Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions

2907 Harborview Dr., Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954

Technical Memorandum

To: Patrick McCourt, KM Capital LLC **File Number: 2534.0001**

From: Laura Livingston, Soundview Consultants LLC **Date: February 17, 2023**
Matt DeCaro, Soundview Consultants LLC

Re: Critical Area Approvals Summary
Marysville Multi-Family

Dear Mr. McCourt,

Soundview Consultants LLC (SVC) is assisting KM Capital, LLC (Applicant) with critical areas support for the proposed residential development of an approximately 48.01-acre site located at 5414 152nd Street Northeast in the City of Marysville, Washington. The subject property consists of three parcels situated in the Northwest and Southwest ¼ of Section 34, Township 31 North, Range 05 East, W.M (Snohomish County Tax Parcel Numbers 31053400200800, 31053400200700, and 31053400300300).

The subject property is subject to critical areas approvals issued for the Cascade Business Park, an approved industrial development spanning the subject property and several parcels to the north of 152nd Street Northeast. The Cascade Business Park critical areas impacts and mitigation were approved by the United States Army Corps of Engineers (USACE), Washington State Department of Ecology (WSDOE), Washington State Department of Fish and Wildlife (WDFW), the City of Marysville, and the City of Arlington. Please see Table 1 for a summary of the Cascade Business Park critical area approvals. The waterbodies approved for impact included federally regulated and non-federally regulated waterbodies. USACE issued an Individual Permit for impacts to federally regulated waters of the United States, and WSDOE issued an Administrative Order for impacts to non-federally regulated waters of the state.

SVC investigated the Cascade Business Park property for the presence of potentially regulated waterbodies, wetlands, and fish and wildlife habitat in 2020 and 2021. The site investigations identified one wetland (Wetland AH), one stream (Edgecomb Creek), and one ditch (51st Avenue East Ditch) that is regulated as a wetland by the City of Marysville and WSDOE on or directly adjacent to the subject property. USACE determined that the 51st Avenue East Ditch was not a federally regulated water of the United States. Results approved by the regulatory agencies are documented in the *Wetland and Fish and Wildlife Habitat Assessment Report: Cascade Business Park* dated April 1, 2021.

The Cascade Business Park project was approved to realign Edgecomb Creek and associated tributary (Tributary/Ditch X); fill several wetlands, including the 51st Avenue East Ditch; and indirectly impact Wetland AH. Approved compensatory mitigation for the stream realignment, wetland fill, and indirect wetland impacts consists of creating a "mitigation corridor" with a realigned stream and side channels, creating wetlands, restoring and planting upland buffers, and installing a media filter drain along the eastern boundary of the mitigation corridor between the created stream channel and the BNSF Railroad. Approved impacts and mitigation for the Cascade Business Park are documented in the *Final Mitigation Plan: Cascade Business Park (NWS-2020-571)* dated May 27, 2021 and June 1, 2021[1].

Approved impacts associated with the subject property consist of the realignment of Edgecomb Creek, partial fill of Wetland AH, indirect impacts to Wetland AH due to the proximity of development to the wetland, and fill of the 51st Avenue East Ditch. Approved mitigation on the subject property consists of the creation of a mitigation corridor on the eastern portion of the site, creation of a new stream channel and off-channel habitat, creation of wetlands, enhancement of Wetland AH, and planting the upland buffers. Realignment of Edgecomb Creek required the installation of a new fish-passable stream crossing beneath 152nd Avenue Northeast.

The planned wetland creation areas identified in the *Final Mitigation Plan* exceeded the amount required for the Cascade Business Park's impacts. USACE and WSDOE approved an *Advanced Mitigation Plan: Cascade Business Park and Edgecomb Creek Restoration Project* dated December 14, 2021 that enables the Cascade Business Park Permittee to propose created wetlands, enhanced wetlands (including the onsite Wetland AH), and protected uplands within the mitigation corridor as wetland mitigation for the Permittee's future, offsite projects. The boundaries of the advanced mitigation site within the mitigation corridor have not yet been formally documented; however, per the approved *Advanced Mitigation Plan: Cascade Business Park and Edgecomb Creek Restoration Project*, the approved advanced mitigation includes the Wetland AH enhancement area on the subject property.

The *Final Mitigation Plan* also identified several non-compensatory mitigation actions, consisting of additional wetland creation, wetland enhancement, and wetland buffer enhancement in the mitigation corridor and the replacement of BNSF Railroad stream crossings. Non-compensatory mitigation actions associated with the subject property include Wetland AH buffer enhancement, Wetland AH enhancement, additional wetland creation in the mitigation corridor, and the replacement of a BNSF Railroad stream crossing adjacent to the subject property. The non-compensatory stream crossing replacement was approved by USACE, WSDOE, and the City of Marysville. Final BNSF stream crossing design was not completed at the time of the Cascade Business Park approvals, and the proposed BNSF replacement stream crossings still require approval from WDFW.

Approved critical areas work on the subject property has partially been completed. Grading for the realigned Edgecomb Creek channel and created wetlands and the installation of a new stream crossing at 152nd Street Northeast have been completed. Edgecomb Creek was realigned in the fall of 2022. Planting within the onsite mitigation corridor has not been completed as of the date of this Technical Memorandum. Site development grading has not been completed outside of the mitigation corridor, and the approved impacts to Wetland AH and the 51st Avenue East ditch have not occurred. Per the WSDOE Administrative Order, fill within the 51st Avenue East Ditch requires water quality monitoring according to the *Water Quality Monitoring Plan* prepared by SVC and dated May 27, 2021.

1. The USACE Individual Permit and WSDOE Administrative Order approvals reference the *Final Mitigation Plan: Cascade Business Park* dated May 27, 2021. The WDFW Hydraulic Project Approval (HPA) references the *Final Mitigation Plan: Cascade Business Park* dated June 1, 2021.

The regulatory approvals for the Cascade Business Park identify several conditions; please see the approvals for the full list of conditions. Monitoring of the mitigation corridor is scheduled for 10 years to ensure mitigation site establishes according to the goals, objectives, and performance standards identified in the *Final Mitigation Plan: Cascade Business Park (NWS-2020-571)*. The mitigation corridor is required to be protected through a site protection mechanism, and a separate critical areas tract has been drafted but yet not recorded to SVC's knowledge. Additional protection is to be provided through critical areas signage along the mitigation site boundary.

Sincerely,

Laura Livingston — February 17, 2023

Laura Livingston
Senior Environmental Planner

Matt DeCaro — February 17, 2023

Matt DeCaro
Associate Principal

Attachments Included:

Attachment A – Cascade Business Park Critical Areas Approval Summary

Attachment B – Critical Area Impacts and Mitigation On Subject Property

Attachment C – Individual Permit (NWS-2020-571)

Attachment D - Individual 401 Water Quality Certification (Water Quality Certification No. 2019 for Corps Reference No. NWS-2020-0571

Attachment E - Approved Jurisdictional Determination (NWS-2020-571)

Attachment F - Administrative Order No. 21016

Attachment G – Hydraulic Project Approval (2021-04-329+01)

Attachment H – Wetland and Fish and Wildlife Habitat Assessment Report

Attachment I – Final Mitigation Plan (May 27, 2021)

Attachment J – Final Mitigation Plan (June 1, 2021)

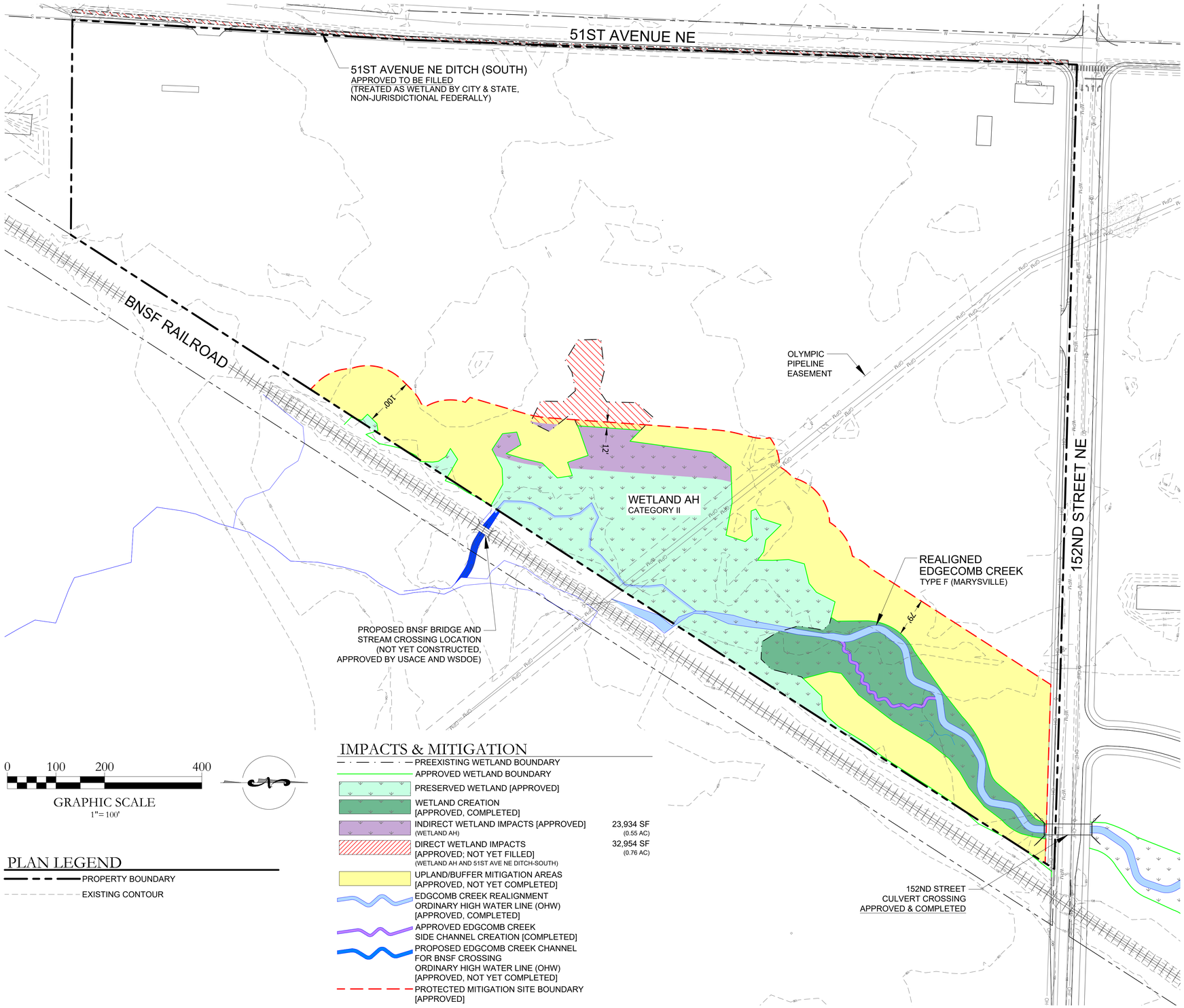
Attachment K – Water Quality Monitoring Plan

Attachment A – Cascade Business Park Critical Areas Approval Summary

Regulatory Agency	Approval	Approval Content Summary[1]
USACE	Individual Permit (NWS-2020-571)	Wetland fill, indirect wetland impacts, realignment of Edgecomb Creek and Tributary/Ditch X, wetland creation according to *Final Mitigation Plan: Cascade Business Park*
USACE	Approved Jurisdictional Determination (NWS-2020-571)	51st Avenue East Ditch and Ditch U are not waters of the United States
WSDOE	Individual 401 Water Quality Certification (Water Quality Certification No. 2019 for Corps Reference No. NWS-2020-0571)	Wetland fill, indirect wetland impacts, realignment of Edgecomb Creek and Tributary/Ditch X, wetland creation according to *Final Mitigation Plan: Cascade Business Park*
WSDOE	Administrative Order No. 21016	Fill of non-federally regulated waters of the state (51st Avenue East Ditch and Ditch U)
WDFW	Hydraulic Project Approval (2021-4-329+01)	Fill, realignment and restoration of Edgecomb Creek, fill and realignment of Tributary/Ditch X, fill of the 51st Avenue East Ditch, creation of mitigation corridor according to *Final Mitigation Plan: Cascade Business Park*
City of Marysville	Development Agreement	
City of Arlington	Development Agreement	

Attachment B – Critical Areas Impacts and Mitigation on Subject Property

EXISTING CONDITIONS PLAN



0 100 200 400

GRAPHIC SCALE
1"= 100'

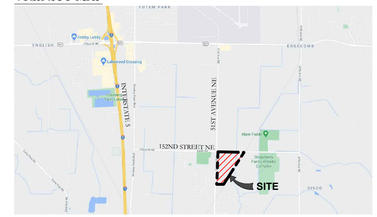
PLAN LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOUR

IMPACTS & MITIGATION

	PREEXISTING WETLAND BOUNDARY	
	APPROVED WETLAND BOUNDARY	
	PRESERVED WETLAND [APPROVED]	
	WETLAND CREATION [APPROVED, COMPLETED]	
	INDIRECT WETLAND IMPACTS [APPROVED] (WETLAND AH)	23,934 SF (0.55 AC)
	DIRECT WETLAND IMPACTS [APPROVED; NOT YET FILLED] (WETLAND AH AND 51ST AVE NE DITCH-SOUTH)	32,954 SF (0.76 AC)
	UPLAND/BUFFER MITIGATION AREAS [APPROVED, NOT YET COMPLETED]	
	EDGCOMB CREEK REALIGNMENT ORDINARY HIGH WATER LINE (OHW) [APPROVED, COMPLETED]	
	APPROVED EDGCOMB CREEK SIDE CHANNEL CREATION [COMPLETED]	
	PROPOSED EDGCOMB CREEK CHANNEL FOR BNSF CROSSING ORDINARY HIGH WATER LINE (OHW) [APPROVED, NOT YET COMPLETED]	
	PROTECTED MITIGATION SITE BOUNDARY [APPROVED]	

VICINITY MAP



SOURCE: GOOGLE MAPS;
WWW.MAPS.GOOGLE.COM
(ACCESSED 11/4/2020)

LOCATION

THE NW & SW ¼ OF SECTION 34,

TOWNSHIP 31N, RANGE 05E, WM

APPLICANT

NAME: KM CAPITAL, LLC.

ADDRESS: 10515 20TH STREET SE, SUITE 202
LAKE STEVENS, WASHINGTON 98258

ENVIRONMENTAL CONSULTANT

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

SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	EXISTING CONDITIONS
2	APPROVED PLANTING PLAN

SOURCES:

LDC | Surveying Engineering Planning
Woodinville
20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869
Kent
1851 Central Pl S, #101
Kent, WA 98030
www.LDCcorp.com
F 425.482.2893

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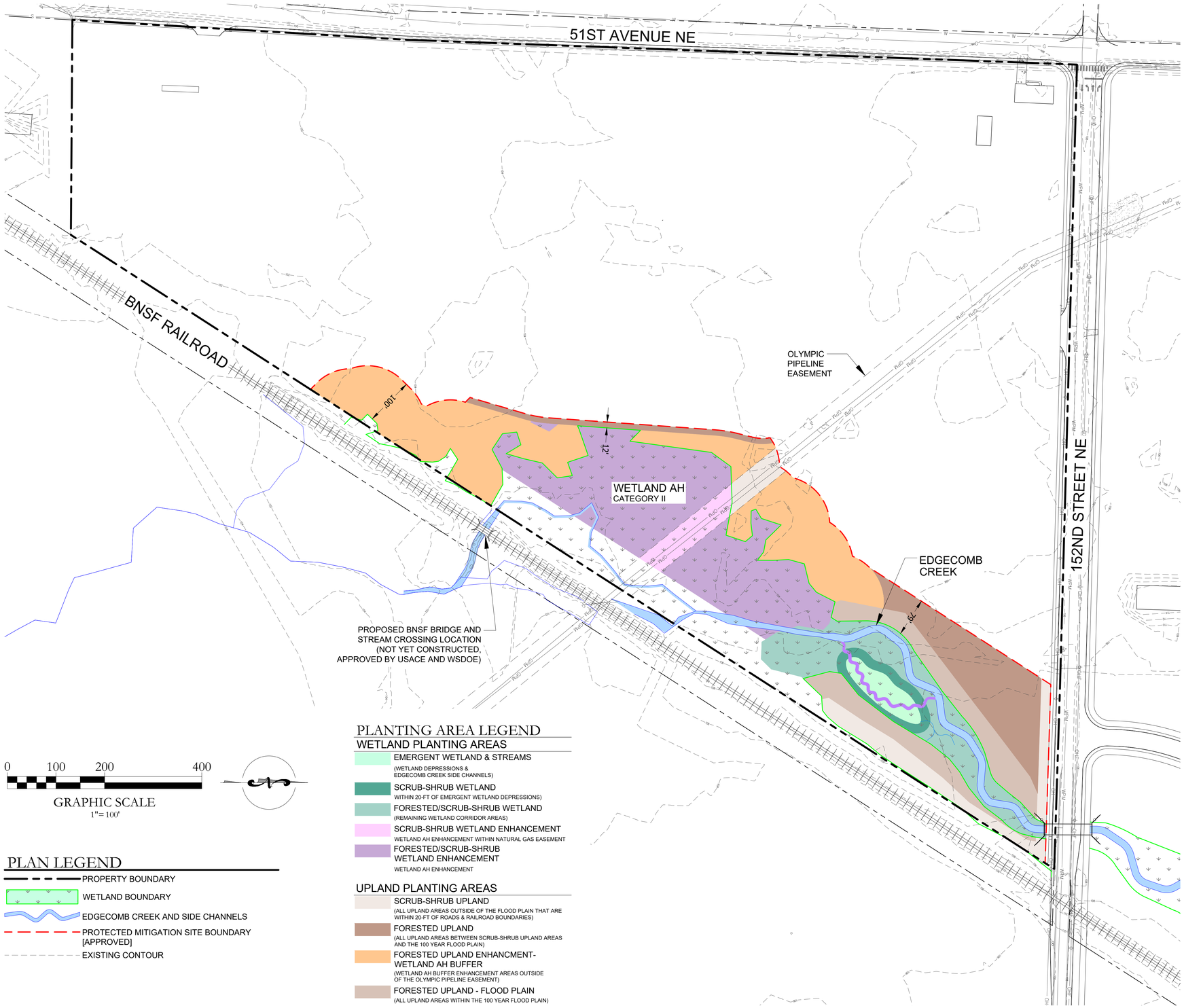
P. 253.514.8952
F. 253.514.8954

MARYSVILLE MULTI-FAMILY
5414 152ND STREET NE
MARYSVILLE, WASHINGTON 98271

SNOHOMISH COUNTY PARCEL NUMBERS:
31053400200800, 31053400200700,
& 31053400300300

DATE: 2/8/2023
JOB: 2534.0001
BY: MW
SCALE: AS SHOWN
SHEET: 1

S:\CURRENT\2534 KM Capital, LLC\2534.0001 Marysville Multi Family\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\2534.0001 (2023-02) base.dwg
Plotted February 9, 2023



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GRAPHIC SCALE
1"= 100'

PLAN LEGEND

- PROPERTY BOUNDARY
- WETLAND BOUNDARY
- EDGECOMB CREEK AND SIDE CHANNELS
- PROTECTED MITIGATION SITE BOUNDARY [APPROVED]
- EXISTING CONTOUR

PLANTING AREA LEGEND

WETLAND PLANTING AREAS

- EMERGENT WETLAND & STREAMS
  (WETLAND DEPRESSIONS & EDGECOMB CREEK SIDE CHANNELS)
- SCRUB-SHRUB WETLAND
  WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)
- FORESTED/SCRUB-SHRUB WETLAND
  (REMAINING WETLAND CORRIDOR AREAS)
- SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT
- FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT

UPLAND PLANTING AREAS

- SCRUB-SHRUB UPLAND
  (ALL UPLAND AREAS OUTSIDE OF THE FLOOD PLAIN THAT ARE WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)
- FORESTED UPLAND
  (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN)
- FORESTED UPLAND ENHANCMENT-WETLAND AH BUFFER
  (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF THE OLYMPIC PIPELINE EASEMENT)
- FORESTED UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN)

SOURCES:

LDC | Surveying Engineering Planning
Woodinville
20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869
Kent
1851 Central Pl S, #101
Kent, WA 98030
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Plotted February 9, 2023

Attachment C – Individual Permit (NWS-2020-571)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch July 14, 2021

Mr. Thane Smith
NorthPoint Holdings, LLC
4825 Northwest 41st Street, Suite 500
Riverside, Missouri 64150

Reference: NWS-2020-571
NorthPoint Holdings, LLC
(Cascade Logistics Park)

Dear Mr. Smith:

Enclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application. You are cautioned that any change in the location or plans of the work will require submittal of revised plans to this office for approval prior to accomplishment. Deviation from the approved plans may result in imposition of criminal or civil penalties.

Your attention is drawn to General Condition 1 of the permit which specifies the expiration date for completion of the work. Upon completing the authorized work, please fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form.

Please note that applicants conduct advance mitigation at their own risk. Even if compensatory mitigation activities are themselves authorized by a permit, establishing compensatory mitigation in advance of the impacts does not create any presumption or guarantee that a proposed future impact will be authorized, or that the advance compensatory mitigation will be considered adequate and/or suitable mitigation for any specific future project.

As part of our permit application review process, we notified Native American Tribes that have an interest in this area. The Stillaguamish Tribe of Indians requested their archeology staff be present to observe construction. Based on our coordination, you agreed to allow the Stillaguamish Tribe of Indians access. Please contact Mr. Kerry Lyste at (360) 572-3072 prior to commencing construction.

You are cautioned that any change in project location or plans will require that you submit a copy of the revised plans to this office and obtain our approval before you begin work. Deviating from the approved plans could result in the assessment of criminal or civil penalties. Please note that we may need to reinitiate consultation with the National Marine Fisheries

Service and/or U.S. Fish and Wildlife Service in order to authorize any work not already included in the enclosed plans.

We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." A copy of this letter with the enclosure will be furnished to Mr. Matt DeCaro at matt@soundviewconsultants.com. If you have any questions, please contact Ms. Amanda Nadjkovic at amanda.n.nadjkovic@usace.army.mil or at (206) 316-3156.

Sincerely,

Kristina G. Tong

For Michelle Walker
Chief, Regulatory Branch

Enclosures

cc: w/drawings only:
U.S. Fish and Wildlife Service
National Marine Fisheries Service

DEPARTMENT OF THE ARMY PERMIT

Permittee: NorthPoint Holdings, LLC

Permit No: NWS-2020-571

Issuing Office: Seattle District

Attention: Mr. Thane Smith
NorthPoint Holdings, LLC
4825 Northwest 41st Street, Suite 500
Riverside, Missouri 64150

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Fill and realign 10,165 linear feet (lf) of Edgecomb Creek, fill and realign 1,167 lf of Ditch X, and fill 4.275 acres of on-site wetlands to construct a regional industrial park in accordance with the plans and drawings dated April 8, 2021, attached hereto which are incorporated in and made a part of this permit. The purpose of the project is commercial development.

