tha da			montthe	indicator	or confirm	a tha ahad	Samping Form.
			eptn ne				or confirm	n the abse	ence of indicators.)
Depth (inches)	Matrix Color (moist)	%		or (moist)	ox Feature %	<u>es</u> Type ¹	Loc ²	Texture	Remarks
0 - 7	2.5Y 3/1	100	-		-	- -	-	SaLo	Sandy loam
7 - 9	2.5Y 3/2	95	10`	YR 5/3	5	С	M,PL	SaLo	Sandy loam
9 - 15	2.5Y 5/2	80	10`	YR 5/3	10	С	Μ	SaLo	Sandy loam, mixed matrix
	2.5Y 3/2	10	-		-	-	-	SaLo	Sandy loam, mixed matrix
15 - 26	5Y 5/2	93	10`	YR 4/3	7	С	Μ	LoSa	Loamy sand
26 - 32	10YR 5/1	97	7.5	YR 5/4	3	С	Μ	LoSa	Loamy sand
¹ Tvpe: C=C	oncentration, D=De	epletion. RI	M=Red	luced Matrix. C	S=Covere	ed or Coat	ed Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appl								icators for Problematic Hydric Soils ³ :
Histosol	(A1)			Sandy Redox (S5)				2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix					Red Parent Material (TF2)
Black His				Loamy Mucky N	Mineral (F	1) (excep	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)			Loamy Gleyed	Matrix (F2	<u>2)</u>			Other (Explain in Remarks)
X Depleted	l Below Dark Surfa	ace (A11)	×	Depleted Matrix	(F3)				
	rk Surface (A12)			Redox Dark Su	rface (F6))		³ Ind	licators of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark		F7)		١	vetland hydrology must be present,
	leyed Matrix (S4)			Redox Depress	ions (F8)			l	unless disturbed or problematic.
Restrictive I Type: NC	Layer (if present):	:							
Depth (in				-					
	ciles)							Hydric	Soil Present? Yes 🗵 No 🗌
Remarks:									
Hydric soil	criteria met thr	ough ind	icator	rs A11 and F	-3.				
HYDROLO	GY								
-	drology Indicator								
Primary India	cators (minimum of	f one requir	ed; ch	eck all that app	ly)				Secondary Indicators (2 or more required)
Surface	Water (A1)			Water-Sta	ined Leav	/es (B9) (e	xcept MLF	RA [Water-Stained Leaves (B9) (MLRA 1, 2,
🗴 High Wa	ter Table (A2)			1, 2, 4	A, and 4E	3)			4A, and 4B)
I Saturation	on (A3)			Salt Crust	(B11)			Ľ	Drainage Patterns (B10)
U Water M				Aquatic In	vertebrate	es (B13)		Ľ	Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen	Sulfide O	dor (C1)		Γ	Saturation Visible on Aerial Imagery (C9)
	osits (B3)					• •	Livina Roo	- ts (C3) Γ	Geomorphic Position (D2)
	t or Crust (B4)			Presence		-	-	Γ	Shallow Aquitard (D3)
	osits (B5)			Recent Iro				5) [FAC-Neutral Test (D5)
-	Soil Cracks (B6)			Stunted or					Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	l Imagery (I	37)	Other (Exp			.) (=,	, L Г	Frost-Heave Hummocks (D7)
	Vegetated Conca					Smanoy		L	
Field Obser	-		(80)						
Surface Wat		Yes 🗌 🕴	No 🗙	Depth (inche	s). None	Э			
Water Table				Depth (inche					
Saturation P				Depth (inche			Wetl	and Hydro	ology Present? Yes 🗌 No 🗵
(includes cap	oillary fringe)				·				
Describe Re	corded Data (strea	am gauge, r	nonito	ing well, aerial	photos, p	revious in	spections),	it available	e:

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Remarks:

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicators A2 and A3 were observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	City/County: <u>Marysville / Sno</u>	homish Sam	npling Date: 05/07/2020
Applicant/Owner: Mowat Construction	State:	WA Sam	npling Point: DP-3/MP-3
Investigator(s): Ryan Krapp	Section, Township, Ra	ange: <u>27 / 31N / (</u>)5E
Landform (hillslope, terrace, etc.): Valley Floor	Local relief (concave, convex, n		
Subregion (LRR): <u>A2</u> Lat: <u>48</u> .	145556 e Long: -	122.16006109	Datum: WGS 84
Soil Map Unit Name: <u>Norma Ioam</u>		NWI classification:	N/A
Are climatic / hydrologic conditions on the site typical for this time of year			
Are Vegetation, Soil, or Hydrology significantly dis	turbed? Are "Normal Circu	mstances" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	matic? (If needed, explain	any answers in Rem	narks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations	, transects, imp	oortant features, etc.
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes X No X Wetland Hydrology Present? Yes X No X	Is the Sampled Area within a Wetland?	Yes 🗌 No 🗵	

Remarks: Not all three wetland criteria met, only hydric soils. Data collected in northwestern portion of site, north of the barn at groundwater monitoring plot MP-3. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 1	(A)
2					()
				Total Number of Dominant	
3			·	Species Across All Strata: 2	(B)
4			<u> </u>	Percent of Dominant Species	
	0	= Total C	over	That Are OBL, FACW, or FAC: 50%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	50	Yes	FAC	Column Totals: (A)	
2. Dactylis glomerata	25	Yes	FACU		_ (8)
3. Alopecurus pratensis	20	No	FAC	Prevalence Index = B/A =	
4. Taraxacum officinale	10	No	FACU	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide suppo	rting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹	
				Problematic Hydrophytic Vegetation ¹ (Expla	in)
11	105			¹ Indicators of hydric soil and wetland hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
1			·	Hydrophytic	
2	0		·	Vegetation	
	0	= Total C	over	Present? Yes No 🗵	
% Bare Ground in Herb Stratum 0					
Remarks: No hydrophytic vegetation criteria met.	Prevaler	nce index	not warr	anted due to lack of combined hydric so	il and

hydrology.

SOIL	
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Profile Desc	ription: (Describ	e to the de	pth needed to docu	ment the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 7	10YR 2/2	100	-	-			SaLo	Sandy loam
7 - 12	10YR 3/1	95	5YR 4/6	5	С	M, PL	SaLo	Sandy loam
12 - 16	10YR 5/1	90	5YR 4/6	10	С	Μ	Sa	Sand
						·		
¹ Type: C=Co	oncentration. D=De	pletion. RN	1=Reduced Matrix, C	S=Covere	d or Coate	d Sand Gr	ains. ² Loo	cation: PL=Pore Lining, M=Matrix.
			I LRRs, unless othe					ors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			🗌 2 cm	n Muck (A10)
Histic Ep	ipedon (A2)		Stripped Matrix				Red	Parent Material (TF2)
Black His	stic (A3)		Loamy Mucky N	/lineral (F1	1) (except	MLRA 1)	🗌 Very	Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed)		🗌 Othe	er (Explain in Remarks)
	Below Dark Surfac	ce (A11)	Depleted Matrix				31	and the device of the second of the second
	rk Surface (A12) lucky Mineral (S1)		Redox Dark Su Depleted Dark S	```				ors of hydrophytic vegetation and ind hydrology must be present,
	leyed Matrix (S4)		Redox Depress		7)			s disturbed or problematic.
	Layer (if present):							
Type: NO								
Depth (ind	ches):						Hydric Soil	Present? Yes 🗵 No 🗌
Remarks:								
	critoria mot thr	ouah indi	cators A11 and F	6				
Tryunc son	chiena met uni	ougninui	Calors Arr and F	0.				
HYDROLO	GY							
Wetland Hyd	drology Indicators	s:						
Primary Indic	cators (minimum of	one require	ed; check all that appl	у)			Seco	ndary Indicators (2 or more required)
Surface \	Water (A1)		Water-Stail	ned Leav	es (B9) (e s	cept MLR	A 🗆 W	ater-Stained Leaves (B9) (MLRA 1, 2,
High Wat	ter Table (A2)		1, 2, 4	A, and 4B)			4A, and 4B)
Saturatio	on (A3)		Salt Crust	(B11)			🗌 D	rainage Patterns (B10)
Water Mater Mater	arks (B1)		Aquatic Inv	/ertebrate	s (B13)		🗌 D	ry-Season Water Table (C2)
Sedimen	t Deposits (B2)		Hydrogen	Sulfide Oo	dor (C1)			aturation Visible on Aerial Imagery (C9)
	osits (B3)				-	-	· · ·	eomorphic Position (D2)
	t or Crust (B4)		Presence			,		hallow Aquitard (D3)
	osits (B5)		Recent Iro			, ,		AC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or			I) (LRR A)		aised Ant Mounds (D6) (LRR A)
_	on Visible on Aerial	0,0	, <u> </u>	olain in Re	marks)		L Fi	rost-Heave Hummocks (D7)
_ , ,	Vegetated Concav	/e Surface	(B8)					
Field Observ				None				
	er Present?	Yes 🗌 🛛 N	lo 🛛 Depth (inches					
Surface Wate		_		.). INCHE				
Water Table	Present?		lo 🛛 Depth (inches					
Water Table Saturation Pr	Present? resent?		lo 🛛 Depth (inches lo 🖾 Depth (inches			Wetla	and Hydrolog	y Present? Yes 🗌 No 🗵
Water Table Saturation Pr (includes cap	Present? resent? billary fringe)	Yes 🗌 🛛 N	lo 🗵 Depth (inches	s): None	•			y Present? Yes 🗌 No 🗵
Water Table Saturation Pl (includes cap Describe Red	Present? resent? oillary fringe) corded Data (strea	Yes D N		s): None	revious ins	pections), i	if available:	-
Water Table Saturation Pl (includes cap Describe Red	Present? resent? oillary fringe) corded Data (strea	Yes D N	onitoring well, aerial	s): None	revious ins	pections), i	if available:	-

No hydrology criteria met. Groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	City	/County: _	Marysville / Snoh	omish	Sampling Date: 05/07/2020
Applicant/Owner: Mowat Construction			State: V	VA	Sampling Point: DP-4/MP-4
Investigator(s): Ryan Krapp		Se	ection, Township, Ran		
Landform (hillslope, terrace, etc.): Valley Floor	Lc				Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat: 48.14	6413	Long: <u>-12</u>	2.1594097	5
Soil Map Unit Name: <u>Norma Ioam</u>			1	WI classificat	tion: N/A
Are climatic / hydrologic conditions on the site typical	for this time of year?	Yes 🗙	No 🗌 (If no, explain		
Are Vegetation, Soil, or Hydrology	significantly disturb	ed?	Are "Normal Circum	stances" pres	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	_ naturally problemat	ic?	(If needed, explain a	ny answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site r	map showing sa	mpling	point locations,	transects,	important features, etc.
Hydrophytic Vegetation Present? Yes X N Hydric Soil Present? Yes X N Wetland Hydrology Present? Yes N N			Sampled Area a Wetland?	Yes 🗌 No	
Remarks: Not all three criteria met, lacking hydrology. D	Data collected in northwe	estern portio	on of site at groundwater	monitoring plo	ot MP-4. Hydrology monitoring

indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.

	Absolute		t Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	-		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3					(B)
4				Percent of Dominant Species	
	0	= Total C	Cover		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	-
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	90	Yes	FAC	Column Totals: (A)	
2. Alopecurus pratensis	10	No	FAC		_ (=)
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^1$	
8				Morphological Adaptations ¹ (Provide supporti data in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain	1)
11	400			¹ Indicators of hydric soil and wetland hydrology m	
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= Total C	Cover	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
	0	= Total C	Cover	Present? Yes X No	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.		

SOIL	
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Profile Desc	ription: (Describe	to the de	pth ne	eded to docum	nent the i	ndicator	or confirm	n the at	osence	of indicators.)
Depth	Matrix			Redox	k Feature	S				
(inches)	Color (moist)	%	Color	<u>(moist)</u>	%	Type ¹	Loc ²	Textu	ire	Remarks_
0 - 7	10YR 3/1	100	-		-	-	-	SiLo		Silt loam
7 - 10	10YR 3/2	98	5YF	R 4/6	2	С	М	SiLo		Silt loam
10 -17	10YR 5/1	85	5YF	R 4/6	15	С	Μ	LoSa	a	Loamy sand
		·			·	·				
		·				·				
		·				·				
		·			·	·				
	oncentration, D=Dep						ed Sand G			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to al	I LRRs	s, unless other	wise not	ed.)		li	ndicato	ors for Problematic Hydric Soils ³ :
Histosol	· · /			andy Redox (S				Ľ		n Muck (A10)
	ipedon (A2)			tripped Matrix (Parent Material (TF2)
Black His				oamy Mucky M			MLRA 1)	_	-	Shallow Dark Surface (TF12)
	n Sulfide (A4)	<i></i>		oamy Gleyed N] Othe	er (Explain in Remarks)
	Below Dark Surface	e (A11)		epleted Matrix				3		
	rk Surface (A12)			edox Dark Surf	()			5		ors of hydrophytic vegetation and
	ucky Mineral (S1) leyed Matrix (S4)			epleted Dark S edox Depression	•	()				nd hydrology must be present, s disturbed or problematic.
	Layer (if present):			ledux Depressio	0115 (FO)				unies	s disturbed of problematic.
Type: No										
Depth (inc								I		
								Hydi	ric Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thro	ugh indi	cators	s A11.						
HYDROLO	GY									
	drology Indicators:									
-					Δ				0	
	cators (minimum of c	one require								ndary Indicators (2 or more required)
Surface \	()			Water-Stair			xcept MLF	RA	ΔW	ater-Stained Leaves (B9) (MLRA 1, 2,
•	ter Table (A2)				, and 4B)			_	4A, and 4B)
Saturatio				☐ Salt Crust (rainage Patterns (B10)
Water Mater Mater	. ,			Aquatic Inv		. ,				ry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Od	lor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized RI	hizospher	es along	Living Roo	ts (C3)	G	eomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presence o	f Reduce	d Iron (C4	4)		🗆 SI	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iron	Reduction	on in Tille	d Soils (C6)	🗌 F/	AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR A)		🗌 Ra	aised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aerial I	magery (E	57)	Other (Expl	ain in Rei	marks)			🗌 Fr	rost-Heave Hummocks (D7)
Sparsely	Vegetated Concave	Surface	(B8)							
Field Obser	vations:									
Surface Wat	er Present? Y	′es 🗌 🛛 N	lo 🗙	Depth (inches): None					
Water Table	Present? Y	'es 🗶 N	lo 🗌	Depth (inches)): <u>17</u>					
Saturation P	resent? Y	′es 🔀 🛛 N	lo 🗌	Depth (inches): <u>17</u>		Wetl	and Hy	drolog	y Present? Yes 🗌 No 🗵
(includes cap	oillary fringe)				-			-		
	corded Data (stream									
High groun	idwater is not su	stained	tor 2	or more con	tinuous	weeks	during th	e grov	wing s	eason.
Remarks:					_	_			_	
	av oritorio mot	watar ta	hla ar	od opturption	too do	on in nr	ofilo to m		D or A	3 Groundwater monitoring

No hydrology criteria met; water table and saturation too deep in profile to meet A2 or A3. Groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial Ci	City/County: _	Marysville / Snoł	omish	Sampling Date: 05/07/2020
Applicant/Owner: Mowat Construction		State:	NA	Sampling Point: DP-5/MP-5
Investigator(s): Ryan Krapp	Se	ection, Township, Ra	nge: <u>27 / 31</u>	N / 05E
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): 0
	146431	Long: <u>-1</u>	22.1582834	19 Datum: WGS 84
Soil Map Unit Name: Norma Ioam			NWI classifica	tion: N/A
Are climatic / hydrologic conditions on the site typical for this time of year	ır?Yes 🗙 🛛	No 🗌 (If no, explain	in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly distu	turbed?	Are "Normal Circur	nstances" pres	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	natic?	(If needed, explain a	any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling _i	point locations,	transects,	important features, etc.
Hydrophytic Vegetation Present? Yes INO □ Hydric Soil Present? Yes INO □ Wetland Hydrology Present? Yes □ No I		Sampled Area a Wetland?	Yes 🗌 N	o 🗵
Remarks: Not all three criteria met, lacks hydrology. Data collected in northy indicates that this area does not remain inundated or saturated for				

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?			
		-		Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
2		<u> </u>		Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4					/
	~	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 100%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Are OBL, FACW, or FAC: <u>100%</u>	(A/D)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
				FAC species x 3 =	
5	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)	<u> </u>		over		
1. Schedonorus arundinaceus	80	Yes	FAC	UPL species x 5 =	
2. Alopecurus pratensis	20	Yes	FAC	Column Totals: (A)	(B)
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				➤ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide suppo	
9				data in Remarks or on a separate shee	t)
10				Wetland Non-Vascular Plants ¹	
		·		Problematic Hydrophytic Vegetation ¹ (Expl	ain)
11	100	= Total C		¹ Indicators of hydric soil and wetland hydrology	/ must
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100		over	be present, unless disturbed or problematic.	
1					
		·		Hydrophytic	
2	0	= Total C	ovor	Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum <u>0</u>	<u> </u>				
Remarks: Hydrophytic vegetation criteria met thr	المعامية		t	1	
Hydrophytic vegetation criteria met thr	ougn aon	inance t	est.		

SOIL	
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Profile Desc	ription: (Describ	e to the de	pth ne	eded to docun	nent the i	ndicator	or confirm	the ab	osence of indicators.)
Depth	Matrix				k Feature				
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	r (moist)	%	Type ¹	Loc ²	Textu	
0 - 6	10YR 3/1	100	-		-			SiLo	Silt loam
6 - 9	10YR 3/2	98	5YI	R 4/6	2	С	Μ	SiLo	Silt loam
9 - 16	10YR 5/1	85	5YF	R 4/6	15	С	Μ	LoSa	a Loamy sand
					·				
					·	·			
						· <u> </u>			
					·				
¹ Type: C=Co	oncentration, D=D	epletion, RN	/I=Red	uced Matrix, CS	=Covered	d or Coate	ed Sand Gr		² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	II LRR	s, unless other	wise not	ed.)		Ir	ndicators for Problematic Hydric Soils ³ :
Histosol				Sandy Redox (S					2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix (,				Red Parent Material (TF2)
Black His				.oamy Mucky M .oamy Gleyed N	•		MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4) I Below Dark Surfa	ce (A11)		Depleted Matrix	• • •			L	Other (Explain in Remarks)
•	rk Surface (A12)			Redox Dark Sur				3	Indicators of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark S	. ,	7)			wetland hydrology must be present,
Sandy G	leyed Matrix (S4)		🗆 F	Redox Depressi	ons (F8)				unless disturbed or problematic.
	_ayer (if present):								
Type: No									
Depth (ind	ches):							Hydr	ric Soil Present? Yes 🗵 No 🗌
Remarks:									
Hydric soil	criteria met thr	ough ind	icator	s A11.					
HYDROLO	GY								
Wetland Hyd	drology Indicator	s:							
Primary Indic	cators (minimum o	f one requir	ed; che	eck all that apply	/)				Secondary Indicators (2 or more required)
Surface \	Water (A1)			U Water-Stair	ned Leave	es (B9) (e	xcept MLR	A	Water-Stained Leaves (B9) (MLRA 1, 2,
High Wat	ter Table (A2)			1, 2, 4A	, and 4B))			4A, and 4B)
Saturatio	n (A3)			Salt Crust (B11)				Drainage Patterns (B10)
Water Mater Mater	arks (B1)			Aquatic Inv	ertebrates	s (B13)			Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Od	or (C1)			Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizospher	es along	Living Root	ts (C3)	Geomorphic Position (D2)
	t or Crust (B4)			Presence o					Shallow Aquitard (D3)
	osits (B5)			Recent Iror			. ,		FAC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	•••		Other (Expl	ain in Rei	narks)			Frost-Heave Hummocks (D7)
	Vegetated Conca	ve Surface	(B8)						
Field Observ			. —		None				
Surface Wate			10 X	Depth (inches					
Water Table			10 X	Depth (inches					
Saturation Pr		Yes 🗌 🛛 N	lo 🗙	Depth (inches): <u>INONE</u>		Wetla	and Hy	drology Present? Yes 🗌 No 🗵
(includes cap Describe Red	corded Data (strea	m gauge, n	nonitor	ng well, aerial p	hotos, pr	evious in	spections).	if availa	able:
	dwater is not s								
Remarks:		-			-		5	2	-

No hydrology criteria met. Groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Ind	ustrial	City/Cou	_{nty:} Marysville / Snoh	omish	Sampling Date: 05/07/2020			
Applicant/Owner: Mowat Constructi	on		State: V	VA	Sampling Point: DP-6/MP-6			
Investigator(s): Ryan Krapp			_ Section, Township, Rar	nge: <u>27 / 31</u>	N / 05E			
Landform (hillslope, terrace, etc.): Valle	ey Floor	Local re			Slope (%): 0			
Subregion (LRR): <u>A2</u>		Lat: 48.146300)Long: <u>-1</u> 2	22.1570355	56			
Soil Map Unit Name: Norma loam				WI classifica	tion: N/A			
Are climatic / hydrologic conditions on th	e site typical fo	or this time of year? Yes						
Are Vegetation, Soil, or Hy	drology	significantly disturbed?	Are "Normal Circum	istances" pres	sent? Yes 🗵 No 🗌			
Are Vegetation, Soil, or Hy	drology	_naturally problematic?	(If needed, explain a	ny answers in	n Remarks.)			
SUMMARY OF FINDINGS - At	SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes □ No	□ s □ wi	the Sampled Area ithin a Wetland?	Yes 🗌 N	o 🗵			
Remarks:								

Not all three criteria met, lacking hydrology. Data collected in north-central portion of site at groundwater monitoring plot MP-6. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	~	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =
1. Schedonorus arundinaceus	75	Yes	FAC	Column Totals: (A) (B)
2. Alopecurus pratensis	20	No	FAC	
3. Ranunculus repens	10	No	FAC	Prevalence Index = B/A =
4. Poa sp.*	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Trifolium pratense	5	No	FACU	Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8		·		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9				☐ Wetland Non-Vascular Plants ¹
10		·		Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u>)	120	= Total C	Cover	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
% Bare Ground in Herb Stratum _0	0	= Total C	Cover	Present? Yes 🗵 No 🗌
Remarks:		inonos t	oot	I
*Could not be identified to species, ass	sumed FA	C for sci	esi. oring purp	Doses.

SOIL	
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	inpuon. (Describ		aeptn no	eded to docum	nent the i	ndicator	or confirm	the ab	sence of indicators.)	
Depth	Matrix			Redox	K Features	<u> </u>				
(inches)	Color (moist)	%	Colo	or (moist)	%	Type ¹	Loc ²	Textur	e Remarks	
0 - 5	10YR 2/2	100	-		-	-	-	SiLo	Silt loam	
5 - 7	10YR 2/2	98	5Y	R 4/6	2	С	Μ	SiLo	Silt loam	
7 -16	10YR 5/2	90	5Y	R 4/6	10	С	Μ	GrSa	Gravelly sand	
		_								
¹ Type: C=Co	oncentration, D=De	epletion, F	RM=Rec	luced Matrix, CS	=Covered	l or Coate	d Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators: (Appli	cable to	all LRR	s, unless other	wise note	ed.)		In	dicators for Problematic Hydric Soils ³ :	
Histosol ((A1)			Sandy Redox (S	5)] 2 cm Muck (A10)	
Histic Ep	ipedon (A2)			Stripped Matrix (S6)				Red Parent Material (TF2)	
Black His	stic (A3)			Loamy Mucky M	ineral (F1) (except	MLRA 1)] Very Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed N					Other (Explain in Remarks)	
	Below Dark Surface	ce (A11)		Depleted Matrix						
	rk Surface (A12)			Redox Dark Surf				³ lr	ndicators of hydrophytic vegetation and	
	ucky Mineral (S1)			Depleted Dark S	•	7)			wetland hydrology must be present,	
	leyed Matrix (S4)			Redox Depression	ons (F8)			1	unless disturbed or problematic.	
Type: No	ayer (if present):									
				-						
Depth (inc	nes)			-				Hydri	c Soil Present? Yes 🗵 No 🗌	
Remarks:										
Hydric soil	criteria met thre	ough in	dicato	rs A11.						
HYDROLO	GY									
Watland Uv										
мецало пус	drology Indicators	5:								
-	drology Indicators		ired: ch	eck all that apply	<i>(</i>)				Secondary Indicators (2 or more required)	
Primary Indic	ators (minimum of		ired; ch			s (B9) (e	rcent MI R	24	Secondary Indicators (2 or more required)	
Primary Indic	cators (minimum of Water (A1)		ired; ch	U Water-Stair	ned Leave		cept MLR	2A	Water-Stained Leaves (B9) (MLRA 1, 2,	
Primary Indic	eators (minimum of Water (A1) ter Table (A2)		ired; ch	Water-Stair 1, 2, 4A	ned Leave ., and 4B)		kcept MLR	2A	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
Primary Indic Surface V High Wat Saturatio	eators (minimum of Water (A1) ter Table (A2) n (A3)		ired; ch	 Water-Stair 1, 2, 4A Salt Crust (ned Leave ., and 4B) B11)		kcept MLR	2A	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) 	
Primary Indic	eators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1)		ired; ch	□ Water-Stair 1, 2, 4A □ Salt Crust (□ Aquatic Invest	ned Leave , and 4B) B11) ertebrates	(B13)	kcept MLR	2A	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) 	
Primary India	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)		ired; ch	Water-Stair 1, 2, 4A Salt Crust (Aquatic Inve Hydrogen S	ned Leave , and 4B) B11) ertebrates Sulfide Od	(B13) or (C1)	-		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)		ired; ch	 □ Water-Stair 1, 2, 4A □ Salt Crust (□ Aquatic Invo □ Hydrogen S □ Oxidized RI 	ned Leave , and 4B) B11) ertebrates Sulfide Od hizospher	(B13) or (C1) es along	Living Root		 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) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mater	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		ired; ch	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized Ri Presence o	ned Leave , and 4B) B11) ertebrates Sulfide Od hizospher f Reduced	s (B13) or (C1) es along d Iron (C4	Living Root	ts (C3)	 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) 	
Primary India	eators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)		ired; ch	□ Water-Stair 1, 2, 4A □ Salt Crust (□ Aquatic Invo □ Hydrogen S □ Oxidized RI □ Presence o □ Recent Iron	ned Leave , and 4B) B11) ertebrates Sulfide Od hizospher f Reduced i Reductio	i (B13) or (C1) es along d Iron (C4 n in Tilled	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	one requ		Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S	ned Leave , and 4B) B11) ertebrates Sulfide Od nizospher f Reduced Reductic Stressed	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mar Surface S Inundation	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial	one requ Imagery	(B7)	□ Water-Stair 1, 2, 4A □ Salt Crust (□ Aquatic Invo □ Hydrogen S □ Oxidized RI □ Presence o □ Recent Iron	ned Leave , and 4B) B11) ertebrates Sulfide Od nizospher f Reduced Reductic Stressed	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mat Surface S Inundatio Sparsely	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav	one requ Imagery	(B7)	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S	ned Leave , and 4B) B11) ertebrates Sulfide Od nizospher f Reduced Reductic Stressed	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Ma Surface S Inundatio Sparsely Field Observ	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations:	one requ Imagery /e Surfac	(B7) e (B8)	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RH Presence o Recent Iron Stunted or S Other (Expl	ned Leave a, and 4B) B11) ertebrates Gulfide Od nizospher f Reduced Reductio Stressed I ain in Rer	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India Surface V Guidante V Guidante V Surface V Guidante V	vators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present?	Imagery /e Surfac	(B7) e (B8) No 🛛	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized Rl Presence o Recent Iron Stunted or S Other (Expl	ned Leave and 4B) B11) ertebrates Sulfide Od hizospher f Reduced Reduction Stressed I ain in Rer): None	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Root) I Soils (C6)	ts (C3))	 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) 	
Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mai Surface S Inundatio Sparsely Field Observ Water Table	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present?	Imagery /e Surfac Yes Yes	(B7) e (B8) No 🗶 No 🗶	□ Water-Stair 1, 2, 4A □ Salt Crust (□ Aquatic Invo □ Hydrogen S □ Oxidized RI □ Presence o □ Recent Iron □ Stunted or S □ Other (Expl □ Depth (inches) □ Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od hizospher f Reduced Reduction Stressed I ain in Rer): <u>None</u>): <u>None</u>	i (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D	Living Roof) 1 Soils (C6) 1) (LRR A)	ts (C3))	 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) 	
Primary India Primary India Surface V High Wate Saturatio Vater Ma Sedimen Drift Dep Algal Mai Iron Dep Surface S Inundatio Sparsely Field Observ Surface Wate Vater Table Saturation Pri (includes cap	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes	(B7) e (B8) No X No X No X	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches) Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od hizospher f Reduced Reduction Stressed I ain in Rer): <u>None</u>): <u>None</u>): <u>None</u>	i (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D narks)	Living Root) d Soils (C6) 1) (LRR A)	ts (C3)) and Hyd	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)	
Primary India Primary India Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mai Iron Dep Surface S Inundatio Sparsely Field Observ Surface Wate Vater Table Saturation Pr (includes cap Describe Ref	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? Present? resent? illary fringe) corded Data (streat	Imagery /e Surfac Yes Yes Yes Yes m gauge,	(B7) e (B8) No ⊠ No ⊠ No ⊠ monito	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches) Depth (inches)	ned Leave and 4B) B11) ertebrates Gulfide Od inizospher f Reduced Reductic Stressed ain in Rer): <u>None</u>): <u>None</u>): <u>None</u>): <u>None</u>	(B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D narks)	Living Root) 1 Soils (C6) 1) (LRR A) Wetta	ts (C3)) and Hyd	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)	
Primary India Primary India Surface V High Wate Saturatio Vater Ma Sedimen Drift Dep Algal Mar Iron Depa Surface S Inundatio Sparsely Field Observ Surface Water Table Saturation Pri (includes cap Describe Red High groun	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes m gauge,	(B7) e (B8) No ⊠ No ⊠ No ⊠ monito	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches) Depth (inches)	ned Leave and 4B) B11) ertebrates Gulfide Od inizospher f Reduced Reductic Stressed ain in Rer): <u>None</u>): <u>None</u>): <u>None</u>): <u>None</u>	(B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D narks)	Living Root) 1 Soils (C6) 1) (LRR A) Wetta	ts (C3)) and Hyd	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)	
Primary India Primary India Surface V High Wate Saturatio Vater Ma Sedimen Drift Dep Algal Mar Iron Depa Surface S Inundatic Sparsely Field Observ Surface Water Table Saturation Pr (includes cap Describe Rec High groun Remarks:	ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? Present? resent? illlary fringe) corded Data (streat dwater is not s	Imagery /e Surfac Yes Yes Yes Yes m gauge, ustaine	(B7) e (B8) No ⊠ No ⊠ Mo ⊠ monitoi d for 2	Water-Stair 1, 2, 4A Salt Crust (Aquatic Invo Hydrogen S Oxidized Rf Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches) ring well, aerial p or more cont	ned Leave and 4B) B11) ertebrates Sulfide Od hizospher f Reduced Reduction Stressed I ain in Rer): <u>None</u>): <u>None</u> bit <u>None</u> bit <u>None</u>	e (B13) or (C1) es along d Iron (C4 Plants (D narks) evious ins weeks (Living Roof) d Soils (C6) 1) (LRR A) Wetta pections), during the	ts (C3)) and Hyd if availal e grow	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)	

saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial City/C	County: Marysville / Snohomish Sampling Date: 05/07/2020
Applicant/Owner: Mowat Construction	State: WA Sampling Point: DP-7/MP-7
Investigator(s): Ryan Krapp	Section, Township, Range: <u>27 / 31N / 05E</u>
Landform (hillslope, terrace, etc.): Valley Floor Loca	al relief (concave, convex, none): <u>None</u> Slope (%): <u>0</u>
Subregion (LRR): <u>A2</u> Lat: <u>48.1462</u>	216 Long: -122.15601204 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? Y	
Are Vegetation, Soil, or Hydrology significantly disturbed	d? 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 sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes ⋈ No □ Hydric Soil Present? Yes ⋈ No □ Wetland Hydrology Present? Yes □ No ⋈	Is the Sampled Area within a Wetland? Yes □ No ⊠
Remarks:	

Not all three criteria met, lacking hydrology. Data collected in north-central portion of site at groundwater monitoring plot MP-7. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u>)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1			<u> </u>	Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: 10 ft)				UPL species x 5 =
1. Schedonorus arundinaceus	30	Yes	FAC	Column Totals: (A) (B)
2. Poa sp.*	30	Yes	FAC	
3. Ranunculus repens	10	No	FAC	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Trifolium pratense	5	No	FACU	☑ Dominance Test is >50%
7. Dactylis glomerata	5	No	FACU	□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting
9				data in Remarks or on a separate sheet)
10				□ Wetland Non-Vascular Plants ¹
11				Problematic Hydrophytic Vegetation ¹ (Explain)
····	95	= Total C	over	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)			Over	be present, unless disturbed or problematic.
1				
				Hydrophytic
2	0			Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum 5	<u> </u>	= Total C	over	
Remarks:	و برام مالو و		1	1
Hydrophytic vegetation criteria met thro				
*Could not be identified to species, ass	sumed FA	U for sco	oring purp	DOSES.