Project Location: In Wetlands A-N, P-R, U-Z, AA-AJ, AL, and AM; Edgecomb Creek; and Ditch X at Arlington and Marysville, Washington.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on July 14, 2024. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps, nonetheless the permittee agreed to

those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

Special Conditions:

a. You shall provide a copy of the permit transmittal letter, permit form, and permit drawings to all contractors involved in the authorized work.

b. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

c. All construction debris shall be properly disposed of on uplands in such a manner that it cannot enter into the waterway or cause water quality degradation.

d. All external galvanized metal onsite must be painted or coated with non-toxic paint or sealant.

e. Permittee shall comply with the conditions specified in the Washington State Department of Ecology's Coastal Zone Management Consistency determination dated June 22, 2021.

f. You shall prepare, submit, and implement an archaeological monitoring plan to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch (Corps). The Corps must review and approve the plan prior to construction. The plan must prominently display the reference number NWS-2020-571. This submittal should be electronically sent to the Corps Project Manager at amanda.n.nadjkovic@usace.army.mil.

g. You shall prepare and submit a summary report of the findings of the archaeological monitoring (positive or negative) to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch within 60 days after monitoring has been completed. The report must prominently display the reference number NWS-2020-571.

h. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch. You shall perform any work required by the Corps in accordance with Section 106 of the National Historic Preservation Act and Corps regulations.

i. An as-built construction report and as-built drawings of the work shall be submitted upon completion of project construction. This report must be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch (Corps) and must prominently display the reference number NWS-2020-571. This submittal should be electronically sent to NWS.Compliance@usace.army.mil.

j. In order to meet the requirements of the Endangered Species Act you may conduct the authorized in-water (below the plane of ordinary high water) activities during the period from June 1 through October 31 in any year this permit is valid. You shall not conduct any in-water work authorized by this permit during the period from November 1 through May 31 in any year this permit is valid.

k. In order to meet the requirements of the Endangered Species Act, you may conduct the authorized work in wetlands and above the plane of ordinary high water and in the dry during the period from November 1 through May 31, provided equipment and materials are prevented from entering the water.

l. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Assessment for Cascade Logistics Park dated October 2020, and the addendum dated December 2020, in their entirety. The U.S. Fish and Wildlife Service (USFWS) provided the enclosed Letter of

Concurrence (LOC) with a finding of "may affect, not likely to adversely affect" based on this document on April 29, 2021 (USFWS Reference Number 01EWFW00-2021-I-0245). The USFWS will be informed of this permit issuance. Failure to comply with the commitments made in this consultation constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS is the appropriate authority to determine compliance with the ESA.

m. This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species, in particular the Puget Sound steelhead or Puget Sound Chinook salmon. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or ESA Section 7 consultation Biological Opinion with non-discretionary "incidental take" provisions with which you must comply). The enclosed BO prepared by the National Marine Fisheries Service (NMFS) dated June 4, 2021, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the specified "incidental take" in the BO (NMFS Reference Number WCRO-2020-03191). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO. These terms and conditions are incorporated by reference in this permit. Failure to comply with the commitments made in this consultation constitutes non-compliance with the ESA and your Corps permit. The USFWS/NMFS is the appropriate authority to determine compliance with the ESA.

n. You shall implement and abide by the mitigation plan, entitled Final Mitigation Plan, dated 27 May 2021. Mitigation shall be constructed before or concurrent with the work authorized by the permit.

o. A status report on the implementation of the authorized work and on the construction of the mitigation shall be submitted annually to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch (Corps) by December 31 each year until mitigation construction is complete as determined by the Corps. This report must prominently display the reference number NWS-2020-571. This submittal should be electronically sent to NWS.Compliance@usace.army.mil.

p. An as-built mitigation construction report and as-built drawings of the mitigation areas shall be submitted upon completion of mitigation construction, in lieu of the status report described in Special Condition "b." This report must be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch (Corps) for review and approval and must prominently display the reference number NWS-2020-571. The year mitigation construction is completed, as determined by the Corps, represents Year 0 for mitigation monitoring. This submittal should be electronically sent to NWS.Compliance@usace.army.mil.

q. Mitigation monitoring reports shall be submitted for monitoring years 1, 2, 3, 5, 7, and 10 to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch (Corps) by December 31 of each monitoring year. Year 1 monitoring will occur at least one year after completion of the mitigation site as determined by the Corps. All reports must prominently display the reference number NWS-2020-571. This submittal should be electronically sent to NWS.Compliance@usace.army.mil.

r. A delineation of all compensatory mitigation wetlands using the currently approved federal wetland delineation manual and appropriate regional supplement must be included with the Year 5 monitoring report and the final monitoring report and shall include all compensatory mitigation areas. If a performance standard requires increasing the rating category, the compensatory wetlands must be evaluated using the most current version of the Washington State Wetlands Rating System for Western Washington.

s. You must take the actions required to record this permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. Proof of this recorded documentation must be provided to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch within 60 days from the date of permit issuance. The fully executed site protection for the entire mitigation area

shall be recorded with the Registrar of Deeds or other appropriate official charged with maintaining records on real property. A copy of the fully executed site protection and proof of recording shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch prior to project construction. This submittal should be electronically sent to NWS.Compliance@usace.army.mil.

t. Your responsibility to complete the required compensatory mitigation as set forth in Special Conditions "n" through "s" will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

☐ Section 10 of the Rivers and Harbor Act of 1899 (33 United States Code (U.S.C.) 403).

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).

☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of the permit.

b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

NorthPoint Holdings, LLC, a Missouri limited liability company

_____ T
Nathaniel Hagedorn, its Manager

July 9, 2021
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Kristina G. Long
For Alexander L. Bullock
Colonel, Corps of Engineers
District Engineer

14 July 2021
(DATE)

STATE OF MISSOURI)
) ss.
COUNTY OF PLATTE)

BE IT REMEMBERED, that on this 9th day of July, 2021, before me, the undersigned, a Notary Public in and for said County and State aforesaid, came Nathaniel Hagedorn, Manager of NORTHPOINT HOLDINGS, LLC, a Missouri limited liability company, who is personally known to me to be such Manager, and who is personally known to me to be the same person who executed, as such Manager, the within instrument on behalf of the limited liability company, and Nathaniel Hagedorn duly acknowledged the execution of the same to be the act and deed of the limited liability company.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Notary Public in and for Said County and State

My Commission Expires: 9-10-23

LISA L BEASLEY
Notary Public - Notary Seal
Platte County - State of Missouri
Commission Number 19497557
My Commission Expires Sep 10, 2023

STATE OF)
) ss.
COUNTY OF)

BE IT REMEMBERED, that on this ____ day of _____, 2021, before me, the undersigned, a Notary Public in and for said County and State aforesaid, came Alexander L. Bullock, Colonel and District Engineer of the Corps of Engineers, Department of Army, who is personally known to me to be such Colonel and District Engineer, and who is personally known to me to be the same person who executed, as such Colonel and District Engineer, the within instrument on behalf of the Corps of Engineers, Department of Army, and Alexander L. Bullock duly acknowledged the execution of the same to be the act and deed of the Corps of Engineers, Department of Army.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

_____
Notary Public in and for Said County and State

My Commission Expires:

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

NP Arlington MIC Industrial, LLC, a Delaware limited liability company
(TRANSFEREE)

Nathaniel Hagedorn, Its Authorized Person

July 9, 2021
(DATE)

STATE OF MISSOURI)
) ss.
COUNTY OF PLATTE)

BE IT REMEMBERED, that on this 9th day of July, 2021, before me, the undersigned, a Notary Public in and for said County and State aforesaid, came Nathaniel Hagedorn, the Authorized Person of NP ARLINGTON MIC INDUSTRIAL, LLC, a Delaware limited liability company, who is personally known to me to be Authorized Person, and who is personally known to me to be the same person who executed, as such Authorized Person, the within instrument on behalf of the limited liability company, and Nathaniel Hagedorn duly acknowledged the execution of the same to be the act and deed of the limited liability company.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Notary Public in and for Said County and State

My Commission Expires: 9-10-23

LISA L BEASLEY
Notary Public - Notary Seal
Platte County - State of Missouri
Commission Number 19497557
My Commission Expires Sep 10, 2023

Attachment D – Individual 401 Water Quality Certification (Water Quality Certification No. 2019 for Corps Reference No. NWS-2020-0571

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • PO Box 330316 • Shoreline, Washington 98133-9716 • (206) 594-0000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 21, 2021

Thane Smith
NorthPoint Holdings, LLC
2265 East Murray Holladay Road
Holladay, UT 84117

RE: Water Quality Certification Order No. **20109** for Corps Reference No. **NWS-2020-0571**, Cascade Business Park, Snohomish County, Washington

Dear Thane Smith:

On August 25, 2020, NorthPoint Holdings, LLC submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Cascade Business Park project, located in Arlington and Marysville, Snohomish County, Washington.

On behalf of the state of Washington, the Department of Ecology certifies that the work described in the Joint Aquatic Resource Permit Application (JARPA) and the public notice complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended, and applicable state laws. This certification is subject to the conditions contained in the enclosed Order and does not authorize impacts to non-federally regulated wetlands.

Please ensure that anyone doing work under this Order has read, is familiar with, and is able to follow all of the provisions within the attached Order.

If you have any questions about this decision, please contact Neil Molstad at (425) 389-5549 or neil.molstad@ecy.wa.gov. The enclosed Order may be appealed by following the procedures described within the Order.

Sincerely,

Joe Burcar, Section Manager
Shorelands and Environmental Assistance Program
Northwest Regional Office

Enclosure

Sent via email to tsmith@northpointkc.com

e-cc: Amanda Nadjkovic, Corps of Engineers
Matt DeCaro and Ben Wright, Soundview Consultants LLC
Chris Holland, City of Marysville
Marc Hayes, City of Arlington
Kurt Nelson, Tulalip Tribes
Pat Stevenson, Stillaguamish Tribe
Ann Harrie, Snoqualmie Tribe
Ashley Kees, Department of Fish and Wildlife
Loree' Randall, Ecology
Rebekah Padgett, Ecology
ECY RE FEDPERMITS

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO NorthPoint Holdings, LLC pursuant to 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC	)))))))	**ORDER # 20109** **Corps Reference No. NWS-2020-0571** Cascade Business Park project, Edgecomb Creek, Ditch X, and Associated Wetlands, located in Arlington and Marysville, Snohomish County, Washington.

Thane Smith
NorthPoint Holdings, LLC
2265 East Murray Holladay Road
Holladay, UT 84117

On August 25, 2020, the Department of Ecology (Ecology) received a request from NorthPoint Holdings, LLC for a Section 401 Water Quality Certification (WQC) for the Cascade Business Park project. The U.S. Army Corps of Engineers (Corps) and Ecology issued a joint public notice for the project on September 1, 2020.

The proposed project entails the construction of a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. The proposed project will result in approximately five acres of direct and indirect wetland impacts and involve the relocation of a portion of Edgecomb Creek and an unnamed tributary (Ditch X) to Edgecomb Creek. Two features in the project area (the 51st Avenue Ditch and Ditch U) are non-federally regulated waters but are considered waters of the state (both ditch features) and regulated wetland (51st Avenue Ditch only) under Washington state law. Impacts to these features will be authorized by Ecology under separate cover (see Ecology Administrative Order # 20160).

The project site is located in portions of Sections 27 and 34, Township 31.N, Range 6.E, within Water Resource Inventory Area (WRIA) 7 (Snohomish) .

AUTHORITIES

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has reviewed the WQC request pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317 (FWPCA §§ 301, 302, 303, 306, and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws;

3. Conformance with the provision of using all known, available, and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010; and,

4. Conformance with Washington's prohibition on discharges that cause or tend to cause pollution of waters of the state of Washington. RCW 90.48.080.

WATER QUALITY CERTIFICATION CONDITIONS

With this Water Quality Certification (WQC) and through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will comply with applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260 Chapter 173-200 WAC and Chapter 173-201A WAC, this WQC is granted to NorthPoint Holdings, LLC (Applicant) subject to the conditions within this Order.

Issuance of this WQC for this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this WQC absolves the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments resulting from project construction or operations.

A. General Conditions

1. In this Order, the term "Applicant" shall mean NorthPoint Holdings, LLC and its agents, assignees, and contractors.

2. All submittals required by this Order shall be sent via e-mail to fednotification@ecy.wa.gov and cc to neil.molstad@ecy.wa.gov. The submittals shall be identified with Order # 20109 and include the Applicant name, Corps reference number, project name, project contact, and the contact phone number. A mailing address for required submittals will be provided if requested.

3. Work authorized by this Order is limited to the work described in the Joint Aquatic Resource Permit Application (JARPA) received by Ecology on August 25, 2020, the *Cascade Business Park Mitigation Plan* dated May 27, 2021, and the *Cascade Business Park Water Quality Monitoring Plan* dated May 27, 2021.

4. The Applicant shall obtain Ecology review and approval before undertaking any changes to the proposed project that might significantly and adversely affect water quality, other than those project changes required by this Order.

5. Within 30 days of receipt of any updated information, Ecology will determine if the revised project requires a new public notice and Water Quality Certification or if a modification to this Order is required.

6. This Order is not effective until the Corps issues a permit for this project.

7. The Applicant shall send (per condition A.2 above) a copy of the final Corps permit to Ecology within two weeks of receiving it.

8. The Applicant shall keep copies of this Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.

9. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, and/or necessary data collection, to ensure that conditions of this Order are being met.

10. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (*e.g.*, violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.

11. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48) or the federal Clean Water Act, Ecology may issue an amendment to this Order to incorporate any such changes or amendments applicable to this project.

12. The Applicant shall ensure that all project engineers, contractors, and other workers at the project site with authority to direct work have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each signatory that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals. These statements shall be provided to Ecology before construction begins.

13. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

14. Failure of any person or entity to comply with the Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

15. This Order will automatically transfer to a new owner or operator if:
    a. A written agreement between the Applicant and new owner or operator with the specific transfer date of the Order's obligations, coverage, and liability is submitted to Ecology per condition A.2.;
    b. A copy of this Order is provided to the new owner or operator; and,
    c. Ecology does not notify the new Applicant that this Order must be modified to complete the transfer.

16. Conditions in this Order apply to all planned phases of the construction and the mitigation for this project.

B. Notification Requirements

1. The following notification shall be made via phone (425) 389-5549) or e-mail (e-mail is preferred) to Ecology's Federal Permit Manager to fednotification@ecy.wa.gov and cc to: neil.molstad@ecy.wa.gov. Notifications shall be identified with Order No. 20109 and include the Applicant name, project name, project location, project contact and the contact phone number.

    a. Immediately following a violation of state water quality standards or when the project is out of compliance with any conditions of this Order.
    b. At least ten (10) days prior to all pre-construction meetings.
    c. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
    d. At least seven (7) days prior to the start of impacts to wetlands.
    e. At least seven (7) days prior to completing each wetland mitigation site.
    f. Within seven (7) days of completing in-water work activities for each in-water work window.
    g. At least seven (7) days within project completion.

2. In addition to the phone or e-mail notification required under B.1.a. above, the Applicant shall submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

3. If the project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit per Condition A2 a written construction status report and submit status reports every 12 months until construction and mitigation are completed.

C. Timing

1. This Order will expire when all its conditions have been met and upon receipt of a mitigation closeout letter from Ecology.

2. In-water work shall be conducted in Edgecomb Creek and Ditch X between July 16 and September 15 of any year, unless otherwise approved by Ecology.

3. Any project change that requires a new or revised Hydraulic Project Approval (HPA) from the Department of Fish and Wildlife should be sent to Ecology for review before the change is implemented. Proposed changes shall be implemented only with written approval from Ecology.

D. Water Quality Monitoring & Criteria

1. This Order does not authorize the Applicant to exceed applicable turbidity standards beyond the limits established in Chapter 173-201A-200(1)(e)(i) WAC.

2. Edgecomb Creek and Ditch X are categorized under the Water Quality Standards For Surface Waters of the State of Washington as habitat for salmonid spawning, rearing, and migration. The criteria of the categorization apply as described in Chapter 173-201A-200(1)(e)(i) WAC, except as specifically modified by this Order.

3. For in-water activities within fresh waters (including wetlands) turbidity shall not exceed 5 NTU over background when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU;

    a. Temporary area of mixing for turbidity established within the state water quality standards for fresh waters (Chapter 173-201A-200(1)(e) WAC) is as follows:

        i. For waters up to 10 cfs flow at the time of construction, the point of compliance shall be one hundred feet downstream from the activity causing the turbidity exceedance.
        ii. For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be two hundred feet downstream of the activity causing the turbidity exceedance.
        iii. For waters above 100 cfs flow at the time of construction, the point of compliance shall be three hundred feet downstream of the activity causing the turbidity exceedance.

    For projects working within or along lakes, ponds, wetlands, or other non-flowing waters, the point of compliance shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.

4. The Applicant shall conduct water quality monitoring as described in the approved Water Quality Monitoring Plan, *Cascade Business Park (NWS-2020-571)* (hereafter referred to as the WQMP) prepared by Soundview Consultants and dated May 27, 2021.

5. The Applicant must provide, in writing, any changes or additions to the WQMP and obtain approval from Ecology (email to fednotification@ecy.wa.gov and cc neil.molstad@ecy.wa.gov and rebekah.padgett@ecy.wa.gov) prior to implementation of the changes or additions.

6. Monitoring results shall be submitted weekly to Ecology (email to fednotification@ecy.wa.gov and cc neil.molstad@ecy.wa.gov and rebekah.padgett@ecy.wa.gov).

7. Mitigation and/or additional monitoring may be required if the monitoring results indicate that the water quality standards have not been met.

8. Visible turbidity anywhere beyond the temporary area of mixing (point of compliance) from the activity shall be considered an exceedance of the standard.

9. If water quality exceedances for turbidity are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of the water quality problem and take immediate action to stop, contain, and correct the problem and prevent further water quality turbidity exceedances.

E. Construction

General Conditions

1. All work in and near waters of the state shall be conducted to minimize turbidity, erosion, and other water quality impacts. Construction stormwater, sediment, and erosion control Best Management Practices (BMPs) suitable to prevent exceedances of state water quality standards shall be in place before starting maintenance and shall be maintained throughout the duration of the activity.

2. No stockpiling or staging of materials shall occur at or below the OHWM of any waterbody.

3. The Applicant shall comply with the conditions of the current Construction Stormwater Permit (National Pollutant Discharge Elimination System – NPDES) issued for this project.

4. Within the project limits[1] all environmentally sensitive areas including, but not limited to, wetlands, wetland buffers, and mitigation areas shall be fenced with high visibility construction (HVF) prior to commencing construction activities. Construction activities include equipment staging, materials storage, and work vehicle parking. *Note: This condition does not apply to activities such as pre-construction surveying and installing HVF and construction zone signage.*
    a. If the project will be constructed in stages[2] a detailed description and drawings of the stages shall be sent to Ecology for review at least 20 days prior to placing HVF.
    b. Condition 2 shall apply to each stage.
    c. All field staff shall be trained to recognize HVF, understand its purpose and properly install it in the appropriate locations.
    d. HVF shall be maintained until all work is completed for each project or each stage of a staged project.

5. All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.

6. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.

7. All construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.

8. Turbid de-watering water associated with in-water work shall not be discharged directly to waters of the state, including wetlands. Turbid de-watering water shall be routed to an upland area for on-site or off-site settling.

9. Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour in the stream channel, banks, or vegetation.

10. In-water construction shall occur in the dry or in isolation from stream flow.

11. All equipment being used below the ordinary high water mark shall utilize biodegradable hydraulic fluid.

---

[1] Project limits include mitigation sites, staging areas, borrow sources, and other sites developed or used to support project construction.
[2] A stage is part of a project that has been separated into at least two distinct areas to be built during separate timeframes.

12. In addition to the above, all site specific construction BMP's as described in the WQMP for this project shall be followed.

Equipment & Maintenance

13. Staging areas will be located a minimum of 50 feet and, where practical, 200 feet, from waters of the state including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation and obtain approval from Ecology before placing the staging area in the 50-foot setback area.

14. Equipment used for this project shall be free of external petroleum-based products while used around the waters of the state, including wetlands. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of equipment prior to its use around waters of the state, including wetlands.

15. No equipment shall enter, operate, be stored or parked within any sensitive area except as specifically provided for in this Order.

16. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

17. Wash water containing oils, grease, or other hazardous materials resulting from washing of equipment or working areas shall not be discharged into state waters. The Applicant shall set up a designated area for washing down equipment.

Dewatering, Culvert Work, and Stream Bypass

18. If necessary, dewatering activities within the stream relocation/wetland creation area, Edgecomb Creek and Ditch X shall be conducted as described in the WQMP.

19. Stream flow isolation work shall not scour the stream channel or banks of the water body in which the work is being done.

20. To minimize sediment releases into downstream water, water reintroduced to the channel shall be done gradually and at a rate not exceeding the normal stream flow.

21. Culverts shall be installed to avoid inlet scouring and prevent downstream bank erosion.

22. Fill associated with culvert installation shall be protected from erosion to the 100-year peak flow.

F. Wetland Compensatory Mitigation Conditions

1. The Applicant shall mitigate wetland impacts as described in the *Cascade Business Park Final Mitigation Plan* (hereafter called the "Mitigation Plan") prepared by Soundview Consultants, and dated May 27, 2021, or as modified by this Order or revised and approved by Ecology.

2. The Applicant shall submit any proposed changes to the Mitigation Plan in writing to Ecology (see Condition A.2) for review and approval before implementing the changes.

3. The Applicant shall have a qualified wetland professional at the wetland mitigation site to supervise during construction and planting.

4. The Mitigation Plan contains more mitigation area than what is required to compensate for the wetland impacts proposed by this project. It is Ecology's understanding that the Applicant may want to use this excess mitigation as advance mitigation for future unavoidable wetland impacts from other projects not authorized under this WQC. Requesting advance mitigation credit for excess wetland mitigation is done at the Applicant's own risk, and Ecology is not under any obligation to accept this excess area as compensation for proposed future wetland impacts. Any excess mitigation credit generated by the current wetland mitigation site will be determined at the time the Applicant submits an advance mitigation use plan to Ecology.

Implementation

5. Unless otherwise approved by Ecology in writing, the Applicant shall begin the compensatory mitigation project before, or concurrently with, impacting wetlands, or Ecology may require additional compensation to account for additional temporal loss of wetland functions.

6. If the mitigation site cannot be completed within 13 months of the date of this Order, the Applicant shall inform Ecology, in writing, of the status of the Cascade Business Park project, with the:
    a. Reason for the delay.
    b. Expected date of completion.
    c. The Applicant shall submit an updated written notification every 12 months thereafter until the Cascade Businees Park project and the wetland mitigation/stream relocation area are complete.

7. The Applicant shall ensure that all excess excavated site material is disposed of in an appropriate location outside of wetlands and their buffers and landward of the 100-year floodplain, unless otherwise provided for in the Mitigation Plan.

8. The Applicant shall ensure that no material is stockpiled within existing wetlands or their buffers at the wetland mitigation site at any time, unless otherwise provided for in the Mitigation Plan.

9. The Applicant shall ensure that no construction debris is deposited within existing wetlands or their buffers at the wetland mitigation site at any time, unless otherwise provided for in the Mitigation Plan.

10. The Applicant shall not use polyacrylamide at the mitigation site.

11. The Applicant shall not use hay or straw on exposed or disturbed soil at the mitigation site, unless otherwise approved by Ecology.

12. Aquatic herbicides can be used or applied only by certified applicators or persons under the direct supervision of a certified applicator, and only for those uses covered by the certified applicator's license category.
    a. Applicators are required to be permitted under Ecology's Noxious Weed Control Permit.
    b. Applicators shall comply with all conditions of the Noxious Weed Control Permit.

13. If weed-barrier fabric is used on the site, the Applicant shall use only water-permeable, fully biodegradable, non-toxic weed-barrier fabric for the entire-site and/or individual plant weed control, unless otherwise approved by Ecology. If non-biodegradable plastic weed-barrier fabric is approved by Ecology, it shall be used only at the base of individual plants and shall be removed before it starts to break down, before it interferes with plant growth, or before the end of the monitoring period, whichever comes first.

14. If seeding is used for temporary erosion control, it must be a seed mix consisting of native, annual, non-invasive plant species, unless otherwise approved by Ecology.

15. The Applicant shall not use solid or mesh plant protector tubes at the mitigation site unless otherwise provided for in the Mitigation Plan.

16. The Applicant shall place signs at the mitigation area's boundaries, including buffers, every 100 feet to mark the area as a wetland mitigation site, as described in the Mitigation Plan.

17. Upon completion of site grading and prior to planting, the Applicant shall submit to Ecology written confirmation (email or signed letter) from a surveyor or project engineer that the finished grades are consistent with the approved Mitigation Plan or subsequent Ecology-approved plan changes and also indicate how final elevations were determined.

18. After completing construction and planting of the mitigation sites(s), the Applicant shall submit to Ecology (see Condition A.2) an as-built report, including plan sheets, documenting site conditions at Year Zero. The as-built report must:

    a. Be submitted within 90 days of completing construction and planting. Include one hard copy and one electronic file.
    b. Include the information listed in Attachment B (Information Required for As-built Reports).
    c. Include documentation of the recorded legal site protection mechanism required in Condition F.19.

19. The Applicant shall provide Ecology with documentation of a recorded conservation easement for the Cascade Business Park stream relocation/wetland mitigation area. The Applicant shall:

    a. Request a conservation easement template from Ecology or use an appropriate alternative to develop a draft conservation easement.
    b. Send the draft conservation easement to Ecology for review and approval prior to recording.
    c. Record the Ecology-approved conservation easement with the County Recording Office, Registrar of Deeds, or other official responsible for maintaining records for, or interest in, real property.
    d. Record the conservation easement with a figure that corresponds with the legal description showing the area that is being protected, a copy of this Order, and a site map showing the location of wetlands and their buffers that are being protected.
    e. Send a copy of the recorded conservation easement to Ecology with the As-Built Report (see Condition F.18), unless otherwise approved by Ecology.

Monitoring and Maintenance

20. The Applicant shall water and maintain all mitigation site plantings so as to meet the Mitigation Plan's performance standards. If an irrigation system is installed, it shall be removed by the end of year three unless Ecology authorizes in writing the system to remain for a longer period.

21. The Applicant shall monitor the mitigation site for a minimum of 10 years. The Applicant shall use the monitoring methods described in Section 2.8 of the Mitigation Plan.

22. The Applicant shall submit to Ecology (see Condition A.2) monitoring reports documenting mitigation site conditions for years 1, 2, 3, 5, 7, and 10. The monitoring reports must:

a. Be submitted by December 31 of each monitoring year. Include one hard copy and one electronic file.
b. Include the information listed in Attachment C (Information Required for Monitoring Reports).

23. The Applicant shall implement the Mitigation Plan's contingency measures if the Mitigation Plan's goals, objectives, or performance standards are not being met.

24. Prior to implementing contingency measures not specified in the Mitigation Plan, the Applicant shall consult with and obtain written approval from Ecology for the contingency measures.

25. When necessary to meet the performance standards, the Applicant shall replace dead or dying plants with the same species, or an appropriate native plant alternative, during the current or upcoming planting season and note species, numbers, and approximate locations of all replacement plants in the subsequent monitoring report.

26. For monitoring years five (5) and ten (10), or prior to submitting an advance mitigation use plan for the site, the Applicant shall use the currently approved federal wetland delineation manual and appropriate regional supplement to delineate all compensatory wetlands and include delineation information (e.g., data sheets, maps, wetland size, etc.) in the monitoring reports or advance mitigation use plan.

27. At the end of the monitoring period or prior to submitting an advance mitigation use plan for the site, the Applicant shall use the October 2014 version of the "Washington State Wetlands Rating System for Western Washington" to rate all wetlands (except those that have been preserved) and include the information in the monitoring report or advance mitigation use plan. The wetlands must be rated no more than 12 months prior to the submittal of any advance mitigation use plan to Ecology.

28. If the Applicant has not met all compensatory mitigation conditions by the end of the monitoring period, Ecology may require additional monitoring, additional mitigation, or both. Conditions include specifications in the approved Mitigation Plan, such as performance standards for the mitigation site.

29. The Applicant's obligation to compensate for wetland impacts under Condition F.1 is not met until the applicant has received written notice from Ecology that the obligation is met

G. Emergency/Contingency Measures

1. The Applicant shall develop and implement a spill prevention and containment plan for this project.

2. The Applicant shall have adequate and appropriate spill cleanup material available on site at all times during construction.

3. The Applicant shall have adequate and appropriate spill response materials available on site to respond to any release of petroleum products or any other material into waters of the state.

4. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

5. Work causing distressed or dying fish and discharges of oil, fuel, or chemicals into state waters or onto land with a potential for entry into state waters is prohibited. If such work, conditions, or discharges occur, the Applicant shall notify fednotification@ecy.wa.gov and cc neil.molstad@ecy.wa.gov per condition B.1. and immediately take the following actions:

    a. Cease operations at the location of the non-compliance.
    b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and prevent further environmental damage.
    c. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
    d. Immediately notify Ecology's Regional Spill Response Office and the Washington State Department of Fish & Wildlife with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems.
    e. Immediately notify the National Response Center at 1-800-424-8802, for actual spills to water only.

6. Notify Ecology's Regional Spill Response Office immediately if chemical containers (e.g. drums) are discovered on-site or any conditions present indicating disposal or burial of chemicals on-site that may impact surface water or ground water.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Neil Molstad
Department of Ecology
Northwest Regional Office
(425) 389-5549

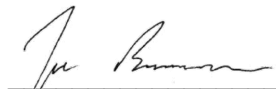
neil.molstad@ecy.wa.gov

MORE INFORMATION

- **Pollution Control Hearings Board Website**
  http://www.eluho.wa.gov/Board/PCHB
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**
  http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B
- **Chapter 371-08 WAC – Practice And Procedure**
  http://app.leg.wa.gov/WAC/default.aspx?cite=371-08
- **Chapter 34.05 RCW – Administrative Procedure Act**
  http://app.leg.wa.gov/RCW/default.aspx?cite=34.05
- **Chapter 90.48 RCW – Water Pollution Control**
  http://app.leg.wa.gov/RCW/default.aspx?cite=90.48
- **Chapter 173.204 WAC – Sediment Management Standards**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204
- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A

SIGNATURE

Dated this 21st day of June, 2021, at the Department of Ecology, Shoreline, Washington.



Joe Burcar, Section Manager
Shorelands and Environmental Assistance Program
Northwest Regional Office

Attachment A
Statement of Understanding
Water Quality Certification Conditions

Cascade Business Park
NorthPoint Holdings, LLC
Water Quality Certification Order No. **20109**
and
Corps Reference No. **NWS-2020-0571**

I, _____, state that I will be involved as an agent or contractor for NorthPoint Holdings, LLC in the site preparation and/or construction of the Cascade Business Park located in Marysville and Arlington, Snohomish County, Washington. I further state that I have read and understand the relevant conditions of Washington Department of Ecology Water Quality Certification Order No. 20109 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

Signature	Date
Title	Phone
Company	

Attachment B
Information Required for As-built Reports

Cascade Business Park
Water Quality Certification Order # 20109
And
Corps Reference # NWS-2020-0571

Ecology requires the following information for as-built reports submitted under this Order. Ecology will accept additional information that may be required by other agencies.

Background Information

1) Project name.
2) Ecology Order number and the Corps reference number.
3) Name and contact information of the person preparing the as-built report. Also, if different from the person preparing the report, include the names of:
    a) The applicant
    b) The landowner
    c) Wetland professional on site during construction of the mitigation site(s).
4) Date the report was produced.

Mitigation Project Information

5) Brief description of the **final** mitigation project with any changes from the approved plan made during construction. Include:
    a) **Actual** acreage of Cowardin classes and mitigation type(s) (re-establishment, rehabilitation, creation, enhancement, preservation, upland, buffers).
    b) Important dates, including:
        i. Start of project construction.
        ii. When work on the mitigation site began and ended.
        iii. When different activities such as grading, removal of invasive plants, installing plants, and installing habitat features began and ended.
6) Description of any problems encountered and solutions implemented (with reasons for changes) during construction of the mitigation site(s).
7) List of any follow-up actions needed, with a schedule.
8) Vicinity map showing the geographic location of the site(s) with landmarks.
9) Mitigation site map(s), 8-1/2" x 11" or larger, showing the following:
    a) Boundary of the site(s).
    b) Topography (with a description of how elevations were determined).
    c) Installed planting scheme (quantities, densities, sizes, and approximate locations of plants, as well as the source(s) of plant material).
    d) Location of habitat features.
    e) Location of permanent photo stations and any other photos taken.

    Include the month and year when each map was produced or revised. The site map(s) should reflect on-the-ground conditions after the site work is completed.
10) Photographs taken at permanent photo stations and other photographs, as needed. Photos must be dated and clearly indicate the direction from which each photo was taken. Photo pans are recommended.

11) A copy of any deed notifications, conservation easements, or other approved site protection mechanism.

Attachment C
Information Required for Monitoring Reports

Cascade Business Park
Ecology Order # 20109
And
Corps Reference # NWS-2020-0571

Ecology requires the following information for monitoring reports submitted under this Order. Ecology will accept additional information that may be required by other agencies.

Background Information

1) Project name.
2) Ecology Order number and the Corps reference number.
3) Name and contact information of the person preparing the monitoring report. Also, if different from the person preparing the report, include the names of:
   a) The applicant
   b) The landowner
   c) The party responsible for the monitoring activities.
4) Dates the monitoring data were collected.
5) Date the report was produced.

Mitigation Project Information

6) Brief description of the mitigation project, including acreage of Cowardin classes and mitigation type(s) (re-establishment, rehabilitation, creation, enhancement, preservation, upland, buffers).
7) Description of the monitoring approach and methods. For each performance standard being measured provide the following information:
   a) Description of the sampling technique (e.g., monitoring point for soil or hydrology, line or point intercept method, ocular estimates in individually placed plots). If you are using a standardized technique, provide a reference for that method.
   b) Size and shape of plots or transects.
   c) Number of sampling locations and how you determined the number of sampling locations to use.
   d) Percent of the mitigation area being sampled.
   e) Locations of sampling (provide a map showing the locations), how you determined where to place the sampling locations (e.g., simple random sample), and whether they are permanent or temporary.
   f) Schedule for sampling (how often and when).
   g) Description of how the data was evaluated and analyzed.
8) Summary table(s) comparing performance standards with monitoring results and whether each standard has been met.

9) Discussion of how the monitoring data were used to determine whether the site(s) is meeting performance standards.
10) Goals and objectives and a discussion of whether the project is progressing toward achieving them.
11) Summary, including dates, of management actions implemented at the site(s), for example, maintenance and corrective actions.
12) Summary of any difficulties or significant events that occurred on the site that may affect the success of the project.
13) Specific recommendations for additional maintenance or corrective actions with a timetable.
14) Photographs taken at permanent photo stations and other photographs, as needed. Photos must be dated and clearly indicate the direction the camera is facing. Photo pans are recommended.
15) Vicinity map showing the geographic location of the site(s) with landmarks.
16) Mitigation site map(s), 8-1/2" x 11" or larger, showing the following:
    a) Boundary of the site(s).
    b) Location of permanent photo stations and any other photos taken.
    c) Data sampling locations, such as points, plots, or transects.
    d) Approximate locations of any replanted vegetation.
    e) Changes to site conditions since the last report, such as areas of regrading, a shift in the location of Cowardin classes or habitat features, or a change in water regime.

    Include the month and year when each map was produced or revised. The site map(s) should reflect on-the-ground conditions during the most recent monitoring year.

Attachment E – Approved Jurisdictional Determination (NWS-2020-571)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch March 31, 2021

Mr. Thane Smith
NorthPoint Development
2265 East Murray Holladay Road
Holladay, Utah 94117

Reference: NWS-2020-571
NorthPoint Development
(AJD Request)

Dear Mr. Smith:

On March 22, 2021, we conducted a desk review of your Technical Memorandum for 51st Avenue Northeast Ditch and Ditch U, dated February 4, 2021, for the property at Marysville, Washington in response to your request for verification of the jurisdictional limits of waters of the U.S. in the review area as shown on the enclosed drawing dated February 4, 2021. The U.S. Army Corps of Engineers has determined that 51st Avenue East Ditch and Ditch U are not waters of the U.S. because they are excluded non-waters of the U.S. per 33 CFR Part 328.3 (b). As such, work that would occur within these areas does not require Department of the Army authorization under Section 404 of the Clean Water Act. This determination applies only to the review area. Other waters and wetlands that may occur on this property outside the review area are not the subject of this determination.

Other state and local regulations may still apply to these areas. For example, the Washington State Department of Ecology (Ecology) may regulate these areas. For information on how to obtain State approval for your project, you should contact Ecology's Federal Permit Coordinator at ecyrefedpermits@ecy.wa.gov or at (360) 407-6068. Information regarding State permitting requirements can also be found at the following website: https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations. We are sending a copy of this letter to Ecology and to the Environmental Protection Agency's Aquatic Resources Unit.

This approved jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination. A copy of this jurisdictional determination, dated March 31, 2021, can be found on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Jurisdictional Determinations". If you object to this determination, you may request an administrative appeal under our regulations (33 Code of Federal Regulations, Part 331) as

described in the enclosed Notification of Administrative Appeal Options and Process and Request for Appeal form.

A copy of this letter with drawings will be furnished to Mr. Matt DeCaro at matt@soundviewconsultants.com. If you have any questions, please contact me at Amanda.N.Nadjkovic@usace.army.mil or at (206) 316-3156.

Sincerely,

Amanda Nadjkovic

Amanda Nadjkovic, Project Manager
Regulatory Branch

Enclosures

CASCADE LOGISTICS PARK - DITCH EXHIBIT

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

CASCADE LOGISTICS PARK
NWS-2020-571

DATE:	2/4/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 350 '
FIGURE NO.	1 of 1

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 3/31/2021
ORM Number: NWS-2020-571
Associated JDs: AJD dated July 30, 2020 for NWS-2020-571 (51st Avenue East Ditch, Ditch V, Ditch W)
Review Area Location[1]: State/Territory: Washington City: Marysville County/Parish/Borough: Snohomish
Center Coordinates of Review Area: Latitude 48.132575 Longitude -122.161641

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
51st Avenue East Ditch	2,039	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	51st Avenue East Ditch is a constructed, excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portion of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.
Ditch U	1,016	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	Ditch U excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portion of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: Technical Memorandum for 51st Avenue East Ditch and Ditch U, dated February 4, 2021

This information is sufficient for purposes of this AJD.

Rationale: N/A or describe rationale for insufficiency (including partial insufficiency).

☐ Data sheets prepared by the Corps: Title(s) and/or date(s).

☒ Photographs: Aerial: Historic aerial imagery accessed via Google Earth, March 2021; Historic Aerials accessed via NETR Online, March 2021; Site photographs provided by Soundview Consultants, LLC dated February 4, 2021

☐ Corps site visit(s) conducted on: Date(s).

☒ Previous Jurisdictional Determinations (AJDs or PJDs): NWS-2020-571 (51st Avenue East Ditch, Ditch V, Ditch W) dated July 30, 2020

☐ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.

☐ USDA NRCS Soil Survey: Title(s) and/or date(s).

☐ USFWS NWI maps: Title(s) and/or date(s).

[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

☒ USGS topographic maps: Mount Vernon, Washington, 1911; Marysville, Washington, 1941, 1943; Arlington, Washington, 1956; Victoria, Washington, 1957; Port Townsend, Washington, 1975; Arlington West, Washington, 2020

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	Letter from Washington State Department of Fish and Wildlife, entitled "Deregulation of 51st Avenue Watercourse", dated January 16, 2009; Snohomish County PDS Map Portal accessed March 2021.
Other Sources	N/A.

B. Typical year assessment(s): N/A

C. Additional comments to support AJD:

The Corps previously determined that the portion of the 51st Avenue East ditch located north of 152nd Street Northeast is a (b)(5) ditch that is not an (a)(1) or (a)(2) water and was not constructed in an (a)(4) water (AJD for NWS-2020-571 dated July 30, 2020). The portion of the 51st Avenue East ditch located south of 152nd Street Northeast is the subject of this AJD.

Historically, a wetland mosaic existed in this portion of Snohomish County. Agricultural practices began in 1916, and drainage tiles were installed to effectively drain the wetland mosaic. The 51st Avenue East ditch was constructed between the years of 1943 and 1956, based on historical USGS topographic maps, for the purpose of seasonal stormwater conveyance. At the time of construction, the ditch appears to extend both to the north and south of 152nd Street Northeast. The 51st Avenue East ditch is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. The subject ditch has been identified as "Westphal Creek" on a 2017 USGS topographic map. Based on historic aerial imagery and topographic maps, there is no history of this creek or evidence to support that a creek was diverted into the subject ditch. The WDFW has determined that the ditch is not a natural watercourse and is entirely artificial. The WDFW found no recorded history that the ditch was a natural watercourse, and thus determined that it is not regulated under their jurisdiction. In addition, the City of Marysville has determined that the subject ditch is not a regulated waterbody under their jurisdiction. Based on historical aerial imagery and topographic maps, the subject ditch does not relocate a tributary, is not constructed in a tributary, and is not constructed in an adjacent wetland; thus the subject ditch does not meet the definition of a tributary.

Ditch U is an excavated ditch located north of and parallel to 152nd Street Northeast. The subject ditch provides an artificial drainageway for drain tiles presumably located in the adjacent, actively managed agricultural fields. The subject ditch is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. Based on a review of historic aerial imagery and topographic maps, the subject ditch does not relocate a tributary and is not constructed in a tributary. The subject ditch is not present on any USGS historic topographic maps dated 1911 through 2020; however, based on a review of aerial imagery the subject ditch was likely constructed concurrent with or after the construction of the 51st Avenue East ditch and other on-site artificial ditches between the years of 1943 and 1956. Due to the

presence of drainage tiles at the subject property since the early 1900s, it is likely that any historic wetlands would have been drained prior to construction of the subject drainage ditch. Based on this information, the subject ditch does not relocate a tributary, was not constructed in a tributary, and was not constructed in an adjacent wetland.

Attachment F – Administrative Order No. 21016

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • PO Box 330316 • Shoreline, Washington 98133-9716 • (206) 594-0000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 27, 2021

NorthPoint Holdings, LLC
Attn: Thane Smith
2265 East Murray Holladay Road
Holladay, UT 84117

Re: Administrative Order No. 20160 to permanently fill/impact 0.706 acres of non-federally regulated wetlands and 0.14 acres of non-federally regulated waters of the state at the Cascade Business Park project in the City of Marysville, Snohomish County, Washington

Dear Thane Smith:

The Department of Ecology (Ecology) received your Joint Aquatic Resources Permit Application (JARPA) on June 15, 2021, requesting an Administrative Order for proposed work in non-federally regulated wetlands and waters of the state. Ecology has determined that the proposed work, as conditioned by the enclosed Order, will comply with applicable provisions of Chapter 90.48 RCW and other applicable requirements of state law.

This approval is subject to the conditions contained in the enclosed Order. **You must familiarize yourself with and abide by the conditions in the Order, including all notification requirements.** If you have any questions, please contact Neil Molstad at (425) 389-5549 or neil.molstad@ecy.wa.gov. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Joe Burcar, Section Manager
Shorelands and Environmental Assistance Program
Northwest Regional Office

Enclosure

ec: Amanda Nadjkovic, U.S. Army Corps of Engineers
Matt DeCaro and Ben Wright, Soundview Consultants LLC
Chris Holland, City of Marysville
Loree' Randall, ECY HQ SEA
Rebekah Padgett, ECY NWRO SEA
Dana Mock, ECY HQ SEA
ECYREFEDPERMITS@ECY.WA.GOV

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF THE REQUEST BY NORTHPOINT HOLDINGS, LLC FOR AN ADMINISTRATIVE ORDER TO CONDUCT WORK IN NON-FEDERALLY REGULATED WETLANDS	)))))	ORDER No. 20160 Corps Ref. No. NWS-2020-571

TO: Northpoint Holdings, LLC
Attn: Thane Smith
2265 East Murray Holladay Road
Holladay, UT 84117

This is an Administrative Order requiring NorthPoint Holdings, LLC to comply with Chapter 90.48 RCW and the rules and regulations of the Department of Ecology (Ecology) by taking certain actions which are described below. RCW 90.48.120(1) authorizes Ecology to issue Administrative Orders requiring compliance whenever it determines that a person has violated or creates a substantial potential to violate any provision of Chapter 90.48 RCW.

On June 15, 2021, Ecology received a request to impact 0.706 acres of non-federally regulated wetland (more specifically, the feature known as the 51st Avenue Ditch) and 0.14 acres of a water of the state (more specifically, the feature known as Ditch U) to construct the Cascade Business Park project in Marysville and Arlington, Snohomish County. The U.S. Army Corps of Engineers (Corps) issued its jurisdictional determination on March 31, 2021 for this project area. The project site is located in portions of Sections 27 and 34, Township 31.N, Range 6.E, within Water Resource Inventory Area (WRIA) 7 (Snohomish).

The proposed project entails the construction of a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. The proposed project will result in approximately five acres of direct and indirect wetland impacts and involve the relocation of a portion of Edgecomb Creek and an unnamed tributary (Ditch X) to Edgecomb Creek. Impacts to federally regulated wetlands and waters have been authorized by Ecology under separate cover (see Ecology Section 401 Water Quality Certification Order # 20109).

This Administrative Order authorizes 0.706 acres of Category III wetland impacts (the 51st Avenue Ditch) and 0.14 acres of impacts to a water of the state (Ditch U) at the project location. Onsite mitigation for this proposal will occur as described in the *Cascade Business Park Final Mitigation Plan* dated May 27, 2021, prepared by Soundview Consultants LLC.

For purposes of this Order, the term "Applicant" shall mean NorthPoint Holdings, LLC, and its agents, assigns, and contractors.

In view of the foregoing and in accordance with RCW 90.48.120(1):

IT IS ORDERED that the Applicant shall comply with the following:

A. General Conditions:

A.1 The Applicant shall construct and operate the project in a manner consistent with the project description contained in the JARPA received by Ecology on June 15, 2021, or as otherwise approved by Ecology.

A.2 For purposes of this Order, all submittals required by its conditions shall be sent to Ecology's Northwest Regional Office, Attn: Neil Molstad, SEA Program, PO Box 330316, Shoreline, WA, 98133-9716, or via e-mail to fednotification@ecy.wa.gov and a cc to neil.molstad@ecy.wa.gov. Submittals via email are preferred. Any submittals shall reference Order No. 20160.

A.3 The Applicant shall provide access to the project site and mitigation site upon request by Ecology.

A.4 Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and forepersons, and state and local government inspectors.

A.5 Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect the public interest.

A.6 The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals. **These statements shall be provided to Ecology before construction begins at the project.**

B. Notification Requirements:

B.1 The Applicant shall provide written notification to Ecology in accordance with condition A.2 above for the following activities:

a. At least ten (10) days prior to a pre-construction meeting

b. At least ten (10) days prior to the onset of any work on site
c. At least ten (10) days prior to the onset of in-water work, including wetlands
d. At least seven (7) days within the start of impacts to wetlands
e. At least ten (10) days prior to the onset of work at the wetland mitigation site
f. Immediately following a violation of the state water quality standards or any condition of this Order
g. Within fourteen (14) days after completion of construction
h. At least seven (7) days prior to completing each wetland mitigation site

C. Wetland Compensatory Mitigation Conditions

C.1 The Applicant shall mitigate wetland impacts as described in the *Cascade Business Park Final Mitigation Plan* (hereafter called the "Mitigation Plan") prepared by Soundview Consultants LLC, and dated May 27, 2021, or as modified by this Order or revised and approved by Ecology.

C.2 The Applicant shall submit any changes to the Mitigation Plan in writing to Ecology (see A.2) for review and approval before work begins.

C.3 The Applicant shall get review and written approval from Ecology of any plan changes required if problems arise during construction and planting of the wetland mitigation site.

C.4 The Applicant shall have a wetland professional at the wetland mitigation site to supervise during construction and planting.

Implementation

C.5 Unless otherwise approved by Ecology in writing, the Applicant shall begin the compensatory mitigation project before, or concurrently with impacting wetlands, or Ecology may require additional compensation to account for additional temporal loss of wetland functions.

C.6 If the mitigation site(s) cannot be completed within 13 months of the date of this Order, the Applicant shall inform Ecology, in writing, of the status of:

a) The Cascade Business Park project.
b) The Cascade Business Park mitigation area.

With the:

c) Reason for the delay.
d) Expected date of completion.

The Applicant shall submit an updated written notification every 12 months thereafter until the Cascade Business Park project and the Cascade Business Park mitigation area are complete.

C.7 The Applicant shall ensure that all excess excavated site material is disposed of in an appropriate location outside of wetlands and their buffers at the wetland mitigation site and above the 100-year floodplain.

C.8 The Applicant shall ensure that no material is stockpiled within existing wetlands or their buffers at the wetland mitigation site(s) at any time, unless provided for in the Ecology-approved Mitigation Plan.

C.9 The Applicant shall ensure that no construction debris is deposited within existing wetlands or their buffers at the wetland mitigation site(s) at any time, unless provided for in the Ecology-approved Mitigation Plan.

C.10 The Applicant shall not use polyacrylamide at the mitigation site(s).

C.11 The Applicant shall not use hay or straw on exposed or disturbed soil at the mitigation site(s).

C.12 Aquatic herbicides can be used or applied only by certified applicators or persons under the direct supervision of a certified applicator, and only for those uses covered by the certified applicator's license category. Applicators are required to be permitted under Ecology's Noxious Weed Control Permit. Applicators shall comply with all conditions of the Noxious Weed Control Permit.

C.13 If weed-barrier fabric is used on the site, the Applicant shall use only permeable, fully biodegradable, non-toxic weed-barrier fabric for entire-site and/or individual plant weed control. Non-biodegradable plastic weed-barrier fabric shall be used only at the base of individual plants and shall be removed before it starts to break down, before it interferes with plant growth, or before the end of the monitoring period, whichever comes first.

C.14 If seeding is used as a best management practice for temporary erosion control, it must be a seed mix consisting of native, annual, non-invasive plant species.