SOIL	
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Profile Desc	ription: (Descril	be to the d	lepth ne	eded to docu	ment the	indicator	or confirm	the absen	ce of indicators.)
Depth	Matrix				ox Featur				
(inches)	Color (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 5	10YR 2/2	100						SiLo	Silt loam
5 - 11	10YR 2/2	98	5YF	R 4/6	2	С	Μ	SiLo	Silt loam
11 -16	10YR 5/2	92	5YF	R 4/6	8	С	Μ	SaLo	Sandy loam
			_						
	oncentration, D=D						ed Sand Gr	ains. ²	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRRs	s, unless othe	rwise no	ted.)		Indica	ators for Problematic Hydric Soils ³ :
Histosol	· · ·			andy Redox (cm Muck (A10)
	ipedon (A2)			tripped Matrix	· ·				ed Parent Material (TF2)
Black His	. ,			oamy Mucky N			MLRA 1)		ery Shallow Dark Surface (TF12)
	n Sulfide (A4) I Below Dark Surfa	ace (A11)		oamy Gleyed epleted Matrix		2)			ther (Explain in Remarks)
-	rk Surface (A12)			ledox Dark Su)		³ Indic	ators of hydrophytic vegetation and
	ucky Mineral (S1)			epleted Dark	•				tland hydrology must be present,
	leyed Matrix (S4)			edox Depress	ions (F8)			un	less disturbed or problematic.
	Layer (if present)	:							
Type: <u>Nc</u>									
Depth (in	ches):							Hydric S	oil Present? Yes 🗵 No 🗌
Remarks:									
Hydric soil	criteria met th	rough ind	dicators	s A11.					
Hydric soil	criteria met th	rough ind	dicators	s A11.					
Hydric soil	criteria met th	rough ind	dicators	s A11.					
-		rough ind	dicators	s A11.					
HYDROLO			dicators	s A11.					
HYDROLO Wetland Hyd	GY	rs:			ly)			<u>Se</u>	condary Indicators (2 or more required)
HYDROLO Wetland Hyd	GY drology Indicator cators (minimum c	rs:	ired; che			ves (B9) (e	xcept MLR		condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hyd Primary India	GY drology Indicator cators (minimum c	rs:	ired; che	<u>ck all that app</u> □ Water-Sta			xcept MLR		· · · · · · · ·
HYDROLO Wetland Hyd Primary India	GY drology Indicator cators (minimum c Water (A1) ter Table (A2)	rs:	ired; che	<u>ck all that app</u> □ Water-Sta	ined Leav A, and 4I		xcept MLR	A 🗌	Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hyd Primary India Surface High Wa	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3)	rs:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 .	ined Leav A, and 4I (B11)	3)	xcept MLR	A 🗌	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatic Water M	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3)	rs:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 . ☐ Salt Crust	ined Leav A, and 4I (B11) vertebrate	3) es (B13)	xcept MLR	A 🗌	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3)	rs:	ired; che	 <u>ck all that app</u> Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F 	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe	3) es (B13) edor (C1) eres along	Living Root		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)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma	GY drology Indicator eators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	rs:	ired; che	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe of Reduc	3) es (B13) edor (C1) eres along ed Iron (C4	Living Root	A	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)
HYDROLO Wetland Hyd Primary India Surface V High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	rs:	ired; che	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe of Reduc n Reduct	3) dor (C1) eres along ed Iron (C4 ion in Tille	Living Root I) d Soils (C6)	A	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)
HYDROLO Wetland Hyd Primary India Surface V High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	rs: If one requ	ired; che	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe of Reduct n Reduct	3) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Root	A	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)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria	r s: If one requ	ired; che	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe of Reduct n Reduct	3) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Root I) d Soils (C6)	A	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)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatic	GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca	r s: If one requ	ired; che	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leav A, and 4I (B11) vertebrate Sulfide C Rhizosphe of Reduct n Reduct	3) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Root I) d Soils (C6)	A	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)
HYDROLO Wetland Hyd Primary India Surface V High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Obser	GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) nosits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations:	r s: If one requ	ired; che (B7) ∋ (B8)	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iroo Stunted or Other (Exp	A, and 4 (B11) vertebrate Sulfide C Rhizosphe of Reduc n Reduct Stressec olain in Re	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root I) d Soils (C6)	A	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)
HYDROLO Wetland Hy Primary India Surface V High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Obser Surface Wat	GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present?	rs: <u>of one requ</u> al Imagery ave Surface Yes []	(B7) e (B8) No 🔀	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inchest)	s): <u>None</u>	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root I) d Soils (C6)	A	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)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimen Algal Ma Iron Dep Surface S Inundatic Sparsely Field Obser Surface Water Water Table	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	rs: <u>of one requ</u> al Imagery ∩ ave Surface Yes □ Yes ⊠	(B7) ≥ (B8) No ⊠ No □	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inche	A, and 4 (B11) vertebrate Sulfide C Rhizosphe of Reduc n Reduct Stressec blain in Re s): <u>None</u> s): <u>17</u>	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root I) d Soils (C6) 1) (LRR A)	A	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)
HYDROLO Wetland Hye Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	rs: <u>of one requ</u> al Imagery ∩ ave Surface Yes □ Yes ⊠	(B7) e (B8) No 🔀	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inchest)	A, and 4 (B11) vertebrate Sulfide C Rhizosphe of Reduc n Reduct Stressec blain in Re s): <u>None</u> s): <u>17</u>	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root I) d Soils (C6) 1) (LRR A)	A	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)
HYDROLO Wetland Hy Primary India Surface V High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	rs: <u>of one requ</u> al Imagery 4 ave Surface Yes □ Yes ⊠ Yes ⊠	(B7) e (B8) No 🛛 No 🗌 No 🗌	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inche Depth (inche	A, and 4 (B11) vertebrate Sulfide C Sulfide C Rhizosphe of Reduct Stressec blain in Re s): <u>None</u> s): <u>17</u> s): <u>16</u>	B) dor (C1) eres along ed Iron (C4) ion in Tille H Plants (D emarks) E	Living Roof I) d Soils (C6) 1) (LRR A) Wetla	A	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)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap Describe Re	GY drology Indicator cators (minimum c Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present? pillary fringe)	rs: <u>of one requ</u> al Imagery ∩ ave Surface Yes □ Yes ⊠ Yes ⊠ am gauge,	(B7) (B7) (B8) No 🖾 No 🗌 No 🗌 monitori	ck all that app Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (inche Depth (inche Depth (inche mg well, aerial	A, and 4 (B11) vertebrate Sulfide C Rhizosphe of Reduc n Reduct Stressec olain in Re s): <u>17</u> s): <u>16</u> photos, p	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks) e e e e e e e	Living Root) d Soils (C6) 1) (LRR A) Wetla spections),	A	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)

No hydrology criteria met; water table and saturation too low in profile (>12") to meet indicators A2 or A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial City/Cou	_{inty:} Marysville / Snohomish s	ampling Date: 05/07/2020
Applicant/Owner: Mowat Construction	State: WA S	ampling Point: DP-8/MP-8
Investigator(s): Ryan Krapp	Section, Township, Range: 27 / 31N	/ 05E
	elief (concave, convex, none): <u>None</u>	
Subregion (LRR): <u>A2</u> Lat: <u>48.14591(</u>	DLong: -122.15327364	Datum: WGS 84
Soil Map Unit Name: Custer fine sandy loam	NWI classificatio	n: 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" preser	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answers in R	emarks.)
SUMMARY OF FINDINGS – Attach site map showing sampl	ing point locations, transects, ir	nportant features, etc.
Hydric Soil Present? Yes 🗌 No 🕱	the Sampled Area ithin a Wetland? Yes 🗌 No [X
Remarks: Not all three criteria met, only hydrophytic vegetation. Data collected in nor monitoring indicates that this area does not remain inundated or saturated for		

-	Abcoluto	Dominant	t Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)	% Cover				
				Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
					(71)
2				Total Number of Dominant	
3		·		Species Across All Strata: 2	(B)
4	<u>^</u>			Percent of Dominant Species	
Copling/Chruh Stratum (Plat size, 20 tt)	0	= Total C	Cover	That Are OBL, FACW, or FAC: 100%	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				Prevalence Index worksheet:	
1					
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	Cover	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	70	Yes	FAC	Column Totals: (A)	
2. Alopecurus pratensis	20	Yes	FAC		(D)
3. Ranunculus repens	5	No	FAC	Prevalence Index = B/A =	
4. Trifolium pratense	5	No	FACU	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				☐ Prevalence Index is ≤3.0 ¹	
				Morphological Adaptations ¹ (Provide support Morphological Adaptations ¹ (Provide support	ortina
8				data in Remarks or on a separate shee	
9				Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Expla	ain)
11	100			¹ Indicators of hydric soil and wetland hydrology	,
	100	= Total C	Cover	be present, unless disturbed or problematic.	maor
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1				Hydrophytic	
2				Vegetation	
	0	= Total C	Cover	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum _0					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.		

SOIL	
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Profile Desc	ription: (Describ	e to the de	pth ne	eded to docur	nent the	indicator	or confirm	n the at	osence	of indicators.)
Depth	Matrix				x Feature					
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	r (moist)	%	Type ¹	Loc ²	Textu	re	Remarks
0 - 7	10YR 2/2	100	-		-		-	SiLo		Silt loam
7 - 13	10YR 2/2	99	5YF	R 4/4	1	С	Μ	SiLo		Silt loam
13 -16	10YR 4/2	95	5YF	R 4/4	5	С	Μ	LoSa	l	Loamy sand
								_		
	-									
1Turney 0, 0				used Matrix CC					21 -	
	oncentration, D=De Indicators: (Appli						ed Sand G			cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :
Histosol				Sandy Redox (S		,		_		n Muck (A10)
	ipedon (A2)			Stripped Matrix				Г		Parent Material (TF2)
Black His				_oamy Mucky N	. ,	1) (except	MLRA 1)	Г		/ Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed N			,	Г		er (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix		/		_		. (
	rk Surface (A12)			Redox Dark Sur	. ,			3	ndicato	ors of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark S	. ,	7)				and hydrology must be present,
-	leyed Matrix (S4)			Redox Depressi	•	/				ss disturbed or problematic.
	_ayer (if present):			•	()					•
Type: <u>No</u>	ne									
Depth (ind	ches):							Hydi	ic Soil	Present? Yes 🗌 No 🗵
Remarks:										
No hydric s	soil criteria met	Deplete	d mat	trix begins to	o deen	(>12") i	n the pro	ofile to	meet	A11 requirements, and top
	not dark enoug								moor	, and top
layere are i	lot dant onoug		u = 1)		- roquir	Sinoino.				
	<u></u>									
HYDROLO										
	drology Indicators				``				•	
	ators (minimum of	one requir	ed; che			(= -) (ndary Indicators (2 or more required)
Surface \				Water-Stai			xcept MLF	RA	ЦW	/ater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B)				4A, and 4B)
Saturatio	()			Salt Crust	· · ·					rainage Patterns (B10)
Water Ma	arks (B1)			Aquatic Inv		. ,			D	ry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Oo	dor (C1)			🗆 S	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizosphe	res along	Living Roo	ots (C3)	ΠG	eomorphic Position (D2)
🗌 Algal Ma	t or Crust (B4)			Presence of	of Reduce	d Iron (C4	4)		🗆 S	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iron	n Reducti	on in Tille	d Soils (C6	5)	🗌 F/	AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR A))	🗌 R	aised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (E	37)	Other (Exp					🗆 Fi	rost-Heave Hummocks (D7)
	Vegetated Concav			_ 、.		,				
Field Observ	vations:									
Surface Wate	er Present?	Yes 🗌 🕴	lo 🗙	Depth (inches	_{):} None	•				
Water Table	Present?	Yes 🗌 🛛 🛚	lo 🗙	Depth (inches						
Saturation Pr (includes cap			lo 🗙	Depth (inches			Wetl	and Hy	drolog	y Present? Yes 🗌 No 🗵
	corded Data (streat	m gauge, n	nonitor	ing well, aerial p	ohotos, pi	revious ins	spections),	if availa	able:	
High groun	dwater is not s	ustained	for 2	or more con	tinuous	weeks	during th	e grov	ving s	eason.
Remarks:										
No hydrolo	gy criteria met.	Additior	ally, d	groundwater	monito	ring indi	cates that	at the a	area c	does not remain inundated or
	ong enough du									
	-						-			

Project/Site: 2021.0001 - M-51 Industrial		City/Co	ounty:	Marysv	ille / Snohomish	_ Sampling Date	05/07/2020
Applicant/Owner: Mowat Construction					State: WA	_ Sampling Point	DP-9/MP-9
					wnship, Range: <u>27 / 3</u>		
Landform (hillslope, terrace, etc.): Valley Floor							ope (%): 0
Subregion (LRR): A2							
Soil Map Unit Name: Custer fine sandy loam					NWI classific		
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Ye	s 🗙	No 🗌 (l	f no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology sign	nificantly dis	turbed	?	Are "No	ormal Circumstances" pre	esent? Yes 🛛	No 🗌
Are Vegetation, Soil, or Hydrology natu	urally probler	matic?		(If need	ed, explain any answers i	in Remarks.)	
SUMMARY OF FINDINGS – Attach site map							aturas atc
		Jamp	Jiing				
Hydrophytic Vegetation Present? Yes No 🗵		1	ls the	Sampled	Area		
Hydric Soil Present? Yes No 🗵		,	withi	n a Wetlar	nd? Yes 🗌 I	No 🔀	
Wetland Hydrology Present? Yes No 🗵 Remarks:							
No wetland criteria met. Data collected in northea			0		0.		ng indicates that
this area does not remain inundated or saturated b	ior long enou	igh dur	ing th	e growing	season to meet wetland hy	drology criteria.	
VEGETATION – Use scientific names of plan	ts.						
	Absolute				Dominance Test work	(sheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Spec	ies?	Status	Number of Dominant S		
1					That Are OBL, FACW,	or FAC: <u>1</u>	(A)
2					Total Number of Domir	•	
3					Species Across All Stra	ata: <u>2</u>	(B)
T	0				Percent of Dominant S That Are OBL, FACW,	pecies	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					That Ale OBL, FACW,	011AC. <u>0070</u>	(A/B)
1					Prevalence Index wor		
2					Total % Cover of:		
3					OBL species		
4					FACW species		
5	0				FAC species FACU species		
Herb Stratum (Plot size: <u>10 ft</u>)	<u> </u>	= 10		iver	UPL species		
1. Dactylis glomerata	60	Yes	3	FACU	Column Totals:		
2. Schedonorus arundinaceus	40	Yes	<u> </u>	FAC		(//)	(=)
3						c = B/A =	
4					Hydrophytic Vegetati		
5					Rapid Test for Hyd		n
6				<u> </u>	Dominance Test is		
7					Prevalence Index is		
8		·		<u> </u>	Morphological Ada data in Remark	ptations' (Provide s or on a separate	

4			Hydrophytic Vegetation Indicators:
5			Rapid Test for Hydrophytic Vegetation
6			Dominance Test is >50%
7			□ Prevalence Index is ≤3.0 ¹
8			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9			☐ Wetland Non-Vascular Plants ¹
10			Problematic Hydrophytic Vegetation ¹ (Explain)
11	100	= Total Cover	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u>)			be present, uniess disturbed of problematic.
1			Lindean budia
2			Hydrophytic Vegetation
	0	= Total Cover	Present? Yes No 🗵
% Bare Ground in Herb Stratum 0			

Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soil and hydrology.

	ription: (Describ		lepth ne				or confirm	n the ab	sence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Colc	or (moist)	ox Feature %	<u>s</u> Type ¹	Loc ²	Textur	e	Remarks	
0 - 13	10YR 2/2	100	-		-	-	-	SiLo		Silt loam	
13 - 16	10YR 5/2	70	7.5	YR 4/6	30	С	М	LoSa		Loamy sand	
·											
¹ Type: C=Co	oncentration, D=D	epletion, F	RM=Red	luced Matrix, C	S=Covere	d or Coat	ed Sand Gr	rains.	² Loc	ation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators: (Appl	icable to	all LRR	s, unless othe	erwise not	ted.)		In	dicato	rs for Problematic Hydric Soils ³ :	
Histosol (,			Sandy Redox (Muck (A10)	
	ipedon (A2)			Stripped Matrix	. ,	• •				Parent Material (TF2)	
Black His				Loamy Mucky N			(MLRA 1)			Shallow Dark Surface (TF12)	
	n Sulfide (A4) Below Dark Surfa	οco (Δ11)		Loamy Gleyed		.)		L	JOthe	r (Explain in Remarks)	
	rk Surface (A12)			Redox Dark Su				³ lr	ndicato	rs of hydrophytic vegetation and	
	ucky Mineral (S1)			Depleted Dark	, ,					nd hydrology must be present,	
	eyed Matrix (S4)			Redox Depress	sions (F8)				unles	s disturbed or problematic.	
	ayer (if present)	:									
Туре: <u>No</u>				-							
Depth (inc	ches):			•				Hydri	ic Soil	Present? Yes 🗌 No 🗵	
Remarks:											
						(>12") i	n the pro	file to r	meet	A11 requirements, and top I	ayer
is not dark	enough (chron	na >1) te	o meet	A12 require	ements.						
HYDROLO	GY										
Wetland Hyd	Irology Indicator	s:									
Primary Indic	ators (minimum o	f one requ	ired; ch	eck all that app	ly)				Secon	ndary Indicators (2 or more required	<u>l)</u>
Surface V	Vater (A1)			U Water-Sta	ined Leav	es (B9) (e	xcept MLR	RA	🗆 Wa	ater-Stained Leaves (B9) (MLRA 1	, 2 ,
High Wat	er Table (A2)			1, 2, 4	A, and 4B	5)				4A, and 4B)	
Saturatio	n (A3)			Salt Crust	(B11)				🗌 Dr	ainage Patterns (B10)	
Water Ma	arks (B1)			Aquatic In	vertebrate	es (B13)			🗌 Dr	y-Season Water Table (C2)	
Sediment	t Deposits (B2)			Hydrogen	Sulfide O	dor (C1)				aturation Visible on Aerial Imagery	(C9)
Drift Dep				Oxidized F		-	-	ts (C3)	🗌 Ge	eomorphic Position (D2)	
	t or Crust (B4)			Presence						nallow Aquitard (D3)	
Iron Depo				Recent Iro			•	,		AC-Neutral Test (D5)	
	Soil Cracks (B6)		() -)				1) (LRR A)			aised Ant Mounds (D6) (LRR A)	
	n Visible on Aeria	• •	. ,	Other (Exp	plain in Re	emarks)			L Fro	ost-Heave Hummocks (D7)	
_ ; ;	Vegetated Conca	ve Surfac	e (B8)								
Field Observ		V –			None	`					
Surface Wate		Yes 🗌	No 🔀	Depth (inche							
Water Table		Yes 🗌	No 🗵	Depth (inche	·						
Saturation Pr (includes cap		Yes 🗌	No 🗵	Depth (inche	s): INONE	;	Wetla	and Hyd	irology	/ Present? Yes 🗌 No 🗵	
	corded Data (strea	m gauge,	monitor	ring well, aerial	photos, p	revious in	spections),	if availal	ble:		
	dwater is not s			-						eason.	
Remarks:								3.01			
	av criteria met	Additic	nallv	aroundwate	r monito	rina indi	icates the	at the a	area d	oes not remain inundated o	r
•	ong enough du		-	-		-					
	3	3	3	5			,	,			

Project/Site: 2021.0001 - M-51 Industrial	_City/County: 1	Marysville / Sno	homish	Sampling Date: 03/12/2020
Applicant/Owner: Mowat Construction		State:	WA	Sampling Point: DP-10/MP-10
Investigator(s): Rachael Hyland	Se	ction, Township, Ra	nge: <u>27 / 311</u>	N / 05E
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>0</u>
				32 Datum: WGS 84
Soil Map Unit Name: Custer fine sandy loam			NWI classificat	ion: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ar?Yes 🗙 🕴	No 🗌 (If no, explai	n in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly dis	sturbed?	Are "Normal Circu	mstances" pres	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally proble	ematic?	(If needed, explain	any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	ı sampling p	point locations	, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes ⋈ No □ Hydric Soil Present? Yes ⋈ No □ Wetland Hydrology Present? Yes □ No ⋈		Sampled Area a Wetland?	Yes 🗌 No	
Remarks: Not all three wetland criteria met, lacking hydrology. Data collect monitoring indicates that this area does not remain inundated or s				

	Absolute	Dominant I	ndicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 30 ft)		Species?				
				Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
		·		That Ale OBE, I AOW, OF I AC.	1	(~)
2				Total Number of Dominant		
3				Species Across All Strata:	1	(B)
4				Percent of Dominant Species		
	0	= Total Co	ver	That Are OBL, FACW, or FAC:	100%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)						()
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x 1	=	_
4				FACW species x 2		
F				FAC species x 3		
	0			FACU species x 4		
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5		
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)		
2						_ (=)
3				Prevalence Index = B/A =		
4				Hydrophytic Vegetation Indicate	ors:	
5				Rapid Test for Hydrophytic Ve	getation	
6				☑ Dominance Test is >50%		
7				☐ Prevalence Index is ≤3.0 ¹		
8				Morphological Adaptations ¹ (P	Provide suppor	ting
9				data in Remarks or on a se	eparate sheet)	
10				U Wetland Non-Vascular Plants	1	
11				Problematic Hydrophytic Vege	etation ¹ (Expla	in)
····	100	= Total Co		¹ Indicators of hydric soil and wetla		must
Woody Vine Stratum (Plot size: 30 ft)			vei	be present, unless disturbed or pre-	oblematic.	
1						
		· <u> </u>		Hydrophytic		
2	0			Vegetation Present? Yes X No		
% Bare Ground in Herb Stratum 0	0	= Total Co	ver			
		_		1		
Remarks: Hydrophytic vegetation criteria met thr	ough don	ninance tes	st.			

SOIL

Depth (inches)	Matrix Color (moist)	%	Color (moist)	dox Featur %	<u>es</u> Type ¹	Loc ²	Texture	Remarks
<u>(incrics)</u> 0 - 7	10YR 3/1	100	-	- 70	<u> </u>	-	SaLo	Sandy loam
7 - 23	2.5Y 5/1	93	10YR 4/4	7	С	М	LoSa	Loamy sand
23 - 32	2.5Y 5/1	90	7.5YR 4/4	10		Μ	LoSa	Loamy sand
23 - 32	2.51 5/1		7.511(4/4				L05a	
				;				
17 0 0							. 21	
			I=Reduced Matrix,			ed Sand G		cocation: PL=Pore Lining, M=Matrix.
-					ieu.)			•
Histosol	pipedon (A2)		Sandy Redox					m Muck (A10) d Parent Material (TF2)
	istic (A3)		Loamy Mucky	. ,	-1) (excep t	MLRA 1)		ry Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed					ner (Explain in Remarks)
	d Below Dark Surfa	ace (A11)	Depleted Mat		,		_	· · · /
Thick Date	ark Surface (A12)		Redox Dark S	urface (F6	i)		³ Indica	tors of hydrophytic vegetation and
	/lucky Mineral (S1)		Depleted Dark					land hydrology must be present,
	Bleyed Matrix (S4)		Redox Depres	sions (F8)			unle	ess disturbed or problematic.
Restrictive	Layer (if present)	:						
, · · ·								
Depth (in	nches):						Hydric So	il Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	l criteria met thr	rough indi	cator A11.					
HYDROLO)GY							
	drology Indicator							
•			ed; check all that ap	nh ()			Soo	ondary Indicators (2 or more required)
						voont ML		
_	()		Water-St	4A, and 4		хсерт міл		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturatio	ater Table (A2)		, ₂, □ □ Salt Crus		D)			A, and 4b) Drainage Patterns (B10)
	larks (B1)			nvertebrat	oc (P12)			Dry-Season Water Table (C2)
	. ,		— •	n Sulfide C	· · /			
	nt Deposits (B2)				eres along	Living Por		Saturation Visible on Aerial Imagery (C9)
	posits (B3) at or Crust (B4)				eres along ed Iron (C4	0	() _	Geomorphic Position (D2) Shallow Aquitard (D3)
					tion in Tille		_	,
	oosits (B5) Soil Cracks (B6)				d Plants (D	•	,	FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	l Imageny (E		xplain in R				Frost-Heave Hummocks (D7)
	y Vegetated Conca	•••	, .		onaixoj			
Field Obser	-							
	valions.			Non				

Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None		
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): <u>26</u>		
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 23	Wetland Hydrology Present? Yes	No 🗵
Describe Recorded Data (str	eam gauge	, monitor	ing well, aerial photos, previous inspe-	ctions), if available:	
High groundwater is no	t sustaine	ed for 2	or more continuous weeks du	ing the growing season.	
Remarks:					
Uudrologu oritorio pot m	at water	toblo c	and acturation too low in profile	(, 10") to most indicators A0 or A0	Additionally

Hydrology criteria not met, water table and saturation too low in profile (>12") to meet indicators A2 or A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	City/County	<u>:</u> Marysville / Snohomish	Sampling Date: 03/12/2020
Applicant/Owner: Mowat Construction		State: WA	Sampling Point: DP-11/MP-11
Investigator(s): Rachael Hyland		Section, Township, Range: 27 /	31N / 05E
Landform (hillslope, terrace, etc.): Valley Floor			e Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat: 48.144582	Long: -122.1515	6385 Datum: WGS 84
Soil Map Unit Name: Custer fine sandy loam		NWI class	ification: N/A
Are climatic / hydrologic conditions on the site typical f	for this time of year? Yes 🗵	_	
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances"	present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	_ naturally problematic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site n	nap showing sampling	g point locations, transed	ets, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 N	0		
Hydric Soil Present? Yes N		e Sampled Area	
Wetland Hydrology Present? Yes 🗌 N	o 🗵 withi	in a Wetland? Yes	No 🗵
Remarks: Not all three wetland criteria met, only hydrophytic	c vegetation present. Data collected	in central-eastern portion of the site at a	groundwater monitoring plot MP-11.
Hydrology monitoring indicates that this area does			

	Absolute		t Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3				Species Across All Strata: <u>1</u>	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	_
4		·		FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C	Cover	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)	
2		·			
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide support data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Explain	n)
11	400			¹ Indicators of hydric soil and wetland hydrology n	,
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= Total C	Cover	be present, unless disturbed or problematic.	
1				Ludrophytic	
2				Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 10	0	= Total C	Cover	Present? Yes 🗵 No 🗌	
				1	
Remarks: Hydrophytic vegetation criteria met thr	ough don	ninance f	est.		

SOIL

	cription: (Describ	e to the de	pth needed to doo	ument the	indicator	or confirm	the absence	e of indicators.)
Depth	Matrix		-	dox Feature				
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0 - 9	10YR 2/1	100	-	-	-	-	SaLo	Sandy loam
9 - 27	5Y 4/1	100	-	-	-	-	LoSa	Loamy sand
27 - 32	5Y 4/1	95	5Y 3/2	5	С	М	LoSa	Loamy sand
	·							
¹ Type: C=Co	oncentration, D=De	epletion, RM	I=Reduced Matrix,	CS=Covere	d or Coat	ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	cable to a	I LRRs, unless ot	nerwise not	ed.)		Indicat	ors for Problematic Hydric Soils ³ :
Histosol	. ,		Sandy Redox					n Muck (A10)
	ipedon (A2)		Stripped Matr	. ,				Parent Material (TF2)
Black His			Loamy Mucky			MLRA 1)		y Shallow Dark Surface (TF12)
	n Sulfide (A4) I Bolow Dork Surfo	00 (111)	 Loamy Gleye Depleted Mat)			er (Explain in Remarks)
-	l Below Dark Surfa Irk Surface (A12)	ce (ATT)	Depleted Mat Redox Dark S	. ,			³ Indicat	ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dar	• • •	7)			and hydrology must be present,
	leyed Matrix (S4)		Redox Depre		.,			ss disturbed or problematic.
	Layer (if present):							
Type: No								
Depth (ind	ches):						Hydric Soi	l Present? Yes 🗌 No 🛛
Remarks:								
No hydric s	soil criteria met	not eno	ugh redox (<2%) in secor	nd layer	to meet A	A11.	
					,			
HYDROLO	GY							
HYDROLO Wetland Hyd		<u></u>						
Wetland Hy	drology Indicators		ed; check all that ap	oply)				ondary Indicators (2 or more required)
Wetland Hyd	drology Indicators cators (minimum of		· · · ·	• • •			Seco	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2 ,
Wetland Hyd Primary India	drology Indicators cators (minimum of Water (A1)		☐ Water-S	tained Leav	es (B9) (e		Seco	Vater-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hyd Primary India Surface High Wa	drology Indicators cators (minimum of Water (A1) ter Table (A2)		☐ Water-S 1, 2,	tained Leav 4A, and 4B	es (B9) (e		<u>Secc</u> A □ V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hyd Primary India	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3)		☐ Water-S	tained Leav 4A, and 4B st (B11)	es (B9) (e)		<u>Secc</u> A □ V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hyd Primary India Surface V High Wa Saturation Water Mater	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic	tained Leav 4A, and 4B st (B11)	es (B9) (e) s (B13)		<u>Secc</u> ▲ □ V □ □ □	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Wetland Hyd Primary India Surface V High Wa Saturation Water Ma Sediment	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic ☐ Hydroge	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O	es (B9) (e) s (B13) dor (C1)	xcept MLR	<u>Secc</u> A □ V □ □ □ □ □ □	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)		Water-S 1, 2, Salt Cru Aquatic Hydroge	tained Leav 4 A, and 4B st (B11) Invertebrate	es (B9) (e) s (B13) dor (C1) res along	xcept MLR	<u>Secc</u> A □ V □ □ □ □ S (C3) □ 0	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce	es (B9) (e) dor (C1) res along d Iron (C4	xcept MLR Living Root	<u>Secc</u> A □ V □ □ □ □ □ 5 □ 5 □ 5	Vater-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)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) to Deposits (B2) posits (B3)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I	tained Leav 4A, and 4B st (B11) Invertebrate n Sulfide O I Rhizosphe	es (B9) (e) dor (C1) res along ed Iron (C4 on in Tille	xcept MLR Living Root I) d Soils (C6)	<u>Secc</u> A □ V □ □ □ □ □ S (C3) □ C □ S 0 □ F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4) osits (B5)	one requir	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D	xcept MLR Living Root I) d Soils (C6)	Secc A □ V □ □ □ □ □ □ □ S (C3) □ 0 □ S □ S □ S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) GC-Neutral Test (D5)
Wetland Hyd Primary India Surface V High Wat Saturation Water Mater Sediment Drift Dep Algal Mater Surface S Inundation	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	one requir	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D	xcept MLR Living Root I) d Soils (C6)	Secc A □ V □ □ □ □ □ □ □ S (C3) □ 0 □ S □ S □ S	Vater-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)
Wetland Hyd Primary India Surface V High Wat Saturation Water Mater Sediment Drift Dep Algal Mater Surface S Inundation	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) to Deposits (B2) posits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial	one requir	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLR Living Root I) d Soils (C6)	Secc A □ V □ □ □ □ □ □ □ S (C3) □ 0 □ S □ S □ S	Vater-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)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations:	one requir Imagery (E <i>v</i> e Surface	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLR Living Root I) d Soils (C6)	Secc A □ V □ □ □ □ □ □ □ S (C3) □ 0 □ S □ S □ S	Vater-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)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concar vations: er Present?	Imagery (E <i>re</i> Surface Yes	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide Or I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLR Living Root I) d Soils (C6)	Secc A □ V □ □ □ □ □ □ □ S (C3) □ 0 □ S □ S □ S	Vater-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)
Wetland Hyd Primary India Surface V High Wat Saturatio Water Mater Sediment Drift Dep Algal Mater Surface S Inundatio Sparsely Field Obsert Surface Water Water Table Saturation P	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present?	one requir Imagery (E /e Surface Yes □ N Yes ⊠ N	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re mes): <u>None</u>	es (B9) (e) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLR	Secc A □ V □ □ □ □ □ □ □ S □ S (C3) □ C □ S □ S □ S □ F □ F □ F	Vater-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)
Wetland Hyd Primary India Surface V High Wat Saturatio Water Mater Sediment Drift Dep Algal Mater Iron Dep Surface S Inundatio Sparsely Field Obsert Surface Water Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? present? pillary fringe)	Imagery (E /e Surface Yes □ N Yes ⊠ N Yes ⊠ N	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Oxidized Recent I Stunted S7) Other (E (B8) Outher (E) Depth (inch- Stunce)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re mes): <u>None</u> mes): <u>22</u> mes): <u>21</u>	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D marks)	xcept MLR	Secc A □ V □ □ □ 5 □ 5 □ 5 □ 6 □ 7 □ 7 □ 7 □ 7 □ 7 □ 7 □ 7 □ 7 □ 7 □ 7	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser Surface Water Water Table Saturation P (includes cap Describe Reference)	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present? Present? resent? corded Data (strea	Imagery (E /e Surface Yes □ N Yes ⊠ N Yes ⊠ N m gauge, n	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Oxidized Recent I Stunted To Other (E (B8)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re mes): <u>22</u> mes): <u>21</u>	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D marks)	xcept MLR	A Secc A V C V C C C C C C C C C C C C C	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser Surface Water Water Table Saturation P (includes cap Describe Reference)	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present? Present? resent? corded Data (strea	Imagery (E /e Surface Yes □ N Yes ⊠ N Yes ⊠ N m gauge, n	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Oxidized Recent I Stunted S7) Other (E (B8) Outher (E) Depth (inch- Stunce)	tained Leav 4A, and 4E st (B11) Invertebrate n Sulfide O I Rhizosphe e of Reduce ron Reducti or Stressed xplain in Re mes): <u>22</u> mes): <u>21</u>	es (B9) (e) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D marks)	xcept MLR	A Secc A V C V C C C C C C C C C C C C C	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Hydrology criteria not met, water table and saturation too low (>12") in profile to meet indicators A2 or A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	ity/County: Marysville / Snoh	omish Sampling	Date: 03/12/2020					
Applicant/Owner: Mowat Construction	State: V	NA Sampling	Point: DP-12/MP-12					
Investigator(s): Rachael Hyland	Section, Township, Rar	nge: <u>27 / 31N / 05E</u>						
Landform (hillslope, terrace, etc.): Valley Floor	_ocal relief (concave, convex, nor		Slope (%):					
	43444 Long: -1							
Soil Map Unit Name: Norma Ioam 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 X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No X	Is the Sampled Area within a Wetland?	Yes 🗌 No 🗵						
Remarks: Not all three wetland criteria met, lacking hydrology. Data collected in eastern portion of the site at groundwater monitoring plot MP-12. Hydrology monitoring indicates that this area does not remain inundated or saturated for long enough during the growing season to meet wetland hydrology criteria.								