C.15 The Applicant shall place signs at the mitigation area's(s') boundaries, including buffers, every 100 feet to mark the area as a wetland mitigation site.

C.16 Upon completion of site-grading and prior to planting, the Applicant shall submit to Ecology written confirmation, from a surveyor or project engineer, that the finished grades are consistent with the approved Mitigation Plan or subsequent Ecology-approved plan changes. The confirmation should indicate how final elevations were confirmed. The written confirmation can be in the form of an email or signed letter.

C.17 After completing construction and planting of the mitigation sites(s), the Applicant shall submit to Ecology (see A.2) an as-built report, including plan sheets, documenting site conditions at Year Zero. The as-built report must:

a) Be submitted within 90 days of completing construction and planting.
b) Include the information listed in Attachment B (Information Required for As-built Reports).
c) Include documentation of the recorded legal mechanism required in Condition C.18.

C.18 Within 90 days of completing construction and planting of the Cascade Business Park mitigation area, the Applicant shall record a restrictive covenant, a copy of this Order, and the site map from the final wetland Mitigation Plan or as-built indicating the location of wetlands and their buffers. These documents must be recorded with the County

Recording Office, Registrar of Deeds, or other official responsible for maintaining records for, or interest in, real property.

Monitoring and Maintenance

C.19 The Applicant shall water and maintain all mitigation site plantings so as to meet the Mitigation Plan's performance standards. If an irrigation system is installed, it shall be removed by the end of year three unless permission is received in writing from Ecology to allow the system to remain for a longer period.

C.20 The Applicant shall monitor the Cascade Business Park mitigation area for the number of years and shall use the monitoring methods described in the approved Mitigation Plan for the Cascade Business Park project.

C.21 The Applicant shall submit to Ecology (see A.2) monitoring reports documenting mitigation site conditions on the schedule outlined in the Cascade Business Park Mitigation Plan. The monitoring reports must:

a) Be submitted by December 31 of each monitoring year.
b) Include the information listed in Attachment C (Information Required for Monitoring Reports).

C.22 The Applicant shall implement the Mitigation Plan's contingency measures if the Mitigation Plan's goals, objectives, or performance standards are not being met.

C.23 Prior to implementing contingency measures not specified in the Mitigation Plan, the Applicant shall consult with and obtain written approval from Ecology for the changes.

C.24 When necessary to meet the performance standards, the Applicant shall replace dead or dying plants with the same species, or an appropriate native plant alternative, during the first available planting season and note species, numbers, and approximate locations of all replacement plants in the subsequent monitoring report.

C.25 The Applicant shall use the currently approved federal wetland delineation manual and appropriate regional supplement to delineate all compensatory wetlands and include delineation information (e.g. data sheets, maps, etc.) in the monitoring reports.

C.26 The Applicant shall use the October 2014 or updated version of "Washington State Wetlands Rating System for Western Washington" to rate all wetlands (except those that have been preserved) and include the information in the monitoring report.

C.27 If the Applicant has not met all conditions, including performance standards, for the mitigation site at the end of the monitoring period, Ecology may require additional monitoring, additional mitigation, or both.

C.28 Until the Applicant has received written notice from Ecology that the Mitigation Plan has been fully implemented, the Applicant's obligation under Condition C.1 to mitigate for wetland impacts is not met.

D. Water Quality Monitoring & Criteria

D.1 This Order does not authorize the Applicant to exceed applicable turbidity standards beyond the limits eastablished in Chapter 173-201A-200(1)(e)(i) WAC.

D.2 The 51st Avenue Ditch and Ditch U are categorized under the Water Quality Standards For Surface Waters of the State of Washington as habitat for salmonid spawning, rearing, and migration. The criteria of the categorization apply as described in WAC 173-201A-200(1), except as specifically modified by this Order.

D.3 For in-water activities within fresh waters (including wetlands) turbidity shall not exceed 5 NTU over background when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU;

a. Temporary area of mixing for turbidity established within the state water quality standards for fresh waters (WAC 173-201A-200) is as follows:
   i. For waters up to 10 cfs flow at the time of construction, the point of compliance shall be one hundred feet downstream from the activity causing the turbidity exceedance.
   ii. For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be two hundred feet downstream of the activity causing the turbidity exceedance.
   iii. For waters above 100 cfs flow at the time of construction, the point of compliance shall be three hundred feet downstream of the activity causing the turbidity exceedance.

For projects working within or along lakes, ponds, wetlands, or other non-flowing waters, the point of compliance shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.

D.4 The Applicant shall conduct water quality monitoring as described in the approved *Cascade Business Park Water Quality Monitoring Plan* (hereafter referred to as the WQMP) prepared by Soundview Consultants and dated May 27, 2021.

D.5 The Applicant must provide, in writing, any changes or additions to the WQMP and obtain approval from Ecology (email to fednotification@ecy.wa.gov and cc neil.molstad@ecy.wa.gov and rebekah.padgett@ecy.wa.gov prior to implementation of the changes or additions.

D.6 Monitoring results shall be submitted weekly to Ecology (email to fednotification@ecy.wa.gov and cc neil.molstad@ecy.wa.gov and rebekah.padgett@ecy.wa.gov), per condition A.2 and as described in the WQMP.

D.7 Mitigation and/or additional monitoring may be required if the monitoring results indicate that the water quality standards have not been met.

D.8 Visible turbidity anywhere beyond the temporary area of mixing (point of compliance) from the activity shall be considered an exceedance of the standard.

D.9 If water quality exceedances for turbidity are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of

the water quality problem and take immediate action to stop, contain, and correct the problem and prevent further water quality turbidity exceedances.

E. Construction

General Conditions

E.1 All work in and near waters of the state shall be conducted to minimize turbidity, erosion, and other water quality impacts. Construction stormwater, sediment, and erosion control Best Management Practices (BMPs) suitable to prevent exceedances of state water quality standards shall be in place before starting maintenance and shall be maintained throughout the duration of the activity.

E.2 All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.

E.3 No stockpiling or staging of materials shall occur at or below the OHWM of any waterbody.

E.4 The Applicant shall comply with the conditions of the Construction Stormwater Permit (National Pollutant Discharge Elimination System – NPDES) issued for this project.

E.5 Within the project limits[1] all environmentally sensitive areas including, but not limited to, wetlands, wetland buffers, and mitigation areas shall be fenced with high visibility construction (HVF) prior to commencing construction activities. Construction activities include equipment staging, materials storage, and work vehicle parking. *Note: This condition does not apply to activities such as pre-construction surveying and installing HVF and construction zone signage.*

a. If the project will be constructed in stages[2] a detailed description and drawings of the stages shall be sent to Ecology for review at least 20 days prior to placing HVF.
b. Condition 2.a. shall apply to each stage.
c. All field staff shall be trained to recognize HVF, understand its purpose and properly install it in the appropriate locations.
d. HVF shall be maintained until all work is completed for each project or each stage of a staged project.

E.6 All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.

E.7 No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.

[1] Project limits include mitigation sites, staging areas, borrow sources, and other sites developed or used to support project construction.
[2] A stage is part of a project that has been separated into at least two distinct areas to be built during separate timeframes.

E.8 All construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.

E.9 Turbid de-watering water associated with in-water work shall not be discharged directly to waters of the state, including wetlands. Turbid de-watering water shall be routed to an upland area for on-site or off-site settling.

E.10 Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour in the stream channel, banks, or vegetation.

E.11 All equipment being used below the ordinary high water mark shall utilize biodegradable hydraulic fluid.

Equipment & Maintenance

E.12 Staging areas will be located a minimum of 50 feet and, where practical, 200 feet, from waters of the state including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation and obtain approval from Ecology's Federal Permit Manager before placing the staging area in the 50-foot setback area.

E.13 Equipment used for this project shall be free of external petroleum-based products while used around the waters of the state, including wetlands. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of equipment prior to its use around waters of the state, including wetlands.

E.14 No equipment shall enter, operate, be stored or parked within any sensitive area except as specifically provided for in this Order.

E.15 Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

E.16 Wash water containing oils, grease, or other hazardous materials resulting from washing of equipment or working areas shall not be discharged into state waters. The Applicant shall set up a designated area for washing down equipment.

E.17 A separate area shall be set aside, which does not have any possibility of draining to surface waters, for the wash-out of concrete delivery trucks, pumping equipment, and tools.

Dewatering Conditions

E.18 It is anticipated that dewatering will not be necessary and that any work within the 51st Avenue Ditch and Ditch U will be conducted in the dry. However, if dewatering is necessary, the procedures described in the WQMP shall be implemented.

E.19 All equipment associated with dewatering activities shall be property operated and maintained.

Culvert Work & Stream Bypass

E.20 All culvert work shall be conducted in the dry or in isolation from stream flow.

E.21 Stream flow isolation work shall not scour the stream channel or banks of the water body in which the work is being done.

E.22 To minimize sediment releases into downstream water, water reintroduced to the channel shall be done gradually and at a rate not exceeding the normal stream flow.

E.23 Culverts shall be installed to avoid inlet scouring and prevent downstream bank erosion.

E.24. Fill associated with culvert installation shall be protected from erosion to the 100-year peak flow.

F. Timing

F.1 This Order is valid until the Applicant meets all its requirements and the Applicant has received written notification from Ecology to that effect.

F.2 In-water work shall be conducted in the 51st Avenue Ditch and Ditch U between July 16 and September 15 of any year, unless otherwise approved by Ecology.

F.3 Any project change that requires a new or revised Hydraulic Project Approval (HPA) from the Department of Fish and Wildlife should be sent to Ecology for review before the change is implemented. Proposed changes shall be implemented only with written approval from Ecology.

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

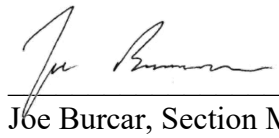
Neil Molstad
Department of Ecology
Northwest Regional Office
(425) 389-5549
neil.molstad@ecy.wa.gov

MORE INFORMATION

- **Pollution Control Hearings Board Website**
  http://www.eluho.wa.gov/Board/PCHB
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**
  http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B
- **Chapter 371-08 WAC – Practice And Procedure**
  http://app.leg.wa.gov/WAC/default.aspx?cite=371-08
- **Chapter 34.05 RCW – Administrative Procedure Act**
  http://app.leg.wa.gov/RCW/default.aspx?cite=34.05
- **Chapter 90.48 RCW – Water Pollution Control**
  http://app.leg.wa.gov/RCW/default.aspx?cite=90.48
- **Chapter 173.204 WAC – Sediment Management Standards**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204

- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**
  http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A

DATED July 27, 2021, at Shoreline, Washington.



Joe Burcar, Section Manager
Shorelands and Environmental Assistance Program
Northwest Regional Office

Attachment A
Statement of Understanding
Water Quality Certification Conditions

Cascade Business Park
NorthPoint Holdings, LLC
Administrative Order No. **20160**
and
Corps Reference No. **NWS-2020-0571**

I, _____, state that I will be involved as an agent or contractor for NorthPoint Holdings, LLC in the site preparation and/or construction of the Cascade Business Park located in Marysville and Arlington, Snohomish County, Washington. I further state that I have read and understand the relevant conditions of Washington Department of Ecology Water Quality Certification Order No. 20160 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

Signature	Date
Title	Phone
Company	

Attachment B
Information Required for As-built Reports

Cascade Business Park
Administrative Order # 20160
And
Corps Reference # NWS-2020-0571

Ecology requires the following information for as-built reports submitted under this Order. Ecology will accept additional information that may be required by other agencies.

Background Information

1) Project name.
2) Ecology Order number and the Corps reference number.
3) Name and contact information of the person preparing the as-built report. Also, if different from the person preparing the report, include the names of:
    a) The applicant
    b) The landowner
    c) Wetland professional on site during construction of the mitigation site(s).
4) Date the report was produced.

Mitigation Project Information

5) Brief description of the **final** mitigation project with any changes from the approved plan made during construction. Include:
    a) **Actual** acreage of Cowardin classes and mitigation type(s) (re-establishment, rehabilitation, creation, enhancement, preservation, upland, buffers).
    b) Important dates, including:
        i. Start of project construction.
        ii. When work on the mitigation site began and ended.
        iii. When different activities such as grading, removal of invasive plants, installing plants, and installing habitat features began and ended.
6) Description of any problems encountered and solutions implemented (with reasons for changes) during construction of the mitigation site(s).
7) List of any follow-up actions needed, with a schedule.
8) Vicinity map showing the geographic location of the site(s) with landmarks.
9) Mitigation site map(s), 8-1/2" x 11" or larger, showing the following:
    a) Boundary of the site(s).
    b) Topography (with a description of how elevations were determined).
    c) Installed planting scheme (quantities, densities, sizes, and approximate locations of plants, as well as the source(s) of plant material).
    d) Location of habitat features.
    e) Location of permanent photo stations and any other photos taken.

    Include the month and year when each map was produced or revised. The site map(s) should reflect on-the-ground conditions after the site work is completed.
10) Photographs taken at permanent photo stations and other photographs, as needed. Photos must be dated and clearly indicate the direction from which each photo was taken. Photo pans are recommended.

11) A copy of any deed notifications, conservation easements, or other approved site protection mechanism.

Attachment C
Information Required for Monitoring Reports

Cascade Business Park
Ecology Administrative Order # 20160
And
Corps Reference # NWS-2020-0571

Ecology requires the following information for monitoring reports submitted under this Order. Ecology will accept additional information that may be required by other agencies.

Background Information

1) Project name.
2) Ecology Order number and the Corps reference number.
3) Name and contact information of the person preparing the monitoring report. Also, if different from the person preparing the report, include the names of:
   a) The applicant
   b) The landowner
   c) The party responsible for the monitoring activities.
4) Dates the monitoring data were collected.
5) Date the report was produced.

Mitigation Project Information

6) Brief description of the mitigation project, including acreage of Cowardin classes and mitigation type(s) (re-establishment, rehabilitation, creation, enhancement, preservation, upland, buffers).
7) Description of the monitoring approach and methods. For each performance standard being measured provide the following information:
   a) Description of the sampling technique (e.g., monitoring point for soil or hydrology, line or point intercept method, ocular estimates in individually placed plots). If you are using a standardized technique, provide a reference for that method.
   b) Size and shape of plots or transects.
   c) Number of sampling locations and how you determined the number of sampling locations to use.
   d) Percent of the mitigation area being sampled.
   e) Locations of sampling (provide a map showing the locations), how you determined where to place the sampling locations (e.g., simple random sample), and whether they are permanent or temporary.
   f) Schedule for sampling (how often and when).
   g) Description of how the data was evaluated and analyzed.
8) Summary table(s) comparing performance standards with monitoring results and whether each standard has been met.

9) Discussion of how the monitoring data were used to determine whether the site(s) is meeting performance standards.
10) Goals and objectives and a discussion of whether the project is progressing toward achieving them.
11) Summary, including dates, of management actions implemented at the site(s), for example, maintenance and corrective actions.
12) Summary of any difficulties or significant events that occurred on the site that may affect the success of the project.
13) Specific recommendations for additional maintenance or corrective actions with a timetable.
14) Photographs taken at permanent photo stations and other photographs, as needed. Photos must be dated and clearly indicate the direction the camera is facing. Photo pans are recommended.
15) Vicinity map showing the geographic location of the site(s) with landmarks.
16) Mitigation site map(s), 8-1/2" x 11" or larger, showing the following:
    a) Boundary of the site(s).
    b) Location of permanent photo stations and any other photos taken.
    c) Data sampling locations, such as points, plots, or transects.
    d) Approximate locations of any replanted vegetation.
    e) Changes to site conditions since the last report, such as areas of regrading, a shift in the location of Cowardin classes or habitat features, or a change in water regime.

    Include the month and year when each map was produced or revised. The site map(s) should reflect on-the-ground conditions during the most recent monitoring year.

Attachment G – Hydraulic Project Approval (2021-4-329+01)

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: July 01, 2021
Project End Date: June 30, 2026

Permit Number: 2021-4-439+01
FPA/Public Notice Number: N/A
Application ID: 24913

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
NP Arlington MIC Industrial LLC	Soundview Consultants
ATTENTION: Thane Smith	ATTENTION: Jeremy Downs
2265 East Murray Holladay Road, Suite 500	2907 Harborview Dr
Holladay, UT 84117	Gig Harbor, WA 98335-1924

Project Name: Cascade Business Park Edgecomb Creek Realignment

Project Description: The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park. The project was carefully designed in attempts to minimize impacts to waterbodies to the greatest extent feasible. However, complete avoidance of aquatic features is not possible due to the central location of the ditched Edgecomb Creek on the subject property, and the large spatial footprints required for industrial buildings and associated utilities and road infrastructure. In order to accommodate the purpose and need for the industrial site development, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet), fill and realignment of Tributary X (1,167 linear feet). The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic connection to offsite side channels on tax parcel number 31052700200900, resulting in 496 linear feet of direct impacts to these offsite side channels. In addition, the proposed project will require 0.707 acres of fill of the 51st Avenue East Ditch. A box culvert will be added beneath 152nd Street Northeast to convey the re-aligned stream channel.

PROVISIONS

TIMING - PLANS - INVASIVE SPECIES CONTROL

1. TIMING LIMITATION: You may begin the project immediately and you must complete the project by June 30, 2026, provided any work below the ordinary high water line occur between July 16 and September 15 of a given calendar year.

2. APPROVED PLANS: You must accomplish the work per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled, "Cascade Business Park Project Drawings 2021 -05-26.pdf," and, "Pages 1-21 from EdgecombCreek_100%ConstructionDrawings 6.2.21.pdf," and, "Pages 22-51 from EdgecombCreek_100%ConstructionDrawings 6.2.21.pdf," and, "Updated 6.7.21 EdgecombCk coversheet-Notes.pdf," received June 10, 2021, and the plans, entitled, "Final Mitigation Plan Cascade Business Park 06.01.21.pdf," received June 9, 2021, and the plans, entitled, "Cascade Business Park Fish Exclusion and Protection Plan 04.23.21.pdf," received April 26, 2021, and the plans, entitled, "Temporary Stream Crossing and Pump Around Details.pdf, " received April 28, 2021, and the plans, entitled, "152ND ST NE Culvert Crossing Plan and Profile_20210624.pdf," received July 1, 2021, and the supporting document, entitled, "Cascade Business Park Response to WDFW Comments 6-9-21.pdf," received June 9, 2021, and all supporting documents and communications uploaded to the Aquatic Protection Permitting System (APPS) project file; except as modified by this Hydraulic Project Approval. You must have a copy of these plans available on site during all phases of the project construction.

3. INVASIVE SPECIES CONTROL: Follow Method 1 for low risk locations (i.e. clean/drain/dry). Thoroughly remove visible dirt and debris from all equipment and gear (including drive mechanisms, wheels, tires, tracks, buckets, and undercarriage) before arriving and leaving the job site to prevent the transport and introduction of invasive species. For

contaminated or high risk sites please refer to the Method 2 Decontamination protocol. Properly dispose of any water and chemicals used to clean gear and equipment. You can find this and additional information in the Washington Department of Fish and Wildlife's "Invasive Species Management Protocols", available online at https://wdfw.wa.gov/species-habitats/invasive/prevention.

NOTIFICATION REQUIREMENTS

4. PRE-, DURING, AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, one day before removing the temporary bypass and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

5. PHOTOGRAPHS: You, your agent, or contractor must take photographs of the job site before the work begins and after the work is completed. You must upload the photographs to the post-permit requirement page in the Aquatic Protection Permitting System (APPS) or mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234 within 30-days after the work is completed.

6. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS, AND EQUIPMENT

7. Establish staging areas (used for equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

8. This Hydraulic Project Approval authorizes the construction of no more than 2 new temporary access roads, as shown in the approved plans.

9. Design and locate new temporary access roads to prevent erosion and sediment delivery to waters of the state.

10. The hydraulic capacity of the temporary stream crossings must be equal to or greater than the 25-year peak flow event expected when the crossings will be in place.

11. Clearly mark boundaries to establish the limit of work associated with site access and construction.

12. Limit the removal of native bankline vegetation to the minimum amount needed to construct the project.

13. Confine the use of equipment to the specific access and work corridor shown in the approved plans.

14. Equipment used for this project may operate waterward of the ordinary high water line, provided the drive mechanisms (wheels, tracks, tires, etc.) do not enter or operate waterward of the ordinary high water line prior to bypassing flow out of the work area.

15. Check equipment daily for leaks and complete any required repairs in an upland location before using the equipment in or near the water.

16. Use environmentally acceptable lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

17. All work must occur in the dry watercourse (when no natural flow is occurring in the channel, or when flow is diverted around the job site).

18. Protect all disturbed areas from erosion. Maintain erosion and sediment control until all work and cleanup of the job site is complete.

19. All erosion control materials that will remain onsite must be composed of 100% natural fiber biodegradable materials.

20. Straw used for erosion and sediment control, must be certified free of noxious weeds and their seeds.

21. Stop all hydraulic project activities except those needed to control erosion and siltation, if flow conditions arise that will result in erosion or siltation of waters of the state.

22. Prevent project contaminants, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

23. Route construction water (wastewater) from the project to an upland area above the limits of anticipated floodwater. Remove fine sediment and other contaminants before discharging the construction water to waters of the state.

24. To prevent leaching, construct forms to contain any wet concrete. Place impervious material over wet concrete that will come in contact with waters of the state. Forms and impervious materials must remain in place until the concrete is cured.

25. Use tarps or other methods to prevent treated wood, sawdust, trimmings, drill shavings and other debris from contacting the bed or waters of the state.

26. Deposit waste material from the project, such as construction debris, silt, excess dirt, or overburden, in an upland area above the limits of anticipated floodwater unless the material is approved by the Washington Department of Fish and Wildlife for reuse in the project.

27. Deposit all trash from the project at an appropriate upland disposal location.

CONSTRUCTION MATERIALS

28. Store all construction and deconstruction material in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

29. Do not stockpile construction material waterward of the ordinary high water line.

IN-WATER WORK AREA ISOLATION USING BLOCK NETS

30. Install block nets at sites with reduced flow volume or velocity, uniform depth, and good accessibility.

31. Place block nets upstream and downstream of the in-water work area, before capturing and removing fish life. Install block nets in flat water pools and at an angle to the direction of flow (not perpendicular to the flow) to avoid entrapping fish in the nets. After the first block net is secured at the upstream end, use a second block net to herd fish downstream and out of the project area. Install a downstream block net if fish may reenter the work area from downstream. To anchor block nets, place bags filled with clean round gravel along the bottom of the nets. Secure block nets along both banks and the channel bottom to prevent failure from debris accumulation, high flows, and/or flanking.

32. Block nets must be checked frequently throughout the day to ensure they remain installed along the banks and creek bottom, that there are no entangled fish, and it is clear of accumulated debris. Natural debris may be released into free-flowing water downstream of the bypass.

IN-WATER WORK AREA ISOLATION USING A TEMPORARY BYPASS

33. Isolate fish from all work areas by using a total bypass to reroute the stream through a temporary pipe.

34. Sequence the work to minimize the duration of dewatering and design the temporary bypass to minimize the length of the dewatered stream channel.

35. Use the least-impacting feasible method to temporarily bypass water from the work area. Consider the physical characteristics of the sites and the anticipated volume of water flowing through the work area. The hydraulic capacity of the stream bypass must be equal to or greater than the peak flow event expected when the bypass will be operated.

36. Return diverted water to the channel immediately downstream of the work area. Dissipate flow energy from the diversion to prevent scour or erosion of the channel and bank.

37. If the bypass is a pumped diversion, once started it must run continuously until it is no longer necessary to bypass flows. This requires back-up pumps on-site and twenty-four-hour monitoring for overnight operation.

38. If the diversion inlet is a pump diversion in a fish-bearing stream, the pump intake structure must have a fish screen installed, operated, and maintained in accordance with RCW 77.57.010 and 77.57.070. Screen the pump intake with one of the following:
a) Perforated plate: 0.094 inch (maximum opening diameter);
b) Profile bar: 0.069 inch (maximum width opening); or
c) Woven wire: 0.087 inch (maximum opening in the narrow direction).
The minimum open area for all types of fish screens is twenty-seven percent. The screened intake facility must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Maintain fish screens to prevent injury or entrapment of fish.

39. The fish screen must remain in place whenever water is withdrawn from the stream through the pump intake.

FISH LIFE REMOVAL

40. The permittee must capture and safely move fish life from all work areas to the nearest suitable free-flowing water. All persons participating in capture and removal must have training, knowledge, and skills in the safe handling of fish life.

41. If electrofishing is conducted, a person with electrofishing training must be on-site to conduct or direct all electrofishing activities.