Trop Strotum (Diot size: 20 ft)	Absolute		t Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	% Cover	<u>Species</u>	Status	Number of Dominant Species	(•)	
1				That Are OBL, FACW, or FAC: 1	(A)	
2				Total Number of Dominant		
3				Species Across All Strata: 1	(B)	
4				Percent of Dominant Species		
	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)	
Sapling/Shrub Stratum (Plot size: 30 ft)						
1						
2				Total % Cover of: Multiply by:		
3				OBL species x 1 =		
4		. <u> </u>		FACW species x 2 =		
5		<u> </u>		FAC species x 3 =		
	0	= Total C		FACU species x 4 =		
Herb Stratum (Plot size: 10 ft)				UPL species x 5 =		
1. Schedonorus arundinaceus	80	Yes	FAC	Column Totals: (A)		
2. Ranunculus repens	5	No	FAC		(=)	
3. Poa pratensis	5	No	FAC	Prevalence Index = B/A =		
4				Hydrophytic Vegetation Indicators:		
5				Rapid Test for Hydrophytic Vegetation		
6				☑ Dominance Test is >50%		
7				□ Prevalence Index is $\leq 3.0^{1}$		
8				Morphological Adaptations ¹ (Provide supporting		
				data in Remarks or on a separate sheet)		
9				Wetland Non-Vascular Plants ¹		
10		·		Problematic Hydrophytic Vegetation ¹ (Expl	ain)	
11	90			¹ Indicators of hydric soil and wetland hydrology	/ must	
Woody Vine Stratum (Plot size: 30 ft)	90	= Total Cover		be present, unless disturbed or problematic.		
1		·		Hydrophytic		
2	0			Vegetation		
% Bare Ground in Herb Stratum <u>10</u>	0	= Total C	over	Present? Yes 🗵 No 🗌		
Remarks:			1	1		
Hydrophytic vegetation criteria met thr	ougn aon	ninance 1	est.			

Profile Desc	cription: (Describe	to the depth	needed to doc	ument the	indicator	or confirm	the ab	sence of indicators.)		
Depth (in all a a)	Matrix			dox Featur		1 2	Tauduur	- Demontra		
<u>(inches)</u> 0 - 11	<u>Color (moist)</u> 10YR 2/1	<u>%</u> <u>C</u> 100 -	Color (moist)		Type ¹	Loc ²	Textur SaLo			
11 - 24	5Y 5/2		7.5YR 4/4	30	С	M, PL	LoSa	Loamy sand		
24 - 32	7.5YR 4/4	50 -				<u>-</u>	LoSa	Loamy sand, mixed matrix		
24 - 32			-							
	2.5Y 4/3	50 -	•	-			LoSa	Loamy sand, mixed matrix		
¹ Type: C=C	oncentration, D=Dep	letion, RM=F	Reduced Matrix,	CS=Covere	ed or Coat	ed Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.		
	Indicators: (Applic							dicators for Problematic Hydric Soils ³ :		
Histosol	(A1)	C] Sandy Redox	(S5)] 2 cm Muck (A10)		
Histic Epipedon (A2)										
							Very Shallow Dark Surface (TF12)			
	n Sulfide (A4)		Loamy Gleyed Matrix (F2) Other (Explain in Remarks)							
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Third Dark Surface (A12) Depleted Matrix (F3)										
	ark Surface (A12)		Redox Dark Surface (F6)					ndicators of hydrophytic vegetation and		
	lucky Mineral (S1) Bleyed Matrix (S4)		 Depleted Dark Surface (F7) Redox Depressions (F8) 					wetland hydrology must be present, unless disturbed or problematic.		
-	Layer (if present):	L		5510113 (1 0)						
Type: No										
Depth (in	ches):						Hydri	c Soil Present? Yes 🗵 No 🗌		
Remarks:										
	criteria met thro	ugh indica	tor A11.							
	0.1/									
HYDROLO										
-	drology Indicators:									
	cators (minimum of c	ne required;						Secondary Indicators (2 or more required)		
Surface			□ Water-St		. , .	except MLR	A	Water-Stained Leaves (B9) (MLRA 1, 2,		
-	iter Table (A2)			4A, and 4I	В)			4A, and 4B)		
Saturatio			Salt Crus					Drainage Patterns (B10)		
	arks (B1)		Aquatic I		` '			Dry-Season Water Table (C2)		
	nt Deposits (B2)			n Sulfide C				Saturation Visible on Aerial Imagery (C9)		
-	oosits (B3)					Living Root	ts (C3)	Geomorphic Position (D2)		
-	at or Crust (B4)			e of Reduc				Shallow Aquitard (D3)		
	osits (B5)					d Soils (C6)		FAC-Neutral Test (D5)		
Surface	Soil Cracks (B6)		Stunted of	or Stressed	d Plants (D	01) (LRR A)		Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7)								Frost-Heave Hummocks (D7)		

Depth (inches): None

Hydrology criteria not met, water table and saturation too low (>12") in profile to meet indicators A2 or A3. Additionally,

Depth (inches): 21

Depth (inches): 20

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

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

groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the gr	rowing
season to meet wetland hydrology criteria.	

Sparsely Vegetated Concave Surface (B8)

Yes 🗌 No 🗙

Yes 🗵 No 🗌

Yes 🗵 No 🗌

Field Observations:

Surface Water Present?

(includes capillary fringe)

Water Table Present?

Saturation Present?

Remarks:

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 2021.0001 - M-51 Industrial	City/County:	Marysville / Snohom	nish Sam	oling Date: 03/12/2020
Applicant/Owner: Mowat Construction		State: WA	Sam	oling Point: DP-13/MP-13
Investigator(s): Rachael Hyland		Section, Township, Range:	27 / 31N / 0	5E
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):		
	143444	Long: -122	.15169898	Datum: WGS 84
Soil Map Unit Name: Norma Ioam		NW	I classification:	N/A
Are climatic / hydrologic conditions on the site typical for this time of year	ar?Yes 🗙	No 🗌 (If no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly dist	turbed?	Are "Normal Circumsta	nces" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	natic?	(If needed, explain any	answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling	g point locations, tra	insects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes INO □ Hydric Soil Present? Yes INO □ Wetland Hydrology Present? Yes □ No INO	withir		Yes 🗌 No 🗵	
Not all three wetland criteria met, lacking hydrology. Data collected monitoring indicates that this area does not remain inundated or sa				

	Absolute	Dominant I	ndiantar	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?			
	<u></u>		Oldido	Number of Dominant Species	(4)
1				That Are OBL, FACW, or FAC: 1	(A)
2		·		Total Number of Dominant	
3				Species Across All Strata: 1	(B)
4					
		= Total Cov	ver	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	<u>)%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Ale OBL, FACW, of FAC. 100	<u>570</u> (A/B)
1				Prevalence Index worksheet:	
2.				Total % Cover of: Mul	Itiply by:
3				OBL species x 1 =	
4				FACW species x 2 =	
				FAC species x 3 =	
5	0	= Total Cov		FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)	0		vei		
1. Schedonorus arundinaceus	90	Yes	FAC	UPL species x 5 =	
				Column Totals: (A)	(B)
2				Prevalence Index = B/A =	
3				Hydrophytic Vegetation Indicators:	
				Rapid Test for Hydrophytic Vegeta	
5				 Dominance Test is >50% 	
6				$\square Prevalence Index is \leq 3.0^{1}$	
7				Morphological Adaptations ¹ (Provi	de supporting
8				data in Remarks or on a separ	
9				□ Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation	on¹ (Explain)
11		· <u> </u>		¹ Indicators of hydric soil and wetland h	nvdrology must
Manchelling Obstance (Blat sizes 00 ft)	90	= Total Cov	ver	be present, unless disturbed or proble	
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1				Hydrophytic	
2		. <u> </u>		Vegetation	
10	0	= Total Cov	ver	Present? Yes 🗶 No 🗌	
% Bare Ground in Herb Stratum <u>10</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance tes	st.		

	cription: (Describ	be to the	depth ne	eded to doc	ument the	indicator	or confirm	n the abse	ence of indicators.)	
Depth	Matrix				dox Feature					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 5	2.5Y 3/1	100			-	-	-	SaLo	Sandy loam	
5 - 11	2.5Y 3/1	50	10`	YR 4/4	10	С	Μ	SaLo	Sandy loam, mixed matrix	
	2.5Y 5/1	40	-		_		-	FiSaLo	Fine sandy loam, mixed matrix	
11 - 18	5Y 5/1	85	10`	YR 4/4	15	С	Μ	CILo	Clay loam	
18 - 26	5Y 5/1	60	10`	YR 4/4	40	С	Μ	CILo	Clay loam	
26 - 32	2.5Y 5/1	50	-		-	-	-	SaCILo	Sandy clay loam, mixed matrix	
	10YR 4/4	50	-		-	-	-	SaCILo	Sandy clay loam, mixed matrix	
Turney C. Concentration D. Depletion DM. Reduced Matrix, CS. Covered or Costed Sand Crains										
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 Soils ³ :										
Histosol				Sandy Redox		,			2 cm Muck (A10)	
	oipedon (A2)			Stripped Matri					Red Parent Material (TF2)	
Black Hi				_oamy Mucky	Mineral (F	1) (excep	t MLRA 1)		Very Shallow Dark Surface (TF12)	
	n Sulfide (A4)			_oamy Gleyed		2)			Other (Explain in Remarks)	
Depleted Below Dark Surface (A11) Depleted Matrix (F3)										
□ Thick Dark Surface (A12) ⊠ Redox Dark Surface (F6) □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7)								³ Indicators of hydrophytic vegetation and		
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)							wetland hydrology must be present, unless disturbed or problematic.			
Restrictive Layer (if present):										
Type: No	• • • •			_						
Depth (in									Soil Present? Yes 🗵 No 🗌	
Remarks:										
Hydric soil criteria met through indicators A11 and F6.										
	Tyune son entena met through indicators ATT and To.									
		rougn in	dicator	s A11 and	F6.					
		rougn in	dicator	s A11 and	F6.					
HYDROLO			dicator	s A11 and	F6.					
	θGY		dicator	s A11 and	F6.					
Wetland Hy	IGY drology Indicator	's:							Secondary Indicators (2 or more required)	
Wetland Hy Primary Indi	GY drology Indicator cators (minimum c	's:		eck all that ap	ply)	res (B9) (e	xcept MLF		Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,	
Wetland Hy Primary Indi Surface	GY drology Indicator cators (minimum c	's:		eck all that ap □ Water-St	ply)		xcept MLF		Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
Wetland Hy Primary Indi Surface	GY drology Indicator cators (minimum c Water (A1) tter Table (A2)	's:		eck all that ap □ Water-St	<u>פוץ)</u> ained Leav 4A, and 4E		xcept MLF	RA [Water-Stained Leaves (B9) (MLRA 1, 2,	
Wetland Hy Primary Indi Surface High Wa Saturation	GY drology Indicator cators (minimum c Water (A1) tter Table (A2)	's:		eck all that ap ☐ Water-St 1, 2, 4 ☐ Salt Crus	<u>פוץ)</u> ained Leav 4A, and 4E	3)	xcept MLF	RA [Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M	GY drology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3)	's:		eck all that ap Water-St 1, 2, 4 Salt Crus	ply) ained Leav 4A, and 4E st (B11)	3) es (B13)	xcept MLF	RA [Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer	drology Indicator cators (minimum o Water (A1) tter Table (A2) on (A3) larks (B1)	's:		eck all that ap ☐ Water-St 1, 2, 4 ☐ Salt Crus ☐ Aquatic li ☐ Hydroger	<u>ply)</u> ained Leav 4A, and 4E tt (B11) nvertebrate	3) es (B13) dor (C1)	-	RA [[[Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep	GY drology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	's:		eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized	<u>ply)</u> ained Leav 4A, and 4E at (B11) nvertebrate n Sulfide O	3) es (B13) dor (C1) eres along	Living Roc	RA [[[Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Chift Dep Algal Ma	GY drology Indicator cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1) ht Deposits (B2) posits (B3)	's:		eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence	ply) ained Leav 4A, and 4E tt (B11) nvertebrate n Sulfide O Rhizosphe	3) dor (C1) eres along ed Iron (C4	Living Roc 4)	RA [[[[[[[[[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) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Algal Ma Iron Dep	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4)	's:		eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir	ply) ained Leav 4 A, and 4E tt (B11) nvertebrate n Sulfide O Rhizosphe e of Reduce	B) dor (C1) eres along ed Iron (C4 ion in Tille	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one requ	uired; che	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic la Hydroger Oxidized Presence Recent Ir Stunted o	ply) ained Leav 4 A, and 4E at (B11) nvertebrate a Sulfide O Rhizosphe e of Reduce on Reduct	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	f one requ	uired; che	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic la Hydroger Oxidized Presence Recent Ir Stunted o	ply) ained Leav 4 A, and 4E at (B11) nvertebrate on Sulfide O Rhizosphe of Reduce on Reduce on Reduce	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	GY drology Indicator <u>cators (minimum o</u> Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca	f one requ	uired; che	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized Presence Recent lr Stunted c Other (E)	ply) ained Leav 4A, and 4E at (B11) nvertebrate n Sulfide O Rhizosphe of Reduce on Reduce or Reduce or Stressec con Reduce	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca	f one requ	uired; che	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir Stunted o Other (E)	ply) ained Leav 4 A, and 4E at (B11) nvertebrate on Sulfide O Rhizosphe e of Reduce on Reduct or Stressec kplain in Re es): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present?	f one requ I Imagery	uired; che (B7) e (B8)	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted c Other (E)	ply) ained Leav 4 A, and 4E at (B11) nvertebrate on Sulfide O Rhizosphe of Reduca on Reduct or Stressed kplain in Re es): <u>None</u> es): 23	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6	RA [[[[[[[[]]]] []]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P	drology Indicator cators (minimum of Water (A1) atter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present? Present?	f one requ I Imagery ive Surfac	uired; che (B7) ee (B8) No 🛛	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir Stunted o Other (E)	ply) ained Leav 4 A, and 4E at (B11) nvertebrate on Sulfide O Rhizosphe of Reduca on Reduct or Stressed kplain in Re es): <u>None</u> es): 23	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6 1) (LRR A	RA [[[[[] []]] []] []] []] []] []] []]] [] [] [] [] [] [] []] []] []]]]]]]]]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes X Yes X	uired; che (B7) ee (B8) No ⊠ No □ No □	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted c Other (E) Depth (inche Depth (inche	ply) ained Leav 4 A, and 4E at (B11) nvertebrate of Reduce of Reduce of Reduce of Reduce of Reduce of Reduce of Stressec kplain in Re es): <u>23</u> es): <u>22</u>	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6 1) (LRR A	RA [[[[[]]] [] [] [] [] []] []] []] []]]]]]]]]]]]]	 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) 	
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca Describe Re	drology Indicator cators (minimum of Water (A1) atter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present? Present?	I Imagery ve Surfac Yes Yes X Yes X am gauge	(B7) (B7) (B8) No ⊠ No □ No □ No □	eck all that ap Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized Presence Recent lr Stunted c Other (E) Depth (inche Depth (inche Depth (inche	ply) ained Leav 4A, and 4E at (B11) nvertebrate on Sulfide O Rhizosphe e of Reduct or Reduct or Stressec con Reduct or Stressec con Reduct es): 23 es): 23 es): 22	B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks) e e revious in	Living Roc 4) d Soils (C6 1) (LRR A	RA [[[[[[[]]] [] [] [] []] []] [] [] [] [] []]] []]]]]]]]]]]]]	 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) 	

Hydrology criteria not met, water table and saturation too low (>12") in profile to meet indicators A2 or A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	_City/County:	Marysville / Snoh	omish	Sampling Date: 03/12/2020					
Applicant/Owner: Mowat Construction		State: V	VA	Sampling Point: DP-14/MP-14					
Investigator(s): Rachael Hyland	S	ection, Township, Ran	_{ge:} <u>27 / 31</u> N	N / 05E					
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): 0					
				4 Datum: WGS 84					
Soil Map Unit Name: Norma Ioam 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 dis	sturbed?	Are "Normal Circum	stances" prese	ent? Yes 🗵 No 🗌					
Are Vegetation, Soil, or Hydrology naturally proble	ematic?	(If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing	j sampling	point locations,	transects,	important features, etc.					
Hydrophytic Vegetation Present? Yes ⋈ No □ Hydric Soil Present? Yes ⋈ No □ Wetland Hydrology Present? Yes □ No ⋈		Sampled Area a Wetland?	Yes 🗌 No						
Remarks: Not all three wetland criteria met, lacking hydrology. Data collect monitoring indicates that this area does not remain inundated or s									

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover				
				Number of Dominant Species That Are OBL, FACW, or FAC: 1	(A)
1					(/,)
2				Total Number of Dominant	
3		·		Species Across All Strata: 1	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover	That Are OBL, FACW, or FAC: 100%	, b (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					<u> </u>
1				Prevalence Index worksheet:	
2				Total % Cover of: Multip	<u>ly by:</u>
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)	
2					
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetatic	n
6				➤ Dominance Test is >50%	
7				☐ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide	
9				data in Remarks or on a separate	e sheet)
10				Wetland Non-Vascular Plants ¹	
11				Problematic Hydrophytic Vegetation ¹	,
	100	= Total C	over	¹ Indicators of hydric soil and wetland hydric	
Woody Vine Stratum (Plot size: <u>30 ft</u>)		- 101010		be present, unless disturbed or problema	atic.
1					
				Hydrophytic	
2	0		、 <u> </u>	Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗵 No 🗌	
Remarke:				1	
Hydrophytic vegetation criteria met thr	ough dom	ninance t	est.		

Profile Des	cription: (Descri	iho to tho de	onth needed	to docume	nt tho	indicator	or confir	m the ab	sence of indicators.)	
Depth	Matri		pui neeueu	Redox F					sence of indicators.	
(inches)	Color (moist)	×%	Color (mo		%	Type ¹	Loc ²	Textur	e Remarks	
0 - 5	2.5Y 3/1	100	-	-		-	-	SaLo	Sandy loam	
5 - 11	2.5Y 3/1	90	7.5YR -	4/3 8	3	С	М	SaLo	Sandy loam	
			5Y 5/2	2	2	D	М			
11 - 16	5Y 4/2	70	10YR 4	/4 1	5	С	М	SiCIL	Silty clay loam, mixed matrix	
	5Y 5/1	15	-	-			-	SaCIL	o Sandy clay loam, mixed matrix	
16 - 28	2.5Y 4/2	70	10YR 4	/4 3	30	С	М	LoSa	Loamy sand	
28 - 32	10YR 5/3	75	7.5YR		25	С	Μ	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.										
	Indicators: (App						ed Sand G		² Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils ³ :	
Histosol				v Redox (S5)		,			2 cm Muck (A10)	
	pipedon (A2)		-	ed Matrix (S6	5)				· · · · · · · · · · · · · · · · · · ·	
Black Hi				y Mucky Mine	,	1) (excep	MLRA 1		• • • • • • • • • • • • • • • • • • • •	
	n Sulfide (A4)			y Gleyed Mat			,		• <u>-</u> · · · · · · · · · · · · · · · · · · ·	
× Depleted	Below Dark Sur	face (A11)		ted Matrix (F						
Thick Dark Surface (A12)							³ Indicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)							wetland hydrology must be present,			
	leyed Matrix (S4)									
	Layer (if present	i):								
Type: None										
Depth (in	ches):							Hydri	c Soil Present? Yes 🗵 No 🗌	
Remarks:										
Hydric soil	criteria met th	nrough ind	icators A1	1 and F6.						
HYDROLO	GY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one requir	ed; check a	ll that apply)					Secondary Indicators (2 or more required)	
Surface	Water (A1)		L ۱	Water-Stained	d Leav	es (B9) (e	xcept ML	RA	Water-Stained Leaves (B9) (MLRA 1, 2,	
🔲 High Wa	ter Table (A2)			1, 2, 4A, a	and 4E	3)			4A, and 4B)	
Saturatio	on (A3)			Salt Crust (B1	1)				Drainage Patterns (B10)	
🗌 Water M	arks (B1)			Aquatic Invert	tebrate	es (B13)			Dry-Season Water Table (C2)	
Sedimer	nt Deposits (B2)			- Hydrogen Sul	fide O	dor (C1)			Saturation Visible on Aerial Imagery (C9)	
Drift Dep	osits (B3)			Oxidized Rhiz	osphe	res along	Living Ro	ots (C3)	Geomorphic Position (D2)	
	t or Crust (B4)			Presence of F	•	-	-	()	Shallow Aquitard (D3)	
	osits (B5)			Recent Iron R				6)	FAC-Neutral Test (D5)	
-	Soil Cracks (B6)			Stunted or Str					Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aeri	al Imagery (E		Other (Explair			, (,	Frost-Heave Hummocks (D7)	
	Vegetated Conc	•••				,				
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌 🕴	No 🗙 Dep	oth (inches):	None)				
Water Table	Present?			oth (inches):						
Saturation P				oth (inches):			Wet	land Hvd	Irology Present? Yes 🗌 No 🗵	
(includes ca	pillary fringe)					rouious is		-		
	corded Data (stre		-							
rign grour	ndwater is not	sustained	ior 2 or n	iore contin	iuous	weeks	uuring ti	ne grow	ing season.	

Remarks:

Hydrology criteria not met, water table and saturation too low (>12") in profile to meet indicators A2 or A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial		City/Count	_{y:} Marysv	ville / Snohomish	_ Sampling Date: <u>06/02/2020</u>
Applicant/Owner: Mowat Construction				State: WA	_ Sampling Point: DP-15/MP-15
Investigator(s): Rachael Hyland			Section, To	ownship, Range: <u>27 / 3</u>	1N / 05E
Landform (hillslope, terrace, etc.): Valley Floor		Local relie	ef (concave	, convex, none): <u>None</u>	Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat: 48.	144268		Long: <u>-122.15368</u> 2	229 Datum: WGS 84
Soil Map Unit Name: <u>Norma Ioam</u>				NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for thi	is time of yea	ar?Yes 🗙	No 🗌 (I	f no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology sig	nificantly dis	turbed?	Are "No	ormal Circumstances" pre	esent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology nati	urally probler	natic?	(If need	ed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes 🗌 No 🗵		1. (1	0	A	
Hydric Soil Present? Yes □ No 🗵			ne Sampled nin a Wetlar		
Wetland Hydrology Present? Yes 🗌 No 🗵		with			
Remarks: No wetland criteria met. Data collected in southe indicates that this area does not remain inundated	d or saturated				
VEGETATION – Use scientific names of plan				1	
Tree Stratum (Plot size: 30 ft)	Absolute <u>% Cover</u>			Dominance Test worl	
1				Number of Dominant S That Are OBL, FACW,	
2				Total Number of Domi	
3				Species Across All Stra	
4				Percent of Dominant S	pecies
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)	0	= Total C	Cover	That Are OBL, FACW,	
1				Prevalence Index wo	rksheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				-	x 3 =
Lienth Christians (Dist sizes 40.4)	0	= Total C	over		x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u>) <u>1</u> Schedonorus pratensis	60	Yes	FACU		x 5 =
2. Holcus lanatus	30	Yes	FAC	Column Totals:	(A) (B)
3. Dactylis glomerata	20	No	FAC	Prevalence Index	<pre>x = B/A =</pre>
4. Poa pratensis	10	No	FAC	Hydrophytic Vegetati	on Indicators:
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hyd	rophytic Vegetation
6				Dominance Test is	>50%
7				Prevalence Index i	s ≤3.0 ¹
8 9					ptations ¹ (Provide supporting s or on a separate sheet)
10				Wetland Non-Vasc	
11					phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>30 ft</u>)	125	= Total C	Cover	¹ Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Ye	es 🗌 No 🗵

Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

Profile Desc	cription: (Descri	be to the de	epth ne	eded to docu	ment the	indicator	or confirm	n the abs	sence of indicators.)	
Depth	Matrix				ox Feature			_		
(inches)	Color (moist)	<u>%</u>	Colo	r (moist)	%	Type ¹	Loc ²	Textur		
0 - 12	10YR 2/2	100	-		-	-	-	SiLo	Silt loam	•
12 - 14	2.5Y 6/3	90		YR 4/6	10	С	M	SiLo	Silt loam (ash)	•
14 - 18+	10YR 5/1	95	10Y	′R 4/6	2	D	Μ	SaLo	Sandy loam	-
										•
			·							•
	·									•
	. <u> </u>									•
	oncentration, D=D						ed Sand G		² Location: PL=Pore Lining, M=Matrix.	
-	Indicators: (App	licable to a				ted.)		In	dicators for Problematic Hydric Soils ³ :	
Histosol	. ,			Sandy Redox (
	vipedon (A2)			Stripped Matrix .oamy Mucky N	. ,	1) (oxcon			Red Parent Material (TF2) Very Shallow Dark Surface (TF12)	
	n Sulfide (A4)			.oamy Mucky N			WILKA I)			
	Below Dark Surf	ace (A11)		Depleted Matrix		-)				
	rk Surface (A12)	()		Redox Dark Su	· · /)		³ lr	ndicators of hydrophytic vegetation and	
Sandy M								wetland hydrology must be present,		
	leyed Matrix (S4)		Redox Depressions (F8) unless disturbed or problematic.							
	Layer (if present):								
Туре: <u>Nc</u>										
Depth (in	ches):							Hydri	c Soil Present? Yes 🗌 No 🗵	
Remarks:										
No hydric s	soil criteria me	t.								
HYDROLO										
2	drology Indicato									
	cators (minimum o	of one requi							Secondary Indicators (2 or more required)	
Surface	()			Water-Sta			xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,	
-	ter Table (A2)				A, and 4E	3)			4A, and 4B)	
Saturatio				Salt Crust					Drainage Patterns (B10)	
Water Mater				Aquatic In		. ,			Dry-Season Water Table (C2)	
	t Deposits (B2)					. ,	Livina Dee	ta (CO)	Saturation Visible on Aerial Imagery (C9)	
	osits (B3)					-	Living Roo	ts (C3)	 Geomorphic Position (D2) Shallow Aquitard (D3) 	
	t or Crust (B4) osits (B5)			Presence Presence			+ <i>)</i> d Soils (C6	`	FAC-Neutral Test (D5)	
-	Soil Cracks (B6)			_			1) (LRR A)	,	Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aeria	al Imagery (R7)	Other (Exp					Frost-Heave Hummocks (D7)	
	Vegetated Conca	0,0	,			inans)				
Field Obser			(-0)							
Surface Wat		Yes 🔲 🛛	No 🗙	Depth (inche	_{s):} None	Э				
Water Table				Depth (inches						
Saturation P			No 🛛	Depth (inches			Wotl	and Hvd	Irology Present? Yes 🗌 No 🗵	
(includes capillary fringe)										
	corded Data (stre			-						
High grour	ndwater is not	sustained	I for 2	or more cor	ntinuous	s weeks	during th	e grow	ing season.	

Remarks:

No hydrology criteria met. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	(City/County	_{y:} Marysv	rille / Snohomish	_ Sampling Date: 06/02/2020			
Applicant/Owner: Mowat Construction				State: WA	_ Sampling Point: DP-16/MP-16			
Investigator(s): Rachael Hyland, Ryan Krapp			Section, To	ownship, Range: <u>27 / 3</u>	1N / 05E			
					Slope (%): 0			
Subregion (LRR): A2	Lat: 48.	144117		Long: -122.154900)52 _{Datum:} WGS 84			
Soil Map Unit Name: Norma Ioam				NWI classific	cation: N/A			
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pre				
Are Vegetation, Soil, or Hydrology alg.				ed, explain any answers				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes □ No ⊠ Hydric Soil Present? Yes □ No ⊠		Is th	e Sampled	Area				
Wetland Hydrology Present? Yes No 🗵		with	in a Wetlar	nd? Yes 🗌	No 🗙			
Remarks:								
No wetland criteria met. Data collected in southea indicates that this area does not remain inundated	-		0	01				
		8	8					
VEGETATION – Use scientific names of plan	ts.							
Tree Checkurg (Dick size: 20.4)		Dominant		Dominance Test wor	ksheet:			
Tree Stratum (Plot size: <u>30 ft</u>)	<u>% Cover</u>			Number of Dominant S That Are OBL, FACW,				
1				That Ale OBL, FACW,	01 FAC. <u>1</u> (A)			
23				Total Number of Domin				
4				Species Across All Stra	ata: <u>2</u> (B)			
		= Total C	over	Percent of Dominant S That Are OBL, FACW,				
Sapling/Shrub Stratum (Plot size: 30 ft)					(,			
1				Prevalence Index wo				
2					Multiply by:			
3					x 1 =			
4					x 2 =			
5					x 3 =			
Herb Stratum (Plot size: <u>10 ft</u>)	0	= Total C	over		x 4 =			
1. Schedonorus pratensis	60	Yes	FACU	UPL species Column Totals:				
2. Holcus lanatus	30	Yes	FAC		(A) (B)			
3. Dactylis glomerata	20	No	FAC	Prevalence Index	x = B/A =			
4. Poa pratensis	10	No	FAC	Hydrophytic Vegetati	on Indicators:			
5				Rapid Test for Hyd	Irophytic Vegetation			
6				Dominance Test is	>50%			
7				Prevalence Index i	s ≤3.0¹			
8					ptations ¹ (Provide supporting			
9				data in Remark	ks or on a separate sheet)			
10					phytic Vegetation ¹ (Explain)			
11					bil and wetland hydrology must			
Woody Vine Stratum (Plot size: 30 ft)	120	= Total C	over	be present, unless dist				
1								
2				Hydrophytic				
	0	= Total C	over	Vegetation Present? Ye	es 🗌 No 🗵			
% Bare Ground in Herb Stratum 0								
Remarks:	Drovolon	oo indox	not worr	antad dua ta laak of	bydric coile and			

No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

Profile Des	cription: (Descri	he to the d	enth ne	eded to docu	ment the	indicator	or confirm	n the at	sence	of indicators)
Depth	Matrix		opunit		ox Feature			in the us		
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>	Type ¹	Loc ²	Textu	re	Remarks
0 - 10	10YR 2/2	100	-		-	-	-	SiLo		Silt loam
10 - 11	2.5Y 5/2	100	-		-	-		LoSa	I	Loamy sand
11 - 15	2.5Y 4/4	100	-		-	-	-	Sa		Sand
15+	2.5Y 5/4	93	2.5	YR 4/6	7	С	М	LoSa	I	Loamy sand
¹ Type: C=C	oncentration, D=D	Depletion, R	M=Red	uced Matrix, C	S=Covere	ed or Coate	ed Sand G	rains.	² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to a	all LRR	s, unless othe	rwise no	ted.)		Ir	ndicate	ors for Problematic Hydric Soils ³ :
Histosol	· · /			Sandy Redox (S						n Muck (A10)
	pipedon (A2)		_	Stripped Matrix	· · ·					Parent Material (TF2)
Black Hi				Loamy Mucky N			MLRA 1)			y Shallow Dark Surface (TF12)
 Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) 						L		er (Explain in Remarks)		
						ors of hydrophytic vegetation and				
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7)					•		and hydrology must be present,			
						ss disturbed or problematic.				
	Layer (if present)):								
Type: <u>No</u>										
Depth (in	iches):							Hydr	ric Soi	l Present? Yes 🗌 No 🗵
Remarks:										
No hydric :	soil criteria me	t.								
HYDROLO	-									
-	drology Indicato								-	
	cators (minimum c	of one requi	red; che	••	11					ndary Indicators (2 or more required)
Surface				□ Water-Sta			xcept MLI	RA	ЦV	/ater-Stained Leaves (B9) (MLRA 1, 2,
-	ater Table (A2)				A, and 4E	3)				4A, and 4B)
Saturatio				Salt Crust		(D40)				rainage Patterns (B10)
	larks (B1)					` '				ry-Season Water Table (C2)
	nt Deposits (B2)						Living Roc	to (C2)	_	aturation Visible on Aerial Imagery (C9)
-	oosits (B3) at or Crust (B4)			 Oxidized F Presence 		-	-	18 (03)		eomorphic Position (D2) hallow Aquitard (D3)
	oosits (B5)			Recent Iro				3)		AC-Neutral Test (D5)
-	Soil Cracks (B6)			Stunted or			· ·	,		aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	al Imagery (B7)	Other (Exp		•		/		rost-Heave Hummocks (D7)
	Vegetated Conca	0,1	. ,						<u>с</u> ,	
Field Obser	9		()							
Surface Wat	ter Present?	Yes 🗌	No 🗙	Depth (inche	_{s):} None	e				
Water Table			No 🗵	Depth (inche						

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

Yes 🗌 No 🗵

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Depth (inches): None

Remarks:

No hydrology criteria met. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Saturation Present?

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 2021.0001 - M-51 Industrial	City/County:	Marysville / Snoho	mish s	Sampling Date: 01/08/2020
Applicant/Owner: Mowat Construction		State: W	<u>A s</u>	Sampling Point: DP-17/MP-17
Investigator(s): Rachael Hyland		Section, Township, Rang	_{e:} <u>27 / 31N</u>	/ 05E
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): 0
	.143729	Long: <u>-122</u>	2.15600475	Datum: WGS 84
Soil Map Unit Name: <u>Norma Ioam</u>		N	NI classificatio	on: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of yea	ar?Yes 🗙	No 🗌 (If no, explain ir	n Remarks.)	
Are Vegetation, Soil, or Hydrology significantly dis	sturbed?	Are "Normal Circums	tances" presei	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	matic?	(If needed, explain an	y answers in F	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling	point locations, t	ransects, i	mportant features, etc.
Hydrophytic Vegetation Present? Yes X No □ Hydric Soil Present? Yes X No □ Wetland Hydrology Present? Yes □ No X Remarks: Not all three wetland criteria met, lacking hydrology. Data collected	withir ed in south-cer			nitoring plot MP-17. Hydrology
monitoring indicates that this area does not remain inundated or s	aturated for lo	ng enough during the grow	ing season to m	eet wetland hydrology criteria.

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft)		Species? Status	
			Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
1			$\frac{1}{(A)}$
2			Total Number of Dominant
3		· ·	Species Across All Strata: 1 (B)
4			Demont of Deminent Origina
	~	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)			
1			Prevalence Index worksheet:
2			Total % Cover of:Multiply by:
3			OBL species x 1 =
4			FACW species x 2 =
5			FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size: 10 ft)			UPL species x 5 =
1. Schedonorus arundinaceus	100	Yes FAC	
2		·	Column Totals: (A) (B)
3			Prevalence Index = B/A =
4			Hydrophytic Vegetation Indicators:
5			Rapid Test for Hydrophytic Vegetation
6			■ Dominance Test is >50%
7			□ Prevalence Index is ≤3.0 ¹
			Morphological Adaptations ¹ (Provide supporting
8			data in Remarks or on a separate sheet)
9			Wetland Non-Vascular Plants ¹
10		· ·	Problematic Hydrophytic Vegetation ¹ (Explain)
11	100	·	¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total Cover	be present, unless disturbed or problematic.
1		· ·	Hydrophytic
2		· ·	Vegetation
	0	= Total Cover	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>0</u>			
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance test.	

Profile Desc	ription: (Describ	e to the de	epth ne	eded to docur	nent the	indicator	or confirm	the abso	ence of indicators.)	
Depth	Matrix		<u> </u>	Redo	x Feature	S				
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	or (moist)	%	Type ¹	Loc ²	Texture		
0 - 10	10YR 3/1	100	-				-	SaLo	Sandy loam	
10 - 27	2.5Y 5/2	93		YR 5/4	7	С	M	SaCILo		
27 - 32	2.5Y 5/1	90	5Y	R 4/4	10	С	Μ	SaCILo	Sandy clay loam	
									<u> </u>	
	oncentration, D=De Indicators: (Appli						ed Sand Gr		² Location: PL=Pore Lining, M=Matrix. icators for Problematic Hydric Soils ³ :	
Histosol						eu.)			•	
	ipedon (A2)			Sandy Redox (S Stripped Matrix					2 cm Muck (A10) Red Parent Material (TF2)	
Black His				_oamy Mucky N	. ,) (excep	t MLRA 1)		Very Shallow Dark Surface (TF12)	
	n Sulfide (A4)			_oamy Gleyed I			,		Other (Explain in Remarks)	
× Depleted	Below Dark Surfa	ce (A11)	×	Depleted Matrix	(F3)					
	rk Surface (A12)			Redox Dark Su	()				licators of hydrophytic vegetation and	
	ucky Mineral (S1)			Depleted Dark S		7)		wetland hydrology must be present,		
	leyed Matrix (S4)			Redox Depress	ions (F8)			1	unless disturbed or problematic.	
Type: NC	Layer (if present):									
Depth (in				-				Lludric		
								Hydric	Soil Present? Yes 🗵 No 🗌	
Remarks:					-					
Hydric soil	criteria met thr	ough ind	cator	s A11 and F	3.					
HYDROLO	GY									
-	drology Indicators									
Primary India	cators (minimum of	one requir	ed; che	eck all that appl	y)				Secondary Indicators (2 or more required)	
Surface V	()			Water-Stai			except MLR	RA [Water-Stained Leaves (B9) (MLRA 1, 2,	
-	ter Table (A2)				A, and 4B)			4A, and 4B)	
Saturation	n (A3)			Salt Crust	(B11)			[Drainage Patterns (B10)	
Water M	arks (B1)			Aquatic Inv		. ,		[Dry-Season Water Table (C2)	
Sedimen	t Deposits (B2)			Hydrogen				[Saturation Visible on Aerial Imagery (C9)	
	osits (B3)					-	-	ts (C3)	Geomorphic Position (D2)	
	t or Crust (B4)			Presence of				[Shallow Aquitard (D3)	
-	osits (B5)						d Soils (C6)	, –	FAC-Neutral Test (D5)	
	Soil Cracks (B6)						01) (LRR A)		Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aerial	0,0	,	Other (Exp	lain in Re	marks)		L	Frost-Heave Hummocks (D7)	
	Vegetated Concav	/e Surface	(B8)							
Field Obser		v – ·	. —	D <i>"</i> .	、 ()					
Surface Wat			10	Depth (inches	-					
Water Table			10 🗌	Depth (inches					· · · - -	
Saturation P (includes cap		Yes 🗶 🏾 1	lo 🗌	Depth (inches	s): <u>U</u>		Wetla	and Hydr	ology Present? Yes 🗌 No 🗵	
	corded Data (strea	m gauge, r	nonitor	ing well, aerial	photos, pr	evious in	spections).	if availabl	e:	
				- ·						

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Remarks:

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicators A1, A2, and A3 were observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	City/County:	Marysville / Snohom	nish Sam	oling Date: 06/02/2020
Applicant/Owner: Mowat Construction		State: WA	Sam	oling Point: DP-18/MP-18
Investigator(s): Rachael Hyland, Ryan Krapp	s	Section, Township, Range:	27 / 31N / 0	5E
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):		
Subregion (LRR): <u>A2</u> Lat: <u>48.1</u>	144788	Long: <u>-122.</u> *	15374299	Datum: WGS 84
Soil Map Unit Name: Custer fine sandy loam		NW	classification:	N/A
Are climatic / hydrologic conditions on the site typical for this time of year	r?Yes 🗙	No 🗌 (If no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly dist	urbed?	Are "Normal Circumsta	nces" present?	Yes 🗶 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	natic?	(If needed, explain any a	answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling	point locations, tra	insects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes □ No ⊠ Hydric Soil Present? Yes ⊠ No □ Wetland Hydrology Present? Yes □ No ⊠ Remarks: No □	withir		Yes 🗌 No 🗵	
Not all three wetland criteria met, only hydric soil. Data collected in monitoring indicates that this area does not remain inundated or sat				

· · · ·	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species		
1				That Are OBL, FACW, or FAC:	1	(A)
2				Total Number of Dominant		
3				Species Across All Strata:	2	(B)
4						()
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC:	50%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Ale OBE, I AGW, OF I AC.	0070	(А/В)
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x	1 =	
4				FACW species x	2 =	
5				FAC species x		
	<u>^</u>	= Total C		FACU species x		
Herb Stratum (Plot size: 10 ft)				UPL species x		
1. Schedonorus pratensis	60	Yes	FACU	Column Totals: (A		
2. Holcus lanatus	40	Yes	FAC		·/	_ (=)
3. Dactylis glomerata	20	No	FAC	Prevalence Index = B/A =		
4. Alopecurus pratensis	5	No	FAC	Hydrophytic Vegetation Indica	ators:	
5				Rapid Test for Hydrophytic \	/egetation	
6				□ Dominance Test is >50%	-	
7				Prevalence Index is $\leq 3.0^{1}$		
				Morphological Adaptations ¹	(Provide suppor	rtina
8				data in Remarks or on a		
9				U Wetland Non-Vascular Plant	tS ¹	
10		·	<u> </u>	Problematic Hydrophytic Ve	getation ¹ (Expla	uin)
11	125			¹ Indicators of hydric soil and wet	tland hydrology	must
Woody Vine Stratum (Plot size: <u>30 ft</u>)	120	= Total C	Cover	be present, unless disturbed or present, unless disturbed or present, unless disturbed or present of the presen	problematic.	
1						
		·	·	Hydrophytic		
2	0	= Total C		Vegetation Present? Yes Ves		
% Bare Ground in Herb Stratum 0	<u> </u>		over			
Remarks:	<u> </u>	• •		· · · · · · · · · · · · · · · · · · ·		
No hydrophytic vegetation criteria met	. Prevaler	nce index	c not warr	anted due to lack of hydric s	soils and	
hydrology.						

Profile Desc	cription: (Describe	to the de	pth ne	eded to docur	nent the	indicator	or confirm	the ab	sence	of indicators.)
Depth	Matrix				x Feature					
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	<u>r (moist)</u>	%	Type ¹	Loc ²	Textu		Remarks
0 - 1	N 2.5/	100	-		-			SaLo		Sandy loam, manure additive
1 - 9	10YR 2/2	100	-					SiLo		Silt loam
9 - 13	2.5Y 4/1	97	7.5	YR 4/6	3	С	Μ	SaLo		Sandy loam
13 - 16+	2.5Y 6/1	90	7.5	YR 4/6	10	С	Μ	SaLo)	Ashy sandy loam
					_					
	oncentration, D=De						ed Sand Gr			cation: PL=Pore Lining, M=Matrix.
	Indicators: (Appli	cable to a				ed.)				rs for Problematic Hydric Soils ³ :
Histosol	· · ·			Sandy Redox (S				_		Muck (A10)
Black His	vipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2) Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed N					-	er (Explain in Remarks)
	Below Dark Surfac	e (A11)		Depleted Matrix		·)		L		
-	rk Surface (A12)			Redox Dark Sur				3	ndicato	rs of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)			Depleted Dark S	Surface (F	7)			wetla	nd hydrology must be present,
-	leyed Matrix (S4)		🗌 F	Redox Depressi	ons (F8)			-	unles	s disturbed or problematic.
	Layer (if present):									
Type: <u>NC</u>										
Depth (in	cnes):							Hydr	ic Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thro	ough ind	icator	A11 and F3	•					
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary India	cators (minimum of	one requir	ed; che	eck all that apply	y)				Secor	ndary Indicators (2 or more required)
Surface	Water (A1)			U Water-Stair	ned Leav	es (B9) (e	xcept MLR	A	ΟW	ater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 44	A, and 4B	5)				4A, and 4B)
Saturatio	on (A3)			Salt Crust	(B11)				🗌 Dr	rainage Patterns (B10)
Water M	arks (B1)			Aquatic Inv	rertebrate	s (B13)			🗌 Dr	y-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide O	dor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)
	oosits (B3)					-	-	ts (C3)		eomorphic Position (D2)
	t or Crust (B4)			Presence o			,			nallow Aquitard (D3)
-	osits (B5)			Recent Iror						AC-Neutral Test (D5)
	Soil Cracks (B6)		\	Stunted or			1) (LRR A)			aised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	•••		Other (Exp	lain in Re	marks)			∐⊦r	ost-Heave Hummocks (D7)
	Vegetated Concav	e Surrace	(B8)							
Field Obser				Depth (inches	. None	•				
Surface Wat			10 X							
Water Table			10 X	Depth (inches	·					
Saturation P (includes cap		Yes 🗌 🕴	lo 🗙	Depth (inches	s): <u>INOTE</u>	•	Wetla	and Hy	arolog	y Present? Yes 🗌 No 🗵
Describe Re	corded Data (strear	n gauge, n	nonitor	ing well, aerial p	ohotos, p	revious in:	spections),	if availa	able:	
High grour	ndwater is not si	ustained	for 2	or more con	tinuous	weeks	during the	e grov	ving s	eason.
Remarks:								-	~	
					_					

No hydrology criteria met. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial		City/Cour	_{nty:} Marysv	ille / Snohomish	Sampling Date: 06/0	2/2020
				State: WA		
				wnship, Range: <u>27 / 31</u>		
Landform (hillslope, terrace, etc.): Valley Floor		Local re	lief (concave,	convex, none): None	Slope (%): <u>0</u>
Subregion (LRR): A2	_{Lat:} 48.	145520		Long: -122.1548683	34 Datum: W	GS 84
				NWI classifica		
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology sign	nificantly dis	turbed?	Are "No	ormal Circumstances" pres	ent? Yes 🗵 No 🗌	
Are Vegetation, Soil, or Hydrology natu			(If need	ed, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map					,	es, etc.
Hydrophytic Vegetation Present? Yes □ No ⊠ Hydric Soil Present? Yes □ No ⊠ Wetland Hydrology Present? Yes □ No ⊠ Remarks: No wetland criteria met. Data collected in north-collected in north-co	central portio	wit	the Sampled	nd? Yes 🗌 N		
indicates that this area does not remain inundated						
VEGETATION – Use scientific names of plan	ts.					
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	Absolute <u>% Cover</u>	Species	nt Indicator	Dominance Test works Number of Dominant Sp That Are OBL, FACW, o	ecies	(A)
2				Total Number of Domina Species Across All Strat		(B)
4 Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)	0			Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
1				Prevalence Index work	sheet:	
2					Multiply by:	
3				OBL species	x 1 =	
4				FACW species	x 2 =	
5				FAC species	x 3 =	
	0	= Total	Cover	FACU species	x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u>) 1. Dactylis glomerata	60	Yes	FACU	UPL species	x 5 =	
2. Holcus lanatus	15	No	FAC	Column Totals:	(A)	(B)
3. Schedonorus arundinaceus	10	No	FAC	Prevalence Index	= B/A =	
4. Poa pratensis	10	No	FAC	Hydrophytic Vegetatio		
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hydro		
6				Dominance Test is >		

0 = Total Cover % Bare Ground in Herb Stratum 0 Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to the lack of hydric soils and hydrology.

100 = Total Cover

7._____ ____ ____ ____ ____ ____

10. _____

8. _____ ____

9._____

11._____

1._____

2._____

Woody Vine Stratum (Plot size: 30 ft)

Yes 🗌 No 🗵

Morphological Adaptations¹ (Provide supporting

Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must

be present, unless disturbed or problematic.

data in Remarks or on a separate sheet)

□ Prevalence Index is $\leq 3.0^{1}$

Hydrophytic

Vegetation

Present?

Wetland Non-Vascular Plants¹

Profile Desc	ription: (Describ	e to the	depth n	eeded to docur	ment the	indicator	or confirn	n the ab	sence	of indicators.)	
Depth	Matrix				x Feature						
(inches)	Color (moist)	<u>%</u>	Colo	or (moist)	%	Type ¹	Loc ²	Textu	re	Remarks	
0 - 13	10YR 3/1	100			-		-	SiLo		Silt loam	_
13 - 14	10YR 5/1	90	7.5	5YR 4/6	10	С	Μ	SaLo		Sandy loam	
14 - 18+	7.5YR 2.5/2	100	-		-	-	-	Sa		Sand	
											_
											_
	oncentration, D=D						ed Sand G			cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Appl	icable to	all LRR	s, unless othe	rwise no	ted.)		In	dicato	rs for Problematic Hydric Soils ³ :	
Histosol	· · /			Sandy Redox (S						n Muck (A10)	
	ipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2)	
Black His				Loamy Mucky N			t MLRA 1)			Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed I		2)		L] Othe	er (Explain in Remarks)	
	Below Dark Surfa	ice (A11)		Depleted Matrix				31			
	rk Surface (A12)			Redox Dark Su	,			3		ors of hydrophytic vegetation and	
	ucky Mineral (S1) leyed Matrix (S4)			Depleted Dark S Redox Depress		-7)				nd hydrology must be present, s disturbed or problematic.	
	_ayer (if present)			Redux Depress				1	unies	s disturbed of problematic.	
Type: NO											
Depth (inc				-				Hydr	ic Soil	Present? Yes 🗌 No 🗵	
Remarks:								nyai			
		Danlar		4	(40")	l 4	41. 1	a seconda de d	011) +-	· ····································	
NO NYONG S	soli criteria met	. Deplei	ed ma	trix too deep)(>12)	and not	thick end	Sugn («	<0)10	o meet A11 requirements.	
HYDROLO											
-	drology Indicator										
Primary India	ators (minimum o	f one requ	ired; ch	eck all that appl	y)				Secor	ndary Indicators (2 or more required)	
Surface V	Nater (A1)			Water-Stai	ined Leav	res (B9) (e	xcept MLF	RA	D W	ater-Stained Leaves (B9) (MLRA 1, 2	,
🔲 High Wa	ter Table (A2)			1, 2, 4/	A, and 4E	3)				4A, and 4B)	
Saturatio	n (A3)			Salt Crust	(B11)				🗌 Dr	rainage Patterns (B10)	
Water Mater Mater	arks (B1)			Aquatic Inv	vertebrate	es (B13)			🗌 Dr	ry-Season Water Table (C2)	
Sedimen	t Deposits (B2)			Hydrogen	Sulfide O	dor (C1)			🗆 Sa	aturation Visible on Aerial Imagery (CS))
Drift Dep	osits (B3)			Oxidized R			Living Roo	ts (C3)		eomorphic Position (D2)	
	t or Crust (B4)			Presence of		-	-	()		nallow Aquitard (D3)	
Iron Dep	. ,			Recent Iro			,	6		AC-Neutral Test (D5)	
	Soil Cracks (B6)			Stunted or						aised Ant Mounds (D6) (LRR A)	
	on Visible on Aeria	Imagery	(B7)	Other (Exp				·		ost-Heave Hummocks (D7)	
	Vegetated Conca		. ,			Jinano)					
Field Obser			- ()								
Surface Wat		Yes 🗌	No 🗙	Depth (inches	s): None	9					
Water Table		Yes 🗌	No 🗵	Depth (inches							
Saturation P		Yes 🗌	No 🛛	Depth (inches	·		Wetl	and Hw	drology	y Present? Yes 🗌 No 🗵	
(includes cap	oillary fringe)							-	0.		
	corded Data (strea			-							
0 0	dwater is not s	sustaine	d for 2	or more con	ntinuous	weeks	during th	e grow	/ing se	eason.	
Remarks:									-		
ملمير أمير أما الم	ov criteria met	. Additic	onally,	groundwater	r monito	oring ind	icates that	at the a	area d	loes not remain inundated or	

Project/Site: 2021.0001 - M-51 Industrial		City/Co	_{unty:} Marysv	ille / Snohomish	Sampling Date: 06/02/2020
Applicant/Owner: Mowat Construction				State: WA	Sampling Point: DP-20/MP-20
Investigator(s): Rachael Hyland			Section, To	ownship, Range: <u>27 / 3</u>	31N / 05E
Landform (hillslope, terrace, etc.): Valley Floor					
Subregion (LRR): <u>A2</u>			,		
Soil Map Unit Name: Custer fine sandy loam				NWI classifi	
Are climatic / hydrologic conditions on the site typical for thi					
Are Vegetation, Soil, or Hydrology sig	•				resent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology nate				ed, explain any answers	
SUMMARY OF FINDINGS – Attach site map	showing	samp	ling point l	ocations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: No wetland criteria met. Data collected in centre that this area does not remain inundated or sature	-	the site	0	r monitoring plot MP-20	. Hydrology monitoring indicates
VEGETATION – Use scientific names of plan	its				
	Absolute	Domin	ant Indicator	Dominance Test wor	ksheet:
Tree Stratum (Plot size: <u>30 ft</u>)			es? <u>Status</u>	Number of Dominant S	
1				That Are OBL, FACW	, or FAC: <u>0</u> (A)
2				Total Number of Domi	
3				Species Across All Str	rata: <u>2</u> (B)
4 Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)	0	= Tota	al Cover	Percent of Dominant S That Are OBL, FACW	
1				Prevalence Index wo	orksheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	0	= Tota	al Cover	FACU species	x 4 =
Herb Stratum (Plot size: <u>10 ft</u>) 1. Schedonorus pratensis	50	Yes	FACU		x 5 =
2. Dactylis glomerata	<u>50</u> 50	Yes		Column Totals:	(A) (B)
3. Phalaris arundinacea	<u>50</u>	No	FACU FACW	Prevalence Inde	ex = B/A =
4. Medicago lupulinus	2	No	FACU	Hydrophytic Vegetat	
					drophytic Vegetation
5				Dominance Test is	
6				Prevalence Index	
7				_	aptations ¹ (Provide supporting
o 9					ks or on a separate sheet)
9 10				U Wetland Non-Vase	cular Plants ¹
11				Problematic Hydro	ophytic Vegetation ¹ (Explain)
	107	= Tota	al Cover		oil and wetland hydrology must sturbed or problematic.

0 = Total Cover

2. _____

1. _

Woody Vine Stratum (Plot size: 30 ft)

Yes 🗌 No 🗵

Hydrophytic

Vegetation

Present?

Profile Desc	ription: (Describe	to the dep	oth nee	ded to docum	nent the i	ndicator	or confirm	n the ab	sence	of indicators.)	_
Depth	Matrix			Redox	K Features	<u>s</u>					
(inches)	Color (moist)	<u>%</u>	<u>Color (</u>	moist)	%	Type ¹	Loc ²	Textur		Remarks	
0 - 8	10YR 2/2	100	-		-			SaLo)	Sandy loam	
8 - 11	10YR 2/2	98		R 3/3	2	С	M,PL	SaLo		Sandy loam	
11 - 14	2.5Y 3/1	94	10YF	R 4/4	6	С	Μ	SaLo		Sandy loam	
14 - 21	10YR 3/6	85	-		-			LoSa		Loamy sand, mixed matrix	
	10YR 3/2	15	-		-	-		LoSa		Loamy sand, mixed matrix	
21 - 36	2.5Y 3/3	100	-		-	-	-	Sa		Sand	
			_								
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduc	ed Matrix, CS	=Covered	d or Coate	ed Sand Gi	rains.	² Loc	ation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators: (Applic	able to all	LRRs,	unless other	wise not	ed.)		In	dicato	rs for Problematic Hydric Soils ³ :	
🔲 Histosol ((A1)		🗌 Sa	ndy Redox (S	5)] 2 cm	Muck (A10)	
Histic Epi	ipedon (A2)		🗌 Str	ipped Matrix (S6)				Red	Parent Material (TF2)	
Black His	stic (A3)		🗌 Lo	amy Mucky M	ineral (F1) (except	MLRA 1)] Very	Shallow Dark Surface (TF12)	
	n Sulfide (A4)			amy Gleyed N)] Othe	r (Explain in Remarks)	
	Below Dark Surface	e (A11)		pleted Matrix	. ,						
	rk Surface (A12)			dox Dark Surf		_,		³ lr		rs of hydrophytic vegetation and	
	ucky Mineral (S1)			pleted Dark S		7)				nd hydrology must be present,	
-	leyed Matrix (S4)		L Re	dox Depression	ons (F8)				unless	s disturbed or problematic.	
Type: NO	_ayer (if present): ne										
Depth (inc								بر امر ا	a Call		
Remarks:								пуал	C 3011	Present? Yes 🗌 No 🗵	
								-			
				lox (<5%) II	n secon	d layer	to meet	F6 req	uirem	ents; redox in third layer is too	D
deeb (>8")	to meet F6 requ	irements	6.								
HYDROLO											
-	drology Indicators:								_		
Primary Indic	ators (minimum of o	ne require							Secon	ndary Indicators (2 or more required)	
Surface V	Vater (A1)		Ľ] Water-Stair	ned Leave	es (B9) (e :	cept MLF	RA	🗆 Wa	ater-Stained Leaves (B9) (MLRA 1, 2	2,
High Wat	ter Table (A2)				, and 4B)				4A, and 4B)	
Saturatio	n (A3)		E] Salt Crust (B11)				🗌 Dr	ainage Patterns (B10)	
Water Ma	arks (B1)		Ľ	Aquatic Inve	ertebrates	s (B13)			🗌 Dr	y-Season Water Table (C2)	
Sediment	t Deposits (B2)		Ľ] Hydrogen S	Sulfide Od	lor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C	9)
Drift Dep	osits (B3)			Oxidized RI	hizospher	es along	Living Roo	ts (C3)	🗌 Ge	eomorphic Position (D2)	
Algal Mat	t or Crust (B4)		Ľ	Presence o	f Reduce	d Iron (C4)		🗌 Sh	nallow Aquitard (D3)	
Iron Depo	osits (B5)		Ľ	Recent Iron	Reductio	on in Tilleo	d Soils (C6)	🗆 FA	C-Neutral Test (D5)	
Surface S	Soil Cracks (B6)] Stunted or \$	Stressed	Plants (D	1) (LRR A))	🗌 Ra	aised Ant Mounds (D6) (LRR A)	
Inundatio	n Visible on Aerial Ir	magery (B	7) [Other (Expl	ain in Rei	marks)			🗌 Fro	ost-Heave Hummocks (D7)	
Sparsely	Vegetated Concave	Surface (I	B8)								
Field Observ	vations:										
Surface Wate	er Present? Y	es 🗌 🛛 No		Depth (inches)	_{):} None						
Water Table	Present? Y			Depth (inches)							
Saturation Pr				Depth (inches)			Wetl	and Hyd	Irology	y Present? Yes 🗌 No 🗵	
(includes cap								-			
	corded Data (stream										
	dwater is not su	stained f	or 2 o	r more cont	tinuous	weeks	during th	e grow	ing se	eason.	
Remarks:											
										icators A2 or A3. Additionall	у,
aroundwat	er monitorina in	dicates	that th	ne area doe	es not r	emain i	nundate	d or sa	aturate	ed long enough during the	

growing season to meet wetland hydrology criteria.

_City/County: Marysville / Snohomish Sampling Date: 06/02/2020
State: WA Sampling Point: DP-21/MP-21
Section, Township, Range: <u>27 / 31N / 05E</u>
Local relief (concave, convex, none): <u>None</u> Slope (%): <u>0</u>
B.145407 Long: -122.15814810 Datum: WGS 84
NWI classification: N/A
ear? Yes 🗵 No 🗌 (If no, explain in Remarks.)
isturbed? Are "Normal Circumstances" present? Yes 🗵 No 🗌
ematic? (If needed, explain any answers in Remarks.)
g sampling point locations, transects, important features, etc.
Is the Sampled Area within a Wetland? Yes No X ted in north-central portion of the siteat groundwater monitoring plot MP-21. Hydrology saturated for long enough during the growing season to meet wetland hydrology criteria.

Tree Stratum (Plot size: 30 ft)	Absolute	Dominant Species?	Indicator	Dominance Test worksheet:	
		Species	Status	Number of Dominant Species	(•)
1				That Are OBL, FACW, or FAC: 2	(A)
2				Total Number of Dominant	
3		·		Species Across All Strata: 2	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					. ,
1		·		Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)		- 10(4) 0		UPL species x 5 =	
1. Schedonorus arundinaceus	50	Yes	FAC	Column Totals:	
2. Holcus lanatus	20	Yes	FAC		_ (D)
3. Poa pratensis	15	No	FAC	Prevalence Index = B/A =	
4. Dactylis glomerata	10	No	FACU	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide support	ting
9				data in Remarks or on a separate sheet)	
10				Wetland Non-Vascular Plants ¹	
		·		Problematic Hydrophytic Vegetation ¹ (Explain	n)
11	95			¹ Indicators of hydric soil and wetland hydrology r	nust
Woody Vine Stratum (Plot size: 30 ft)		= Total C	over	be present, unless disturbed or problematic.	
1					
		·		Hydrophytic	
2	0			Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum 5	<u> </u>	= Total C	over		
Bomarka:				1	
Hydrophytic vegetation criteria met thr	ough dom	ninance t	est.		

SOIL	
------	--

Profile Desc	cription: (Descrit	be to the d	epth ne	eded to docu	ment the	indicator	or conf	irm the	absenc	e of indicators.)		
Depth	Matrix				ox Feature					· · · · · · · · · · · · · · · · · · ·		
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>	Type ¹	Loc ²	Te	xture	Remarks		
0 - 1	10YR 2/1	100	-		-	-	-	Sa	Lo	Sandy loam, manure additive		
1 - 7	10YR 3/2	99	7.5	YR 4/4	1	С	Μ	SiL	_0	Silt loam		
7 - 16+	10YR 5/1	90	7.5	YR 4/6	10	С	М	Gr	Sa	Gravelly sand		
			·									
			. <u> </u>									
¹ Type: C=C	oncentration, D=D	epletion, R	M=Red	uced Matrix, C	S=Covere	ed or Coate	ed Sand	Grains.	² L	ocation: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators: (App	licable to a	all LRR	s, unless othe	erwise no	ted.)			Indica	tors for Problematic Hydric Soils ³ :		
Histosol	· · /			Sandy Redox (m Muck (A10)		
	pipedon (A2)			Stripped Matrix	. ,			•		d Parent Material (TF2)		
Black His				Loamy Mucky			MLRA	1)		ry Shallow Dark Surface (TF12)		
	n Sulfide (A4) I Below Dark Surfa	000 (111)		Loamy Gleyed Depleted Matrix		<u>2)</u>				ner (Explain in Remarks)		
	rk Surface (A12)	ace (ATT)		Redox Dark Su					³ Indica	tors of hydrophytic vegetation and		
	· ,				, ,				wetland hydrology must be present,			
_ , , ,				 Depleted Dark Surface (F7) Redox Depressions (F8) 						unless disturbed or problematic.		
-	Layer (if present)	:			()					·		
Type: No	one											
Depth (in	ches):							Hy	Hydric Soil Present? Yes 🗵 No 🗌			
Remarks:												
Hydric soil	criteria met thi	rough inc	licator	A11.								
-		-										
HYDROLO	GY											
	drology Indicator	·e•										
-	cators (minimum o		red: cha	ack all that ann					Sec	ondary Indicators (2 or more required)		
Surface	•	i one requi				(PO) (P	voont M					
	ter Table (A2)			Water-Sta	A, and 4E		xcept w	ILKA		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
Saturatio				Salt Crust	•)				Prainage Patterns (B10)		
Water M	. ,				. ,	oc (P12)				Drainage Patterns (BT0) Dry-Season Water Table (C2)		
	it Deposits (B2)					. ,				Saturation Visible on Aerial Imagery (C9)		
_	,						Livina P	Poote (C	_			
	oosits (B3)				•	-	-		·	Geomorphic Position (D2)		
	t or Crust (B4)							CE)	_	Shallow Aquitard (D3)		
-	osits (B5)			Recent Irc						FAC-Neutral Test (D5)		
	Soil Cracks (B6)	l Imoren (7 1	Stunted or		,	1) (LKR	A)		Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aeria	•••		Other (Exp	piain in Re	emarks)				Frost-Heave Hummocks (D7)		
	Vegetated Conca	ive Surface	(B8)				1					
Field Obser		. –	. –		None	2						
Surface Wat			No 🗵	Depth (inche		<u> </u>						
Water Table	Present?	Yes 🗙	No 🗌	Depth (inche	s): 10							

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

Yes 🗵 No 🗌

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Depth (inches): 19

Remarks:

Saturation Present?

No hydrology criteria met; water table and saturation too deep (>12") to meet indicators A2 and A3. Additionally, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 2021.0001 - M-51 Industrial	City/County	<u>.</u> Marysville / Snol	nomish	Sampling Date: 01/08/2020					
Applicant/Owner: Mowat Construction		State:	WA	Sampling Point: DP-22/MP-22					
Investigator(s): Rachael Hyland		Section, Township, Ra	nge: <u>27 / 31</u>	N / 05E					
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): 0					
Subregion (LRR): <u>A2</u> Lat: <u>48</u> .	144072	Long: <u>-1</u>	22.158222	16					
Soil Map Unit Name: Norma Ioam			NWI classifica	ation: 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 dist	turbed?	Are "Normal Circur	nstances" pre	sent? Yes 🗵 No 🗌					
Are Vegetation, Soil, or Hydrology naturally problem	matic?	(If needed, explain	any answers i	n Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing	sampling	g point locations	transects	, important features, etc.					
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No X		e Sampled Area in a Wetland?	Yes 🗌 N	lo 🗵					
Remarks: Not all three wetland criteria met, lacking hydrology. Data collected monitoring indicates that this area does not remain inundated or sa									

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover				
				Number of Dominant Species That Are OBL, FACW, or FAC: 1	(A)
1					(/,)
2				Total Number of Dominant	
3		·		Species Across All Strata: 1	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover	That Are OBL, FACW, or FAC: 100%	, b (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					<u> </u>
1				Prevalence Index worksheet:	
2				Total % Cover of: Multip	<u>ly by:</u>
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)	
2					
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetatic	n
6				➤ Dominance Test is >50%	
7				☐ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide	
9				data in Remarks or on a separate	e sheet)
10				Wetland Non-Vascular Plants ¹	
11				Problematic Hydrophytic Vegetation ¹	,
	100	= Total C	over	¹ Indicators of hydric soil and wetland hydric	
Woody Vine Stratum (Plot size: <u>30 ft</u>)		- 101010		be present, unless disturbed or problema	atic.
1					
				Hydrophytic	
2	0		、 <u> </u>	Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗵 No 🗌	
Remarke:				1	
Hydrophytic vegetation criteria met thr	ough dom	ninance t	est.		

Profile Desc	cription: (Descril	be to the c	lepth ne	eded to docu	ment the	indicator	or confi	rm the	absenc	e of indicators.)		
Depth	Matrix				ox Feature							
(inches)	Color (moist)	%	Colo	or (moist)	<u>%</u>	Type ¹	Loc ²	Te	xture	Remarks		
0 - 12	10YR 3/1	100	-		-	-	-	Sa	aLo	Sandy loam		
12 - 18	2.5Y 5/1	97	7.5	YR 3/3	3	С	М	Lo	Sa	Loamy sand		
18 - 32	2.5Y 4/1	100	-		-	-	-	Lo	Sa	Loamy sand		
·												
·												
	oncentration, D=D						ed Sand	Grains		Decation: PL=Pore Lining, M=Matrix.		
	Indicators: (App	licable to				ted.)				tors for Problematic Hydric Soils ³ :		
	(A1) vipedon (A2)			Sandy Redox (\$ Stripped Matrix						m Muck (A10) d Parent Material (TF2)		
Histic Ep				Loamy Mucky N	. ,	1) (except	MLRA 1	0		ry Shallow Dark Surface (TF12)		
	n Sulfide (A4)			Loamy Gleyed				,		ner (Explain in Remarks)		
	Below Dark Surfa	ace (A11)		Depleted Matrix								
	rk Surface (A12)			Redox Dark Su	. ,				³ Indicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)				Depleted Dark Surface (F7)						wetland hydrology must be present,		
-	leyed Matrix (S4) Layer (if present)			Redox Depress	ions (F8)				unle	ess disturbed or problematic.		
Type: NC):										
Depth (in				-				ц.	udria Ca			
									yane so	il Present? Yes 🗵 No 🗌		
Remarks:	aritaria maat th	من مام نم	diaata									
Hydric soll	criteria met th	rougn in	dicator	ATT.								
HYDROLO	GY											
Wetland Hy	drology Indicato	rs:										
Primary India	cators (minimum c	of one requ	ired; ch	eck all that app	ly)				Seco	ondary Indicators (2 or more required)		
Surface	Water (A1)			□ Water-Sta	ined Leav	es (B9) (e	xcept MI	LRA	Π \	Water-Stained Leaves (B9) (MLRA 1, 2,		
_ 0	ter Table (A2)				A, and 4B	8)				4A, and 4B)		
✗ Saturation	on (A3)			Salt Crust	(B11)					Drainage Patterns (B10)		
Water M	. ,			Aquatic In		. ,				Dry-Season Water Table (C2)		
_	t Deposits (B2)			Hydrogen					_	Saturation Visible on Aerial Imagery (C9)		
	osits (B3)					0	0	oots (C	/	Geomorphic Position (D2)		
	t or Crust (B4)									Shallow Aquitard (D3)		
-	osits (B5)			Recent Iro						FAC-Neutral Test (D5)		
— · · · ·	Soil Cracks (B6)			Stunted or			1) (LRR)	A)		Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aeria	• •	. ,	Other (Exp	plain in Re	emarks)				Frost-Heave Hummocks (D7)		
	Vegetated Conca	ave Surfac	е (В8)									
Field Obser		V 🗖	N	Depth (inche	None	ć						
Surface Wat		Yes 🗌	No 🗵									
Water Table	Present?	Yes 🗙	No 🗌	Depth (inche	s): <u>10</u>		1					

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

Yes 🗵 No 🗌

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Depth (inches): 9

Remarks:

Saturation Present?