42. If freshwater mussels are observed, capture and safely move all freshwater mussels to the nearest suitable location. Someone with experience in freshwater mussel relocation must be on-site to conduct or direct all mussel relocation activities.

WATER CROSSING REMOVAL

43. Remove the culvert in the dry or in isolation from the stream flow by using a bypass channel or culvert, or by pumping the stream flow around the work area.

44. Remove all the components of a bridge or culvert crossing (approach material, sills, stringers, deck, riprap, guardrails, etc.).

WATER CROSSING STRUCTURE

45. This HPA authorizes the installation of one permanent water crossing structure at 152nd Street NE, as shown in the approved plans.

46. Establish the culvert invert elevation with reference point(s) or benchmark(s) created before to starting work on this project. Clearly mark and preserve the reference point(s) for post-project compliance. Before backfilling, confirm the invert elevation, as stated on the plans, relative to the reference points with at least a construction-grade leveling device (such as an optical auto-level or laser level).

47. The authorized culvert is a stream simulation design.

48. The length of the culvert must not exceed 99 feet.

49. The span of the water crossing structure must be a minimum of 21 feet and 10 inches.

50. Set the stream simulation culvert at the same gradient as the prevailing stream gradient of 0.53 percent.

51. Place a minimum depth of 18 inches of clean, rounded and well-graded (includes all size classes) streambed material as shown in the approved plans. Angular rock is not permitted within the channel or culvert.

52. The streambed must include a sinuous low-flow channel expected under common conditions in the reach and a high-flow bench on both sides of the culvert.

53. Protect structural fill associated with the culvert installation from erosion to the 100-year peak flow.

54. Minimize damage to the bed and banks when placing the culvert.

55. Approach material must be structurally stable and composed of material that if eroded into the water will not harm fish life.

56. The owner(s) must maintain the culvert to ensure it provides continued, unimpeded fish passage. If the culvert becomes a hindrance to fish passage, the owner must obtain an Hydraulic Project Approval and provide prompt repair.

CHANNEL RELOCATION AND REALIGNMENT

57. The new channel(s) must incorporate habitat components, bed materials, channel morphology, and native or other approved vegetation to provide better habitat compared to that which previously existed in the old channel, as indicated in the approved plans.

58. During construction, isolate the new channel from the flowing watercourse.

59. The streambed must include a sinuous low-flow channel expected under common conditions in the reach and a high-flow bench on both sides of the water crossing structure.

60. Place a minimum depth of 1 foot of 2.5 inch minus streambed material throughout the entirety of the Reach 1. Size streambed material as listed in WSDOT specifications under 9-03.11(1) Streambed Sediment, as shown in the approved plans. The material must be rounded, well-graded (includes all size classes), non-porous, and with 5-10% fines with sieve size U.S. No. 200 to prevent subsurface flow.

61. Install the quantity and size of woody material habitat structures at the locations shown in the approved plans cited in provision 2. The applicant may install additional wood habitat structures.

62. Before water is diverted into a permanent new channel(s), install approved habitat components and bed and bank protection materials to prevent erosion as shown in the approved plan.

63. Place spoils from the new channel in an upland area above the limits of anticipated floodwater. This material may be used as fill for the old channel once the stream is diverted into the new channel.

64. The angle of the structure used to divert the water into the new channel(s) must allow a smooth transition of water flow.

65. Streambed shall have adequate surface flow and flow continuity upon completion.

66. The Habitat Biologist listed below or their representative must inspect and approve the new channel before the stream is diverted into the channel.

BEAVER DAM MANAGEMENT

67. You must contact the Habitat Biologist to arrange a site visit and obtain approval prior to conducting any beaver dam management activities.

68. Remove or notch beaver dams by hand or with hand-held tools and hand-operated or motorized winches.

69. Notch the dam gradually to allow the water to release slowly. This will prevent the downstream release of accumulated sediment from the bottom of the pond and damage to the stream bed and banks from scour and erosion.

70. The notch in the beaver dam must not be wider than a maximum of 4 feet.

71. The invert elevation of the dam notch must be no lower than a minimum elevation of 6-inches above the accumulated sediment behind the dam.

72. This permit allows for the removal of newly constructed beaver dams that have been in place for less than one year. You must contact the Habitat Biologist for approval prior to dam removal. Beaver dams that have been present on the landscape more than one full year will require an individual HPA for removal.

73. Before starting work, install sediment and erosion control measures to prevent sediment from entering waters of the state. Inspect the sediment and erosion control measures regularly during construction and make all needed repairs if any damage occurs.

74. Remove the dam gradually to allow the water to release slowly. This will prevent the downstream release of accumulated sediment from the bottom of the pond and damage to the stream bed and banks from scour and erosion.

75. Do not disturb large woody material embedded in the stream bed or banks.

76. During and immediately after removal, monitor upstream and downstream for stranded fish in isolated pools. Capture and safely move all stranded or isolated fish to the nearest free-flowing water.

DEMOBILIZATION AND CLEANUP

77. Do not relocate removed or replaced structures within waters of the state. Remove and dispose of these structures in an upland area above the limits of anticipated floodwater.

78. Before the end of the in-water work period specified in the “timing limitations” provision, remove all temporary stream crossings.

79. To prevent fish from stranding, backfill trenches, depressions, and holes in the bed that may entrain fish during high water or wave action.

80. To minimize sediment delivery to the stream or stream channel, do not return in-stream flows to the work area until all in-channel work is completed and the bed and banks are stabilized.

81. Upon completion of the project, remove all materials or equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.

82. Return water flow slowly to the in-water work area to prevent the downstream release of sediment laden water. If necessary, install silt fencing above the bypass outlet to capture sediment during re-watering of the channel.

83. Remove temporary erosion and sediment control methods after job site is stabilized or within three months of project completion, whichever is sooner.

MONITORING AND REPORTING REQUIREMENTS

84. RE-VEGETATION: You must complete replanting of woody riparian vegetation by the end of the first dormant season (late fall through late winter) after the new channel has been constructed. Maintain plantings in accordance with the goals, objectives and performance standards provided in the Final Mitigation Plan cited in provision 2. Failure to achieve meet these goals, objectives and performance standards will require you to submit a plan with follow-up measures to achieve requirements or reasons to modify requirements. You must provide annual monitoring reports in accordance with the plans and upload them to the post-permit requirement page in the Aquatic Protection Permitting System (APPS) or mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234 no later than December 31 of each year.

85. The owner(s) must monitor and maintain the crossing structure and constructed channel to ensure it provides continued, unimpeded fish passage and meets the goals, objectives, and performance standards provided in the Final Mitigation Plan cited in provision 2. If the constructed channel becomes a hindrance to fish passage or does not meet the provided goals, objectives, and performance standards, the owner must obtain an Hydraulic Project Approval and provide prompt repair.

86. Monitor woody structures annually to ensure they function as designed per the approved plans cited in provision 2. The Habitat Biologist must be consulted if woody structures do not meet the above requirements.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 01, 2021
Project End Date: June 30, 2026

Permit Number: 2021-4-439+01
FPA/Public Notice Number: N/A
Application ID: 24913

LOCATION #1:	, Marysville and Arlington, WA					
WORK START:	July 1, 2021			WORK END:	June 30, 2026	
WRIA		Waterbody:			Tributary to:	
07 - Snohomish		Edgecomb Creek			Quilceda Creek Middle Fork	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
Center	27	31 N	05 E	48.142339	-122.150983	Snohomish
Location #1 Driving Directions						
To access the subject property from I-5 North, take Exit 206 for WA-531 East. Turn right on WA-531 East/172nd Street Northeast/Edgecomb Road and continue for 2.1 miles. The subject property will be on the right before 67th Avenue Northeast.						

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

HYDRAULIC PROJECT APPROVAL

Issued Date: July 01, 2021
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MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

HYDRAULIC PROJECT APPROVAL

Issued Date: July 01, 2021
Project End Date: June 30, 2026

Permit Number: 2021-4-439+01
FPA/Public Notice Number: N/A
Application ID: 24913

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	Ashley.Kees@dfw.wa.gov	Ashley Kees	for Director
Ashley Kees	425-765-9157		WDFW

Attachment H – Wetland and Fish and Wildlife Habitat Assessment Report

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

CASCADE BUSINESS PARK (NWS-2020-571)

REVISED APRIL 2021

AUGUST 2020

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

CASCADE BUSINESS PARK (NWS-2020-571)

REVISED APRIL 1, 2021

AUGUST 15, 2020

PROJECT LOCATION

6600 172ND STREET NORTHEAST
ARLINGTON, WASHINGTON 98223

15223 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

16015 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

5414 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

PREPARED FOR

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
RIVERSIDE, MISSOURI 64150

PREPARED BY

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98335
(253) 514-8952

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting NorthPoint Holdings, LLC (Applicant) with wetland and habitat assessments and environmental regulatory compliance support for the planned development of the Cascade Business Park on a 361.19-acre site located in the Cities of Arlington and Marysville, Washington. The subject property consists of 14 tax parcels situated in the Northeast and Southwest ¼ of Section 27 and Northwest and Southwest ¼ of Section 34, Township 31 North, Range 5 East, W.M. (Snohomish County Tax Parcel Numbers (Snohomish County Tax Parcel Numbers 31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, and 31053400300300).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, and other fish and wildlife habitat on multiple dates in March, April, May, June, July, August, September, and October of 2020 and January, February, and March of 2021. SVC delineated a total of 41 wetlands (Wetlands A-Z, AA-AM), one stream (Edgecomb Creek), and one fish-bearing agricultural ditch (Tributary X) and estimated the boundaries of four additional agricultural or roadside ditches (51st Avenue East Ditch, two 152nd Street Ditches, and Ditch U) in the project area. SVC also installed continuous water quality data loggers (flow, temperature, and dissolved oxygen) in Edgecomb Creek in June 2020 that continue to be monitored. Parcels located to the east of the Burlington – Northern Santa Fe (BNSF) railroad tracks are not included in the proposed development and as such were not evaluated for the purpose of this report. The United States Army Corps of Engineers (USACE) and Washington State Department of Ecology (WSDOE) conducted a site visit with SVC on February 9, 2021; WSDOE conducted additional site visits with SVC on October 9, 2020 and March 10, 2021. During the February and March 2021 site visits, two additional wetlands (Wetlands AL and AM) were identified, and the boundary of Wetland AH was revised. WSDOE provided concurrence with boundaries of all wetlands in the proposed project area in a letter dated March 17, 2021 (Appendix K). A revised assessment report was submitted to USACE on December 22, 2020 to incorporate formal wetland delineation and rating results of previously estimated wetlands on the southern portions of the subject property. This assessment report has been updated to incorporate formal wetland delineation and rating results of the two additional wetlands (Wetlands AL and AM) and the revised boundary of Wetland AH.

In general, Wetlands A-D, J-N, P-U, W, X, AC, AE-AG, and AK-AM are considered Category IV depressional wetlands with standard buffers ranging from 35 feet per Marysville Municipal Code (MMC) 22E.010.100(4) to 40 feet per Arlington Municipal Code (AMC) 20.93.830 Table 20.93-4. Wetlands E-G, I, O, V, Y, AA, AB, AD, AI and AJ are considered Category III depressional or riverine wetlands with standard buffers of 75 feet for the City of Marysville and ranging from 60 to 105 feet for the City of Arlington. Wetlands H and AH are considered Category II riverine wetlands with standard buffers of 165 feet for the City of Arlington based on the moderate habitat score of 6-7 points (Wetland H) and 100 feet for the City of Marysville (Wetland AH). Edgecomb Creek is considered a Type F (City of Marysville) and Type F-ESA (City of Arlington) stream with a standard 150-foot buffer under MMC 22E.010.220.1.a and AMC 20.93.730. Tributary X provides off-channel habitat to Edgecomb Creek and as such is considered a Type F-ESA water by Arlington and subject to a standard 150-foot buffer.

After extensive research and coordination, WSDOE determined that the 51st Avenue East Ditch was likely constructed from a wetland in the early 1900s (email correspondence between Soundview Consultants and Neil Molstad, WSDOE, 10/28/2020). The Applicant has indicated their disagreement with WSDOE's determination; however, the Applicant has decided to accept the positive wetland determination for the 51st Avenue East Ditch in order to expedite the permitting process for the Cascade Business Park project. The 51st Avenue East Ditch will be treated as a Category III wetland and subject to a standard 75-foot buffer in the City of Marysville. The USACE has identified the 51st Avenue East Ditch and Ditch U are non-jurisdictional under the Navigable Waters Protection Rule (NWPR) (USACE, 2020 and USACE, 2021). The remaining roadside ditches (two 152nd Street Ditches) are artificially excavated agricultural ditches and are not likely regulated as streams or wetlands under MMC 22E.010 Article II or Article III or jurisdictional under the NWPR. Ditch U is likely regulated as a "waters of the state" under the Revised Code of Washington (RCW) 90.48.

The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. Overall, the project requires unavoidable direct impacts to 3.57 acres of federally jurisdictional wetlands (plus 0.71 acres of additional fill of the non-jurisdictional 51st Avenue East Ditch which is being treated as a wetland at the local and state levels), 10,165 linear feet of Edgecomb Creek, and 1,167 linear feet of Tributary X. An additional 0.595 acre of indirect wetland impacts is proposed. To improve fish access to and upstream of the restored riparian corridor, the Applicant will also coordinate with BNSF to replace two partial fish barrier culverts with upgraded culverts designed to improve fish access and convey Edgecomb Creek beneath the railroad. A full description of aquatic impacts, necessary regulatory analysis, and compensatory mitigation details is provided in SVC's Conceptual Mitigation Plan under separate cover.

The table below identifies the wetlands, streams and ditches observed during the site investigation and summarizes the potential regulatory status by the USACE.

Wetland / Waterbody	Size/Length Onsite	Local Jurisdiction Location	Category/ Type[1]	Regulated under Section 404 of the CWA[2]
A	1,369 SF	Arlington	IV	Assumed[3]
B	4,859 SF	Arlington	IV	Assumed[3]
C	4,841 SF	Arlington	IV	Assumed[3]
D	3,537 SF	Arlington	IV	Assumed[3]
E	775 SF	Arlington	III	Likely
F	386 SF	Arlington	III	Likely
G	987 SF	Arlington	III	Likely
H	6,279 SF	Arlington	II	Likely
I	377 SF	Marysville	III	Likely
J	334 SF	Marysville	IV	Assumed[3]

K	16,836 SF	Marysville	IV	Assumed[3]
L	15,756 SF	Marysville	IV	Likely
M	1,969 SF	Marysville	IV	Assumed[3]
N	8,133 SF	Marysville	IV	Assumed[3]
Offsite O	N/A	Arlington/ Marysville	III	Assumed[3]
P	550 SF	Arlington	IV	Assumed[3]
Q	2,522 SF	Arlington	IV	Assumed[3]
R	1,773 SF	Arlington	IV	Assumed[3]
Offsite S	N/A	Marysville	IV	Assumed[3]
Offsite T	N/A	Marysville	IV	Assumed[3]
U	4,909 SF	Marysville	IV	Assumed[3]
V	5,945 SF	Arlington	III	Assumed[3]
W	258 SF	Marysville	IV	Assumed[3]
X	4,492 SF	Marysville	IV	Assumed[3]
Y	662 SF	Arlington	III	Likely
Z	483 SF	Marysville	III	Likely
AA	574 SF	Marysville	III	Likely
AB	1,166 SF	Marysville	III	Likely
AC	4,866 SF	Marysville	IV	Assumed[3]
AD	2,462 SF	Marysville	III	Likely
AE	11,346 SF	Marysville	IV	Assumed[3]
AF	615 SF	Marysville	IV	Assumed[3]
AG	285 SF	Marysville	IV	Assumed[3]
AH	180,709 SF	Marysville	II	Likely
AI	3,873 SF	Marysville	III	Likely
AJ	2,471 SF	Marysville	III	Likely
AK	696 SF	Marysville	IV	Assumed[3]
AL	11,835 SF	Marysville	IV	Likely
AM	3,021 SF	Marysville	IV	Assumed[3]
Edgecomb Creek	10,723 LF	Arlington/ Marysville	F-ESA F	Likely

51st Avenue East Ditch	44,087 LF	Marysville	N/A (non-typed)[5]	Non-Jurisdictional (USACE, 2020 and USACE, 2021)
Ditch U	1,223 LF	Marysville	N/A (non-typed)	Unlikely
Tributary X	1,167 LF	Arlington	F-ESA	Assumed[3]
152nd Street Ditches	~0.33 mile	Marysville	N/A (non-typed)	Unlikely

Notes:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per MMC 22E.010.060.1 and AMC 20.93.800.a. DNR Water Typing system per MMC 22E.010.060.1. and AMC 20.93.700.
2. Per 2020 Navigable Waters Protection Rule.
3. Potentially non-jurisdictional federally; however, regulation under Section 404 of the CWA assumed in order to expedite permitting process.
4. Does not include approximately 732 linear feet of ditch located on Parcels 31052700300600, 31052700301000, and 31053400201400, outside of the project area but likely affected by frontage improvement requirements along 51st Avenue Northeast.
5. The 51st Avenue East Ditch, which is non-jurisdictional federally, is being treated as a Category III wetland to expedite the local and state permitting processes.

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Appendices

Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting NorthPoint Holdings, LLC (Applicant) with wetland and habitat assessments and environmental regulatory compliance support for the planned development of the Cascade Business Park on a 361.19-acre site located in the Cities of Arlington and Marysville, Washington. The subject property consists of 14 tax parcels situated in the Northeast and Southwest ¼ of Section 27 and Northwest and Southwest ¼ of Section 34, Township 31 North, Range 5 East, W.M. (Snohomish County Tax Parcel Numbers (Snohomish County Tax Parcel Numbers 31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, and 31053400300300).

The purpose of this Wetland and Fish and Wildlife Habitat Assessment Report is to identify the presence of potentially regulated wetlands, waterbodies, or other fish and wildlife habitat that may be found on or near the subject property. A full description of aquatic impacts and compensatory mitigation details is provided in SVC's Conceptual Mitigation Plan under separate cover.

This report provides conclusions and recommendations regarding:

- Site description, project description, and areas of assessment;
- Background research, identification, and assessment of potentially regulated wetlands, streams, and other waters in the vicinity of the proposed project;
- Existing site maps detailing potentially regulated wetlands, streams, other waters, and standard buffers according to local code requirements; and
- Supplemental information necessary for regulatory review.

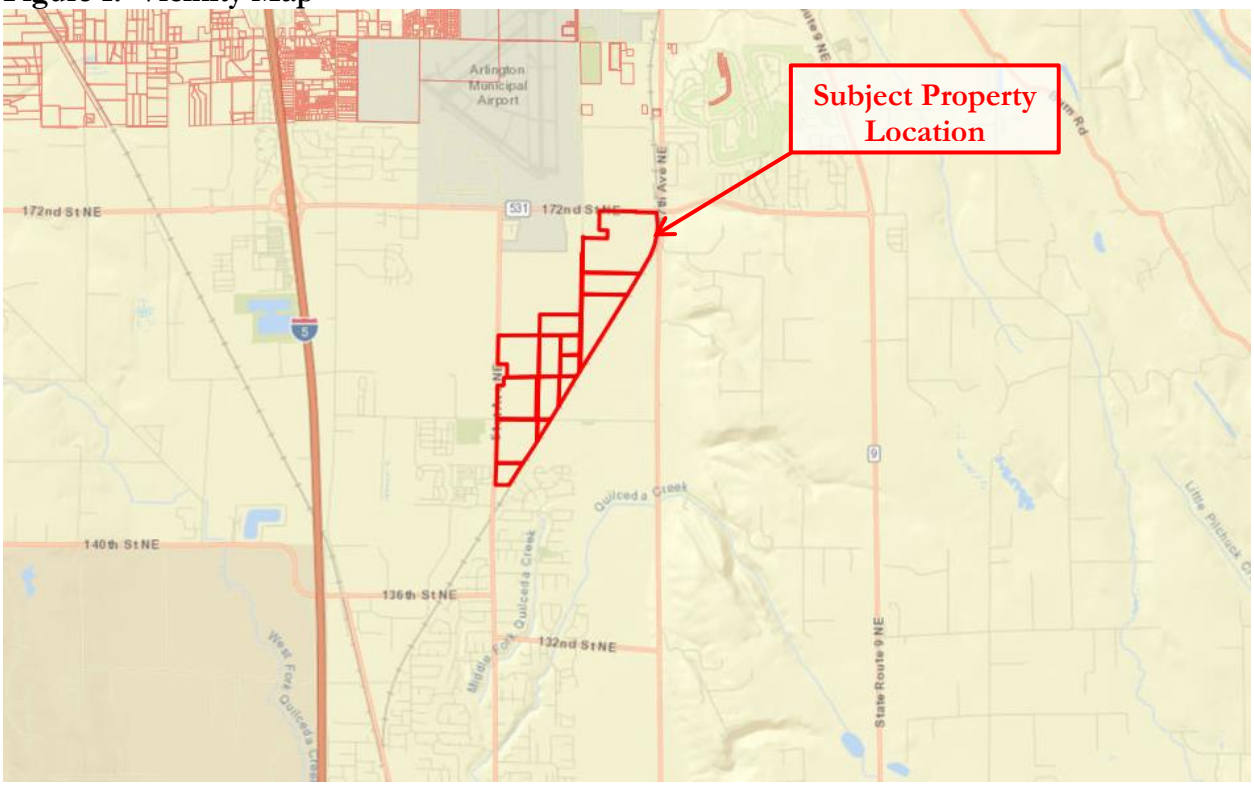
Chapter 2. Proposed Project

2.1 Location

The subject property is generally located at 6600 172nd Street Northeast in the City of Arlington and at 15223 and 16015 51st Avenue Northwest, and 5414 152nd Street East in the City of Marysville, Washington. The proposed project is located within both the City of Arlington and the City of Marysville jurisdictions. The subject property consists of 14 tax parcels situated in the Northeast and Southwest ¼ of Section 27 and Northwest and Southwest ¼ of Section 34, Township 31 North, Range 5 East, W.M. (Snohomish County Tax Parcel Numbers (Snohomish County Tax Parcel Numbers 31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, and 31053400300300).

To access the subject property from I-5 North, take Exit 206 for WA-531 East. Turn right on WA-531 East/172nd Street Northeast/Edgecomb Road and continue for 2.1 miles. The subject property will be on the right before 67th Avenue Northeast.

Figure 1. Vicinity Map



2.2 Abbreviated Project Description

The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing

enhanced water quality treatment for runoff from all impervious surfaces. Overall, the project requires unavoidable direct impacts to 4.275 acres of wetlands; 10,165 linear feet of Edgecomb Creek, and 1,167 linear feet of Tributary X. An additional 0.595 acre of indirect wetland impacts is proposed. The project proposes to realign Edgecomb Creek and create wetlands within a restored riparian corridor (up to 315 feet wide) on the eastern portion of the project area. Tributary X will also be re-aligned and reconnected to the re-aligned Edgecomb Creek. To facilitate public access to Edgecomb Creek, a public pedestrian trail will be developed through the riparian corridor To improve fish access to and upstream of the restored riparian corridor, the Applicant will also coordinate with BNSF to replace two partial fish barrier culverts with upgraded culverts designed to improve fish access and convey Edgecomb Creek beneath the railroad. A box culvert will also be added beneath 152nd Street Northeast to convey the re-aligned stream channel. A full description of aquatic impacts, necessary regulatory analysis, and compensatory mitigation details is provided in SVC's Conceptual Mitigation Plan under separate cover.

Chapter 3. Methods

SVC investigated and assessed any potentially regulated wetlands, streams, and other waterbodies on the subject property on multiple dates in spring, summer, and fall of 2020. 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, Snohomish County, City of Arlington and City of Marysville Geographic Information Systems (GIS) data, Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) and SalmonScape mapping tools, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington Department of Natural Resources (DNR) water typing system, and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report. Parcels 31052700100900, 31053400200100, 31053400200900, and 31053400201300 are located east of the BNSF railroad tracks, outside of the proposed project area, and were excluded from site investigations.

Wetland boundaries were determined using the 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* (NRCS, 2018). Qualified wetland scientists marked boundaries of onsite wetlands with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 through DP-97 with the exception of DP-51 and DP-94). Completed data forms are provided in Appendix D. Additional tests pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm each delineation.

SVC classified all wetlands using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979) classification systems. Following classification and assessment, WSDOE-trained scientists rated and categorized all wetlands using the *Washington State Wetlands Rating System for Western Washington* (Hruby, 2014) and the definitions established in MMC 22E.010.060 and AMC 20.93.800.