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicators A2 and A3 were observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 2021.0001 - M-51 Industrial		City/County	_{/:} Marysville / Sno	ohomish	Sampling Date: 01/08/2020
Applicant/Owner: Mowat Construction			State:	WA	Sampling Point: DP-23/MP-23
Investigator(s): Rachael Hyland			Section, Township, R	ange: <u>27 / 311</u>	N / 05E
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat:				5
Soil Map Unit Name: Custer fine sandy loam				NWI classificat	ion: N/A
Are climatic / hydrologic conditions on the site typical	for this time of	f year?Yes 🗙			
Are Vegetation, Soil, or Hydrology	_ significantly	/ disturbed?	Are "Normal Circu	umstances" prese	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	_ naturally pro	oblematic?	(If needed, explain	any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site r	map showi	ng samplin	g point locations	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 N	lo 🗆				
Hydric Soil Present? Yes 🗙 N	_		e Sampled Area		
Wetland Hydrology Present? Yes 🗌 N	lo 🗙	with	in a Wetland?	Yes 🗌 No	
Remarks: Not all three wetland criteria met, lacking hydrolog	gy. Data collecte	d in southwest cor	ner of the site, east of pow	er substation at grou	undwater monitoring plot MP-23.
Hydrology monitoring indicates that this area doe	s not remain inu	ndated or saturated	l for long enough during t	he growing season t	o meet wetland hydrology criteria.

	Absolute		Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3					(B)
4					
		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 100%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					(/ (/ D))
1		. <u> </u>		Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)	
2					_ (-)
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				➤ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^{1}$	
8				Morphological Adaptations ¹ (Provide support data in Remarks or on a separate sheet)	ting
9				Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Explain	n)
11		·		¹ Indicators of hydric soil and wetland hydrology n	
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= Total C	Cover	be present, unless disturbed or problematic.	nust
1		·		Underschadte	
2				Hydrophytic Vegetation	
		= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.		

Depth (inches)	Matriz Color (moist)	x%		r (moist)	dox Featur %	<u>es</u> Type ¹	Loc ²	Texture	Remarks	
0 - 11	2.5Y 3/2	95		YR 5/4	4	C	M, PL	SaLo	Sandy loam	
				YR 4/3	1	C	M			
11 - 25	2.5Y 4/2	95	7.5	YR 4/3	3	C	М	SaCILo	Sandy clay loam	
11 20	2.01 4/2			G 3/1	2	 D	M	000120		
25 - 29	2.5Y 4/2	90		YR 4/6	10		M	SaLo	Sandy loam	
	7.5YR 4/4		<u>- 1.0</u> -	11(+/0	-		-	-		
29 - 32	7.31K 4/4	100						LoSa	Loamy sand	
							<u> </u>			
	concentration, D=D						ed Sand G		ocation: PL=Pore Lining, M=Matrix.	
-	Indicators: (App	blicable to				oted.)			tors for Problematic Hydric Soils ³ :	
Histosol	(A1) pipedon (A2)			Sandy Redox Stripped Matr					m Muck (A10) d Parent Material (TF2)	
Black Hi	• • • •			_oamy Mucky	· · ·	- 1) (excep	t MLRA 1)		ry Shallow Dark Surface (TF12)	
	en Sulfide (A4)			_oamy Gleye			,		her (Explain in Remarks)	
	d Below Dark Surf	ace (A11)		Depleted Mat						
	ark Surface (A12)			Redox Dark S					tors of hydrophytic vegetation and	
				Depleted Darl				wetland hydrology must be present, unless disturbed or problematic.		
	Bleyed Matrix (S4)			Redox Depres	SSIONS (FO)			uni	ess disturbed of problematic.	
	• • •	<i>)</i> .								
Type: NC	one									
Type: <u>No</u> Depth (in	DNE hches):_ 			-				Hvdric So	il Present? Yes ⊠ No □	
•••				-				Hydric Sc	il Present? Yes 🗵 No 🗌	
Depth (in Remarks:	iches):	nrouah ir	dicator	s A11 and	F6.			Hydric Sc	il Present? Yes ⊠ No 🗌	
Depth (in Remarks:		nrough ir	ndicator	s A11 and	F6.			Hydric Sc	il Present? Yes ⊠ No 🗌	
Depth (in Remarks:	iches):	nrough ir	ndicator	s A11 and	F6.			Hydric Sc	il Present? Yes ⊠ No 🗌	
Depth (in Remarks: Hydric soil	nches): <u></u> criteria met th	nrough ir	ndicator	s A11 and	F6.			Hydric Sc	nil Present? Yes ⊠ No 🗌	
Depth (in Remarks: Hydric soil	nches): <u></u> criteria met th		ndicator	s A11 and	F6.			Hydric Sc	oil Present? Yes ⊠ No 🗌	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy	criteria met th	rs:							nil Present? Yes ⊠ No □ ondary Indicators (2 or more required)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi	oches): criteria met th OGY rdrology Indicato cators (minimum o	rs:			oply)	ves (B9) (¢	except MLF	Sec		
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi Surface	oches): criteria met th OGY rdrology Indicato cators (minimum o	rs:		eck all that ap □ Water-S	oply)	. , .	except MLF	Sec	ondary Indicators (2 or more required)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi X Surface X High Wa	oches): criteria met th OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2)	rs:		eck all that ap □ Water-S	oply) tained Leav 4A, and 4	. , .	except MLF	Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi Surface Surface High Wa Saturatio Water M	oches): criteria met th oGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)	rs:		eck all that ap Water-S 1, 2, Salt Crus Aquatic	oply) tained Leav 4A, and 4 st (B11) Invertebrate	B) es (B13)	except MLF	RA C	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Water M Sedimer	oches): criteria met th DGY drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	rs:		eck all that ap Water-S 1, 2, Salt Crus Aquatic I	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C	B) es (B13) Odor (C1)		RA C	ondary 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)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Water M Sedimer Drift Dep	Criteria met the OGY drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	rs:		eck all that ap Water-S 1, 2, Salt Crus Aquatic I Hydroge Oxidized	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe	B) es (B13) Odor (C1) eres along	Living Roc	<u>Sec</u> RA □ □ □ □	ondary 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)	
Depth (in Remarks: Hydric soil HyDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) at or Crust (B4)	rs:		eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized	pply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduc	B) es (B13) Odor (C1) eres along ed Iron (C	Living Roc 4)	Sec RA □ □ □ □ □ □ □	ondary 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)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi IX Surface IX High Wa IX Saturatio IX Saturati	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	rs:		eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduc ron Reduct	B) es (B13) Odor (C1) eres along ed Iron (C tion in Tille	Living Roo 4) ed Soils (C6	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	
Depth (in Remarks: Hydric soil Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Water M Sedimer Algal Ma Iron Dep Surface	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	of one req	uired; che	eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed	B) Dodor (C1) eres along ed Iron (C tion in Tille d Plants (D	Living Roc 4)	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	
Depth (in Remarks: Hydric soil HyDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Saturatio Sedimer Drift Dep Algal Ma Iron Dep Surface	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria	of one req	uired; che	eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduc ron Reduct	B) Dodor (C1) eres along ed Iron (C tion in Tille d Plants (D	Living Roo 4) ed Soils (C6	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	
Depth (in Remarks: Hydric soil HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatio Water M Saturatio Urift Dep Algal Ma Iron Dep Surface Surface Surface	Criteria met the OGY drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conce	of one req	uired; che	eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	oply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed	B) Dodor (C1) eres along ed Iron (C tion in Tille d Plants (D	Living Roo 4) ed Soils (C6	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	
Depth (in Remarks: Hydric soil IYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Sedimer Drift Dep Algal Ma Iron Dep Surface Surface Surface	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations:	o rs: of one req al Imagery ave Surfac	uired; che r (B7) ce (B8)	eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	pply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduc ron Reduct or Stressed xplain in Re	B) Dodor (C1) eres along ed Iron (C tion in Tille d Plants (D	Living Roo 4) ed Soils (C6	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	
Depth (in Remarks: Hydric soil Hydric soil Hydric soil EXTRACT Wetland Hy Primary Indi Surface High Wa Saturatio Saturatio Vater M Sedimer Chift Dep Algal Ma Iron Dep Surface Surface Inundatii Sparsely	Criteria met the OGY rdrology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rvations: ter Present?	of one req	uired; che	eck all that ap Water-Si 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	pply) tained Leav 4A, and 4I st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct or Stressed xplain in Re mes): 0	B) Dodor (C1) eres along ed Iron (C tion in Tille d Plants (D	Living Roo 4) ed Soils (C6	Sec RA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	ondary 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)	

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

High groundwater is not sustained for 2 or more continuous weeks during the growing season.

Remarks:

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicators A1, A2, and A3 were observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	_City/Count	_{ty:} Marysville / Snohomish	Sampling Date: 01/08/2020
Applicant/Owner: Mowat Construction		State: WA	Sampling Point: DP-24/MP-24
Investigator(s): Rachael Hyland		Section, Township, Range: 27 / 31	
Landform (hillslope, terrace, etc.): Valley Floor		ef (concave, convex, none): None	
Subregion (LRR): <u>A2</u>	Lat: 48.143759	Long: -122.1592046	68 Datum: WGS 84
Soil Map Unit Name: <u>Norma Ioam</u>		NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typic	al for this time of year? Yes 🗵		
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances" pres	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answers ir	n Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing samplin	ng point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵	No 🗆		
Hydric Soil Present? Yes		he Sampled Area	
Wetland Hydrology Present? Yes	No 🗵	hin a Wetland? Yes 🗌 N	10 🔀
Remarks: Not all three wetland criteria met, only hydro	phytic vegetation. Data collected in	southwest portion of the site at groundwater	r monitoring plot MP-24. Hydrology
monitoring indicates that this area does not r	emain inundated or saturated for lon	ng enough during the growing season to me	et wetland hydrology criteria.

	Absolute		Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2 3				Total Number of Dominant Species Across All Strata: <u>1</u> ((B)
4 Sapling/Shrub Stratum (Plot size: 30 ft)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> ((A/B)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
· ·	0	= Total C		FACU species x 4 =	-
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	100	Yes	FAC	Column Totals: (A)	
2					
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				➤ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^1$	
8				Morphological Adaptations ¹ (Provide supportin data in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants ¹	
10		. <u></u>		Problematic Hydrophytic Vegetation ¹ (Explain	ı)
11	100			¹ Indicators of hydric soil and wetland hydrology m	nust
Woody Vine Stratum (Plot size: <u>30 ft</u>)		= Total C		be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes 🛛 No 🗌	
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.		

Profile Des	cription: (Describe	e to the a	lepth ne	eded to docur	nent the	mulcator	or confirm	the absence	of indicators.)
Depth	Matrix			Redo	x Feature	<u>es</u>			
(inches)	Color (moist)		Colo	r (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 10	2.5Y 3/2	100	-		-			SaLo	Sandy loam
10 - 13	2.5Y 5/2	85	7.5	YR 5/4	15	С	Μ	SaLo	Sandy loam
13 - 23	2.5Y 3/2	100	-		-			GrSaLo	Gravelly sandy loam
23 - 25	7.5YR 5/6	50	-		-			GrSaLo	Gravelly sandy loam
	2.5Y 5/3	30			-			GrSaLo	Gravelly sandy loam
	7.5YR 4/4	20						GrSaLo	Gravelly sandy loam
25 - 32	7.5YR 5/6	100	-		-	-	-	GrSaClLo	Gravelly sandy clay loam
¹ Type: C=C	oncentration, D=De	epletion. R	RM=Red	uced Matrix. CS	S=Covere	d or Coat	ed Sand Gr	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
	Indicators: (Appli								ors for Problematic Hydric Soils ³ :
Histosol				Sandy Redox (S		,			n Muck (A10)
	bipedon (A2)			Stripped Matrix					Parent Material (TF2)
Black Hi				_oamy Mucky N	` '	1) (excep t	MLRA 1)		Shallow Dark Surface (TF12)
	n Sulfide (A4)			_oamy Gleyed I				-	er (Explain in Remarks)
	d Below Dark Surfa	ce (A11)		Depleted Matrix		,		_	
-	ark Surface (A12)	()		Redox Dark Sui				³ Indicato	ors of hydrophytic vegetation and
🔲 Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F	7)		wetla	ind hydrology must be present,
Sandy G	Bleyed Matrix (S4)		🗆 F	Redox Depress	ions (F8)			unles	s disturbed or problematic.
	Layer (if present):								
Type: <u>No</u>									
Depth (in	ches):							Hydric Soil	Present? Yes 🗌 No 🗵
Remarks:									
No hydric s									
No hydric soil criteria met, second layer not thick enough (<4") to meet A11 or F3.								or F3	
i to nyano t	soli criteria met,	second	d layer	not thick en	ough (<	4") to m	eet A11	or F3.	
	soli criteria met,	second	d layer	not thick en	ough (<	4") to m	eet A11	or F3.	
		second	d layer	not thick en	ough (<	4") to m	eet A11	or F3.	
HYDROLO	θGY		d layer	not thick en	ough (<	4") to m	eet A11 o	or F3.	
HYDROLO Wetland Hy	IGY drology Indicators	3:				4") to m	eet A11		ndany Indiantora (2 or maro required)
HYDROLO Wetland Hy	GY drology Indicators cators (minimum of	3:		eck all that appl	y)			Seco	ndary Indicators (2 or more required)
HYDROLO Wetland Hy Primary Indi	GY drology Indicators cators (minimum of Water (A1)	3:		eck all that appl	y) ned Leav	es (B9) (e		Seco	ater-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hy Primary Indi Surface Surface	GY drology Indicators cators (minimum of Water (A1) ater Table (A2)	3:	ired; che	eck all that appl U Water-Stai 1, 2, 4/	y) ned Leav A, and 4 E	es (B9) (e		<u>Seco</u> 2 A W	/ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLO Wetland Hy Primary Indi Surface X High Wa X Saturatio	GY drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3)	3:	ired; che	eck all that appl ☐ Water-Stai 1, 2, 4/ ☐ Salt Crust	y) ned Leav A, and 4B (B11)	es (B9) (e 3)		<u>Seco</u> A V D	<pre>/ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10)</pre>
HYDROLO Wetland Hy Primary India Surface X High Wa Saturatio Water M	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1)	3:	ired; che	eck all that appl Water-Stai 1, 2, 4/ Salt Crust	y) ned Leav A, and 4B (B11) vertebrate	es (B9) (e i) es (B13)		<u>Seco</u> XA U W D D D	(ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2)
HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatio Water M Sedimer	GY drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2)	3:	ired; che	eck all that appl ☐ Water-Stai 1, 2, 4/ ☐ Salt Crust ☐ Aquatic Inv ☐ Hydrogen	y) ned Leav A, and 4E (B11) /ertebrate Sulfide O	es (B9) (e i) s (B13) dor (C1)	xcept MLR	<u>Seco</u> XA U U D S	(ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep	GY drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	3:	ired; che	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R	y) ned Leav A, and 4E (B11) /ertebrate Sulfide O	es (B9) (e i) es (B13) dor (C1) res along	xcept MLR	<u>Seco</u> A □ W □ D □ D □ S ts (C3) □ G	 Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2)
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	3:	ired; che	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of	y) ned Leav A, and 4B (B11) vertebrate Sulfide O Rhizosphe of Reduce	es (B9) (e 3) es (B13) dor (C1) res along ed Iron (C4	xcept MLR Living Roo	<u>Seco</u> 2A □ W □ D □ D □ S ts (C3) □ G □ S	(ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3)
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HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations:	s: one requi Imagery o /e Surface	ired; che	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (inchest	y) ned Leav A, and 4E (B11) vertebrate Sulfide Or Shizosphe of Reduce n Reducti Stressed olain in Re	es (B9) (e s) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks)	xcept MLR Living Roo 1) d Soils (C6	<u>Seco</u> :A □ W □ D □ D □ S :s (C3) □ G □ S □ S □ S □ S □ S □ S □ R	 (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii Sparsely	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ter Present?	S: one required Imagery (re Surface Yes []	ired; che (B7) ∋ (B8)	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iroo Stunted or Other (Exp	y) ned Leav A, and 4E (B11) vertebrate Sulfide Or Shizosphe of Reduce n Reducti Stressed olain in Re	es (B9) (e s) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks)	xcept MLR Living Roo 1) d Soils (C6	<u>Seco</u> :A □ W □ D □ D □ S :s (C3) □ G □ S □ S □ S □ S □ S □ S □ R	 (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ter Present?	imagery (ve Surface Yes Yes X	(B7) e (B8)	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (inchest	y) ned Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed Jain in Re S): <u>None</u> S): <u>7</u>	es (B9) (e s) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Secon A □ W □ D □ D □ S 15 (C3) □ G □ S 0 □ F, □ Fi □ Fi	 (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Water Table Saturation P (includes ca	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ther Present? Present? pillary fringe)	Imagery of ve Surface Yes Yes X Yes X	(B7) (B7) (B8) No 🛛 No 🖓 No 🗌	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (inchest Depth (inchest Depth (inchest Depth (inchest	y) ned Leav (B11) vertebrate Sulfide Of Reduce n Reducti Stressed plain in Re s): None s): 7 s): 6	es (B9) (e s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks) e	xcept MLR Living Roo 4) d Soils (C6 1) (LRR A) Weth	Secon A □ W □ D □ D □ S S S S S 0 □ F □ R □ F □ F 1 − F 1	(ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca Describe Re	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ter Present? Present? pillary fringe) corded Data (streat	Imagery (ve Surface Yes Yes Yes Yes Yes Yes m gauge,	(B7) ⇒ (B8) No ⊠ No □ No □ monitor	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (inchest Depth (inchest	y) ned Leav A, and 4E (B11) vertebrate Sulfide Of Reducti Stressed blain in Re s): <u>None</u> s): <u>7</u> s): <u>6</u> photos, p	es (B9) (e s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks) e revious in:	xcept MLR Living Roo 4) d Soils (C6 1) (LRR A) Uetta spections),	Second A W D D S S ts (C3) G S S N Fi The second	Yater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ther Present? Present? pillary fringe)	Imagery (ve Surface Yes Yes Yes Yes Yes Yes m gauge,	(B7) ⇒ (B8) No ⊠ No □ No □ monitor	eck all that appl Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (inchest Depth (inchest	y) ned Leav A, and 4E (B11) vertebrate Sulfide Of Reducti Stressed blain in Re s): <u>None</u> s): <u>7</u> s): <u>6</u> photos, p	es (B9) (e s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks) e revious in:	xcept MLR Living Roo 4) d Soils (C6 1) (LRR A) Uetta spections),	Second A W D D S S ts (C3) G S S N Fi The second	Yater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

Over 3 inches of precipitation recorded in the week preceding the site investigation, which likely resulted in exaggerated hydrology. While primary indicators A2 and A3 were observed during the initial site investigation in January 2020, groundwater monitoring indicates that the area does not remain inundated or saturated long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 2021.0001 - M-51 Industrial	City/County:	Marysville / Snoh	iomish s	Sampling Date: 06/02/2020						
Applicant/Owner: Mowat Construction				Sampling Point: DP-25						
Investigator(s): Rachael Hyland	S	ection, Township, Rar	nge: <u>27 / 31N</u>	/ 05E						
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>1</u>						
Subregion (LRR): <u>A2</u>										
Soil Map Unit Name: Custer fine sandy loam			NWI classificatio	_{on:} 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 signifi	cantly disturbed?	Are "Normal Circum	istances" preser	nt? Yes 🗵 No 🗌						
Are Vegetation, Soil, or Hydrology natura	Illy problematic?	(If needed, explain a	iny answers in F	Remarks.)						
SUMMARY OF FINDINGS – Attach site map sl	nowing sampling	point locations,	transects, in	mportant features, etc.						
Hydrophytic Vegetation Present? Yes 🗌 No 🗵	la tha	O								
Hydric Soil Present? Yes No 🗵		Sampled Area	Yes 🗍 No							
Wetland Hydrology Present? Yes 🗌 No 🗵	WILIIII									
Remarks:										
No wetland criteria met. Data colle	ected in central	portion of the si	ite.							

VEGETATION – Use scientific names of plants.

Tree Stratum (Plat size: 20 th)			t Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	% Cover			Number of Dominant Species	0	(
1				That Are OBL, FACW, or FAC:	0	(A)
2				Total Number of Dominant		
3		·		Species Across All Strata:	2	(B)
4				Percent of Dominant Species		
	0	= Total C	Cover	That Are OBL, FACW, or FAC:	0%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)						()
1		·		Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x	1 =	
4				FACW species x	2 =	
5				FAC species x		
	~	= Total C		FACU species x		
Herb Stratum (Plot size: 10 ft)		- 101010		UPL species x		
1. Dactylis glomerata	70	Yes	FACU	Column Totals: (A)		
2. Schedonorus pratensis	30	Yes	FACU		/	_ (D)
3. Phalaris arundinacea	5	No	FACW	Prevalence Index = B/A =		
4				Hydrophytic Vegetation Indicat	tors:	
5				Rapid Test for Hydrophytic V	egetation	
6				Dominance Test is >50%		
7				□ Prevalence Index is $\leq 3.0^{1}$		
8				☐ Morphological Adaptations ¹ (Provide suppor	rting
				data in Remarks or on a s		
9				Wetland Non-Vascular Plants	S ¹	
10		·		Problematic Hydrophytic Veg	etation ¹ (Explai	in)
11	105			¹ Indicators of hydric soil and wetl	and hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	105	= Total C	Cover	be present, unless disturbed or p		
,, ()						
1		·		Hydrophytic		
2	0			Vegetation		
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes No		
Remarks:						
No hydrophytic vegetation criteria met				anted due to lack of hydric s	ioil and hydr	ology.
Shrubs rooted on adjacent berm not in	cluded in	calculat	ion.			

US Army Corps of Engineers

Profile Description: (Describe to t	ne depth n	eeded to docum	nent the i	ndicator	or confirm	the abs	ence of indicators.)					
Depth Matrix		Redox	K Features									
		or (moist)	%	Type ¹	Loc ²	Texture						
0 - 10 10YR 2/1+ 10	- 00		-		-	SaLo	Sandy loam					
10 - 18+ 7.5YR 2.5/2 10	- 00		-	-	-	LoSa	Loamy sand					
			·		·							
·				<u> </u>	<u> </u>							
¹ Type: C=Concentration, D=Depletic	n, RM=Re	duced Matrix, CS	=Covered	l or Coate	d Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.					
Hydric Soil Indicators: (Applicable							dicators for Problematic Hydric Soils ³ :					
Histosol (A1)		Sandy Redox (S	5)				2 cm Muck (A10)					
Histic Epipedon (A2)		Stripped Matrix (S6)				Red Parent Material (TF2)					
Black Histic (A3)		Loamy Mucky M			MLRA 1)		Very Shallow Dark Surface (TF12)					
Hydrogen Sulfide (A4)		Loamy Gleyed M	. ,				Other (Explain in Remarks)					
Depleted Below Dark Surface (A	1)	Depleted Matrix				3.						
 Thick Dark Surface (A12) Sandy Mucky Mineral (S1) 		Redox Dark Sur	. ,	7)		SIN	dicators of hydrophytic vegetation and					
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)		Depleted Dark S Redox Depression	•	()			wetland hydrology must be present, unless disturbed or problematic.					
Restrictive Layer (if present):		Tready Depression	5113 (1 0)			1						
Type: None												
Depth (inches):		_				Hydrid	c Soil Present? Yes 🗌 No 🗵					
Remarks:						nyan						
No hydric soil criteria met. Soi	a nat da	k anayah (ah	romo . 1) to mo	ot 110 ro	auiran	aanta					
no fiyune son chiena met. Son	s not uai	k enough (ch	10111a > 1	i) to me	elAIZIE	quiren	ients.					
HYDROLOGY Wetland Hydrology Indicators:												
Primary Indicators (minimum of one r	oguirodu ok	ade all that annu	A				Cooperations (Dor more required)					
	equirea, cr						Secondary Indicators (2 or more required)					
Surface Water (A1)		Water-Stair			ссерт мск	A	Water-Stained Leaves (B9) (MLRA 1, 2,					
High Water Table (A2)			, and 4B)				4A, and 4B)					
Saturation (A3)		Salt Crust (,	(D12)			Drainage Patterns (B10)					
Water Marks (B1)				. ,			Dry-Season Water Table (C2)					
Sediment Deposits (B2)		Hydrogen S			iving Boot	· (C2)	Saturation Visible on Aerial Imagery (C9)					
 Drift Deposits (B3) Algal Mat or Crust (B4) 				-	-	S (U3)	 Geomorphic Position (D2) Shallow Aguitard (D3) 					
_ •		Presence o Recent Iron					□ FAC-Neutral Test (D5)					
 Iron Deposits (B5) Surface Soil Cracks (B6) 		Stunted or			. ,		Raised Ant Mounds (D6) (LRR A)					
Inundation Visible on Aerial Imag	orv (B7)	Other (Expl					Frost-Heave Hummocks (D7)					
Sparsely Vegetated Concave Su	• • •			naiks)								
Field Observations:												
_		Depth (inches)	. None									
Surface Water Present?Yes [Water Table Present?Yes [Depth (inches)										
		Depth (inches)		<u> </u>	M - (1-							
Saturation Present? Yes [(includes capillary fringe)	No 🗵	Depth (Inches			wetia	ana Hya	rology Present? Yes 🗌 No 🗵					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:												
Describe Recorded Data (stream gau	ige, monito	ning well, aeriai p										
Describe Recorded Data (stream gat	ige, monito	ning weil, aeriai p	notos, pre		pections), i	ii availat	ло.					
Remarks:	ige, monito	ning wen, aenai p			pections), i	ii avaiiat	ις.					

Project/Site: 2021.0001 - M-51 Industrial	City/County:	y: Marysville / Snohomish Sampling Date: 06/0							
Applicant/Owner: Mowat Construction		State: WA	Sam	pling Point: DP-26					
Investigator(s): Rachael Hyland		Section, Township, Range:	27 / 31N / 0	5E					
Landform (hillslope, terrace, etc.): Valley Floor		f (concave, convex, none):							
	_{at:} 48.146555	Long: -122.	15950276	Datum: WGS 84					
Soil Map Unit Name: Norma Ioam 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 significa	antly disturbed?	Are "Normal Circumsta	nces" present?	Yes 🗵 No 🗌					
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, explain any a	answers in Rem	arks.)					
SUMMARY OF FINDINGS – Attach site map sho	owing sampling	g point locations, tra	insects, imp	ortant features, etc.					
Hydrophytic Vegetation Present? Yes X No I Hydric Soil Present? Yes I No X Wetland Hydrology Present? Yes I No X		e Sampled Area n a Wetland?	Yes 🗌 No 🛛						
Remarks:	_								

Not all three wetland criteria met, only hydrophytic vegetation. Data collected along northern property boundary, south of Offsite Wetland A.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	-		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u>	A)
2					
3.				Total Number of Dominant Species Across All Strata: 4 (E	2)
				Species Across Air Strata. <u>4</u> (c)
4	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A	4/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Ranunculus repens	30	Yes	FAC	Column Totals: (A)	(B)
2. Phalaris arundinacea	30	Yes	FACW		(_)
3. Schedonorus pratensis	25	Yes	FACU	Prevalence Index = B/A =	
4. Alopecurus pratensis	25	Yes	FAC	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				➤ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supportin data in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11				¹ Indicators of hydric soil and wetland hydrology mu	
Woody Vine Stratum (Plot size: <u>30 ft</u>)	110	= Total C	over	be present, unless disturbed or problematic.	u31
1				Under wheeler	
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.		

Profile Desc	cription: (Describe	to the de	epth n	eeded to docun	nent the i	indicator	or confirm	n the ab	sence	of indicators.)	
Depth	Matrix			Redo	x Feature	<u>s</u>					
(inches)	Color (moist)	%		or (moist)	%	Type ¹	Loc ²	Textur	e	Remarks	
0 - 10	2.5Y 3/2	99	10	YR 3/4	1	С	Μ	SiLo		Silt loam	
10 - 14	2.5Y 3/2	75	10	YR 3/4	5	С	Μ	SiLo		Silt loam, mixed matrix	
	2.5Y 4/2	20	-		-	-		SaLo		Sandy loam, mixed matr	ix
14 - 16+	2.5Y 4/3	50	-		-	-	-	LoSa		Loamy sand, mixed mate	ix
	10YR 3/4	50	-		-	-	-	LoSa		Loamy sand, mixed mate	ix
¹ Type: C=C	oncentration, D=De	pletion, RI	M=Rec	luced Matrix, CS	=Covered	d or Coat	ed Sand G	rains.	² Loc	ation: PL=Pore Lining, M=Ma	atrix.
	Indicators: (Appli									rs for Problematic Hydric S	
Histosol	(A1)			Sandy Redox (S	5)] 2 cm	Muck (A10)	
Histic Ep	vipedon (A2)			Stripped Matrix ((S6)] Red	Parent Material (TF2)	
Black His	. ,			Loamy Mucky M			t MLRA 1)] Very	Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed N	• •)] Othe	r (Explain in Remarks)	
	Below Dark Surfac	e (A11)		Depleted Matrix							
	rk Surface (A12)			Redox Dark Sur	()			³ lı		rs of hydrophytic vegetation a	
	lucky Mineral (S1)			Depleted Dark S		7)				nd hydrology must be present	,
	leyed Matrix (S4)			Redox Depressi	ons (F8)				unles	s disturbed or problematic.	
Type: NC	Layer (if present):										
		· · · · · · · · · · · · · · · · · · ·		-							
Depth (in	cnes)			-				Hydr	ic Soil	Present? Yes 🗌 No 🗵	
Remarks:											
No hydric s	soil criteria met.	Redox	begin	s too deep (>	•8") to n	neet F6	requirem	nents.			
HYDROLO	GY										
Wetland Hy	drology Indicators	:									
Primary India	cators (minimum of	one requii	ed; ch	eck all that apply	()				Secor	dary Indicators (2 or more red	uired)
	Water (A1)			Water-Stair		es (B9) (e	xcept MLF	RA	Πw	ater-Stained Leaves (B9) (ML	RA 1. 2.
	ter Table (A2)				, and 4B				_	4A, and 4B)	, ,
Saturatio	. ,			Salt Crust (,				ainage Patterns (B10)	
U Water M				Aquatic Inv		s (B13)				y-Season Water Table (C2)	
	it Deposits (B2)			Hydrogen S		. ,				aturation Visible on Aerial Ima	nery (CQ)
	osits (B3)			Oxidized R				te (C3)		eomorphic Position (D2)	Jory (00)
	t or Crust (B4)			Presence o		-	-	13 (03)		nallow Aquitard (D3)	
										• • • •	
-	osits (B5)								_	AC-Neutral Test (D5)	A \
	Soil Cracks (B6)		יבר	Stunted or)		aised Ant Mounds (D6) (LRR	A)
	on Visible on Aerial		,	Other (Expl	ain in Re	marks)				ost-Heave Hummocks (D7)	
	Vegetated Concav	e Sunace	(B8)								
Field Obser		. — .	. —		None						
Surface Wat			No 🗙	Depth (inches							
Water Table			No 🗙	Depth (inches							
Saturation P		Yes 🗌 🛛 I	No 🗙	Depth (inches): <u>None</u>		Wetl	and Hyd	Irology	/ Present? Yes 🗌 No 🗵	
(includes cap Describe Re	corded Data (stream	n gauge. r	nonito	ring well, aerial r	hotos, pr	evious in	spections).	if availa	ble:		
		J		J . ,	, 		, , ,		-		
Remarks:											
	logy oritoria	moti ni	t loft		night (an E/2) with a		long	a of a water table to	10"
πνυ πναία	nogy criteria i	met; pl	ιeπ	upen over	night (UH 0/2	ງ with N		rence	e of a water table to	10.

Project/Site: 2021.0001 - M-51 Industrial	City/County:	Marysville / Snohor	nish Sa	Sampling Date: 06/03/2020						
Applicant/Owner: Mowat Construction		State: W								
Investigator(s): Rachael Hyland	S	Section, Township, Range	e: <u>27 / 31N /</u>	/ 05E						
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>1</u>						
Subregion (LRR): A2				Datum: WGS 84						
Soil Map Unit Name: Norma Ioam										
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 Circumst	ances" present	t? Yes 🗵 No 🗌						
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any	answers in Re	emarks.)						
SUMMARY OF FINDINGS – Attach site ma	ap showing sampling	point locations, tr	ansects, in	nportant features, etc.						
Hydrophytic Vegetation Present? Yes ⋈ No Hydric Soil Present? Yes ⋈ No Wetland Hydrology Present? Yes □ No	□ Is the within	Sampled Area a Wetland?	Yes 🗌 No 👂	3						
Remarks: Not all three wetland criteria met, lacking	y hydrology. Data collected	along northern property	v boundary, so	outheast of Offsite Wetland						

A.

Tree Strotum (Dist size: 20 ft)	Absolute		Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	1 (•
				That Are OBL, FACW, or FAC:	<u> </u>	A)
2				Total Number of Dominant		
3				Species Across All Strata:	<u>1</u> (B	3)
4			. <u> </u>	Percent of Dominant Species		
	0	= Total C	over	That Are OBL, FACW, or FAC:	100% (A	√B)
Sapling/Shrub Stratum (Plot size: 30 ft)					、	,
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x	1 =	
4				FACW species x	2 =	
5				FAC species x	3 =	
	0	= Total C		FACU species x		
Herb Stratum (Plot size: 10 ft)				UPL species x		
1. Phalaris arundinacea	100	Yes	FACW	Column Totals: (A		(B)
2. Poa pratensis	5	No	FAC			(D)
3. Schedonorus arundinaceum	5	No	FAC	Prevalence Index = B/A =		
4				Hydrophytic Vegetation Indica	itors:	
5				Rapid Test for Hydrophytic \	/egetation	
6				➤ Dominance Test is >50%		
7				□ Prevalence Index is $\leq 3.0^{1}$		
				Morphological Adaptations ¹	(Provide supporting	a
8				data in Remarks or on a		5
9				U Wetland Non-Vascular Plant	S ¹	
10				Problematic Hydrophytic Ver	getation ¹ (Explain)	
11	110		·	¹ Indicators of hydric soil and wet	land hydrology mu	ıst
Woody Vine Stratum (Plot size: 30 ft)	110	= Total C	Cover	be present, unless disturbed or present	problematic.	
1			·	Hydrophytic		
2			·	Vegetation	_	
% Para Craund in Harb Stratum	0	= Total C	over	Present? Yes 🗙 No	י 🗋 כ	
% Bare Ground in Herb Stratum 0						
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	ect			

Depth (inches)	Matrix Color (moist)	%		moist)	ox Feature %	<u>es</u> Type ¹	Loc ²	Textur	e	Remarks	\$
0 - 8	2.5Y 3/2	100	-	(-	-	-	SiLo	<u> </u>	Silt loam	<u>-</u>
8 - 16+	2.5Y 5/1	93	10Y	′R 3/4	7	С	М	LoSa		Loamy sand	
¹ Type: C=Co	ncentration, D=De	epletion, R	M=Redu	uced Matrix, C	S=Covere	ed or Coat	ed Sand G	rains.	² Loc	ation: PL=Pore Linin	g, M=Matrix.
	ndicators: (Appl									s for Problematic H	
Histosol (,			andy Redox (Muck (A10)	
	pedon (A2)			tripped Matrix	. ,					Parent Material (TF2)	
 Black His Hydrogen 				oamy Mucky oamy Gleyed			t MLRA 1)			Shallow Dark Surface (Explain in Remarks	
	Below Dark Surfa	CO (A11)		epleted Matri		2)		L			<i>)</i>
	k Surface (A12)			ledox Dark Su)		³ lr	ndicator	s of hydrophytic vege	etation and
	ucky Mineral (S1)			epleted Dark	• • •					nd hydrology must be	
	eyed Matrix (S4)			edox Depres		,				disturbed or problem	
	ayer (if present):										
Type: No											
Type: <u>NO</u> I Depth (inc								Hydri	ic Soil I	Present? Yes 🗵	No 🗌
Depth (inc								Hydri	ic Soil I	Present? Yes 🗵	No 🗌
Depth (inc Remarks:		ough inc	dicator	A11.				Hydri	ic Soil I	Present? Yes 🗵	No 🗌
Depth (inc Remarks:	hes):	ough inc	dicator	A11.				Hydri	ic Soil I	Present? Yes 🗵	No 🗌
Depth (inc Remarks:	hes):	ough inc	dicator	A11.				Hydri	ic Soil I	Present? Yes ⊠	No 🗌
Depth (inc Remarks: Hydric soil (HYDROLO(^{.hes):} criteria met thr GY		dicator	A11.				Hydri	ic Soil I	Present? Yes ⊠	No 🗌
Depth (inc Remarks: Hydric soil (IYDROLO(Wetland Hyd	hes): <u></u> criteria met thr GY Irology Indicator	s:						Hydri			
Depth (inc Remarks: Hydric soil (IYDROLO(Wetland Hyd Primary Indic	hes): criteria met thr GY Irology Indicator ators (minimum of	s:	ired; che	ck all that app					Secon	dary Indicators (2 or	more required)
Depth (inc Remarks: Hydric soil (MYDROLO(Wetland Hyd Primary Indic Surface V	hes): criteria met thr GY Irology Indicator ators (minimum of Vater (A1)	s:	ired; che	<u>ck all that ap</u> ☐ Water-Sta	ined Leav		except MLI		Secon	dary Indicators (2 or ater-Stained Leaves (more required)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic Surface V High Wate	thes): criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2)	s:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4	iined Leav A, and 4E		except MLI		Secon	dary Indicators (2 or ater-Stained Leaves (4A, and 4B)	<u>more required)</u> B9) (MLRA 1, 2,
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic: Surface V High Wato Saturation	thes): criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3)	s:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 ☐ Salt Crust	ined Leav A, and 4E (B11)	3)	except MLI		Secon	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10	<u>more required)</u> B9) (MLRA 1, 2,)
Depth (inc Remarks: Hydric soil of Primary Indic Surface V High Wate Saturation Water Ma	hes): criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1)	s:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 ☐ Salt Crusi ☐ Aquatic Ir	iined Leav A, and 4E (B11) vertebrate	3) es (B13)	except MLI		Secon	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl	<u>more required)</u> B9) (MLRA 1, 2,) e (C2)
Depth (inc Remarks: Hydric soil of Primary Indic Surface V High Wate Saturation Water Ma Sediment	hes): criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2)	s:	red; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic Ir ☐ Hydrogen	iined Leav A, and 4E (B11) vertebrate Sulfide O	B) es (B13) edor (C1)		RA	Secon Wa Dra Dra Sa	dary Indicators (2 or a ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae	<u>more required)</u> B9) (MLRA 1, 2,) e (C2) erial Imagery (C9)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) posits (B3)	s:	ired; che	<u>ck all that app</u> ☐ Water-Sta 1, 2, 4 ☐ Salt Crusi ☐ Aquatic Ir ☐ Hydrogen ☐ Oxidized	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe	3) es (B13) edor (C1) eres along	Living Roc	RA	Secon Wa Dra Dra Sa Ge	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D	<u>more required)</u> B9) (MLRA 1, 2,) e (C2) erial Imagery (C9)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) osits (B3) or Crust (B4)	s:	ired; che	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce	3) es (B13) edor (C1) eres along ed Iron (C	Living Roc 4)	RA ots (C3)	Secon Wa Dra Dra Sa Ge Sh	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3)	<u>more required)</u> B9) (MLRA 1, 2,) e (C2) erial Imagery (C9)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic Surface V High Wate Saturation Water Ma Sediment Sediment Algal Mat Iron Depo	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5)	s:	red; che	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ird	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce	3) dor (C1) eres along ed Iron (C ion in Tille	Living Roc 4) d Soils (C6	RA ots (C3)	Secon Wa Dra Dra Sa Ge Sh FA	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5)	more required) B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) 92)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic: Surface V High Wate Saturation Saturation Saturation Dift Depo Algal Mat Iron Depo	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6)	s: f one requi	red; che	ck all that app Water-Sta 1, 2, 4 Salt Cruss Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressed	3) dor (C1) eres along ed Iron (C ion in Tille I Plants (C	Living Roc 4)	RA ots (C3)	Secon Wa Dra Dry Sa Ge Sh FA Ra	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6	more required) (B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) (D2) (LRR A)
Depth (inc Remarks: Hydric soil of YDROLOO Vetland Hyd Primary Indica Surface V High Water Saturation Saturation Drift Depo Algal Mat Iron Depo Surface S Inundation	hes): criteria met thr GY frology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aeria	s: f one requi	(B7)	ck all that app Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ird	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressed	3) dor (C1) eres along ed Iron (C ion in Tille I Plants (C	Living Roc 4) d Soils (C6	RA ots (C3)	Secon Wa Dra Dry Sa Ge Sh FA Ra	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5)	more required) (B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) (D2) (LRR A)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indica Surface V High Water Saturation Sediment Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) posits (B3) : or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aeria Vegetated Conca	s: f one requi	(B7)	ck all that app Water-Sta 1, 2, 4 Salt Cruss Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressed	3) dor (C1) eres along ed Iron (C ion in Tille I Plants (C	Living Roc 4) d Soils (C6	RA ots (C3)	Secon Wa Dra Dry Sa Ge Sh FA Ra	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6	more required) (B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) (D2) (LRR A)
Depth (inc Remarks: Hydric soil of YDROLOO Wetland Hyd Primary Indic Surface V High Wate Saturation Vater Ma Sediment Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aeria Vegetated Conca rations:	s: f one requi	(B7) (B8)	ck all that app Water-Sta 1, 2, 4 Salt Cruss Aquatic Ir Hydrogen Oxidized Presence Recent Irr Stunted o Other (Ex	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressec plain in Re	B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6	RA ots (C3)	Secon Wa Dra Dry Sa Ge Sh FA Ra	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6	more required) (B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) (D2) (LRR A)
Depth (inc Remarks: Hydric soil of IYDROLOO Wetland Hyd Primary Indica Surface V High Wate Saturation Saturation Saturation Drift Depo Algal Mat Iron Depo Surface S Inundation	criteria met thr criteria met thr GY Irology Indicator ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aeria Vegetated Conca vations: pr Present?	s: f one requi	(B7)	ck all that app Water-Sta 1, 2, 4 Salt Cruss Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	ined Leav A, and 4E (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressec plain in Re	B) es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roc 4) d Soils (C6	RA ots (C3)	Secon Wa Dra Dry Sa Ge Sh FA Ra	dary Indicators (2 or ater-Stained Leaves (4A, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6	more required) (B9) (MLRA 1, 2,) e (C2) erial Imagery (C9) (C9) (LRR A)

Remarks:

No hydrology criteria met; pit left open overnight (on 6/2) with no evidence of a water table to 20".

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

(includes capillary fringe)

Project/Site: 2021.0001 - M-51 Industrial Cit	y/County: Marysville / Snohomish	Sampling Date: 06/03/2020							
Applicant/Owner: Mowat Construction	State: WA	_ Sampling Point: DP-28							
Investigator(s): Rachael Hyland	Section, Township, Range: <u>27 / 3</u>	1N / 05E							
Landform (hillslope, terrace, etc.): Valley Floor	ocal relief (concave, convex, none): <u>Conve</u>								
	6584 Long: -122.156223	B23 Datum: WGS 84							
Soil Map Unit Name: Norma Ioam	NWI classifie	cation: 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 distur	bed? Are "Normal Circumstances" pr	esent? Yes 🗵 No 🗌							
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, explain any answers	in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transect	s, important features, etc.							
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes X No X Wetland Hydrology Present? Yes No X	Is the Sampled Area within a Wetland? Yes 🗌	No 🗵							

Remarks: Not all three wetland criteria met, only hydric soils. Data collected along northern property boundary, southeast of Offsite Wetland B.

	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Demonst of Dominant Crossica
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1	- <u> </u>			Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =
_{1.} Holcus lanatus	50	Yes	FAC	Column Totals: (A) (B)
2. Schedonorus pratensis	50	Yes	FACU	
3. Poa pratensis	10	No	FAC	Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹
		·		Problematic Hydrophytic Vegetation ¹ (Explain)
11	110	= Total C		¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)			over	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
	0	= Total C	over	Present? Yes No 🗵
% Bare Ground in Herb Stratum 0				
Remarks: No hydrophytic vegetation criteria me	t Prevalor	nco indo	not warr	anted due to lack of hydric soils and
hydrology.			unot wall	anieu uue iu iauk ui nyunu suns anu

Profile Desc	cription: (Descri	be to the d	lepth need	ed to docur	nent the	indicator	or confirm	n the ab	osence o	f indicators.)	
Depth	Matrix				x Feature						
<u>(inches)</u> 0 - 5	<u>Color (moist)</u> 2.5Y 3/2	<u>%</u> 100	<u>Color (n</u>	noist)		Type ¹	<u>Loc²</u>	<u> </u>	re	<u>Remarks</u> Silt loam	
5 - 8	2.5Y 3/2	98	10YR	3/3	3	С	М	SaLo)	Sandy loam	
8 - 12	5Y 5/2		10YR			<u>C</u>		SaCl		· · · · ·	
		90			10		M			Sandy clay loam	
12 - 16+	5Y 4/2	95	10YR	4/4	5	С	Μ	LoSa	۱ <u> </u>	Loamy sand	
			<u> </u>								
			_								
		·			-		·				
	oncentration, D=D						ed Sand G			ition: PL=Pore Lining, M=Matrix.	
-	Indicators: (App	licable to a				ea.)				s for Problematic Hydric Soils ³ :	
	· ,			dy Redox (S						Muck (A10)	
Black Hi	oipedon (A2) stic (A3)			my Mucky M	· /	1) (excent	MIRA 1)			arent Material (TF2) Shallow Dark Surface (TF12)	
	en Sulfide (A4)			my Gleyed N						(Explain in Remarks)	
	d Below Dark Surf	ace (A11)		leted Matrix		,		-		()	
Thick Da	ark Surface (A12)	. ,		lox Dark Sur				3	ndicators	s of hydrophytic vegetation and	
Sandy Mucky Mineral (S1)								wetland hydrology must be present,			
	Bleyed Matrix (S4)		🗌 Red	lox Depressi	ions (F8)			- 1	unless	disturbed or problematic.	
	Layer (if present)):									
Type: <u>No</u>											
	ches):							Hydr	ric Soil F	Present? Yes 🗵 No 🗌	
Remarks:					_						
Hydric soil	criteria met th	rough inc	dicators A	A11 and F	3.						
HYDROLO	GY										
Wetland Hy	drology Indicato	rs:									
Primary Indi	cators (minimum o	of one requi	ired; check	all that appl	y)				Second	lary Indicators (2 or more required)	
Surface	Water (A1)			Water-Stai	ned Leav	es (B9) (e	xcept MLF	RA	🗌 Wa	ter-Stained Leaves (B9) (MLRA 1, 2,	
🔲 High Wa	ater Table (A2)			1, 2, 44	A, and 4B	5)				4A, and 4B)	
Saturatio	on (A3)			Salt Crust	(B11)				🗌 Dra	inage Patterns (B10)	
Water M	larks (B1)			Aquatic Inv	vertebrate	s (B13)			🗌 Dry	-Season Water Table (C2)	
Sedimer	nt Deposits (B2)			Hydrogen \$	Sulfide O	dor (C1)			🗌 Sat	uration Visible on Aerial Imagery (C9)	
Drift Dep	oosits (B3)			Oxidized R	hizosphe	res along	Living Roc	ots (C3)	🗌 Geo	omorphic Position (D2)	
Algal Ma	at or Crust (B4)			Presence of	of Reduce	ed Iron (C4	l)		🗌 Sha	allow Aquitard (D3)	
Iron Dep	oosits (B5)			Recent Iror	n Reducti	on in Tille	d Soils (C6	5)	🗌 FAG	C-Neutral Test (D5)	
Surface	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR A	.)	🗌 Rai	sed Ant Mounds (D6) (LRR A)	
Inundation	on Visible on Aeria	al Imagery ((B7)	Other (Exp	lain in Re	marks)			🗌 Fro	st-Heave Hummocks (D7)	
Sparsely	Vegetated Conca	ave Surface	e (B8)								
Field Obser					Nam-						
Surface Wat	ter Present?	Yes 🗌	No 🗙 D	epth (inches	s): INONE	;					
Water Table			No 🗌 🛛 D	epth (inches	_{s):} 18						
Water Table Saturation P	Present?	Yes 🗙	No 🗌 🛛 D	epth (inches epth (inches	_{s):} 18		Wet	land Hyd	drology	Present? Yes 🗌 No 🗵	

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

Remarks:

No hydrology criteria met; water table and saturation too deep (>12") to meet indicators A2 and A3. Hydrology observed on 6/3 after pit left open overnight (on 6/2).

Project/Site: 2021.0001 - M-51 Industrial	City/County	_{ty:} <u>Marysville / Snohomish</u> _{Sampling Date: 06/0}							
Applicant/Owner: Mowat Construction		State: WA	Sampli	ng Point: DP-29					
Investigator(s): Rachael Hyland		Section, Township, Range:	27 / 31N / 05E	=					
Landform (hillslope, terrace, etc.): Berm		f (concave, convex, none):							
Subregion (LRR): <u>A2</u>		Long: -122.							
Soil Map Unit Name: Norma Ioam									
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 s	significantly disturbed?	Are "Normal Circumsta	nces" present? Y	es 🗵 No 🗌					
Are Vegetation, Soil, or Hydrology na	aturally problematic?	(If needed, explain any a	answers in Remarl	ks.)					
SUMMARY OF FINDINGS – Attach site ma	p showing sampling	g point locations, tra	nsects, impor	rtant features, etc.					
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	x withi	e Sampled Area in a Wetland?	Yes 🗌 No 🛛						
Remarks:									

No wetland criteria met. Data collected along northern property boundary, southeast of Offsite Wetland C.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u>)		Species?		Number of Dominant Species
				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4		·		Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)	0	Vee		
1. Rubus laciantus	2	Yes	FACU	Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	2	= Total Cover		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =
_{1.} Holcus lanatus	40	Yes	FAC	Column Totals: (A) (B)
2. Schedonorus pratensis	30	Yes	FACU	
3. Dactylis glomerata	20	No	FACU	Prevalence Index = B/A =
4. Poa pratensis	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Geranium dissectum	5	No	UPL	Rapid Test for Hydrophytic Vegetation
_{6.} Vicia hirsuta	5	No	UPL	Dominance Test is >50%
7. Galium aparine	5	No	FACU	□ Prevalence Index is ≤3.0 ¹
8				☐ Morphological Adaptations ¹ (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants ¹
11				Problematic Hydrophytic Vegetation ¹ (Explain)
····	115	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)		- 101010	000	be present, unless disturbed or problematic.
1				
2		·		Hydrophytic
۲	0	- Total C		Vegetation Present? Yes No X
% Bare Ground in Herb Stratum <u>0</u>	<u> </u>	= Total Cover		
Remarks:	Dural			
No hydrophytic vegetation criteria met.	Prevaler	nce index	not warr	anted due to lack of hydric soils and
hydrology.				

Profile Desc	cription: (Describ	e to the de	epth nee	eded to docu	ment the	indicator	or confirn	n the absen	ce of indicators.)		
Depth	Matrix			Redo	x Feature	<u>s</u>					
(inches)	Color (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks		
0 - 6	10YR 3/3	100	-		-			GrSiCILo	Gravelly silty clay loam		
6 - 10	10YR 3/3	95	7.5Y	′R 4/6	5	С	Μ	GrSiCILo	Gravelly silty clay loam		
10 - 16	7.5YR 4/6	88	10Y	R 3/3	10	С	Μ	SaCILo	Sandy clay loam		
			5YR	3/4	2	С	Μ				
			·								
			·								
			·								
	oncentration, D=D						ed Sand G		Location: PL=Pore Lining, M=Matrix.		
-	Indicators: (Appl	icable to a				ed.)			ators for Problematic Hydric Soils ³ :		
Histosol	. ,			andy Redox (S					cm Muck (A10)		
Black His	pipedon (A2)			tripped Matrix bamy Mucky N	· ·				ed Parent Material (TF2) ery Shallow Dark Surface (TF12)		
	en Sulfide (A4)			barny Mucky No					ther (Explain in Remarks)		
	d Below Dark Surfa	ce (A11)		epleted Matrix)					
-	ark Surface (A12)			edox Dark Su				³ Indic	ators of hydrophytic vegetation and		
	lucky Mineral (S1)			epleted Dark \$. ,			wetland hydrology must be present,			
Sandy G	Bleyed Matrix (S4)			edox Depress	ions (F8)			un	less disturbed or problematic.		
	Layer (if present):										
Type: <u>No</u>											
Depth (in	iches):							Hydric S	oil Present? Yes 🗌 No 🗵		
Remarks:											
No hydric s	soil criteria met										
HYDROLO	GY										
Wetland Hy	drology Indicator	s:									
Primary Indi	cators (minimum o	f one requi	red; cheo	ck all that appl	у)			Secondary Indicators (2 or more required)			
Surface	Water (A1)		[☐ Water-Stail	ned Leav	es (B9) (e	xcept MLF	MLRA Water-Stained Leaves (B9) (MLRA 1, 2,			
🔲 High Wa	ater Table (A2)			1, 2, 4A, and 4B)					4A, and 4B)		
Saturation	on (A3)		[Salt Crust (B11)					Drainage Patterns (B10)		
Water M	larks (B1)		[Aquatic Invertebrates (B13)					Dry-Season Water Table (C2)		
Sedimer	nt Deposits (B2)		[Hydrogen Sulfide Odor (C1)					Saturation Visible on Aerial Imagery (C9)		
Drift Dep	posits (B3)							ts (C3)	Geomorphic Position (D2)		
🗌 Algal Ma	at or Crust (B4)	st (B4) Presence of Reduced Iron (C4)						Shallow Aquitard (D3)			
Iron Dep	oosits (B5)	Recent Iron Reduction in Tilled Soils (C6))	FAC-Neutral Test (D5)			
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)							Raised Ant Mounds (D6) (LRR A)				
Inundation									Frost-Heave Hummocks (D7)		
Sparsely	Vegetated Conca	ve Surface	(B8)								
Field Obser	vations:										
	ter Present?	Yes 🗌 🛛	No 🗙	Depth (inches							
Surface Wat											
Surface Wat Water Table		Yes 🗌 🛛	No 🗙	Depth (inches							
Water Table Saturation P	Present? Present?		No 🛛 No 🗡	Depth (inches Depth (inches			Wetl	and Hydrol	ogy Present? Yes 🗌 No 🗵		
Water Table Saturation P (includes ca	Present?	Yes 🗌 🛛 I	No 🗙	Depth (inches	s): None)		-			

Remarks:

No hydrology criteria met; pit left open overnight (on 6/2) with no evidence of a water table to 16".

Project/Site: 2021.0001 - M-51 Industrial	City/County	: Marysville / Snoho	nish _{Sa}	ampling Date: <u>06/03/2020</u>				
Applicant/Owner: Mowat Construction		State: W	۹ sa	ampling Point: DP-30				
Investigator(s): Rachael Hyland		Section, Township, Range	e: <u>27 / 31N /</u>	/ 05E				
Landform (hillslope, terrace, etc.): Toe of slope				Slope (%): <u>1</u>				
Subregion (LRR): <u>A2</u>	Lat: 48.146516	Long: <u>-122</u>	.15148670	Datum: WGS 84				
Soil Map Unit Name: Custer fine sandy loam		NV	VI classificatior	n: N/A				
Are climatic / hydrologic conditions on the site typical for th	nis time of year? Yes 🗵							
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 X No □ Hydric Soil Present? Yes X No □ Wetland Hydrology Present? Yes □ No X	is the withi	e Sampled Area n a Wetland?	Yes 🗌 No 🛛	3				
Remarks:	D.4							

Not all three criteria met, lacking hydrology. Data collected in northeastern portion of site, south of offsite stormwater treatment and voluntary mitigation area.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: <u>3</u> (A	.)
2				Total Number of Dominant	
3				Species Across All Strata: 4 (B))
4				· · · · · · · · · · · · · · · · · · ·	
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/	/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				1112 AIC ODE, 1 AOW, 011 AO. <u>1070</u> (A	0)
1. Rubus armeniacus	10	Yes	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	10	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)				UPL species x 5 =	
1. Schedonorus pratensis	40	Yes	FACU	Column Totals: (A) ((B)
2. Holcus lanatus	40	Yes	FAC		()
3. Poa pratensis	30	Yes	FAC	Prevalence Index = B/A =	
4. Dactylis glomerata	10	No	FACU	Hydrophytic Vegetation Indicators:	
5. Galium aparine	10	No	FACU	Rapid Test for Hydrophytic Vegetation	
6. Geranium dissectum	5	No	UPL	☑ Dominance Test is >50%	
7. Ranunculus repens	2	No	FAC	☐ Prevalence Index is ≤3.0 ¹	
8. Lotus corniculatus	2	No	FAC	Morphological Adaptations ¹ (Provide supporting	I
9. Rumex crispus	2	No	FAC	data in Remarks or on a separate sheet)	
10				☐ Wetland Non-Vascular Plants ¹	
11.				Problematic Hydrophytic Vegetation ¹ (Explain)	
	141	= Total C	over	¹ Indicators of hydric soil and wetland hydrology mus	st
Woody Vine Stratum (Plot size: <u>30 ft</u>)		- 10141 0	0101	be present, unless disturbed or problematic.	
1					
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum _0					
Remarks: Hvdrophytic vegetation criteria met thre	ouah dom	ninance te	est.		

SOIL	
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Profile Desc	ription: (Describe	to the de	epth needed to docu	iment the	e indicato	r or confiri	n the absenc	e of indicators.)
Depth	Matrix		Rec	ox Featur				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 6	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
6 - 12	2.5Y 5/1	95	10YR 4/4	5	С	М	LoSa	Loamy sand
12 - 16+	10YR 5/2	90	10YR 4/4	10	С	Μ	Sa	Sand
				·		·		
¹ Type: C=C	ncentration D=Der	letion R	M=Reduced Matrix, C	S=Cover	ed or Coa	ted Sand G	rains ² I	ccation: PL=Pore Lining, M=Matrix.
			II LRRs, unless oth					tors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox	(S5)			🗌 2 c	m Muck (A10)
	ipedon (A2)		Stripped Matrix					d Parent Material (TF2)
Black His			Loamy Mucky	Mineral (F	-1) (exce p	t MLRA 1)		ry Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed		,	,		ner (Explain in Remarks)
X Depleted	Below Dark Surfac	e (A11)	Depleted Matri	x (F3)	,			
Thick Da	rk Surface (A12)		Redox Dark S	urface (F6	5)		³ Indica	tors of hydrophytic vegetation and
Sandy M	ucky Mineral (S1)		Depleted Dark	Surface (F7)		wet	and hydrology must be present,
	leyed Matrix (S4)		Redox Depres		. ,			ess disturbed or problematic.
	Layer (if present):			, ,				· · ·
Type: No	ne							
Depth (in	ches):						Hydric So	il Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	criteria met thro	ugh A1	1.					
2		0						
HYDROLO	GY							
	drology Indicators							
-	•••		ed; check all that ap	oly)			<u>S</u> ec	ondary Indicators (2 or more required)
Surface	Water (A1)		□ Water-Sta	ained Lea	ves (B9) (except ML		Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)		1, 2, 4	A, and 4	B)	-		4A, and 4B)
Saturatio			Salt Crus					Drainage Patterns (B10)
□ Water M	()			. ,	oc (B13)			Dry Season Water Table (C2)

Wetland Hydrology Indicato	rs:				
Primary Indicators (minimum	Secondary Indicators (2 or more required)				
Surface Water (A1)			□ Water-Stained Leaves (B9) (except	ot MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)
Iron Deposits (B5)			Recent Iron Reduction in Tilled So	ils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aeria	al Imagery	(B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)
Sparsely Vegetated Conce	ave Surfac	e (B8)			
Field Observations:					
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None		
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): <u>18</u>		
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): <u>16</u>	Wetland Hy	drology Present? Yes 🗌 No 🗵
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if availa	able:
Remarks:					
No hydrology criteria me	t; water	table a	nd saturation are too deep (>12	2") to meet i	indicators A2 and A3.

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

Project/Site: 2021.0001 - M-51 Industrial	City/County	<u>Marysville / Snohom</u>	nish Sampli	ng Date: 06/03/2020
Applicant/Owner: Mowat Construction		State: WA	Sampli	ng Point: DP-31
Investigator(s): Rachael Hyland	(Section, Township, Range:		
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):		
Subregion (LRR): A2	Lat: 48.145075	Long: -122.	16075386	Datum: WGS 84
Soil Map Unit Name: Norma Ioam		NW	l classification: N	/Α
Are climatic / hydrologic conditions on the site typica	al for this time of year? Yes 🗵	No 🗌 (If no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumsta	nces" present? Y	es 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any a	answers in Remar	ks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling	g point locations, tra	insects, impo	rtant features, etc.
Hydrophytic Vegetation Present? Yes X Hydric Soil Present? Yes D Wetland Hydrology Present? Yes D	No X withi	e Sampled Area n a Wetland?	Yes 🗌 No 🗵	
Remarks:	h	d in mastern portion of a	to in fallow field a	outh of residential

Not all three criteria met, only hydrophytic vegetation. Data collected in western portion of site in fallow field south of residential home and north of barns.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
				That Are OBL, FACW, or FAC: 2 ((A)
2		·		Total Number of Dominant	
3		·		Species Across All Strata: 2 (I	B)
4				Percent of Dominant Species	
	0	= Total C	over		A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					,
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u>)				UPL species x 5 =	
1. Schedonorus arundinaceus	80	Yes	FAC	Column Totals: (A)	(B)
2. Poa pratensis	60	Yes	FAC		
3. Holcus lanatus	20	No	FAC	Prevalence Index = B/A =	
4. Dactylis glomerata	10	No	FACU	Hydrophytic Vegetation Indicators:	
5. Galium aparine	10	No	FACU	Rapid Test for Hydrophytic Vegetation	
6. Cirsium arvense	10	No	FAC	☑ Dominance Test is >50%	
7. Rubus armeniacus	2	No	FAC	□ Prevalence Index is ≤3.0 ¹	
8		·		Morphological Adaptations ¹ (Provide supportin data in Remarks or on a separate sheet)	ng
9				□ Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	`
11		·		¹ Indicators of hydric soil and wetland hydrology mi	
	192	= Total C	over	be present, unless disturbed or problematic.	นรเ
Woody Vine Stratum (Plot size: <u>30 ft</u>)					
1		·	<u> </u>	Hydrophytic	
2				Vegetation	
	0	= Total C	over	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est.		

Profile Dese	cription: (Descril	be to the de	epth ne	eded to docu	ment the	indicator	or confirm	n the al	osence	e of indicators.)
Depth	Matrix				ox Featur	es		_		
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	r (moist)	%	Type ¹	Loc ²	Textu		Remarks
0 - 8	2.5Y 3/2	100	-		-			SaCl	Lo	Sandy clay loam
8 - 16	2.5Y 3/2	98		YR 3/3	2	С	Μ	SaCl		Sandy clay loam
16 - 22	2.5Y 3/2	86	2.5	Y 4/2	10	D	Μ	SaCl	Lo	Sandy clay loam
			7.5	YR 3/4	4	С	Μ			
										·
							<u> </u>			
								<u> </u>	2.	
	oncentration, D=D Indicators: (App						ed Sand G			cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils ³ :
						icu.)				n Muck (A10)
	bipedon (A2)			Sandy Redox (Stripped Matrix						Parent Material (TF2)
Black Hi				_oamy Mucky N	· · ·	1) (excep	MLRA 1)	ſ		y Shallow Dark Surface (TF12)
	n Sulfide (A4)			_oamy Gleyed				ſ	-	er (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matrix		_/		-		(
-	ark Surface (A12)	()		Redox Dark Su)		3	Indicate	ors of hydrophytic vegetation and
Sandy N	lucky Mineral (S1)	1		Depleted Dark	Surface (F7)				and hydrology must be present,
Sandy G	Bleyed Matrix (S4)			Redox Depress	ions (F8)				unles	ss disturbed or problematic.
	Layer (if present)):								
Туре: <u>Nc</u>				-						
Depth (in	ches):							Hyd	ric Soi	I Present? Yes 🗌 No 🗵
No hydric :	soil criteria me	t; redox ir	n seco	ond layer no	t preval	ent enou	ıgh (<5%	b) to m	eet F	6 requirements.
HYDROLO										
Wetland Hy	drology Indicator	rs:								
Primary Indi	cators (minimum c	of one requir	ed; che	eck all that app	ly)				<u>Seco</u>	ndary Indicators (2 or more required)
Surface	Water (A1)			Water-Sta	ined Leav	/es (B9) (e	xcept MLF	RA	□ v	Vater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 4	A, and 4	3)				4A, and 4B)
Saturatio	on (A3)			Salt Crust	(B11)					orainage Patterns (B10)
Water M	arks (B1)			Aquatic In	vertebrate	es (B13)				Pry-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide O	dor (C1)			🗆 S	aturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Oxidized F	Rhizosphe	eres along	Living Roo	ots (C3)	ΠG	Geomorphic Position (D2)
🔲 Algal Ma	at or Crust (B4)			Presence	of Reduc	ed Iron (C4	4)		🗆 S	hallow Aquitard (D3)
🔲 Iron Dep	oosits (B5)			Recent Iro	n Reduct	ion in Tille	d Soils (C6	6)	ΠF	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed	d Plants (D	1) (LRR A))	🗌 R	aised Ant Mounds (D6) (LRR A)
🗌 Inundatio	on Visible on Aeria	al Imagery (E	37)	Other (Exp	olain in Re	emarks)			ΓF	rost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ave Surface	(B8)							
Field Obser	vations:									
Surface Wat	ter Present?	Yes 🗌 🕴	No 🗙	Depth (inche	_{s):} None	Э				
Water Table	Present?	Yes 🗌 🕴	No 🗙	Depth (inche						
Saturation P (includes ca	resent? pillary fringe)		No 🗙	Depth (inche			Wetl	land Hy	drolog	y Present? Yes 🗌 No 🗵
	corded Data (strea	am gauge, r	nonitor	ing well, aerial	photos, p	previous in:	spections),	, if availa	able:	
Remarks:										
	av oritoria rea	•								
ινο πγαΓοίο	ogy criteria me	ι.								