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)(c) 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) and AMC 20.93.700.

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity. Water quality parameters (temperature, dissolved oxygen, and pH) were collected at locations along Edgecomb Creek and onsite ditches. Data loggers were installed in

Edgecomb Creek in June 2020 to record stream flow, temperature, and dissolved oxygen levels continuously throughout 2020.

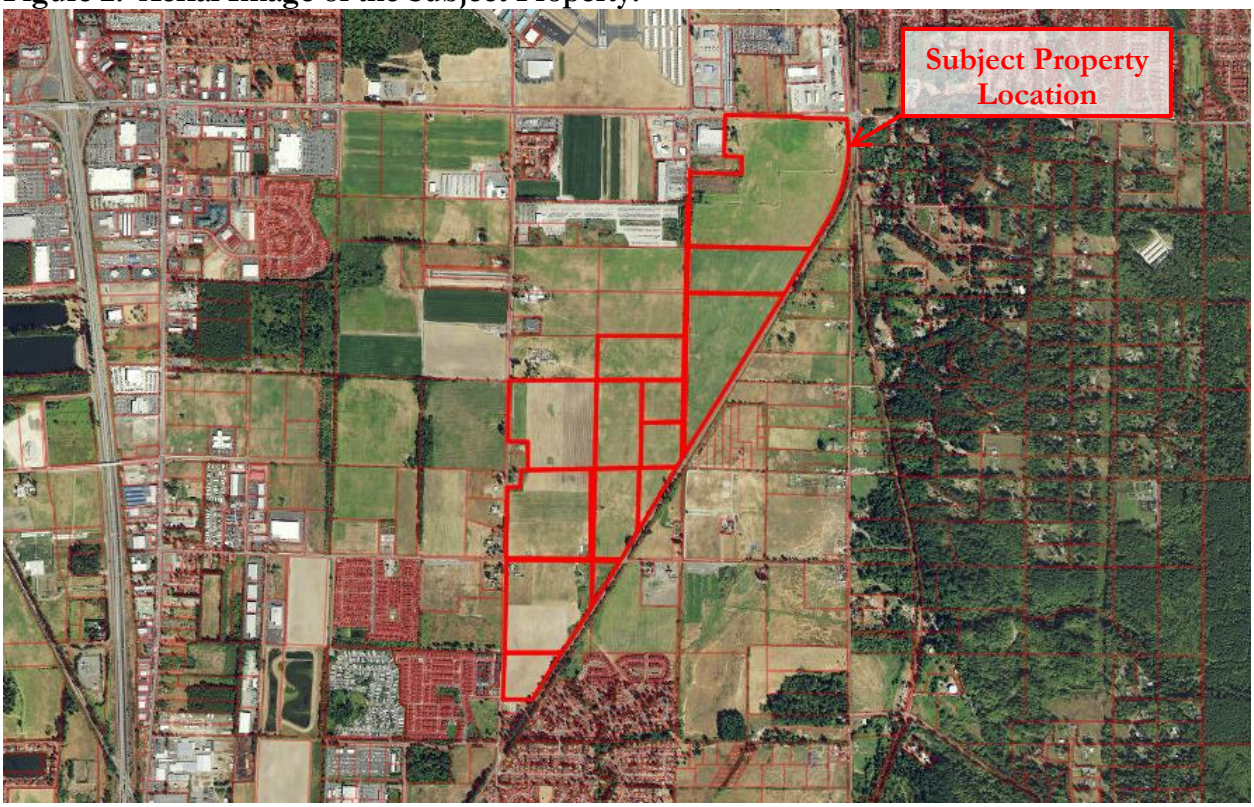
Chapter 4. Background

4.1 Landscape Setting

The subject property is located in the City of Marysville and the City of Arlington in a mixed agricultural, commercial, and residential setting (Figure 2). The subject property is currently used for agriculture and is actively maintained. The subject property abuts 172nd Street Northeast/State Route 531 to the north with commercial development beyond; a BNSF railway, agricultural fields and 67th Avenue Northeast to the east; agricultural fields and 51st Avenue Northeast to the west; and residential development to the south. 152nd Street Northeast traverses through the southern portion of the subject property.

The study area is within the Snohomish watershed (Water Resources Inventory Area 7). Topography onsite is generally flat with an approximate elevation of 130 feet above mean sea level (Appendix B1) that slopes gently to the south.

Figure 2. Aerial Image of the Subject Property.



4.2 Vegetation

The subject property is currently used for agricultural production and consists of row crop and hay fields. The northernmost parcels (parcel numbers 31052700100100 and 31052700100300) and central fields (parcel numbers 31052700300200, and 31052700300500, 31052700300900, 31052700300700, 31052700300800, and 31053400200600) consist of mixed forage grasses for hay production such as meadow foxtail (*Alopecurus pratensis*), orchardgrass (*Dactylis glomerata*), and tall fescue (*Schedonorus*

arundinaceus). The southeast parcels (parcel numbers 31053400200400, 31053400200300, 31052700400300, and 31052700400300) consist of seeded winter wheat (*Triticum aestivum*), and four parcels on the southern portion of the property (parcel numbers 31053400300900, 31053400200700, 31053400200800, and 31053400300300) consist of planted cabbage (*Brassica oleracea*).

4.3 Soils

The NRCS soil survey identifies two soil series on the subject property: Custer fine sandy loam and Norma loam. An NRCS soil survey map is provided in Appendix B2. Below is a 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, N.d.).

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, N.d.).

4.4 Critical Area and Priority Habitat Inventories

The City of Marysville critical areas inventory (Appendix B3), Snohomish County critical areas inventory (Appendix B4), WDFW PHS and SalmonScape mapping tools (Appendices B5 and B6), DNR stream typing map (Appendix B7), and the USFWS NWI map (Appendix B8) identify one onsite stream (Edgecomb Creek) and two waters along the southeast and western property boundaries.

Edgecomb Creek is mapped entering the property in the northeast corner, crossing the property generally in a southwesterly direction, flowing south, and then crossing beneath the BNSF railroad to exit the subject property through the southern property boundary before converging with two additional channels offsite. The City of Marysville and DNR identify Edgecomb Creek as a Type F water. 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*) within the reach of Edgecomb Creek mapped onsite. The City of Marysville, Snohomish County, DNR, and USFWS NWI identify a potential tributary to Edgecomb Creek on the northern portion of the site; Snohomish County and DNR classify this water as a seasonal non-fish bearing (Type N) water.

The City of Marysville and Snohomish County, USFWS NWI, and WDFW identify a second potential water that acts as a roadside ditch parallel to the western property boundary and on the east side of 51st Avenue Northeast. This ditch 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 5.3 for more details regarding the 51st Avenue Northeast ditch.

The City of Marysville and Snohomish County, USFWS NWI, DNR, and WDFW identify a third potential water located just offsite to the east across the BNSF railway, which branches to the east multiple times throughout its length. Snohomish County identifies this stream as Olaf Strad Creek. Snohomish County, the City of Marysville, and DNR classify Olaf Strad Creek as a Type F stream. WDFW documents coho salmon and resident coastal cutthroat trout as well as the modeled/presumed presence of bull trout, chinook salmon, chum salmon, pink salmon, and steelhead trout within Olaf Strad Creek.

The Snohomish County critical areas inventory also identifies potential wetlands throughout the site based on remote sensing models in addition to two potential offsite wetlands to the east across the BNSF railway and within 300 feet of the subject property. The City of Marysville identifies one potential linear wetland adjacent to 51st Avenue Northeast in the east-central portion of the subject property; additional potential wetlands are mapped on the southern portion of the subject property. No other potential wetlands, waterbodies, or other habitat areas are identified on or within 300 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.

Table 1. Precipitation Summary[1]

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 (water year)
03/05/2020	0.69	0.00	2.37	3.47	9.37/4.08	34.37/27.54	125
04/08/2020	0.00	0.00	0.25	1.65	1.84/4.72	36.78/32.66	113
04/09/2020	0.00	0.00	0.23	1.58	1.84/4.73	36.78/32.81	112
04/14/2020	0.00	0.00	0.11	0.47	1.82/4.73	36.89/33.52	110
04/17/2020	0.00	0.00	0.11	0.23	1.82/4.69	36.89/33.93	109
04/23/2020	0.05	1.02	1.09	1.20	2.91/4.57	37.98/34.72	109
04/27/2020	0.19	0.09	1.54	1.54	3.11/4.43	38.43/35.20	109
04/28/2020	0.03	0.19	1.56	1.57	3.02/4.38	38.46/35.31	109
05/12/2020	0.02	0.12	0.99	1.89	3.43/3.81	40.32/36.90	109
05/13/2020	0.00	0.02	0.27	1.86	3.43/3.78	40.32/37.02	109
05/28/2020	0.00	0.00	0.99	2.35	4.24/3.58	42.67/38.78	110
06/04/2020	0.00	0.00	1.42	2.41	4.76/3.61	44.09/39.61	111

06/18/2020	0.00	0.00	3.10	4.33	7.47/3.40	48.42/41.00	118
07/09/2020	0.06	0.05	0.38	1.11	4.60/2.39	49.65/42.43	117
07/28/2020	0.00	0.00	0.31	0.61	1.23/1.55	49.77/43.26	115
08/13/2020	0.00	0.00	0.43	0.52	0.57/1.23	50.29/43.88	115
08/18/2020	0.00	0.00	0.00	0.52	0.57/1.26	50.29/44.13	114
08/20/2020	0.05	0.00	0.05	0.48	0.62/1.29	50.34/44.24	114
08/25/2020	0.00	0.00	0.19	0.19	0.71/1.39	50.48/44.53	113
09/01/2020	0.00	0.00	0.26	0.45	0.97/1.57	50.74/44.98	113
10/09/2020	0.52	0.00	0.52	0.52	3.00/1.87	0.52/0.70[3]	69
01/22/2021	0.00	0.04	0.19	3.96	9.83/5.61	22.58/19.52	116
02/09/2021	0.00	Trace	0.73	2.41	6.33/5.08	25.17/22.17	114
02/25/2021	0.24	0.01	1.50	2.93	5.34/4.08	28.10/24.10	117
03/10/2021	0.00	0.00	0.49	0.88	3.56/3.81	28.73/25.72	112

Notes:
1. Precipitation levels provided in inches. Data obtained from the NOAA weather station for Arlington (http://w2.weather.gov/climate/xmacis.php?wfo=sew).
2. Year-to-date precipitation is the total for the 2019/2020 water year from October 1st to the onsite date(s).
3. Year-to-date precipitation is the total for the 2020/2021 water year from October 1st to the onsite date(s).

Precipitation levels at the time of the site investigation in early March 2020 were significantly higher than the statistical normal for the prior 30 days (230 percent of normal) with 2.37 inches of precipitation occurring during the 1 week prior to the site investigation. Precipitation levels were at the higher end of normal for the water year (125 percent of normal). Precipitation levels at the time of the site investigation in April 2020 were either below the statistical normal or on the lower end of normal for the prior 30 days (39, 39, 38, 39, 64, 70, and 69 percent of normal, respectively) and within statistical normal for the 2019/2020 water year (113, 112, 110, 109, 109, 109, and 109 percent of normal, respectively). Precipitation levels during the site investigations in May 2020 were within the statistical normal range for the prior 30 days (90, 91, and 118 percent of normal, respectively) and within the normal range for the 2019/2020 water year (109, 109, and 110 percent of normal, respectively).

Precipitation levels during the June 2020 and July 9 site investigations were above normal for the prior 30 days (132, 220, and 192 percent of normal) and within the normal range for the 2019/2020 water year (111, 118, and 117 percent of normal). During the July 28, 2020 site investigation were within the statistical normal range for both the prior 30 days (79 percent of normal) and the 2019/2020 water year (115 percent of normal). 3.1 inches of precipitation was recorded in the one week leading up to the 6/18/2020 site visit, potentially causing areas not normally wet to become saturated or inundated during the time of the site investigation. Finally, the August and September 2020 site investigations were below normal for the prior 30 days (45 to 62 percent of normal) and within the statistical normal for the 2019/2020 water year (115, 114, 113 and 113 percent of normal). While the precipitation data for the prior 30 days ranged from below normal to above normal, the 2019/2020 water year data remained generally unchanged within normal, suggesting that hydrologic conditions onsite were likely stable and normal for delineation purposes.

Precipitation levels during the October 2020 site visit were slightly below statistical normal range for the 2021/2021 water year (69 percent of normal), but slightly above normal for the prior 30 days (160 percent of normal). It should be noted that the water year begins October 1 and therefore the water year calculation for this site visit date may not be very accurate as it is only accounting for 9 days. The prior 30 days is a more representative assessment given the larger sample size. This suggests that hydrological conditions onsite were likely somewhat exaggerated.

Precipitation levels during January 2021 site visit within the statistical normal range for the 2021/2021 water year (116 percent of normal), but above normal for the prior 30 days (175 percent of normal), with nearly 4 inches of rainfall occurring within 2 weeks of the site visit. This suggests that hydrological conditions onsite were likely somewhat exaggerated. Precipitation levels during the February 2021 and March 2021 were within the statistical normal for the 2020/2021 water year (114, 117, and 112 percent of normal) and relatively within normal (125, 131, and 93 percent of normal) for the prior 30 days. This suggests that hydrological conditions onsite were likely stable and normal for the additional delineation and regulatory concurrence. Such conditions were considered in making professional wetland determinations.

4.6 Edgecomb Creek

4.6.1 Watershed Characteristics

Edgecomb Creek is a first order tributary in the Quilceda Creek watershed. The stream originates from a farm pasture in the City of Arlington, flows west through the pasture and into a wooded ravine, crosses State Route 531, flows through agricultural lands in a series of straight channels, and drains into the Middle Fork of Quilceda Creek (WSDOT, 2016). The majority of the Edgecomb Creek watershed consists of agricultural land with remaining areas consisting of residential, commercial, and industrial areas. Edgecomb Creek crosses the BNSF railroad in two locations: 1) slightly south of State Route 531 and east of 67th Avenue Northeast, and 2) south of 152nd Street northeast and east of 51st Avenue Northeast. The WDFW fish passage assessment program identifies that the culverts beneath the railroad crossings act as slope barriers to fish passage.

Edgecomb Creek provides salmonid habitat with documented coho and chum salmon presence. WDFW identifies that ESA-listed Chinook salmon and steelhead trout are documented lower within the watershed in the Middle Fork of Quilceda Creek and Quilceda Creek. The City of Marysville also identifies Chinook and steelhead migration, spawning, and rearing habitat in the Middle Fork of Quilceda Creek and Quilceda Creek as well as bull trout migration and rearing habitat within Quilceda Creek. Refer to Table 2 below for a comprehensive review of fish distribution in Edgecomb Creek and receiving waters.

Table 2. Fish Distribution in Edgecomb Creek and Receiving Waters

Source	Edgecomb Creek	Middle Fork Quilceda Creek	Quilceda Creek
WDFW SalmonScape	Documented coho Modeled fall chinook, winter steelhead, chum, and pink salmon (gradient accessible) Presumed bull trout	Documented coho, summer/fall chinook, fall chum, cutthroat Modeled winter steelhead, pink salmon (gradient accessible) Presumed bull trout, summer steelhead	Documented coho, chum, summer/fall chinook, resident cutthroat, winter/summer steelhead Modeled pink salmon (gradient accessible) Presumed bull trout
City of Marysville salmonid distribution maps (data from December 2014 download from StreamNet and compiled by WDFW)	Chum migration habitat Coho spawning, rearing, and migration habitat Cutthroat presence	Chinook migration habitat Chum migration habitat, spawning, and rearing habitat Coho spawning, rearing, and migration habitat Cutthroat presence Steelhead migration	Bull trout migration and rearing habitat Chinook spawning and rearing habitat Chum migration, spawning, and rearing habitat Coho spawning, rearing, and migration habitat Cutthroat presence Steelhead rearing and migration
Electrofishing surveys (Otak, 2010)	Coho, cutthroat, and lamprey	--	--

The Edgecomb Creek watershed is located within the Marysville Trough, a north-south oriented glacial outwash plateau. The trough is bordered by the Getchell and Tulalip plateaus to the east and west, respectively. This topography affects surface and groundwater flow direction and velocity with stream flows slowing and depositing sediments on the flat valley floors of the Marysville Trough (Carroll, 1999). In the Edgecomb Creek area, the Marysville Trough is primarily filled with recessional outwash (Marysville Sand Member of the Vashon recessional outwash). The outwash soils have high permeability and a seasonally very high water table and supply significant base flows to streams (Otak, 2009). The Edgecomb Creek watershed is primarily composed of till soils that are moderately well drained and usually are overlain on a layer of impermeable hardpan. During the rainy season and saturated soil conditions, little rainfall infiltrates into the till soils and most of it runs off into drainage systems and streams. During drier periods, the groundwater table recedes, and a large percentage of rainfall is infiltrated (WSDOT, 2016).

The Marysville Trough contains a shallow unconfined recessional outwash aquifer (Marysville Trough aquifer) that extends from the ground surface to 150 feet below the surface. This aquifer extends from Arlington and the Stillaguamish River to the north and to Marysville and the Snohomish River to the south (Carroll, 1999). This aquifer is comprised of loose to medium dense sands with traces of silt and gravel, with high permeability and transmissivity. The water table in the aquifer is highly response to rainfall events: "with the water table rising rapidly after moderate rainfall events and receding after prolonged dry periods" (Otak, 2009). The rapidly rising groundwater contributes to

local flooding during the rainy season. Drain tiles and ditches have been installed to support agriculture and are effective at lowering shallow groundwater tables; these drain tiles and ditches create complex local groundwater flow paths. During the 1990s, flooding within the Quilceda Creek watershed was also assessed to have been exacerbated by increases in sediment inputs that decrease channel volumes by increasing silt accumulation and vegetation growth within stream channels. (Carroll, 1999).

Based on historical USGS maps, Edgecomb Creek once flowed from slopes to the northwest of the subject property into a large wetland complex at the toe of the Gretchell Plateau. The wetland complex was ditched and drained and Edgecomb Creek was channelized for agricultural purposes (Otak, 2009). Historical aerial photographs show that the onsite channel has been channelized in its current configuration with minimal riparian cover and adjacent agricultural use since at least 1954. Edgecomb Creek is a mild gradient gravel bed stream that has been previously assessed to be mostly geomorphically stable with regards to sediment transport and bank erosion. The channel mostly contains very fine substrates and lacks pool/riffle habitat, wood debris, and planform sinuosity. Lower reaches of Edgecomb Creek (below 152nd Street Northeast) appear to be instable, and substantial bank erosion and lateral channel migration have been observed downstream of Timberbrook Drive (Otak, 2009).

In 2018 the Washington State Department of Transportation (WSDOT) completed a fish passage correction project along an upgradient reach immediately to the northeast of the subject property. Habitat upstream of the subject property is generally of higher quality than the onsite habitat. These upgradient sections of Edgecomb Creek are steeper, contain more meandering sections, and contain more riffle habitat with some pool and glide habitat. The stream substrates are dominated by gravels with some silt and cobbles. The riparian habitat consisted of a mixed coniferous/deciduous forest dominated by western red cedar (*Thuja plicata*), big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), and black cottonwood (*Populus balsamifera*) (Northwest Region Environmental Services, 2016). The fish passage project significantly improved fish access to approximately two miles of stream habitat by re-aligning Edgecomb Creek and creating 650 linear feet of new stream channel on the south side of State Route 531. This stream alignment eliminated two culvert crossings acting as partial fish passage barriers beneath State Route 531 and 330 linear feet of stream north of the road (Northwest Region Environmental Services, 2016). Prior to the fish passage correction project, WDFW stream assessments documented abundant adult chum and coho salmon spawning in the reach immediately downstream of the fish passage barriers and less abundant coho upstream of the barrier.

Water quality within Edgecomb Creek is presumed to be relatively poor (Otak, 2010). During the 1990s, watershed planning efforts in the Quilceda Creek and the neighboring Allen Creek identified water quality issues within the watersheds to include high sediment, nutrient, and bacteria levels and contaminants conveyed by runoff (Carroll, 1999). WSDOE conducted water quality monitoring along Edgecomb Creek in 2015 and 2016. The WSDOE data (Appendix G) indicates that dissolved oxygen occasionally exceeds WAC criteria for salmonid rearing and migration. Edgecomb Creek is listed as a Category 2 (Water of Concern) for dissolved oxygen, and WSDOE has implemented a TMDL plan for bacteria in the stream.

No stream gauges are located on Edgecomb Creek or within a nearby basin of similar size and characteristics. During the planning process for the 2018 WSDOT fish passage barrier correction northeast of the subject property, WSDOT reported peak flows within Edgecomb Creek from the

USGS flood frequency regression equations and a 2002 Snohomish County drainage needs report that assessed peak flows using a hydrologic simulation model Hydrologic Simulation Program – FORTRAN (HSPF) developed by the United States Environmental Protection Agency (USEPA). Due to the detailed analysis contained within the HSPF, WSDOT selected the FORTRAN model for understanding peak flows when designing the fish passage barrier correction (WSDOT, 2016). Table 3 lists the peak flow estimates compared by WSDOT. SVC also obtained USGS flow regression estimates from the StreamStats program for Edgecomb Creek flow on the subject property (Table 4). The basin at this location is 2.62 square miles and receives 48.3 inches of precipitation annually (USGS StreamStats, 2020).

Table 3. Edgecomb Creek Peak Flows Near WSDOT Barrier Correction (WSDOT, 2016)

Mean Recurrence Interval (MRI)	USGS Regression Equation Regression (cfs) and Standard Error (SE)	HPSF Peak Flow at SR 531 (cfs)
2	17.3 (SE 56%)	8.0
10	31.1 (SE 53%)	12.8
25	38.4 (SE 54%)	16.2
50	45.1 (SE 53%)	Not provided
100	50.6 (SE 54%)	22.9

Table 4. Peak Flows for Onsite Edgecomb Creek (USGS StreamStats, 2020)

Mean Recurrence Interval (MRI)	USGS Regression Equation Regression (cfs) and Standard Error (SE)
2	61.8 (SE 43.2)
5	97.5 (SE 44.4)
10	122 (SE 45.6)
25	154 (SE 50.5)
50	177 (SE 50.5)
100	203 (SE 51.8)

4.6.2 Previous Stream Relocation Proposal

The City of Marysville previously proposed to relocate Edgecomb Creek in preparation for anticipated development for the City's lands zoned for industrial use (NWS-2010-1059). The purpose of the City's relocation proposal was to provide an alternative to the long-term continuation of the existing poor-quality stream habitat on private lands where future development that avoided impacts to the existing channelized stream would have no obligation to provide ecological benefits to the stream. The City's proposed alternative to the existing channelized stream envisioned creating a restored riparian corridor containing a highly functioning stream, wetland, and floodplain complex, improving water quality, managing stormwater for protection of downstream resources, and recovering some degree of groundwater infiltration function to augment baseflows. The City's proposal assumed that all wetlands in their project area would be eventually filled. The proposed project was known as the North Marysville Streams project, was located within the Smokey Point Master Plan Area of the City of Marysville, and consisted of re-aligning and restoring sections of Edgecomb and Hayho Creeks (Otak, 2009).

The North Marysville Streams project identified several impaired stream, riparian, and floodplain functions within the watershed (Otak, 2010), including the issues listed below:

- High summertime water temperatures due to lack of riparian canopy;
- Substrates dominated by silts and sands with minimal, highly embedded gravels;
- Hydrological disconnection between streams and floodplains;
- Lack of large woody debris (LWD) within streams;
- Lack of pool and riffle formations;
- Lack of off-channel habitat;
- Steep, vertical streambanks with reduced channel complexity and microhabitats resulting from stream channelization;
- Sediment inputs and turbidity from impervious surfaces;
- Chemical inputs from runoff from agricultural fields and stormwater; and
- Increase in peak flows and decrease in base flows from impervious surface and channel excavation.

The North Marysville Streams project was designed to provide significant habitat benefits by restoring physical, biological, and chemical processes in Edgecomb Creek, its floodplain, and associated wetlands (Otak, 2010); the restored functions were proposed to be supported by several design features, including:

- Re-creating a floodplain to handle the 100-year flood event;
- Increasing physical complexity within the channel with restrictions to create backwater conditions and wetland habitat complexity;
- Maintaining in-stream complexity and deep pools in the channel for cooler low-flow fish refuge through placement of LWD;
- Creating cooler stream conditions through shading and deep refuge pools so that summer stream water can remain appropriately oxygenated for fish and other aquatic biota;
- Creating self-sustaining wetlands within the floodplain with variety of habitat types; and

- Creating locations for sediment deposition in order to remove heavy metals and other toxics linked to those sediments from the aquatic system.

The North Marysville Streams project considered four alternative alignments for the Edgecomb Creek relocation. Appendix I provides an excerpt from the feasibility study illustrating the previously considered alternatives. Analysis of the alternatives consisted of understanding the relationships between groundwater, storm/surface water, geomorphology and channel stability, and precipitation on flooding and stream flows. The Applicant's proposed re-alignment is generally consistent with the North Marysville Streams project's preferred alternative to re-locate Edgecomb Creek adjacent to the west side of the BNSF railroad. The North Marysville Stream project selected this preferred alternative location based on several factors related to potential habitat gain, stormwater management, impact to the existing Edgecomb Creek channel, and potential flow and groundwater impacts to the neighboring Olaf Strad Creek basin (Otak, 2009).

The Northern Marysville Streams project feasibility assessment was supported by groundwater studies and hydrologic modelling to understand groundwater movement within the areas adjacent to Edgecomb Creek and hydrologic impacts of the proposed stream location. Groundwater movement within the area is anticipated to be complex and highly influenced by drain tiles and ditches. Site specific groundwater analysis within the Northern Marysville Streams project area identified that the upper sections of Edgecomb Creek were losing stream reaches with water flowing from the stream into the surrounding glacial outwash, while the lower sections of Edgecomb Creek were gaining stream reaches with the regional groundwater table providing baseflow to the stream. Additionally, the BNSF railroad fill is not a barrier to groundwater movement; shallow groundwater wells indicated that groundwater is moving east to west beneath the railroad fill (Otak, 2009). A stream channel hydraulic analysis for the channel and floodplain were conducted to assess how changes in depth, velocity, and energy slope would affect the long-term stability of the channel in the project area and downstream reaches. The hydraulic analysis indicated that the proposed design would not adversely affect sediment transport processes in the stream (Otak, 2009).

4.7 Previous Jurisdictional Determination

In 2009 USACE completed a Jurisdictional Determination (JD) under NWS-2008-405 for the Steiner Farm portion of the subject property (Snohomish County Tax Parcels 31052700400300, 31052700300200, 31052700300500, 31052700300900, 31052700300700, 31052700300800). The JD concluded that there were no wetlands on the Steiner Farm except for two small depressions totaling less than 0.1 of an acre. The two small wetlands were determined to be jurisdictional wetlands. In addition, the JD concluded that Edgecomb Creek and three seasonal ditches with potential fringe wetlands were jurisdictional. The three seasonal ditches included a ditch along 51st Avenue and two ditches connected to this 51st Avenue ditch (USACE Seattle District, 2009).

Chapter 5. Results

The site assessments in spring, summer, and fall of 2020 identified a total of 40 potentially regulated wetlands (Wetlands A-Z and AA-AM), one stream (Edgecomb Creek), one fish-bearing ditch (Tributary X) and 4 roadside or agricultural ditches (51st Avenue East Ditch, two 152nd Street Ditches, and Ditch U) in the project area. WSDOE has determined that the 51st Avenue East Ditch is a wetland, and the project will treat the ditch as a wetland for local and state permitting purposes. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were identified in the proposed project area.

5.1 Delineated Wetlands

A total of 40 wetlands (Wetlands A-Z, AA-AM) were delineated in the project area and reviewed during site visits with USACE and/or WSDOE on October 9, 2020; February 9, 2021; and March 10, 2021. WSDOE has provided concurrence for the delineated wetland boundaries in a letter dated March 17, 2021 (Appendix K). Maps depicting the location and sizes of each wetland are presented in Appendix C. The identified wetlands contained indicators of hydric soils, wetland hydrology, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Data forms are provided in Appendix D, wetland rating forms are provided in Appendix E, and wetland rating maps are provided in Appendix F. Table 5 below summarizes the wetlands delineated during the site investigations.

Table 5. Wetland Summary

Wetland	Predominant Wetland Classification / Rating					Wetland Size Onsite (SF)	Standard Buffer Width (feet)[5]
	Cowardin[1]	HGM[2]	WSDOE[3]	Local Jurisdiction	Jurisdiction Classification[4]		
A	PEMA	Depressional	IV	Arlington	IV	1,369	40
B	PEMA	Depressional	IV	Arlington	IV	4,859	40
C	PEMA	Depressional	IV	Arlington	IV	4,841	40
D	PEMA	Depressional	IV	Arlington	IV	3,537	40
E	PEMA	Riverine	III	Arlington	III	775	60
F	PEMA	Riverine	III	Arlington	III	386	60
G	PEMA	Riverine	III	Arlington	III	987	105
H	PFO/SS/EMAC	Riverine	II	Arlington	II	6,279	165
I	PSSA	Riverine	III	Marysville	III	377	75
J	PEMA	Depressional	IV	Marysville	IV	334	35
K	PEMA	Depressional	IV	Marysville	IV	16,836	35
L	PEMA	Depressional	IV	Marysville	IV	15,756	35
M	PEMA	Depressional	IV	Marysville	IV	1,969	35

N	PEMA	Depressional	IV	Marysville	IV	8,133	35
Offsite O	PFOBC	Depressional	III	Arlington/ Marysville	III	N/A	60/75
P	PEMA	Depressional	IV	Arlington	IV	550	40
Q	PEMA	Depressional	IV	Arlington	IV	2,522	40
R	PEMA	Depressional	IV	Arlington	IV	1,773	40
Offsite S	PEMA	Depressional	IV	Marysville	IV	N/A	35
Offsite T	PEMA	Depressional	IV	Marysville	IV	N/A	35
U	PEMA	Depressional	IV	Marysville	IV	4,909	35
V	PEMA	Depressional	III	Arlington	III	5,945	105
W	PEMA	Depressional	IV	Marysville	IV	258	35
X	PEMA	Depressional	IV	Marysville	IV	4,492	35
Y	PSSC	Riverine	III	Arlington	III	662	60
Z	PEMA	Riverine	III	Marysville	III	483	75
AA	PEMA	Riverine	III	Marysville	III	574	75
AB	PEMA	Riverine	III	Marysville	III	1,166	75
AC	PEMA	Depressional	IV	Marysville	IV	4,866	35
AD	PEMA	Riverine	III	Marysville	III	2,462	75
AE	PEMA	Depressional	IV	Marysville	IV	11,346	35
AF	PEMA	Depressional	IV	Marysville	IV	615	35
AG	PEMA	Depressional	IV	Marysville	IV	285	35
AH	PFO/SS/EMBC	Riverine	II	Marysville	II	201,280	100
AI	PEMAB	Riverine	III	Marysville	III	3,873	75
AJ	PEMA	Riverine	III	Marysville	III	2,471	75
AK	PEMA	Depressional	IV	Marysville	IV	696	35
AL	PEMA	Depressional	IV	Marysville	IV	11,835	35
AM	PEMA	Depressional	IV	Marysville	IV	3,021	35

Notes:

1. Cowardin et al. (1979), Federal Geographic Data Committee (2013), or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub Shrub, PEM = Palustrine Emergent; Modifiers for Water Regime: A = Temporarily Flooded, B = Seasonally Saturated, C = Seasonally Flooded.
2. Brinson, M. M. (1993).
3. Current WSDOE wetland rating system for Western Washington (Hruby, 2014).
4. MMC 22E.010.060.1 and AMC 20.93.800.a wetland classification and rating according to Washington State Wetland Rating System for Western Washington (Hruby, 2014); .
5. MMC 22E.010.100.4 and AMC 20.93.830 Table 20.93-4 standard buffer widths.

Wetland A

Wetland A is 1,369 square feet (0.03 acre) in size and is located near the northern boundary of the northernmost parcel. Hydrology for Wetland A is provided by seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush (*Juncus effusus*), and creeping buttercup (*Ranunculus repens*). Wetland A is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland A is considered a Category IV depressional wetland. Table 6 provides a summary of Wetland A.

Wetland B

Wetland B is 4,859 square feet (0.11 acre) in size and is located on the northern portion of the subject property. Hydrology for Wetland B is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush, and creeping buttercup. Wetland B is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland B is considered a Category IV depressional wetland. Table 7 provides a summary of Wetland B.

Wetland C

Wetland C is 4,841 square feet (0.11 acre) in size and is located on the northern portion of the subject property. 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 meadow foxtail, tall fescue, soft rush, and creeping buttercup. Wetland C is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland C is considered a Category IV depressional wetland. Table 8 provides a summary of Wetland C.

Wetland D

Wetland D is 3,537 square feet (0.08 acre) in size and is located on the northern portion of the subject property. 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 meadow foxtail, tall fescue, soft rush, and creeping buttercup. Wetland D is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland D is considered a Category IV depressional wetland. Table 9 provides a summary of Wetland D.

Wetland E

Wetland E is 775 square feet (0.021 acre) in size and is located on the central portion of the northernmost parcel along Edgecomb Creek. Hydrology for Wetland E 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 non-native invasive reed canarygrass (*Phalaris arundinacea*). Wetland E is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland E is a Category III riverine wetland with a low habitat score of 4 points. Table 10 summarizes Wetland E.

Wetland F

Wetland F is 386 square feet (0.01 acre) in size and is located on the central portion of the northernmost parcel along Edgecomb Creek, to the west of Wetland E. Hydrology for Wetland F 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. Wetland F is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b,

Wetland F is a Category III riverine wetland with a low habitat score of 4 points. Table 11 summarizes Wetland F.

Wetland G

Wetland G is 987 square feet (0.02 acre) in size and is located on the west-central portion of the northernmost parcel along the south side of Edgecomb Creek, to the west of Wetland F. Hydrology for Wetland G 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. Wetland G is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland). Per AMC 20.93.800.b, Wetland G is a Category III riverine wetland with a low habitat score of 5 points. Table 12 summarizes Wetland G.

Wetland H

Wetland H is 6,279 square feet (0.14 acre) in size and is located on the west-central portion of the northernmost parcel along the north side of Edgecomb Creek. Hydrology for Wetland H 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 red alder (*Alnus rubra*), salmonberry (*Rubus spectabilis*), non-native invasive Himalayan blackberry (*Rubus armeniacus*), stinging nettle (*Urtica dioica*), and reed canarygrass. Wetland H is a Palustrine Forested/Scrub-Shrub/Emergent, Temporarily and Seasonally Flooded wetland (PFO/SS/EMAC). Per AMC 20.93.800.b, Wetland H is a Category II riverine wetland with a moderate habitat score of 6 points. Table 13 summarizes Wetland H.

Wetland I

Wetland I is 377 square feet (0.01 acre) in size and is located on the central portion of the subject property on the western border of tax parcel number 31052700400300, along the east side of Edgecomb Creek. Hydrology for Wetland I 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 redosier dogwood (*Cornus alba*), stinging nettle, and reed canarygrass. Wetland I is a Palustrine Scrub-Shrub, Temporarily Flooded wetland (PSSA). Per MMC 22E.010.060, Wetland I is a Category III riverine wetland with a low habitat score of 4 points. Table 14 summarizes Wetland I.

Wetland J

Wetland J is 334 square feet (0.01 acre) in size and is located on the northern portion of the subject property on tax parcel number 31052700400300. Hydrology for Wetland J is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by winter wheat that exhibited signs of stunted growth. Wetland J is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland J is a Category IV depressional wetland. Table 15 summarizes Wetland J.

Wetland K

Wetland K is 16,836 square feet (0.39 acre) in size and is located on the northern portion of the subject property on tax parcel number 31052700400300. Hydrology for Wetland K is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat. Wetland

K is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland K is a Category IV depressional wetland. Table 16 summarizes Wetland K.

Wetland L

Wetland L is 15,756 square feet (0.36 acre) in size and is located on the northern portion of the subject property on the western boundary of tax parcel number 31052700400300. 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. Table 17 summarizes Wetland L.

Wetland M

Wetland M is 1,969 square feet (0.05 acre) in size and is located on the northern portion of the subject property near the western boundary of tax parcel number 31052700400300. Hydrology for Wetland M 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 M is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland M is a Category IV depressional wetland. Table 18 summarizes Wetland M.

Wetland N

Wetland N is 8,133 square feet (0.19 acre) in size and is located on the northern portion of the subject property on tax parcel number 31052700400300. Hydrology for Wetland N 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 N is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland N is a Category IV depressional wetland. Table 19 summarizes Wetland N.

Offsite Wetland O

Offsite Wetland O is approximately 38,322 square feet (0.88 acre) in size and is located offsite to the east of the northeast boundary of the subject property, west of the BNSF railroad. Hydrology for Offsite Wetland O is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by Pacific willow (*Salix lasiandra*), redosier dogwood, non-native invasive Himalayan blackberry, salmonberry, hardhack (*Spiraea douglasii*), twinberry honeysuckle (*Lonicera involucrata*), soft rush, and reed canarygrass. Offsite Wetland O is a Palustrine Forested, Seasonally Saturated, Seasonally Flooded wetland (PFOBC). Per MMC 22E.010.060 and AMC 20.93.800.b, Offsite Wetland O is likely a Category III depressional wetland with a low habitat score of 4 points.

Wetland P

Wetland P is 550 square feet (0.01 acre) in size and is located on the northern portion of the subject property along the southern boundary of tax parcel number 31052700100100. Hydrology for Wetland P 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 P is a Palustrine Emergent, Temporarily

Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland P is a Category IV depressional wetland. Table 20 summarizes Wetland P.

Wetland Q

Wetland Q is 2,522 square feet (0.06 acre) in size and is located on the northern portion of the subject property near the southern boundary of tax parcel number 31052700100100. Hydrology for Wetland Q is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation consists of winter wheat that exhibited signs of stunted growth. Wetland Q is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland Q is a Category IV depressional wetland. Table 21 summarizes Wetland Q.

Wetland R

Wetland R is 1,773 square feet (0.04 acre) in size and is located on the northern portion of the subject property along the southern boundary of tax parcel number 31052700100100. Hydrology for Wetland R is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation consists of winter wheat that exhibited stunted growth. Wetland R is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland R is a Category IV depressional wetland. Table 22 summarizes Wetland R.

Offsite Wetland S

Offsite Wetland S is approximately 4,628 square feet (0.11 acre) in size and is located offsite east of the eastern boundary of tax parcel number 31052700100300, west of the BNSF railroad. Hydrology for Offsite Wetland S is likely 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. Offsite Wetland S is likely a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Offsite Wetland S is likely a Category IV depressional wetland.

Offsite Wetland T

Offsite Wetland T is approximately 10,036 square feet (0.23 acre) in size and is located offsite east of the eastern boundary of tax parcel number 31052700400300, west of the BNSF railroad. Hydrology for Offsite Wetland T is likely 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. Offsite Wetland T is likely a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Offsite Wetland T is likely a Category IV depressional wetland.

Wetland U

Wetland U is 4,909 square feet (0.11 acre) in size and is located on the northern portion of the subject property on tax parcel number 31052700400300. Hydrology for Wetland U 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 U is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland U is a Category IV depressional wetland. Table 23 summarizes Wetland U.

Wetland V

Wetland V is 5,945 square feet (0.14 acre) in size and is located on the northwest portion of the subject property on the western portion of tax parcel number 31052700100100. Hydrology for Wetland V is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by meadow foxtail, reed canarygrass, and creeping buttercup. Wetland V is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland V is a Category III depressional wetland with a low habitat score of 5 points. Table 24 summarizes Wetland V.

Wetland W

Wetland W is 258 square feet (0.006 acre) in size and is located on the central portion of the subject property on tax parcel number 31052700300500. Hydrology for Wetland W is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by meadow foxtail, shortawn foxtail (*Alopecurus aequalis*), fringed willowherb (*Epilobium ciliatum*), and creeping buttercup. Wetland W is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland W is a Category IV depressional wetland. Table 25 summarizes Wetland W.

Wetland X

Wetland X is 4,492 square feet (0.10 acre) in size and is located on the central portion of the subject property on tax parcel number 31052700300500. Hydrology for Wetland X is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by shortawn foxtail and meadow fescue (*Schedonorus pratensis*). Wetland X is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland X is a Category IV depressional wetland. Table 26 summarizes Wetland X.

Wetland Y

Wetland Y is 662 square feet (0.02 acre) in size and is located on the western boundary of the subject property, along the east side of Edgecomb Creek, on tax parcel numbers 31052700100100 and 31052700100300. 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 AMC 20.93.800.b , Wetland Y is a Category III riverine wetland with a low habitat score of 5 points. Table 27 summarizes Wetland Y.

Wetland Z

Wetland Z is 483 square feet (0.01 acre) in size and is located on the west-central boundary of the subject property, along the west side of Edgecomb Creek, on tax parcel number 31052700400300. 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. Table 28 summarizes Wetland Z.

Wetland AA

Wetland AA is 574 square feet (0.01 acre) in size and is located on the central portion of the subject property along Edgecomb Creek on tax parcel number 31052700300200. Hydrology for Wetland AA 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 AA is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AA is a Category III riverine wetland with a low habitat score of 4 points. Table 29 summarizes Wetland AA.

Wetland AB

Wetland AB is 1,166 square feet (0.03 acre) in size and is located on the central portion of the subject property along Edgecomb Creek. Hydrology for Wetland AB 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 AB is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AB is a Category III riverine wetland with a low habitat score of 4 points. Table 30 summarizes Wetland AB.

Wetland AC

Wetland AC is 4,866 square feet (0.11 acre) in size and is located on the central portion of the subject property on tax parcel number 31053400200600. Hydrology for Wetland AC is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by shortawn foxtail. Wetland AC is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AC is a Category IV depressional wetland. Table 31 summarizes Wetland AC.

Wetland AD

Wetland AD is 2,462 square feet (0.06 acre) in size and is located centrally on the subject property, along Edgecomb Creek, primarily on tax parcel number 31053400200500. Hydrology for Wetland AD 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. Wetland AD is a Palustrine Emergent, Temporarily Flooded wetland (PEMA). Per MMC 22E.010.060, Wetland AD is a Category III riverine wetland with a low habitat score of 4 points. Table 32 summarizes Wetland AD.

Wetland AE

Wetland AE is 11,346 square feet (0.26 acre) in size and is located on the west-central portion of the subject property on tax parcel number 31053400200600. Hydrology for Wetland AE is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by shortawn foxtail, colonial bentgrass, and reed canarygrass. Wetland AE is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AE is a Category IV depressional wetland. Table 33 summarizes Wetland AE.

Wetland AF

Wetland AF is 615 square feet (0.01 acre) in size and is located on the west-central portion of the subject property on tax parcel number 31053400200600. Hydrology for Wetland AF is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland

vegetation is dominated by shortawn foxtail and colonial bentgrass. Wetland AF is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AF is a Category IV depressional wetland. Table 34 summarizes Wetland AF.

Wetland AG

Wetland AG is 285 square feet (0.01 acre) in size and is located on the west-central portion of the subject property on tax parcel number 31053400200600. Hydrology for Wetland AG is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by shortawn foxtail and colonial bentgrass. Wetland AG is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AG is a Category IV depressional wetland. Table 35 summarizes Wetland AG.

Wetland AH

Wetland AH is 233,630 square feet (5.36 acres) in size and is located on the southern portion of the of the subject property, along Edgecomb Creek. Hydrology for Wetland AH 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 Pacific willow, hardhack, twinberry honeysuckle, and reed canarygrass. Wetland AH is a Palustrine Forested/Scrub-Shrub/Emergent, Seasonally Saturated and Seasonally Flooded wetland (PFO/SS/EMBC). Per MMC 22E.010.060, Wetland AH is a Category II riverine wetland with a moderate habitat score of 6 points. Table 36 summarizes Wetland AH. The boundaries of Wetland AH were revised following site visits with WSDOE. The boundary revisions incorporated previously non-delineated areas that displayed signs of saturation or inundation in historical aerial photographs.

Wetland AI

Wetland AI is 3,873 square feet (0.09 acre) in size and is located on the central portion of the subject property, primarily within the OHW of Edgecomb Creek, on tax parcel numbers 31053400200600, 31053400200500, and 31053400200400. Hydrology for Wetland AI 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 and creeping buttercup. Wetland AI is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated wetland (PEMAB). Per MMC 22E.010.060, Wetland AI is a Category III riverine wetland with a low habitat score of 4 points. Table 37 summarizes Wetland AI.

Wetland AJ

Wetland AJ is 2,471 square feet (0.06 acre) in size and is located on the central portion of the subject property, within the OHW of Edgecomb Creek, on tax parcel numbers 31053400200600, and 31053400200500. Hydrology for Wetland AJ 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. Wetland AJ is a Palustrine Emergent, Temporarily Flooded wetland (PEMA). Per MMC 22E.010.060, Wetland AJ is a Category III riverine wetland with a low habitat score of 4 points. Table 38 summarizes Wetland AJ.

Wetland AK

Wetland AK is 696 square feet (0.02 acre) in size and is located centrally on the eastern boundary of the subject property on tax parcel number 31053400200300. Hydrology for Wetland AK is provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.

Wetland vegetation is dominated by tall fescue, creeping buttercup, common velvetgrass, and shortawn foxtail. Wetland AK is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per MMC 22E.010.060, Wetland AK is a Category IV depressional wetland. Table 39 summarizes Wetland AK.

Wetland AL

Wetland AL is 11,835 square feet (0.27 acre) in size and is located on the northwest portion of the subject property on the western portion of tax parcel number 31052700100300. Hydrology for Wetland AL appears to be provided by direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by maintained agricultural crops during the growing season, most recently corn (*Zea mays*), and otherwise remains relatively devoid of vegetation following harvest. Wetland AL is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland AL is a Category IV depressional wetland with a low habitat score of 4 points. Table 40 summarizes Wetland AL.

While Wetland AL receives surficial hydrology, no evidence of surface water has been observed in this wetland outside of the winter months. During SVC's site visits in April 2020, the area within Wetland AL boundaries lacked a high water table. Several test pits were left open overnight from April 7 to April 8, 2020 within the boundary of this wetland, and no evidence of a water table was observed within 12 inches of the ground surface. With the exception of a few small areas of perched water in the northwest corner of the corn field, the area did not appear to be holding water during a January 22, 2021 site investigation, and no water table was encountered down to 16 inches below ground surface. However, during the February 9, 2021 site visit with USACE and WSDOE, the northwest corner of the field was inundated with several inches of standing water. The follow up site investigation with WSDOE conducted on March 10, 2021 demonstrated that this area generally drains quickly as areas of surface water had shrunk significantly. In an email dated February 10, 2021 WSDOE summarized a review of historical aerial photographs and the corresponding antecedent precipitation; this analysis identified areas within Wetland AL that appeared to be semi-consistently saturated. Based on the site observations, including lack of a high water table during the April 2020 site investigations, it is unknown whether this area meets the technical wetland hydrology standard of containing surface water or a water table within 12 inches of the ground surface for at least 14 consecutive days during the growing season. However, a positive wetland determination has been accepted in order to expedite the permitting process.

Wetland AM

Wetland AM is 3,021 square feet (0.07 acre) in size and is located on the northwest portion of the subject property on the northwestern portion of tax parcel number 31052700100300. Hydrology for Wetland AM appears to be provided by direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by maintained agricultural crops during the growing season, most recently corn (*Zea mays*), and otherwise remains relatively devoid of vegetation following harvest. Wetland AM is a Palustrine Emergent, Temporarily Flooded (PEMA) wetland. Per AMC 20.93.800.b, Wetland AM is a Category IV depressional wetland with a low habitat score of 3 points. Table 41 summarizes Wetland AM.

While Wetland AM receives surficial hydrology, no evidence of surface water has been observed in this wetland outside of the winter months. During SVC's site visits in April 2020, the area within Wetland AM boundaries lacked a high water table. Several test pits were left open overnight from

April 7 to April 8, 2020 within the boundary of this wetland, and no evidence of a water table was observed within 12 inches of the ground surface. With the exception of a few small areas of perched water in the northwest corner of the corn field, the area did not appear to be holding water during a January 22, 2021 site investigation, and no water table was encountered down to 16 inches below ground surface. However, during the February 9, 2021 site visit with USACE and WSDOE, the northwest corner of the field was inundated with several inches of standing water. The follow up site investigation with WSDOE conducted on March 10, 2021 demonstrated that this area generally drains quickly as areas of surface water had shrunk significantly. In an email dated February 10, 2021 WSDOE summarized a review of historical aerial photographs and the corresponding antecedent precipitation; this analysis identified areas within Wetland AM that appeared to be semi-consistently saturated. Based on the site observations, including lack of a high water table during the April 2020 site investigations, it is unknown whether this area meets the technical wetland hydrology standard of containing surface water or a water table within 12 inches of the ground surface for at least 14 consecutive days during the growing season. However, a positive wetland determination has been accepted in order to expedite the permitting process.