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

Project/Site: 2021.0001 - M-51 Industria	al <u>C</u>	ity/County: Ma	arysville / Snoho	mish s	Sampling Date: 06/03/2020
Applicant/Owner: Mowat Construction					Sampling Point: DP-32
Investigator(s): Rachael Hyland		Sect	ion, Township, Rang		
Landform (hillslope, terrace, etc.): Valley Flo	or				Slope (%): 0
Subregion (LRR): <u>A2</u>					Datum: WGS 84
Soil Map Unit Name: Custer fine sandy Ic	am		N	WI classificatio	_{nn:} N/A
Are climatic / hydrologic conditions on the site	typical for this time of year	? Yes 🗶 No) 🗌 (If no, explain ir	n Remarks.)	
Are Vegetation, Soil, or Hydrolog	y significantly distu	urbed? A	Are "Normal Circums	tances" preser	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrolog	y naturally problem	natic? (If	f needed, explain an	y answers in R	Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing s	sampling po	pint locations, t	ransects, ii	mportant features, etc.
Hydrophytic Vegetation Present? Yes	s 🗌 No 🗷	la tha Ca	maled Area		
	s 🗌 No 🗷		mpled Area Wetland?	Yes 🗌 No	Y
Wetland Hydrology Present? Yes	s 🗌 No 🗶	within a			
Remarks:					

No wetland criteria met. Data collected in western portion of site in north of power substation and south of barns.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A))
2				Total Number of Dominant	
3				Species Across All Strata: <u>2</u> (B)	
4				Percent of Dominant Species	
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>50%</u> (A/F	B)
Sapling/Shrub Stratum (Plot size: 30 ft)					<i>.</i>
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)				UPL species x 5 =	
1. Holcus lanatus	60	Yes	FAC	Column Totals: (A) (I	B)
2. Dactylis glomerata	40	Yes	FACU		-,
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11	100			¹ Indicators of hydric soil and wetland hydrology mus	t
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= Total C	over	be present, unless disturbed or problematic.	-
1					
				Hydrophytic	
2	~	= Total C	over	Vegetation Present? Yes No X	
% Bare Ground in Herb Stratum 0	<u> </u>	= 10 (al C	over		
Remarks:					

SOIL	
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Profile Desc	ription: (Describ	e to the	depth r	needed to docum	nent the i	ndicator	or confi	irm the a	absence	e of indicators.)
Depth	Matrix				K Features					
(inches)	Color (moist)	%	Co	or (moist)	%	Type ¹	Loc ²	Text		Remarks
0 - 6	10YR 2/1	100			-		-	SaL	.0	Sandy loam, manure additive mixed throughout
6 - 10	2.5 Y 3/2	97	7.	5YR 3/4	3	С	M, PL	Sal	.0	Sandy loam
10 - 18+	2.5Y 4/3	95	10)YR 4/4	5	С	М	LoS	a	Loamy sand
										- <u></u>
										·
	oncentration, D=D						ed Sand			ocation: PL=Pore Lining, M=Matrix.
	Indicators: (Appl	icable to				ed.)				ors for Problematic Hydric Soils ³ :
Histosol	· ,			Sandy Redox (S						m Muck (A10)
	ipedon (A2)			Stripped Matrix (,					d Parent Material (TF2)
Black His				Loamy Mucky M			t MLRA 1	1)		y Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed M					Oth	er (Explain in Remarks)
	Below Dark Surfa	ice (A11)		Depleted Matrix						
—	rk Surface (A12)			Redox Dark Surf	. ,					ors of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark S	•	7)				and hydrology must be present,
	leyed Matrix (S4)			Redox Depression	ons (F8)				unle	ss disturbed or problematic.
Type: NC	Layer (if present)									
••				_						
Depth (in	cnes)			_				Ну	dric Soi	il Present? Yes 🗌 No 🗵
Remarks:										
No hydric s	soil criteria met	; redox	in sec	ond layer not	prevale	nt enou	ugh (<5º	%) to r	neet F	6 requirements.
-				-	-					-
HYDROLO	GY									
	drology Indicator	e ·								
-			uiradı al	and all that annu	A				S	anders (Indiactors (2 or more required)
	cators (minimum o	r one req	uirea; ci							ondary Indicators (2 or more required)
Surface				Water-Stair			except M	LRA	Ľν	Vater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)				, and 4B)					4A, and 4B)
Saturation	n (A3)			Salt Crust (B11)					Drainage Patterns (B10)
Water Mater Mater Mater	arks (B1)			Aquatic Investion	ertebrates	s (B13)				Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Od	or (C1)			🗆 S	Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized RI	nizospher	es along	Living Ro	oots (C3		Geomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presence o	f Reduced	d Iron (C	4)		s	Shallow Aquitard (D3)
-	osits (B5)			Recent Iron				C6)		AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or						Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	Imager	(B7)	Other (Expl		•	.) (,		Frost-Heave Hummocks (D7)
	Vegetated Conca	• •	. ,			nantoj			<u> </u>	
Field Obser		ve ouna	,с (ВО)							
Surface Wat		Yes 🗌	No 🗙	Depth (inches)	. None					
				Depth (inches						
Water Table		Yes 🔀		Depth (inches)			10/0	ational Li	valuator	
Saturation P (includes cap		Yes 🗙	No 🗌). <u> </u>		VVE		yuruluğ	gy Present? Yes 🗌 No 🗵
	corded Data (strea	im gauge	, monito	oring well, aerial p	hotos, pre	evious in	spections	s), if ava	lable:	
Remarks:										
No hydrolc	ogy criteria met	; water	table a	and saturation	too dee	ep (>12	?") to me	eet ind	icators	s A2 or A3.
INO ITYUIOIC						· · -	, .			

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

Project/Site: 2021.0001 - M-51 Industrial Cir	ty/County: <u>Marysville /</u>	Snohomish	Sampling Date: 06/03/2020
Applicant/Owner: Mowat Construction	S	itate: WA	Sampling Point: DP-33
Investigator(s): Rachael Hyland		ip, Range: <u>27 / 31</u>	
Landform (hillslope, terrace, etc.): Valley Floor			Slope (%): 0
Subregion (LRR): <u>A2</u> Lat: <u>48.14</u>	13026 Lor	ng: <u>-122.1596095</u>	58 Datum: WGS 84
Soil Map Unit Name: Custer fine sandy loam		NWI classifica	tion: N/A
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes 🗵 No 🗌 (If no, e	explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly distur	bed? Are "Normal	Circumstances" pres	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, ex	plain any answers in	n Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locat	ions, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes ⋈ No □ Hydric Soil Present? Yes ⋈ No □ Wetland Hydrology Present? Yes □ No ⋈	Is the Sampled Area within a Wetland?		o 🗵

Remarks: Not all three wetland criteria met, lacking hydrology. Data collected in southwestern portion of site, north of Ditch V.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (/	A)
2	_			Total Number of Deminent	
3				Total Number of Dominant Species Across All Strata: <u>3</u> (B	3)
4				· · · · · · · · · · · · · · · · · · ·	.,
	<u> </u>	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A	√B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Ale OBE, FACW, OFFAC. <u>10070</u> (A	VD)
1. Rubus armeniacus	15	Yes	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	15	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)				UPL species x 5 =	
1. Ranunculus repens	50	Yes	FAC	Column Totals: (A)	(B)
2. Holcus lanatus	40	Yes	FAC		(2)
3. Poa pratensis	30	No	FAC	Prevalence Index = B/A =	
4. Phalaris arundinacea	30	No	FACW	Hydrophytic Vegetation Indicators:	
5. Cirsium arvense	10	No	FAC	Rapid Test for Hydrophytic Vegetation	
6. Rumex crispus	5	No	FAC	☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	g
9				Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Explain)	
11	405	·		¹ Indicators of hydric soil and wetland hydrology mu	
Woody Vine Stratum (Plot size: <u>30 ft</u>)	165	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum _0					
Remarks: Hydrophytic vegetation criteria met thr	ough dom	ninance te	est.		

SOIL

Profile Des	cription: (Descri	be to the	depth ne	eeded to docu	ment the	indicator	or confirm	n the ab	sence	of indicators.)
Depth	Matri			Red	ox Featur	es				
(inches)	Color (moist)	<u>%</u>		or (moist)	%	Type ¹	Loc ²	Textur		Remarks
0 - 12	10YR 3/2	100			-			GrSiL		Gravelly silty loam
12 - 16	10YR 4/2	72	2.5	YR 3/6	5	С	Μ	SiCIL	0	Silty clay loam, mixed matrix
	2.5Y 3/2	20	10	YR 4/1	3	D	Μ	SiCIL	0	Silty clay loam, mixed matrix
16+	10YR 5/2	83	75`	YR 4/6	7	С	Μ	SiCIL	0	Silty clay loam
			10`	YR 5/1	10	D	Μ	_		
						_				
1Turney 0, 0				hussel Matrix C					21	
	Concentration, D=I Indicators: (App						ed Sand G			ation: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils ³ :
				Sandy Redox (,				Muck (A10)
	oipedon (A2)			Stripped Matrix						Parent Material (TF2)
	istic (A3)			Loamy Mucky	. ,	1) (except	MLRA 1)			Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)			Loamy Gleyed	Matrix (F2	2)] Othe	r (Explain in Remarks)
-	d Below Dark Sur	ace (A11)		Depleted Matri	. ,					
	ark Surface (A12)			Redox Dark Su		•		³ lr		rs of hydrophytic vegetation and
-	Aucky Mineral (S1		_	Depleted Dark	•	F7)				nd hydrology must be present,
	Bleyed Matrix (S4) Layer (if present			Redox Depress	sions (F8)				unies	s disturbed or problematic.
Type: No)-								
	iches):			-				Hydri	ic Soil	Present? Yes 🗵 No 🗌
Remarks:								, c		
	criteria met th	rough in	dicato	· Δ11						
Tryunc Son	chiena met u	nouginin	uicatoi	ATT.						
HYDROLO	ΟGY									
	drology Indicato	rs:								
•	cators (minimum		uired; ch	eck all that app	oly)				Secor	idary Indicators (2 or more required)
Surface				U Water-Sta		/es (B9) (e	xcept ML	RA		ater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)				A, and 4		•			4A, and 4B)
Saturatio				Salt Crust					🗌 Dr	ainage Patterns (B10)
Water M				Aquatic Ir		es (B13)				y-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide O	dor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)			Oxidized	Rhizosphe	eres along	Living Roc	ots (C3)	🗌 Ge	eomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence	of Reduc	ed Iron (C4	4)		🗌 Sh	nallow Aquitard (D3)
Iron Dep	oosits (B5)			Recent Iro	on Reduct	ion in Tille	d Soils (C6	6)	🗆 FA	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted o	r Stressed	d Plants (D	1) (LRR A	.)	🗌 Ra	aised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)						ost-Heave Hummocks (D7)				
Sparsely	Vegetated Conc	ave Surfac	e (B8)							
Field Obser	rvations:									
Surface Wat	ter Present?	Yes 🗌	No 🗙	Depth (inche						
	-	Vaa 🗖	No 🗵	Depth (inche	_{s):} None	e	1			
Water Table	Present?	Yes 🗌								
Water Table Saturation P	Present?	Yes 🗌 Yes 🗍	No 🗙	Depth (inche			Wet	land Hyd	Irology	/ Present? Yes 🗌 No 🛛
Water Table Saturation P (includes ca	Present? pillary fringe)	Yes 🗌	No 🗵	Depth (inche	es): <u>None</u>	9		-		/ Present? Yes 🗌 No 🗵
Water Table Saturation P (includes ca	Present?	Yes 🗌	No 🗵	Depth (inche	es): <u>None</u>	9		-		/ Present? Yes □ No ⊠

Remarks:

No hydrology criteria met.

RATING SUMMARY – Western Washington

Name of wetland (or ID #): <u>L</u> Date of site visit: <u>04/10/20</u> Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? <u>V</u> Yes No Date of training <u>9/2016</u>

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY <u>IV</u> (based on functions <u>v</u> 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

X Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	6	5	4	15

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H 8 = H,H,M

7 = H,H,L 7 = H,M,M 6 = H,M,L 6 = M,M,M 5 = H,L,L 5 = M,M,L 4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value		Ι
Bog		Ι
Mature Forest I		Ι
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	Н 1.1, Н 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🖾 NO – go to 5

YES – The wetland class is **Slope**

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>L</u>_____

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

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

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

D 2.0. Does the landscape have the potential to support the water quality function of th	e 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 question Source	ons D 2.1-D 2.3? 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 $\times 1$ 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 (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4
 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 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 = 1 Marks of ponding less than 0.5 ft (6 in) 	0
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 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	0
Total for D 4Add the points in the boxes above	4
Rating of Site Potential If score is:12-16 = H $6-11 = M$ \times 0-5 = LRecord 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 5Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 = H × 1 or 2 = M 0 = L Record the rating on the	first page
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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. 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. <i>Explain why</i> points = 0 There are no problems with flooding downstream of the wetland. 	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	0
Total for D 6Add the points in the boxes above	1
Rating of Value If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page

These questions apply to we	tlands of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to p	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 Cowardin plant classes in the wetland. Up to 10 patches may b of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-cano that each cover 20% within the Forested polygon	Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 0	
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present with more than 10% of the wetland or ¼ ac to count (<i>see text for de</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, th Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	escriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 0	
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover a Different patches of the same species can be combined to mee the species. Do not include Eurasian milfoil, reed canarygras If you counted: > 19 species 5 - 19 species	t the size threshold and you do not have to name ss, purple loosestrife, Canadian thistle points = 2 points = 1	
< 5 species	points = 0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among the classes and unvegetated areas (can include open water or have four or more plant classes or three classes and open water None = 0 points All three diagrams in this row are HIGH = 3points	mudflats) is high, moderate, low, or none. If you	

Wetland name or number <u>L</u>____

 H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland 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) 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>) 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>) 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>) 	1
Total for H 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ____15-18 = H ____7-14 = M ____0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0.00 % undisturbed habitat + [(% moderate and low intensity land uses) 0.00 /2] = 0% If total accessible habitat is:	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	Ŭ
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. $Calculate: 2$ % undisturbed habitat + [(% moderate and low intensity land uses) 26 /2] = 15 %Undisturbed habitat > 50% of Polygonpoints = 3Undisturbed habitat 10-50% and in 1-3 patchespoints = 2Undisturbed habitat 10-50% and > 3 patchespoints = 1Undisturbed habitat < 10% of 1 km Polygon	2
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2Add the points in the boxes above	0
Rating of Landscape Potential If score is:4-6 = H1-3 = M \times < 1 = LRecord the rating on	the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? C	hoose only the highest score
that applies to the wetland being rated.	
Site meets ANY of the following criteria:	points = 2
 It has 3 or more priority habitats within 100 m (see next page) 	
 It provides habitat for Threatened or Endangered species (any plant or animal 	l on the state or federal lists)
 It is mapped as a location for an individual WDFW priority species 	1
 It is a Wetland of High Conservation Value as determined by the Department 	of Natural Resources
— It has been categorized as an important habitat site in a local or regional com	prehensive plan, in a
Shoreline Master Plan, or in a watershed plan	
× Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1
Site does not meet any of the criteria above	points = 0
Rating of Value If score is: 2 = H X 1 = M 0 = L	Record the rating on the first page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- X **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 Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number L

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	
than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
□ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. □ Yes = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I	
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	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
species (or combination of species) instead in rable 4 provide more than 50% of the cover under the callopy?	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> the wetland based on its functions.	
— 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).	
□Yes = Category I ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
 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 (needs to be measured near the bottom)	
□Yes – Go to SC 5.1 INo = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— 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 un- mowed grassland.	
mowed grassland. — The wetland is larger than $1/_{10}$ ac (4350 ft ²)	
$\square Yes = Category I \square No = Category II$	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
 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	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)? \Box Yes = Category I \Box No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
$\Box Yes = Category II \Box No - Go to SC 6.3$	
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? 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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number L

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Z _____ Date of site visit: $\frac{04/10/20}{2}$ Rated by Rachael Hyland, Matt DeCaro _____ Trained by Ecology? \checkmark Yes _____ No Date of training $\frac{9/2016}{2}$

HGM Class used for rating Riverine Wetland has multiple HGM classes? Y Y N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 23 - 27

____Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	М	М	L	
Landscape Potential	Н	М	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	8	6	4	18

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

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

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🖾 NO – go to 5

YES – The wetland class is **Slope**

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number Z

NO − go to 6 XYES − 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.
7

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

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments durir	ng a flooding event:	
Depressions cover $>^{3}/_{4}$ area of wetland	points = 8	
Depressions cover > 1/2 area of wetland	points = 4	2
Depressions present but cover < ½ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowa	rdin classes)	
Trees or shrubs $> 2/3$ area of the wetland	points = 8	
Trees or shrubs $> 1/3$ area of the wetland	points = 6	6
Herbaceous plants (> 6 in high) > $^{2}/_{3}$ area of the wetland	points = 6	0
Herbaceous plants (> 6 in high) > $^{1}/_{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1 Add the points in the boxes above		8

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources Yes = 1 No = 0	0
Total for R 2Add the points in the boxes above	5
Rating of Landscape Potential If score is: X 3-6 = H 1 or 2 = M 0 = L Record the rating on a score is:	the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to	one within 1 mi?	0
	Yes = 1 No = 0	
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens	?	0
	Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water q YES if there is a TMDL for the drainage in which the unit is found)	uality?(<i>answer</i> Yes = 2 No = 0	2
Total for R 3 Add the points in	the boxes above	2
Rating of Value If score is: X 2-4 = H 1 = M 0 = L Re	cord the rating on t	he first page

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Hydrologic Functions - Indicators that site functions to reduce flooding and strea	m erosio	n
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides:		
Estimate the average width of the wetland perpendicular to the direction of the flow and the width of t	he	
stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(av	erage	
width of stream between banks).		
If the ratio is more than 20 po	ints = 9	2
If the ratio is 10-20 po	ints = 6	
If the ratio is 5-<10 po	ints = 4	
If the ratio is 1-<5 po	ints = 2	
If the ratio is < 1 po	ints = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as for	rest or	
shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at pe	erson	
height. These are <u>NOT Cowardin</u> classes).		7
, , , , , , , , , , , , , , , , , , ,	ints = 7	1
Forest or shrub for $> 1/_{10}$ area OR emergent plants $> 1/_3$ area po	ints = 4	
Plants do not meet above criteria po	ints = 0	
Total for R 4 Add the points in the boxes	s above	9
Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ Record the rating on the first page		
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		-
R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0	No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1	No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0	No = 1	0

Total for R 5

Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

2

Add the points in the boxes above

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

Rating of Value If score is: 2-4 = H X1 = M 0 = L

Record the rating on the first page

These questions apply to	o wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site function	· · · · · · · · · · · · · · · · · · ·
H 1.0. Does the site have the potential to provide habitat	?
H 1.1. Structure of plant community: Indicators are Cowardin ch Cowardin plant classes in the wetland. Up to 10 patches of ¼ ac or more than 10% of the unit if it is smaller than 2 Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub that each cover 20% within the Forested polygon	may be combined for each class to meet the threshold 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 0
H 1.2. Hydroperiods	
Check the types of water regimes (hydroperiods) present more than 10% of the wetland or ¼ ac to count (<i>see text</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Seasonally flowing stream or river in, or adjacent Seasonally flowing stream in, or adjacent to, the we Lake Fringe wetland Freshwater tidal wetland	for descriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 to, the wetland
H 1.3. Richness of plant species Count the number of plant species in the wetland that co Different patches of the same species can be combined to the species. Do not include Eurasian milfoil, reed cana If you counted: > 19 species 5 - 19 species < 5 species	o meet the size threshold and you do not have to name
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion a the classes and unvegetated areas (can include open wat have four or more plant classes or three classes and oper None = 0 points All three diagrams in this row are HIGH = 3points	among Cowardin plants classes (described in H 1.1), or ter or mudflats) is high, moderate, low, or none. <i>If you</i>

Wetland name or number Z

H 1.5. Special habitat features:	
 Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland x 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) x 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>) 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>) 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>) 	2
Total for H 1Add the points in the boxes above	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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
 1 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 % If total accessible habitat is: > ¹/₃ (33.3%) of 1 km Polygon points = 3 	
20-33% of 1 km Polygon points = 2	
10-19% of 1 km Polygon points = 1	
<pre>< 10% of 1 km Polygon points = 0 f 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</pre>	
$Calculate: 2 \qquad $	
Undisturbed habitat 10-50% and in 1-3 patches points = 2	2
Undisturbed habitat 10-50% and > 3 patchespoints = 1Undisturbed habitat < 10% of 1 km Polygon	
1 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	
Fotal for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M $\times < 1 = L$

h

Record the rating on the first page

-1

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only t	the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
 It has 3 or more priority habitats within 100 m (see next page) 		
— It provides habitat for Threatened or Endangered species (any plant or animal on the stat	e or federal lists)	
 It is mapped as a location for an individual WDFW priority species 		1
 It is a Wetland of High Conservation Value as determined by the Department of Natural R 	Resources	
 It has been categorized as an important habitat site in a local or regional comprehensive 	plan, in a	
Shoreline Master Plan, or in a watershed plan		
× Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
Site does not meet any of the criteria above	points = 0	
Rating of Value If score is: $2 = H \times 1 = M = 0 = L$	ecord the rating on	the first page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- X **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.

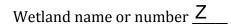
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number Z

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
\Box The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
$\Box Yes = Category I \Box No - Go to SC 1.2$	
	+
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
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)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands. Yes = Category I	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I	
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	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 区No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	-
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 3.3 No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? \Box Yes = Is a Category I bog \Box No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions.	
 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). 	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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 (needs to be measured near the bottom) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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 ft ²)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to SC 6.1 ☑No = not an interdunal wetland for rating 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)? □Yes = Category I □No – Go to SC 6.2 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): ADate of site visit: $\frac{06/08/20}{2}$ Rated by Rachael HylandTrained by Ecology? Yes _____ No Date of training $\frac{3/2019}{2}$

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark 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	
		Circle the ap	propriate ratings	
Site Potential	М	М	L	
Landscape Potential	М	Н	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	7	7	4	18

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

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

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY		
Estuarine	Ι	II	
Wetland of High Conservation Value		I	
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	Ι	II	
Interdunal	I II	III IV	
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	Н 1.1, Н 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🖾 NO – go to 5

YES – The wetland class is **Slope**

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>A</u>

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

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve wa	iter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland 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	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	5
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	8

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ 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	1	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1	
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	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? SourceYes = 1 No = 0	0	
Total for D 2Add the points in the boxes above	2	

Rating of Landscape Potential If score is: 3 or 4 = H $\times 1$ 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		
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 (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)? Yes = 2 No = 0		
Total for D 3 Add the points in the boxes above	e 4	
Rating of ValueIf score is: \times 2-4 = HI = M0 = LRecord the rating on the first page	e	

NOTES and FIELD OBSERVATIONS:

The Quilceda Creek sub-basin has approved TMDLs for bacteria, nitrogen, oxygen demand, and dissolved oxygen.

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion	
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: points = 4 Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4	
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	3	
Total for D 4 Add the points in the boxes above	7	
Rating of Site Potential If score is: 12-16 = H × 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	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1	
Total for D 5Add the points in the boxes above	3	
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
 D 6.1. The 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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. 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. <i>Explain why</i> points = 0 There are no problems with flooding downstream of the wetland. 	1	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0	
Yes = 2 No = 0		
Total for D 6 Add the points in the boxes above Paties of Value If score is: 2.4 - H X 1 - M 0 - I	1	
Rating of Value If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	jirst page	

These questions apply to wetland	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	de 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	abined for each class to meet the threshold the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	1
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (<i>see text for descript</i>) Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetl Seasonally flowing stream in, or adjacent to, the wetl Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the s the species. Do not include Eurasian milfoil, reed canarygrass, pur If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfl have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ats) is high, moderate, low, or none. If you	1

Wetland name or number A

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i> . Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland 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) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	0
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	3

Rating of Site Potential If score is: ___15-18 = H ___7-14 = M X0-6 = 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?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat + [(% moderate and low intensity land uses) /2] = <u>0</u> % If total accessible habitat is:	
> 1/3 (33.3%) of 1 km Polygon points = 3	1
20-33% of 1 km Polygon points = 2	
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 0 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2Add the points in the boxes above	0
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Record the rating on	the first page

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

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

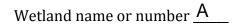
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
\Box With a salinity greater than 0.5 ppt \Box Yes –Go to SC 1.1 \blacksquare No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□ Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
L 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)	
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.	
L The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes – Contact WNHP/WDNR and go to SC 2.4 区No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 3.3 No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog \Box No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
 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). 	
□Yes = Category I ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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 (needs to be measured near the bottom) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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 ft ²)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to 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)? SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? □Yes = Category II □No – Go to SC 6.3 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): BDate of site visit: $\frac{06/08/20}{2}$ Rated by Rachael HylandTrained by Ecology? \checkmark Yes _____ No Date of training $\frac{3}{2019}$

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark 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	
		Circle the ap	propriate ratings	
Site Potential	М	М	L	
Landscape Potential	М	Н	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	7	7	4	18

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

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

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🗙 NO – go to 5

YES – The wetland class is **Slope**

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>B</u>

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

DEPRESSIONAL AND FLATS WETLANDS	tor quality	
Water Quality Functions - Indicators that the site functions to improve wa	ter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (r	no outlet).	
	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	g outlet.	3
	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	5
Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1 Add the points in the b	oxes above	8

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ 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	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	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? SourceYes = 1 No = 0	0
Total for D 2Add the points in the boxes above	2

Rating of Landscape Potential If score is: **3 or 4 = H** \times **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 wate 303(d) list?	er that is on the 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 (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)? Yes = 2 No = 0		2
Total for D 3 Add the points in	the boxes above	4
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating	on the first page	-

NOTES and FIELD OBSERVATIONS:

The Quilceda Creek sub-basin has approved TMDLs for bacteria, nitrogen, oxygen demand, and dissolved oxygen.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 points = 0	4
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	3
Total for D 4Add the points in the boxes above	7
Rating of Site Potential If score is: 12-16 = H × 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	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
D 6.1. The 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): • 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	1
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
Yes = 2 No = 0 Total for D 6 Add the points in the boxes above	1
Rating of Value If score is: $2-4 = H$ $\times 1 = M$ $0 = L$ Record the rating on the	

These questions apply to wetlands of	all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide in	nportant 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 strate Cowardin plant classes in the wetland. Up to 10 patches may be combine of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the n Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs that each cover 20% within the Forested polygon 	ed for each class to meet the threshold umber of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the wetl more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland		0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 f Different patches of the same species can be combined to meet the size t the species. Do not include Eurasian milfoil, reed canarygrass, purple l If you counted: > 19 species 5 - 19 species < 5 species	hreshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin the classes and unvegetated areas (can include open water or mudflats) have four or more plant classes or three classes and open water, the ratin None = 0 points All three diagrams in this row are HIGH = 3points	plants classes (described in H 1.1), or is high, moderate, low, or none. If you	1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Oudercut 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) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	0
 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> 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>) 	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: ____**15-18 = H** ____**7-14 = M** ____**20-6 = 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?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses) /2] = <u>0</u> % If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1
20-33% of 1 km Polygon points = 2	•
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 0 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2Add the points in the boxes above	0
Rating of Landscape Potential If score is: 4-6 = H 1-3 = M X < 1 = L Record the rating on a score is:	the first page

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

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

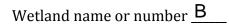
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number <u>B</u>

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
\Box 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 Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I ⊠No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
$\Box Yes - Contact WNHP/WDNR and go to SC 2.4 \boxtimes No = Not a WHCV$	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
<i>below.</i> If you answer YES you will still need to rate the wetland based on its functions. 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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? \Box Yes – Go to SC 3.3 \boxtimes No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? \Box Yes = Is a Category I bog \Box No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
 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). 	
□Yes = Category I INO = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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 (needs to be measured near the bottom) □Yes – Go to SC 5.1 ☑No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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 ft ²)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to 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)? SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? □Yes = Category II □No – Go to SC 6.3 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): CDate of site visit: $\frac{06/08/20}{2}$ Rated by Rachael HylandTrained by Ecology? \checkmark Yes ____ No Date of training $\frac{3/2019}{2}$

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 23 - 27

_____Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	М	М	L	
Landscape Potential	М	Н	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	7	7	4	18

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

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

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value		Ι
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	Н 1.1, Н 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🗙 NO – go to 5

YES – The wetland class is **Slope**

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>C</u>

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

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve wa	ter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (r	no outlet).	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	5
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	8

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ 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	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	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? SourceYes = 1 No = 0	0
Total for D 2Add the points in the boxes above	2

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

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

NOTES and FIELD OBSERVATIONS:

The Quilceda Creek sub-basin has approved TMDLs for bacteria, nitrogen, oxygen demand, and dissolved oxygen.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	3
Total for D 4 Add the points in the boxes above	7
Rating of Site Potential If score is: 12-16 = H × 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	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
 D 6.1. The 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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. 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. <i>Explain why</i> points = 0 There are no problems with flooding downstream of the wetland. 	1
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: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page

These questions apply to wetlands of all	HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide impo	ortant 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 with Cowardin plant classes in the wetland. Up to 10 patches may be combined for of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the numb Aquatic bed × Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, here that each cover 20% within the Forested polygon 	r each class to meet the threshold ber of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the wetland. more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions of h</i>) Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland		0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threst the species. Do not include Eurasian milfoil, reed canarygrass, purple loose If you counted: > 19 species 5 - 19 species < 5 species	-	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plat the classes and unvegetated areas (can include open water or mudflats) is hig have four or more plant classes or three classes and open water, the rating is None = 0 points All three diagrams in this row are HIGH = 3points	gh, moderate, low, or none. <i>If you</i>	1

Total for H 1 Add the points in the boxes above	2
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> 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>)	
 Standing snags (dbh > 4 in) within the wetland 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) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are 	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	

Rating of Site Potential If score is: ____**15-18 = H** ____**7-14 = M** ____**X0-6 = L**

Record the rating on the first page

- 1

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses) /2] =% If total accessible habitat is:	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	1
20-33% of 1 km Polygon points = 2	•
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 0 Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon points = 0 Points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0 Points = 0	1
Undisturbed habitat < 10% of 1 km Polygonpoints = 0H 2.3. Land use intensity in 1 km Polygon: If $> 50\%$ of 1 km Polygon is high intensity land usepoints = (- 2) $\leq 50\%$ of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is: $4-6 = H$ $1-3 = M \times < 1 = L$ Record the rating of	n the first page

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

P

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

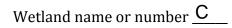
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number \underline{C}

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
\Box 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 Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I ⊠No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
$\Box Yes - Contact WNHP/WDNR and go to SC 2.4 \boxtimes No = Not a WHCV$	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
<i>below.</i> If you answer YES you will still need to rate the wetland based on its functions. 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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? \Box Yes – Go to SC 3.3 \boxtimes No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? \Box Yes = Is a Category I bog \Box No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
 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). 	
□Yes = Category I ⊠No = Not a forested wetland for this section	
 SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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>) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to 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)? SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? □Yes = Category II □No – Go to SC 6.3 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): DDate of site visit: $\frac{06/08/20}{2}$ Rated by Rachael HylandTrained by Ecology? \checkmark Yes _____ No Date of training $\frac{3/2019}{2}$

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 23 - 27

_____Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	М	Μ	L	
Landscape Potential	М	Н	L	
Value	Н	М	М	TOTAL
Score Based on Ratings	7	7	4	18

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

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

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🖾 NO – go to 5

YES – The wetland class is **Slope**

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number D

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve wate	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no	o outlet).	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	3
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	rdin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	5
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	xes above	8

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ 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	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	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? SourceYes = 1 No = 0	0
Total for D 2Add the points in the boxes above	2

Rating of Landscape Potential If score is: **3 or 4 = H** \times **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 socie	ety?	
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 (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)? Yes = 2 No = 0		2
Total for D 3 Add	d the points in the boxes above	4
Rating of Value If score is: X2-4 = H 1 = M 0 = L Rec	cord the rating on the first page	

NOTES and FIELD OBSERVATIONS:

The Quilceda Creek sub-basin has approved TMDLs for bacteria, nitrogen, oxygen demand, and dissolved oxygen.

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4	
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	3	
Total for D 4 Add the points in the boxes above	7	
Rating of Site Potential If score is: 12-16 = H × 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	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1	
Total for D 5Add the points in the boxes above	3	
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The 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): • 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	1	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0	
Yes = 2 No = 0	5	
Total for D 6 Add the points in the boxes above	1	
Rating of Value If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page	

These questions apply to wetlands		
HABITAT FUNCTIONS - Indicators that site functions to provide I 1.0. Does the site have the potential to provide habitat?	e important nabitat	-
 1.1. Structure of plant community: Indicators are Cowardin classes and structure of plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add theAquatic bedEmergentScrub-shrub (areas where shrubs have > 30% cover)Forested (areas where trees have > 30% cover)I the unit has a Forested class, check if: 	ined for each class to meet the threshold	1
The Forested class has 3 out of 5 strata (canopy, sub-canopy, shruthat each cover 20% within the Forested polygon 1 1.2. Hydroperiods	ubs, herbaceous, moss/ground-cover)	
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count (<i>see text for descriptio</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetlar Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland	ns of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	0
 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 1 Different patches of the same species can be combined to meet the siz the species. Do not include Eurasian milfoil, reed canarygrass, purple If you counted: > 19 species 5 - 19 species 	e threshold and you do not have to name le loosestrife, Canadian thistle points = 2 points = 1	1
< 5 species 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudflat have four or more plant classes or three classes and open water, the row of the plant classes or three classes and open water, the row of the plant classes or three classes are open water. None = 0 points Low = 1 point All three diagrams in this row or more plants	s) is high, moderate, low, or none. If you	1

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland 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) 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</i>)	0
 where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 	
Total for H 1Add the points in the boxes above	3

Rating of Site Potential If score is: ____**15-18 = H** ____**7-14 = M** ____**X0-6 = L**

H 2.0. Does the landscape have the potential to support the habitat functions of the site H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).		
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)	/2] = <u>0</u> %	
If total accessible habitat is:		
> ¹ / ₃ (33.3%) of 1 km Polygon	points = 3	1
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)]/2] = <u>0</u> %	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Fotal for H 2 Add the points	in the boxes above	0
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L	Record the rating on	the first page

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

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

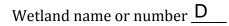
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number D

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
\Box 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 Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐Yes = Category I ☐No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
$\Box Yes = Category I \boxed{No} = Not a WHCV$	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <u>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</u>	
Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	1
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? \Box Yes – Go to SC 3.3 \boxtimes No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
□Yes = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate	
the wetland based on its functions.	
 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). 	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
 Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? 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 (needs to be measured near the bottom) Yes – Go to SC 5.1 XNO = Not a wetland in a coastal lagoon 	
SC 5.1. Does the wetland meet all of the following three conditions?	
— 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 un- mowed grassland.	
- The wetland is larger than $1/_{10}$ ac (4350 ft ²)	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? ☐Yes = Category II ☐No – Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	1



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): EDate of site visit: $\frac{06/08/20}{2}$ Rated by Rachael HylandTrained by Ecology? \checkmark Yes ____ No Date of training $\frac{3/2019}{2}$

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY []] (based on functions \checkmark or special characteristics])

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 23 - 27

_____Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	L	L	М	
Landscape Potential	М	Н	L	
Value	Н	М	Н	TOTAL
Score Based on Ratings	6	6	6	18

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H 8 = H,H,M

7 = H,H,L 7 = H,M,M 6 = H,M,L 6 = M,M,M 5 = H,L,L 5 = M,M,L

4 = M,L,L 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

XNO – go to 4

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

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

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

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

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

🗙 NO – go to 5

YES – The wetland class is **Slope**

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>E</u>

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

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

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

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

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	4
Rating of ValueIf score is: \times 2-4 = H1 = M0 = LRecord the rating on the first page	<u> </u>

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	3
Total for D 4Add the points in the boxes above	5
Rating of Site Potential If score is: 12-16 = H 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	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
D 6.1. The 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): • 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	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	1
Rating of Value If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page

HABITAT FUNCTIONS - Indicators that site functions to provide	e 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 str Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed × Emergent × Scrub-shrub (areas where shrubs have > 30% cover) × Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shr that each cover 20% within the Forested polygon 	bined for each class to meet the threshold be number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	2
that each cover 20% within the Forested polygon H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count (<i>see text for description</i> Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetla Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	ons of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 1 Different patches of the same species can be combined to meet the siz the species. Do not include Eurasian milfoil, reed canarygrass, purp If you counted: > 19 species 5 - 19 species < 5 species	ze threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudfla <i>have four or more plant classes or three classes and open water, the r</i> None = 0 points All three diagrams in this row are HIGH = 3points	ts) is high, moderate, low, or none. If you	2

Wetland name or number <u>E</u>

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	2
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	8

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?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 0 % If total accessible habitat is:	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2	1
10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)]/2] = 0 % Undisturbed habitat > 50% of Polygon points = 3 points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 points = 1 Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Fotal for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M X < 1 = L

Record the rating on the first page

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

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- X **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.

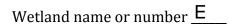
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number <u>E</u>

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	
than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
□ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. □ Yes = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I	
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	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
species (or combination of species) instead in rable 4 provide more than 50% of the cover under the callopy?	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
 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). 	
□Yes = Category I INO = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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 (needs to be measured near the bottom) □Yes – Go to SC 5.1 ☑No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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 ft ²)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to 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)? SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? □Yes = Category II □No – Go to SC 6.3 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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RATING SUMMARY – Western Washington

Name of wetland (or ID #): \underline{Y} _____ Date of site visit: $\underline{5/13/20}$ Rated by Rachael Hyland, Ryan Krapp ____ Trained by Ecology? \checkmark Yes ____ No Date of training $\underline{9/2016}$

HGM Class used for rating Riverine Wetland has multiple HGM classes? Y Y N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

OVERALL WETLAND CATEGORY _____ (based on functions <u><</u> 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	
		Circle the ap	propriate ratings	
Site Potential	М	М	L	
Landscape Potential	Н	М	L	
Value	Н	Μ	Н	TOTAL
Score Based on Ratings	8	6	5	19

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	Н 1.1, Н 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

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

🗙 NO – go to 2

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

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

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

NO − go to 3 If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).

🗙 NO – go to 4

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

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

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

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

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

🗙 NO – go to 5

YES – The wetland class is **Slope**

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number \underline{Y}

NO − go to 6 XYES − 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the pote	ntial to improve water quality?		
R 1.1. Area of surface depressions wit	thin the Riverine wetland that can trap sediments d	luring a flooding event:	
Depressions cover $>^3/_4$ area of	wetland	points = 8	
Depressions cover > 1/2 area of	wetland	points = 4	4
Depressions present but cover	< ½ area of wetland	points = 2	
No depressions present		points = 0	
R 1.2. Structure of plants in the wetla	nd (areas with >90% cover at person height, not Co	owardin classes)	
Trees or shrubs $> ^{2}/_{3}$ area of the	e wetland	points = 8	
Trees or shrubs $> 1/3$ area of the	e wetland	points = 6	6
Herbaceous plants (> 6 in high)		points = 6	0
Herbaceous plants (> 6 in high)		points = 3	
Trees, shrubs, and ungrazed he	erbaceous < 1/3 area of the wetland	points = 0	
Total for R 1	Add the points in the boxes above		10

Rating of Site Potential If score is: $12-16 = H \times 6-11 = M = 0-5 = L$

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?	-
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources Yes = 1 No = 0	0
Total for R 2Add the points in the boxes above	5
Rating of Landscape Potential If score is: X 3-6 = H 1 or 2 = M 0 = L Record the rating on a score is:	the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	0
Yes = 1 No = 0	
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	0
Yes = 1 No = 0	U
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer	2
YES if there is a TMDL for the drainage in which the unit is found) $Yes = 2$ No = 0	2
Total for R 3 Add the points in the boxes above	2
	the Cost is a sec

Rating of Value If score is: $\times 2-4 = H$ __1 = M __0 = L

Wetland name or number \underline{Y}

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS										
Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion										
R 4.0. Does the site have the potential to reduce flooding and erosion?										
R 4.1. Characteristics of the overbank storage the wetland provides:										
Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the										
stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average										
width of stream between banks).										
If the ratio is more than 20 points = 9	2									
If the ratio is 10-20 points = 6										
If the ratio is 5-<10 points = 4										
If the ratio is 1-<5 points = 2										
If the ratio is < 1 points = 1										
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or										
shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person										
height. These are <u>NOT Cowardin</u> classes).	7									
Forest or shrub for $>^1/_3$ area OR emergent plants $>^2/_3$ area points = 7	/									
Forest or shrub for $> 1/_{10}$ area OR emergent plants $> 1/_3$ area points = 4										
Plants do not meet above criteria points = 0										
Total for R 4 Add the points in the boxes above	9									
Rating of Site Potential If score is:12-16 = H \times 6-11 = M0-5 = LRecord the rating on	the first page									
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?										
R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1	1									
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 No = 0	1									

R 5.3. Is the up-gradient stream or river controlled by dams?

Total for R 5

Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

0

2

Yes = 0 No = 1

Add the points in the boxes above

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

Rating of Value If score is: ___2-4 = H ___X1 = M ___0 = L

These questions apply to wetland	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	de 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 s Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add to Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	nbined for each class to meet the threshold the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (<i>see text for descript</i> Permanently flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetl Seasonally flowing stream in, or adjacent to, the wetl Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland	tions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the s the species. Do not include Eurasian milfoil, reed canarygrass, pur If you counted: > 19 species 5 - 19 species < 5 species	size threshold and you do not have to name	0
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cow the classes and unvegetated areas (can include open water or mudfl have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

Wetland name or number \underline{Y}

H 1.5. Special habitat features:	
 Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <u>×</u> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland <u>×</u> 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) <u>×</u> 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>) 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>) 	3
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	4

Rating of Site Potential If score is: ____**15-18 = H** ____**7-14 = M** ____**X0-6 = L**

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 % If total accessible habitat is:	
> 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 2 % undisturbed habitat + [(% moderate and low intensity land uses)]26 /2] = 15 % Undisturbed habitat > 50% of Polygon points = 3 points = 3 points = 2 Undisturbed habitat 10-50% and in 1-3 patches points = 1 points = 1 Undisturbed habitat < 10% of 1 km Polygon	2
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2Add the points in the boxes above	0
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Record the rating on	the first page

H 3.0. Is the habitat provided by the site valuable to society?		
 H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the that applies to the wetland being rated. Site meets ANY of the following criteria: ▲ It has 3 or more priority habitats within 100 m (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the state of It is mapped as a location for an individual WDFW priority species It is a Wetland of High Conservation Value as determined by the Department of Natural Resonance (It has been categorized as an important habitat site in a local or regional comprehensive plan Shoreline Master Plan, or in a watershed plan Site does not meet any of the criteria above 	points = 2 or federal lists) ources n, in a points = 1 points = 0	2
Rating of Value If score is: X2 = H1 = M0 = L Reco	ord the rating on	the first page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- X **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.

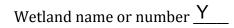
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number \underline{Y}

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

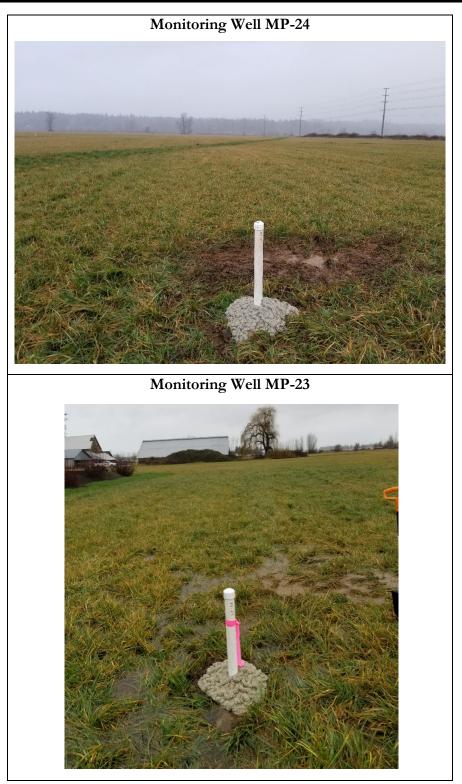
Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
Yes = Category I No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
\Box 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 Spartina, see page 25)	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value?	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? \Box Yes – Go to SC 3.3 \boxtimes No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog INO – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

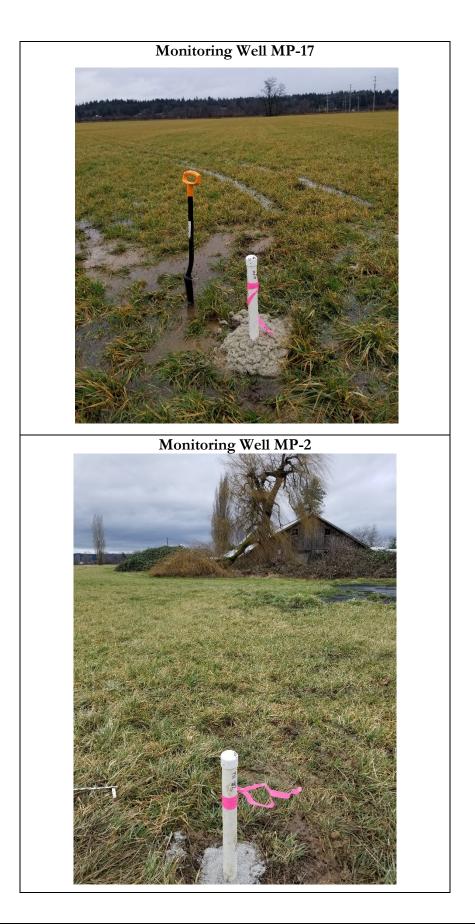
SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions.	
 Old-growth forests (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). 	
□Yes = Category I 区No = Not a forested wetland for this section	
 SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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>) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — 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)	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — 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 □Yes – Go to 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)? □Yes = Category I SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? □Yes = Category II □No – Go to SC 6.3 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? □Yes = Category III □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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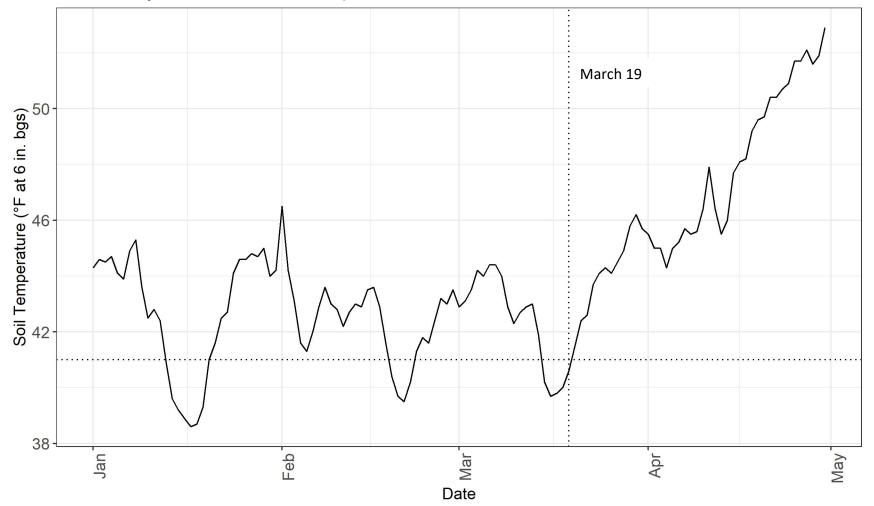
Appendix F — Monitoring Well Photos (January 2020)



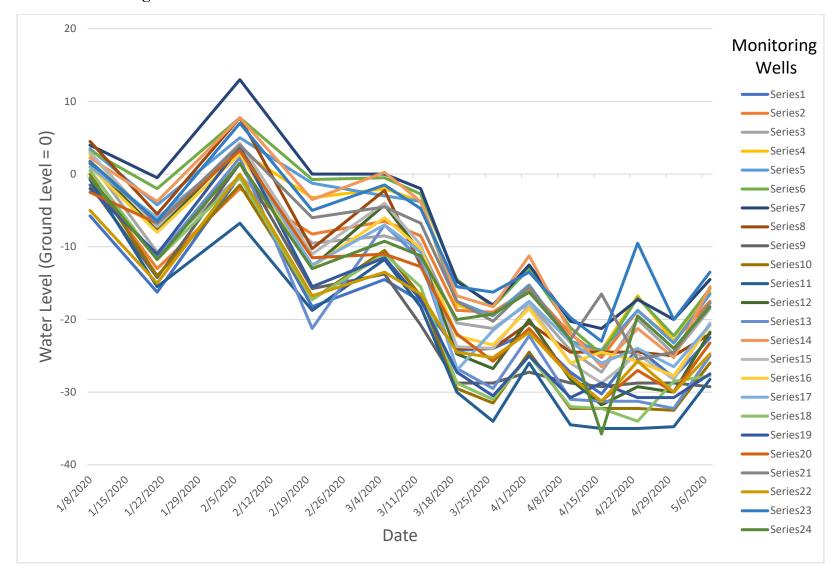


Appendix G — Monitoring Well and Precipitation Summary

Attachment G – Figure 1. Start of 2020 Growing Season



2020 Daily Minimum Soil Temperatures



Attachment G – Figure 2. Water Table Observations.

Month	Total Observed Precipitation for Calendar Month	Average Precipitation	30th Percentile of Precipitation	70th Percentile of Precipitation	Observed Monthly Precipitation Compared to Normal Percentile Ranges
January 2020	9.37	5.64	4.17	6.62	Above Normal
February 2020	7.35	3.83	2.79	4.51	Above Normal
March 2020	4.28	4.57	3.58	5.24	Normal
April 2020	1.96	4.12	3.33	4.70	Below Normal
May 2020	5.58	3.61	2.52	4.25	Above Normal

Attachment G – Table 1. 2020 Total Precipitation and Average Precipitation by Month¹

Notes

1. Precipitation levels in inches. Data from Arlington weather station, the nearest weather station with long-term daily precipitation records.

2. Average precipitation amount and percentiles for precipitation based on data generated by WETS table using daily data collected from the Arlington weather station for the time period 1981-2010.

Date	Day Of	Prior Day	Prior 7 Days Total	Prior 14 Days Total	Prior 30 Days Total	Prior 30 Days Normal	Prior 30 Days (Percent of Normal)	Water Year Total	Water Year Normal	Water Year (Percent of Normal)	Calendar Year	Calendar Year Normal	Calendar Year (Percent of Normal)
1/8/2020	0.25	0.31	3.14	4.3	8.29	5.84	142	18.67	18.95	99	3.14	1.57	200
1/21/2020	0.15	0.24	0.74	2.92	6.68	6.68	100	21.03	21.41	98	5.5	5.5	100
2/6/2020	0.75	1.69	4.54	6.81	10.46	5.33	196	28.57	23.75	120	13.04	6.51	200
2/20/2020	0	0	1.25	3.08	10.02	4.54	221	30.9	25.78	120	15.37	8.4	183
3/5/2020	0.69	0	2.37	3.47	9.37	4.08	230	34.37	27.54	125	18.84	10.16	185
3/12/2020	0	0.02	1.37	3.05	5.63	4.04	139	35.05	28.5	123	19.52	11.12	176
3/19/2020	0	0	0.02	1.39	4.17	4.14	101	35.07	29.53	119	19.54	12.15	161
3/26/2020	0.07	0.07	0.2	0.22	3.38	4.31	78	35.27	30.62	115	19.74	13.24	149
4/2/2020	0.11	0.02	1.46	1.59	3.1	4.61	67	36.66	31.74	116	21.13	14.36	147
4/10/2020	0.11	0	0.23	1.62	1.86	4.73	39	36.89	32.95	112	21.36	15.57	137
4/16/2020	0	0	0.11	0.34	1.82	4.7	39	36.89	33.79	109	21.36	16.41	130
4/23/2020	0.05	1.02	1.09	1.2	2.91	4.57	64	37.98	34.72	109	22.45	17.34	129
4/30/2020	0.01	0.02	0.56	1.6	2.07	4.28	48	38.49	35.43	109	22.96	18.16	126
5/7/2020	0.05	0.08	1.7	2.25	3.4	3.98	85	40.18	36.34	111	24.65	18.96	130
6/2/2020	0.02	0	1.42	3.14	4.77	3.61	132	44.09	39.38	112	28.56	22	130

Attachment G – Table 2. Arlington Weather Station Precipitation¹

<u>Notes</u>

1. Normal data is compiled from daily precipitation measurements collected from 1981 to 2010. Precipitation levels in inches.

2. Formal monitoring ended on May 7, 2020. Water table data collected on June 2, 2020 during delineation.

Well #	1/8	1/21	2/6	2/20	3/5	3/12	3/19	3/26	4/2	4/10	4/16	4/23	4/30	5/7	6/2
1	-5.75	-16.25	-0.25	-18.25	-14.50	-17.50	-24.25	-24	-21.75	-27.25	-30.25	-24	-28	-22.5	-24.5
2	-0.5	-13	-2	-8.25	-6.50	-8.50	-18.75	-19	-15.75	-22	-25.25	-18.75	-23	-17.5	-19.25
3	1.75	-10.75	-0.25	-9.50	-8.50	-10.00	-20.50	-21.25	-17.75	-24.25	-27.25	-20	-24.75	-18.5	-19.75
4	2.75	-7	3.25	-3.25	-2.00	-3.75	-18.00	-19.5	-15.25	-23.25	-24.25	-16.75	-23	-16.25	
5	3.5	-4.25	5	-1.25	-3.00	-3.75	-17.50	-19.5	-15.25	-23	-24.25	-18.75	-23.25	-16.5	-20.25
6	3.25	-2	7.75	-0.75	-0.50	-2.75	-14.50	-18.25	-13	-21.12	-24.75	-17	-22.25	-15.75	-18.75
7	4	-0.5	13	0.00	0.00	-2.00	-14.75	-18	-12.5	-20.25	-21.25	-17.25	-20	-14.5	-16.5
8	4.5	-5.5	7.75	-10.25	-2.25	-12.50	-24.00	-24	-20.5	-24.5	-24.5	-24.5	-25	-22	-24.75
9	-1.5	-14.25	1.5	-15.75	-13.75	-20.75	-28.75	-28.75	-27.25	-28.75	-29.25	-28.75	-28.75	-29.25	-30.5
10	0	-14	-1.5	-17.25	-10.50	-16.75	-29.50	-31.5	-24.5	-32.25	-32.25	-32.25	-32.5	-26	-26
11	-0.75	-15.5	-6.75	-18.75	-11.75	-18.25	-30.00	-34	-26	-34.5	-35	-35	-34.75	-28.25	-28.5
12	1.5	-7.75	3.75	-12.75	-4.25	-10.75	-24.75	-26.76	-20	-28.25	-31.75	-29.25	-30	-21.75	-23.5
13	-0.5	-11.5	2.25	-21.25	-7.00	-11.75	-26.75	-29.5	-22.25	-31	-31.25	-31.25	-32.25	-25	-26.5
14	2.25	-3.75	7.75	-3.50	0.25	-3.75	-16.75	-18.25	-11.25	-21.75	-26.5	-21.25	-25.25	-15.5	-19
15	3	-7.25	4.25	-11.00	-4.00	-9.75	-23.75	-24	-18	-26	-28.75	-24.75	-28.25	-20.5	-22.75
16	1	-8	2.75	-12.75	-6.00	-10.25	-22.25	-23.5	-18.5	-26	-24.5	-25.75	-27.75	-20.75	-23
17	1	-6	3.25	-12.50	-7.00	-10.75	-27.00	-21.5	-17.5	-23.12	-26	-24	-26.5	-20.75	-23.25
18	0.5	-11.75	-0.5	-17.25	-11.00	-15.50	-28.75	-31	-25	-32	-32.25	-34	-28.5	-27.75	
19	-2	-11	3.75	-15.50	-11.50	-17.25	-27.25	-30.5	-25	-30.75	-28.75	-30.75	-30.75	-27.5	-28.5
20	-2.5	-6.75	3.25	-11.50	-11.00	-12.75	-22.00	-25.75	-21.25	-27.75	-31.25	-27	-30	-23.25	-24.75
21	1.75	-6.75	4	-6.00	-4.50	-6.75	-17.50	-20.25	-15.5	-22.75	-16.5	-25.5	-24.5	-17.75	-19.25
22	-5	-15	0	-16.75	-13.50	-16.50	-24.50	-25.25	-21.75	-27.87	-31.25	-25.75	-30	-24.75	-26.75
23	1.75	-6.5	7	-5.00	-1.50	-4.75	-15.50	-16.25	-13.5	-19.75	-23	-9.5	-20	-13.5	
24	-0.5	-11.75	1.5	-13.00	-9.25	-11.25	-20.00	-19.25	-16.25	-22.75	-35.75	-19.5	-24	-18.25	-20.25

Attachment G – Table 3. 2020 Groundwater Monitoring ^{1,2,3,4}

Notes:

1. SVC established hydrology monitoring wells on January 8, 2020. Based on soil temperature data from the WSU Snohomish station, the 2020 growing season began on March 19, 2020.

2. Groundwater levels in inches below ground surface (bgs).

3. Results in blue indicate water levels at or above12 inches bgs Results in orange indicate water levels below12 inches bgs.

4. Formal monitoring ended on May 7, 2020. Water table data collected on June 2, 2020 during delineation.

Well #	1/21	2/6	2/20	3/5	3/12	3/19	3/26	4/2	4/10	4/16	4/23	4/30	5/7	6/2
1	-10.5	16	-18.00	3.75	-3.00	-6.75	0.25	2.25	-5.50	-3.00	6.25	-4.00	5.50	-2.00
2	-12.5	11	-6.25	1.75	-2.00	-10.25	-0.25	3.25	-6.25	-3.25	6.50	-4.25	5.50	-1.75
3	-12.5	10.5	-9.25	1.00	-1.50	-10.50	-0.75	3.50	-6.50	-3.00	7.25	-4.75	6.25	-1.25
4	-9.75	10.25	-6.50	1.25	-1.75	-14.25	-1.50	4.25	-8.00	-1.00	7.50	-6.25	6.75	N/A
5	-7.75	9.25	-6.25	-1.75	-0.75	-13.75	-2.00	4.25	-7.75	-1.25	5.50	-4.50	6.75	-3.75
6	-5.25	9.75	-8.50	0.25	-2.25	-11.75	-3.75	5.25	-8.12	-3.63	7.75	-5.25	6.50	-3.00
7	-4.5	13.5	-13.00	0.00	-2.00	-12.75	-3.25	5.50	-7.75	-1.00	4.00	-2.75	5.50	-2.00
8	-10	13.25	-18.00	8.00	-10.25	-11.50	0.00	3.50	-4.00	0.00	0.00	-0.50	3.00	-2.75
9	-12.75	15.75	-17.25	2.00	-7.00	-8.00	0.00	1.50	-1.50	-0.50	0.50	0.00	-0.50	-1.25
10	-14	12.5	-15.75	6.75	-6.25	-12.75	-2.00	7.00	-7.75	0.00	0.00	-0.25	6.50	0.00
11	-14.75	8.75	-12.00	7.00	-6.50	-11.75	-4.00	8.00	-8.50	-0.50	0.00	0.25	6.50	-0.25
12	-9.25	11.5	-16.50	8.50	-6.50	-14.00	-2.01	6.76	-8.25	-3.50	2.50	-0.75	8.25	-1.75
13	-11	13.75	-23.50	14.25	-4.75	-15.00	-2.75	7.25	-8.75	-0.25	0.00	-1.00	7.25	-1.50
14	-6	11.5	-11.25	3.75	-4.00	-13.00	-1.50	7.00	-10.50	-4.75	5.25	-4.00	9.75	-3.50
15	-10.25	11.5	-15.25	7.00	-5.75	-14.00	-0.25	6.00	-8.00	-2.75	4.00	-3.50	7.75	-2.25
16	-9	10.75	-15.50	6.75	-4.25	-12.00	-1.25	5.00	-7.50	1.50	-1.25	-2.00	7.00	-2.25
17	-7	9.25	-15.75	5.50	-3.75	-16.25	5.50	4.00	-5.62	-2.88	2.00	-2.50	5.75	-2.50
18	-12.25	11.25	-16.75	6.25	-4.50	-13.25	-2.25	6.00	-7.00	-0.25	-1.75	5.50	0.75	N/A
19	-9	14.75	-19.25	4.00	-5.75	-10.00	-3.25	5.50	-5.75	2.00	-2.00	0.00	3.25	-1.00
20	-4.25	10	-14.75	0.50	-1.75	-9.25	-3.75	4.50	-6.50	-3.50	4.25	-3.00	6.75	-1.50
21	-8.5	10.75	-10.00	1.50	-2.25	-10.75	-2.75	4.75	-7.25	6.25	-9.00	1.00	6.75	-1.50
22	-10	15	-16.75	3.25	-3.00	-8.00	-0.75	3.50	-6.12	-3.38	5.50	-4.25	5.25	-2.00
23	-8.25	13.5	-12.00	3.50	-3.25	-10.75	-0.75	2.75	-6.25	-3.25	13.50	-10.50	6.50	N/A
24	-11.25	13.25	-14.50	3.75	-2.00	-8.75	0.75	3.00	-6.50	-13.00	16.25	-4.50	5.75	-2.00
Prior 7 Days of Precipitation	0.74	4.54	1.25	2.37	1.37	0.02	0.2	1.46	0.23	0.11	1.09	0.56	1.7	1.42
Prior 30 Days Percent of Normal	100	196	221	230	139	101	78	67	39	39	64	48	85	132

Attachment G – Table 4. Measured Groundwater Levels Changes from Previous Site Visit¹

Notes: 1) Values calculated by taking the groundwater measurement for a given site visit and subtracting the groundwater measurement recorded during prior site visit.

Attachment G – Table 5. Daily 2020 Monitoring Period Precipitation Values at Arlington Weather Station.

Date	Precipitation (Inches)	Date	Precipitation (Inches)	Date	Precipitation (Inches)
1/8/2020	0.25	2/9/2020	0.05	3/12/2020	0
1/9/2020	0.3	2/10/2020	0.03	3/13/2020	0.02
1/10/2020	0.41	2/11/2020	0.23	3/14/2020	0
1/11/2020	0.39	2/12/2020	0	3/15/2020	0
1/12/2020	0.47	2/13/2020	0.69	3/16/2020	0
1/13/2020	0.05	2/14/2020	0.13	3/17/2020	0
1/14/2020	0.17	2/15/2020	0.22	3/18/2020	0
1/15/2020	0.06	2/16/2020	0.21	3/19/2020	0
1/16/2020	0	2/17/2020	0	3/20/2020	0
1/17/2020	0.1	2/18/2020	0	3/21/2020	0
1/18/2020	0.02	2/19/2020	0	3/22/2020	0
1/19/2020	0	2/20/2020	0	3/23/2020	0
1/20/2020	0.24	2/21/2020	0	3/24/2020	0.06
1/21/2020	0.15	2/22/2020	0.64	3/25/2020	0.07
1/22/2020	0.73	2/23/2020	0.35	3/26/2020	0.07
1/23/2020	0.45	2/24/2020	0	3/27/2020	0.05
1/24/2020	0.12	2/25/2020	0.11	3/28/2020	0.12
1/25/2020	0.33	2/26/2020	0	3/29/2020	0.67
1/26/2020	0.08	2/27/2020	0	3/30/2020	0.31
1/27/2020	0.72	2/28/2020	0.23	3/31/2020	0.11
1/28/2020	0.51	2/29/2020	0.02	4/1/2020	0.02
1/29/2020	0.06	3/1/2020	0.27	4/2/2020	0.11
1/30/2020	0.61	3/2/2020	1.04	4/3/2020	0.11
1/31/2020	0.26	3/3/2020	0.12	4/4/2020	0
2/1/2020	0.1	3/4/2020	0	4/5/2020	0.01
2/2/2020	0	3/5/2020	0.69	4/6/2020	0
2/3/2020	0	3/6/2020	0.04	4/7/2020	0
2/4/2020	1.13	3/7/2020	0.53	4/8/2020	0
2/5/2020	1.69	3/8/2020	0	4/9/2020	0
2/6/2020	0.75	3/9/2020	0	4/10/2020	0.11
2/7/2020	0.72	3/10/2020	0.09	4/11/2020	0
2/8/2020	0.05	3/11/2020	0.02	4/12/2020	0

Date	Precipitation (Inches)
4/13/2020	0
4/14/2020	0
4/15/2020	0
4/16/2020	0
4/17/2020	0
4/18/2020	0
4/19/2020	0
4/20/2020	0.01
4/21/2020	0.01
4/22/2020	1.02
4/23/2020	0.05
4/24/2020	0
4/25/2020	0.17
4/26/2020	0.09
4/27/2020	0.19
4/28/2020	0.03
4/29/2020	0.02
4/30/2020	0.01
5/1/2020	0.05
5/2/2020	0.78
5/3/2020	0
5/4/2020	0.01
5/5/2020	0.72
5/6/2020	0.08
5/7/2020	0.05
5/8/2020	0
5/9/2020	0
5/10/2020	0
5/11/2020	0.12
5/12/2020	0.02
5/13/2020	0
5/14/2020	0.08

5	Precipitation
Date	(Inches)
5/15/2020	0
5/16/2020	0.54
5/17/2020	0.01
5/18/2020	0
5/19/2020	0.6
5/20/2020	0.13
5/21/2020	0.28
5/22/2020	0.04
5/23/2020	0
5/24/2020	0.15
5/25/2020	0.52
5/26/2020	0
5/27/2020	0
5/28/2020	0
5/29/2020	0
5/30/2020	1.33
5/31/2020	0.07
6/1/2020	0
6/2/2020	0.02

Notes:

1. Dates of SVC monitoring visits highlighted in green.

Appendix H — Qualifications

All field inspections, jurisdictional wetland boundary delineations, OHW delineation, habitat assessments, and supporting documentation, including this <u>Wetland and Fish and Wildlife Habitat</u> <u>Assessment Report</u> prepared for the <u>M-51 Industrial</u> project site were prepared by, or under the direction of, Jon Pickett of SVC. In addition, the site investigations were performed by Rachael Hyland and Ryan Krapp, and report preparation was completed by Morgan Kentch, Rachael Hyland, and Laura Livingston.

Jon Pickett

Associate Principal Professional Experience: 10+ years

Jon Pickett is an Associate Principal and Senior Scientist with diverse professional experience in habitat development as a Regional Biologist and Environmental Project Manager, with an emphasis in wetland restoration and enhancement. Jon has extensive experience successfully planning, developing, securing funding, managing and implementing numerous large-scale wetland habitat projects aimed at restoring the biological and physical functions of wetlands throughout California's Central Valley and Southern California. During this time, he managed a 2,200-acre private wetland and upland habitat complex as a public trust resource for conservation and consumptive use. He worked to ensure projects were designed and implemented to achieve habitat restoration goals, including reclamation of wetland and floodplain habitats, reintroduction of aquatic complexity and habitat, and reestablishment of riparian corridor.

Jon has worked with Federal and State agencies and private entities on land acquisitions for conservational habitat and public use, including prioritizing acquisitions relative to value and opportunity and funding. In addition, Jon has experience in regulatory coordination to ensure projects operated in compliance with Federal, State and local environmental regulations, preparing permit documentation, coordinating with all pertinent agencies and stakeholders, and developing and maintaining appropriate permitting timelines to ensure timely approvals. He also oversaw earthwork construction components and revegetation efforts, as well as post-project monitoring, with an emphasis in native vegetation establishment and natural channel morphology.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement) and has been formally trained in the use of the Washington State Wetland Rating System, How to Determine the Ordinary High Water Mark, Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

Rachael Hyland

Environmental Scientist & Certified Ecologist Professional Experience: 7 years

Rachael Hyland is a Wetland Professional in Training (WPIT) through the Society of Wetland Scientists and a Certified Ecologist through the Ecological Society of America. 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 tidal, stream, and wetland systems, reporting on biological evaluations, permitting, and site assessments. She also has extensive knowledge of bats 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 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 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, and Selecting Wetland Mitigation Sites Using a Watershed Approach. 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.

Laura Livingston

Environmental Planner Professional Experience: 7 years

Laura Livingston is an Environmental Planner with a background in water quality monitoring, invasive species monitoring, wildlife monitoring, wilderness stewardship, and erosion control projects. Laura has field experience working on natural resources projects, with an emphasis on stream and river projects, in the Northwest, Northeast, and Southwest United States. She has also worked on a variety of environmental science research, grant, and teaching projects requiring scientific writing, science communication, laboratory work, and statistical analysis. She currently performs ordinary high water delineations; 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. Laura has a particular interest in shoreline projects and has prepared a variety of application materials to support projects within Shoreline Master Program jurisdictions.

Laura earned a Master of Science degree in Environmental Science from Washington State University, Pullman. In addition, she has received training from the Washington State Department of Ecology in How to Administer Shoreline Development Permits in Western Washington's Shorelines, Determining the Ordinary High Water Mark, the revised Washington State Wetland Rating System, Puget Sound Coastal Processes, How to Conduct a Forage Fish Survey, and Using the Credit-Debit Method for Estimating Mitigation Needs. Laura 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.