Table 6. Wetland A Summary

<table>
<tr><th colspan="3">WETLAND A – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland A is located along the northern boundary of the northernmost parcel.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>IV</td></tr>
<tr><td>Arlington Rating</td><td>IV</td></tr>
<tr><td>Arlington Buffer Width</td><td>40 feet</td></tr>
<tr><td>Wetland Size</td><td>1,369 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-1</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush, and creeping buttercup.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicators All (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by slight topographic drop, stunted, stressed vegetation, and a transition to wetland hydrology.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 7. Wetland B Summary

WETLAND B – INFORMATION SUMMARY			
Location:	Wetland B is located on the northern portion of the subject property.		
		**Local Jurisdiction**	City of Arlington
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Arlington Rating	IV
		Arlington Buffer Width	40 feet
		Wetland Size	4,859 SF onsite
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-3
		Upland Data Sheet (s)	DP-2
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush, and creeping buttercup		
Soils	Hydric soil indicator A4 (Hydrogen Sulfide) and A12 (Thick Dark Surface) were observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted, stressed vegetation, and a transition to wetland hydrology.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 8. Wetland C Summary

WETLAND C – INFORMATION SUMMARY	
Location:	Wetland C is located on the northern portion of the subject property.

Local Jurisdiction	City of Arlington
WRIA	7 – Snohomish
WSDOE Rating (Hruby, 2014)	IV
Arlington Rating	IV
Arlington Buffer Width	40 feet
Wetland Size	4,841 SF onsite
Cowardin Classification	PEMA
HGM Classification	Depressional
Wetland Data Sheet(s)	DP-6
Upland Data Sheet (s)	DP-7
Boundary Flag color	Orange

Dominant Vegetation	Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush, and creeping buttercup.
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F6 (Redox Dark Surface) were observed.
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted, stressed vegetation, and a transition to wetland hydrology.
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.
Wetland Functions Summary	
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods, the minimal contribution of storage within the watershed, and the presence of an intermittent surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.

Table 9. Wetland D Summary

WETLAND D – INFORMATION SUMMARY			
Location:	Wetland D is located on the northern portion of the subject property.		
		**Local Jurisdiction**	City of Arlington
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Arlington Rating	IV
		Arlington Buffer Width	40 feet
		Wetland Size	3,537 SF onsite
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-5
		Upland Data Sheet (s)	DP-4
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by meadow foxtail, tall fescue, soft rush, and creeping buttercup.		
Soils	Hydric soil indicator f6 (Redox Dark Surface) was observed at DP-5.		
Hydrology	Hydrology is likely provided by direct precipitation, surface sheet flow, and a seasonally high groundwater table.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted, stressed vegetation, and a transition to wetland hydrology.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and Per AMC 20.93.800.b.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 10. Wetland E Summary

<table>
<tr><th colspan="3">WETLAND E – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland E is located on the central portion of the northernmost parcel along Edgecomb Creek.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>III</td></tr>
<tr><td>Arlington Rating</td><td>III</td></tr>
<tr><td>Arlington Buffer Width</td><td>60 feet</td></tr>
<tr><td>Wetland Size</td><td>775 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-15</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-16</td></tr>
<tr><td colspan="2"></td><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is dominated by reed canarygrass.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicators Al1 (Depleted Below Dark Surface) and A4 (Hydrogen Sulfide) were observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by topographic break and a transition to hydric soils and wetland hydrology.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 11. Wetland F Summary

<table>
<tr><th colspan="3">WETLAND F – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland F is located on the central portion of the northernmost parcel along Edgecomb Creek, to the west of Wetland E.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>III</td></tr>
<tr><td>Arlington Rating</td><td>III</td></tr>
<tr><td>Arlington Buffer Width</td><td>60 feet</td></tr>
<tr><td>Wetland Size</td><td>386 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-17</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-18</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is dominated by reed canarygrass</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by topographic break and a transition to wetland hydrology and hydric soils.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 12. Wetland G Summary

<table>
<tr><th colspan="3">WETLAND G – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland G is located on the west-central portion of the northernmost parcel along the south side of Edgecomb Creek, to the west of Wetland F.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>III</td></tr>
<tr><td>Arlington Rating</td><td>III</td></tr>
<tr><td>Arlington Buffer Width</td><td>105 feet</td></tr>
<tr><td>Wetland Size</td><td>987 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-22</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-23</td></tr>
<tr><td colspan="2"></td><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="3">Wetland vegetation is dominated by reed canarygrass.</td></tr>
<tr><td>Soils</td><td colspan="3">Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="3">Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="3">Wetland boundaries were determined by topographic break and a transition to wetland hydrology and hydric soils.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="3">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="4">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="3">The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="3">This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="3">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is increased by the presence of three WDFW Priority Habitats within 100 m of the wetland. This wetland scores 5 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="3">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 13. Wetland H Summary

WETLAND H – INFORMATION SUMMARY		
Location:	Wetland H is located on the west-central portion of the northernmost parcel along the north side of Edgecomb Creek.	
	**Local Jurisdiction**	City of Arlington
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	II
	Arlington Rating	II
	Arlington Buffer Width	165 feet
	Wetland Size	6,279 SF onsite
	Cowardin Classification	PFO/SS/EMAC
	HGM Classification	Riverine
	Wetland Data Sheet(s)	DP-20
	Upland Data Sheet (s)	DP-21
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by red alder, salmonberry, non-native invasive Himalayan blackberry, stinging nettle, and non-native invasive reed canarygrass.	
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek	
Rationale for Delineation	Wetland boundaries were determined by topographic break and a transition to wetland hydrology and hydric soils.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.	
Wetland Functions Summary		
Water Quality	The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.	
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.	
Habitat	This wetland is likely to provide forage and cover for a variety of terrestrial mammals and birds as the wetland contains moderate habitat interspersion due to the presence of three Cowardin classes. This wetland also contains large woody debris and undercut and steep banks which provide greater habitat suitability and complexity. Additionally, the unit is located within 100 m of three WDFW Priority Habitats. This wetland scores 6 out of 9 points, a moderate score for habitat functions.	
Buffer Condition	The buffer contains narrow strips of some intact native vegetation, but is otherwise degraded due to the location within an actively managed agricultural field.	

Table 14. Wetland I Summary

<table>
<tr><th colspan="3">WETLAND I – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland I is located on the central portion of the subject property on the western border of tax parcel number 31052700400300, along the east side of Edgecomb Creek.</td></tr>
<tr><td colspan="2" rowspan="11">  </td><td>Local Jurisdiction</td><td>City of Marysville</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>III</td></tr>
<tr><td>Marysville Rating</td><td>III</td></tr>
<tr><td>Marysville Buffer Width</td><td>75 feet</td></tr>
<tr><td>Wetland Size</td><td>377 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PSSA</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-28</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-29</td></tr>
<tr><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is dominated by redosier dogwood, stinging nettle, and reed canarygrass.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by topographic break and a transition to wetland hydrology and hydric soils.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide some forage and cover for small terrestrial mammals and birds as the wetland consists entirely of scrub-shrub vegetation. While this wetland contains special habitat features including undercut and steep banks, there is an overall lack of habitat suitability and complexity. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 15. Wetland J Summary

WETLAND J – INFORMATION SUMMARY	
Location:	Wetland J is located on the northern portion of the subject property on tax parcel number 31052700400300.

Local Jurisdiction	City of Marysville
WRIA	7 – Snohomish
WSDOE Rating (Hruby, 2014)	IV
Marysville Rating	IV
Marysville Buffer Width	35 feet
Wetland Size	334 SF onsite
Cowardin Classification	PEMA
HGM Classification	Depressional
Wetland Data Sheet(s)	DP-30
Upland Data Sheet (s)	DP-31
Boundary Flag color	Orange

Dominant Vegetation	Wetland vegetation is dominated by winter wheat that exhibited stunted growth.
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.
Wetland Functions Summary	
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.

Table 16. Wetland K Summary

WETLAND K – INFORMATION SUMMARY			
Location:	Wetland K is located on the northern portion of the subject property on tax parcel number 31052700400300.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	16,836 SF onsite
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-32
		Upland Data Sheet (s)	DP-31
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.		
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 17. Wetland L Summary

WETLAND L – INFORMATION SUMMARY		
Location:	Wetland L is located on the northern portion of the subject property on the western boundary of tax parcel number 31052700400300.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	15,756 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-33
	Upland Data Sheet (s)	DP-34
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.	
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 18. Wetland M Summary

WETLAND M – INFORMATION SUMMARY		
Location:	Wetland M is located on the northern portion of the subject property near the western boundary of tax parcel number 31052700400300.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	1,969 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-35
	Upland Data Sheet (s)	DP-34
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.	
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 19. Wetland N Summary

<table>
<tr><th colspan="3">WETLAND N – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland N is located on the northern portion of the subject property on tax parcel number 31052700400300.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Marysville</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>IV</td></tr>
<tr><td>Marysville Rating</td><td>IV</td></tr>
<tr><td>Marysville Buffer Width</td><td>35 feet</td></tr>
<tr><td>Wetland Size</td><td>8,133 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-37</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-36</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 20. Wetland P Summary

<table>
<tr><th colspan="3">WETLAND P – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland P is located on the northern portion of the subject property along the southern boundary of tax parcel number 31052700100100.</td></tr>
<tr><td rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>IV</td></tr>
<tr><td>Arlington Rating</td><td>IV</td></tr>
<tr><td>Arlington Buffer Width</td><td>40 feet</td></tr>
<tr><td>Wetland Size</td><td>550 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-39</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-40</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicator F3 (Depleted Matrix) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 21. Wetland Q Summary

WETLAND Q – INFORMATION SUMMARY		
Location:	Wetland Q is located on the northern portion of the subject property near the southern boundary of tax parcel number 31052700100100.	
	**Local Jurisdiction**	City of Arlington
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Arlington Rating	IV
	Arlington Buffer Width	40 feet
	Wetland Size	2,522 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-41
	Upland Data Sheet (s)	DP-40
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation consists winter wheat that exhibited stunted growth.	
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 22. Wetland R Summary

<table>
<tr><th colspan="3">WETLAND R – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland R is located on the northern portion of the subject property along the southern boundary of tax parcel number 31052700100100.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>IV</td></tr>
<tr><td>Arlington Rating</td><td>IV</td></tr>
<tr><td>Arlington Buffer Width</td><td>40 feet</td></tr>
<tr><td>Wetland Size</td><td>1,773 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-43</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-42</td></tr>
<tr><td colspan="2"></td><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="3">Wetland vegetation consists of winter wheat that exhibited stunted growth.</td></tr>
<tr><td>Soils</td><td colspan="3">Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.</td></tr>
<tr><td>Hydrology</td><td colspan="3">Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="3">Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="3">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="4">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="3">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="3">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="3">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="3">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 23. Wetland U Summary

WETLAND U – INFORMATION SUMMARY		
Location:	Wetland U is located on the northern portion of the subject property on tax parcel number 31052700400300.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	4,909 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-46
	Upland Data Sheet (s)	DP-47
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is lacking as the unit consists of a concave, sparsely vegetated area surrounded by a managed field of winter wheat.	
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 24. Wetland V Summary

<table>
<tr><th colspan="3">WETLAND V – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland V is located on the northern portion of the subject property on the western portion of tax parcel number 31052700100100.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Arlington</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>III</td></tr>
<tr><td>Arlington Rating</td><td>III</td></tr>
<tr><td>Arlington Buffer Width</td><td>105 feet</td></tr>
<tr><td>Wetland Size</td><td>5,945 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-49</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-50</td></tr>
<tr><td colspan="2"></td><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="3">Wetland vegetation is dominated by meadow foxtail, reed canarygrass, and creeping buttercup.</td></tr>
<tr><td>Soils</td><td colspan="3">Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="3">Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="3">Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="3">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="4">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="3">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="3">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="3">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is high as three WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 5 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="3">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

Table 25. Wetland W Summary

WETLAND W – INFORMATION SUMMARY		
Location:	Wetland W is located on the central portion of the subject property on tax parcel number 31052700300500.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	258 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-52
	Upland Data Sheet (s)	DP-53
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by meadow foxtail, shortawn foxtail, fringed willowherb, and creeping buttercup.	
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), F6 (Redox Dark Surface) and F7 (Depleted Dark Surface) were observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 26. Wetland X Summary

WETLAND X – INFORMATION SUMMARY		
Location:	Wetland X is located on the central portion of the subject property on tax parcel number 31052700300500.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	4,492 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-54
	Upland Data Sheet (s)	DP-55
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail and meadow fescue.	
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), F6 (Redox Dark Surface) and F3 (Depleted Matrix) were observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, stunted and sparse vegetation, and saturation on aerials.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 27. Wetland Y Summary

WETLAND Y – INFORMATION SUMMARY		
Location:	Wetland Y is located on the western boundary of the subject property, along the east side of Edgecomb Creek, on tax parcel numbers 31052700100300 and 31052700100100.	
	**Local Jurisdiction**	City of Arlington
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	III
	Arlington Rating	III
	Arlington Buffer Width	60 feet
	Wetland Size	662 SF onsite
	Cowardin Classification	PSSC
	HGM Classification	Riverine
	Wetland Data Sheet(s)	DP-25
	Upland Data Sheet (s)	DP-26
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by hardhack, non-native invasive Himalayan blackberry, reed canarygrass, and climbing nightshade.	
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and seasonal flooding from Edgecomb Creek.	
Rationale for Delineation	Wetland boundaries were determined by topographic breaks and a transition to a more indicative hydrophytic plant community.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b	
Wetland Functions Summary		
Water Quality	The wetland has some potential to provide overbank storage as more than half the wetland area contains depressions to trap sediments and pollutants during flooding events. In addition, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.	
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is increased by the presence of three WDFW Priority Habitats within 100 m of the wetland. This wetland scores 5 out of 9 points, a low score for habitat functions.	
Buffer Condition	The buffer contains narrow strips of some intact native vegetation, but is otherwise degraded due to the location within an actively managed agricultural field.	

Table 28. Wetland Z Summary

WETLAND Z – INFORMATION SUMMARY		
Location:	Wetland Z is located on the west-central boundary of the subject property, along the west side of Edgecomb Creek, on tax parcel number 31052700100300.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	III
	Marysville Rating	III
	Marysville Buffer Width	75 feet
	Wetland Size	483 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Riverine
	Wetland Data Sheet(s)	DP-56
	Upland Data Sheet (s)	DP-27
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass, climbing nightshade, and fringed willowherb.	
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.	
Rationale for Delineation	Wetland boundaries were determined by topographic breaks and a transition to wetland hydrology and hydric soils.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	The wetland has little potential to provide water quality functions as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than one third the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed identified as important for maintaining water quality. This wetland scores 8 out of 9 points for water quality functions.	
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and the adjacent stream is downcut. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 29. Wetland AA Summary

WETLAND AA – INFORMATION SUMMARY		
Location:	Wetland AA is located on the central portion of the subject property along Edgecomb Creek on tax parcel number 31052700300200.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	III
	Marysville Rating	III
	Marysville Buffer Width	75 feet
	Wetland Size	574 SF onsite
	Cowardin Classification	PEMA
	HGM Classification	Riverine
	Wetland Data Sheet(s)	DP-57
	Upland Data Sheet (s)	DP-58
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass, climbing nightshade, and fringed willowherb.	
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.	
Rationale for Delineation	Wetland boundaries were determined by topographic breaks and a transition to wetland hydrology and hydric soils.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than 2/3 of the wetland area is covered in herbaceous plants, which can capture sediment and pollutants. There is substantial opportunity and value for the wetland to treat pollutants due to the immediate surrounding area that generates pollutants and location in a watershed with an approved TMDL. This wetland scores 8 out of 9 points for water quality functions, a high score for water quality functions.	
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width, which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions, a moderate score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 30. Wetland AB Summary

WETLAND AB – INFORMATION SUMMARY	
Location:	Wetland AB is located on the central portion of the subject property along Edgecomb Creek.

Local Jurisdiction	City of Marysville
WRIA	7 – Snohomish
WSDOE Rating (Hruby, 2014)	III
Marysville Rating	III
Marysville Buffer Width	75 feet
Wetland Size	1,166 SF onsite
Cowardin Classification	PEMA
HGM Classification	Riverine
Wetland Data Sheet(s)	DP-61
Upland Data Sheet (s)	DP-62
Boundary Flag color	Orange

Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass, climbing nightshade, and fringed willowherb.
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.
Rationale for Delineation	Wetland boundaries were determined by topographic breaks and a transition to wetland hydrology and hydric soils.
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.
Wetland Functions Summary	
Water Quality	The wetland has little potential to provide overbank storage as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than 2/3 of the wetland area is covered in herbaceous plants, which can capture sediment and pollutants. There is substantial opportunity and value for the wetland to treat pollutants due to the immediate surrounding area that generates pollutants and location in a watershed with an approved TMDL. This wetland scores 8 out of 9 points for water quality functions, a high score for water quality functions.
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions, a moderate score for hydrologic functions.
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. However, this wetland contains special habitat features including undercut and steep banks. Additionally, the value of habitat is minimal as the wetland is located within 100 m of just one WDFW Priority Habitat. This wetland scores 4 out of 9 points, a low score for habitat functions.
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.

Table 31. Wetland AC Summary

WETLAND AC – INFORMATION SUMMARY			
Location:	Wetland AC is located on the central portion of the subject property on tax parcel number 31053400200600		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	4,866 SF
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-76
		Upland Data Sheet (s)	DP-77
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail.		
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop, and the presence of stunted and sparse vegetation.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a watershed with an approved TMDL. This wetland scores 6 out of 9 points, a moderate score for water quality functions, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. While the wetland is dominated by native species, the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as it is located within 100 m of just one WDFW Priority Habitat and does not provide habitat for priority species. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 32. Wetland AD Summary

WETLAND AD – INFORMATION SUMMARY			
Location:	Wetland AD is located centrally on the subject property, along Edgecomb Creek, on tax parcel number 31053400200500		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	III
		Marysville Rating	III
		Marysville Buffer Width	75 feet
		Wetland Size	2,462 SF
		Cowardin Classification	PEMA
		HGM Classification	Riverine
		Wetland Data Sheet(s)	DP-78
		Upland Data Sheet (s)	DP-79
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass.		
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.		
Rationale for Delineation	Wetland boundaries were determined by topographic break and a transition to wetland hydrology and hydric soils.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	The wetland has little potential to provide water quality functions as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than 2/3 of the wetland area is covered in herbaceous plants, the immediate surrounding area generates pollutants, and the wetland is located in a watershed with an approved TMDL. This wetland scores 8 out of 9 points, a high score for water quality functions.		
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points, a moderate score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation and is dominated by non-native invasive vegetation, which also greatly reduces habitat suitability and complexity. The wetland contains a few special habitat features (undercut and steep banks) and is located within 100 m of a WDFW Priority Habitat (instream habitat); however, the connectivity to surround habitat is low due to the surrounding high intensity land use. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 33. Wetland AE Summary

WETLAND AE – INFORMATION SUMMARY			
Location:	Wetland AE is located on the west-central portion of the subject property on tax parcel number 31053400200600.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	11,346 SF
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-80
		Upland Data Sheet (s)	DP-81
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail, colonial bentgrass, and reed canarygrass.		
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a shift to a stunted or stressed plant community.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a in a watershed with an approved TMDL. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. Additionally, the wetland is dominated by non-native, invasive species, and the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is minimal as there is no WDFW Priority Habitat within 100 m of the wetland. This wetland scores 3 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 34. Wetland AF Summary

WETLAND AF – INFORMATION SUMMARY		
Location:	Wetland AF is located on the west-central portion of the subject property on tax parcel number 31053400200600.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	IV
	Marysville Rating	IV
	Marysville Buffer Width	35 feet
	Wetland Size	615 SF
	Cowardin Classification	PEMA
	HGM Classification	Depressional
	Wetland Data Sheet(s)	DP-82
	Upland Data Sheet (s)	DP-83
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail and colonial bentgrass.	
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.	
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and the presence of stunted and sparse vegetation.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.	
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses, which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. Additionally, more than 25 percent of the unit consists of non-native invasive vegetation, and the unit lacks special habitat features that provide greater habitat suitability and complexity. The value of habitat is minimal as it is there are no WDFW Priority Habitats within 100 meters of the unit. This wetland scores 3 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 35. Wetland AG Summary

WETLAND AG – INFORMATION SUMMARY			
Location:	Wetland AG is located on the west-central portion of the subject property on tax parcel number 31053400200600.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	285 SF
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-84
		Upland Data Sheet (s)	DP-83
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail and colonial bentgrass.		
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and the presence of stunted and sparse vegetation.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a watershed with an approved TMDL. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses, which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation, which also greatly reduces habitat suitability and complexity. Additionally, more than 25 percent of the unit consists of non-native invasive vegetation, and the unit lacks special habitat features that provide greater habitat suitability and complexity. The value of habitat is minimal as it is there are no WDFW Priority Habitats within 100 meters of the unit. This wetland scores 3 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 36. Wetland AH Summary

WETLAND AH – INFORMATION SUMMARY			
Location:	Wetland AH is located on the southern portion of the of the subject property, along Edgecomb Creek		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	II
		Marysville Rating	II
		Marysville Buffer Width	100 feet
		Wetland Size	233,630 SF onsite
		Cowardin Classification	PFO/SS/EMBC
		HGM Classification	Riverine
		Wetland Data Sheet(s)	DP-87
		Upland Data Sheet (s)	DP-86
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by Pacific willow, hardhack, twinberry honeysuckle, and non-native invasive reed canarygrass.		
Soils	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek		
Rationale for Delineation	Wetland boundaries were determined by topographic break, a transition to wetland hydrology and hydric soils, and review of aerial photos for wetland hydrology indicators (e.g. surface water and saturation).		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	The wetland has moderate potential to provide improve water quality as more than half of the wetland area contains depressions to trap sediments and pollutants during flooding events. Additionally, greater than 1/3 of the wetland area is covered in trees or shrubs, the immediate surrounding area generates pollutants, and the wetland is located in a watershed with an approved TMDL. This wetland scores 8 out of 9 points for water quality functions, a high score for water quality functions		
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities and a relatively wide wetland area perpendicular to Edgecomb Creek. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. This wetland scores 7 out of 9 points for hydrologic functions, a moderate score for hydrologic functions		
Habitat	This wetland is likely to provide forage and cover for a variety of terrestrial mammals and birds as the wetland contains moderate habitat interspersion due to the presence of three Cowardin classes. This wetland also contains several special habitat features (large downed woody debris, standing snags, and undercut and steep banks), which increase habitat complexity. Additionally, the unit is located within 100 m of three WDFW Priority Habitats (Instream, Riparian, and Snags and Logs). This wetland scores 6 out of 9 points, a moderate score for habitat functions.		
Buffer Condition	The buffer contains narrow strips of some intact native vegetation, but is otherwise degraded due to the location within an actively managed agricultural field.		

Table 37. Wetland AI Summary

WETLAND AI – INFORMATION SUMMARY			
Location:	Wetland AI is located on the central portion of the subject property, primarily within the OHW of Edgecomb Creek, on tax parcel numbers 31053400200600, 31053400200500, and 31053400200400.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	III
		Marysville Rating	III
		Marysville Buffer Width	75 feet
		Wetland Size	3,873 SF onsite
		Cowardin Classification	PEMAB
		HGM Classification	Riverine
		Wetland Data Sheet(s)	DP-89
		Upland Data Sheet (s)	DP-90
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass and creeping buttercup.		
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), F3 (Depleted Matrix), and F6 (Redox Dark Surface) were observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to wetland hydrology and hydric soils.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	The wetland has little potential to provide water quality functions as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than 2/3 of the wetland area is covered in herbaceous plants, which can capture sediment and pollutants. There is substantial opportunity and value for the wetland to treat pollutants due to the immediate surrounding area that generates pollutants and location in a watershed with an approved TMDL. This wetland scores 8 out of 9 points for water quality functions, a high score for water quality functions		
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width, which reduces overbank storage. This wetland scores 6 out of 9 points for hydrologic functions, a moderate score for hydrologic functions		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation and is dominated by non-native invasive species, which greatly reduce habitat suitability and complexity. The wetland contains a few special habitat features (undercut and steep banks) and is located within 100 m of a WDFW Priority Habitat (Instream); however, the connectivity to surround habitat is low due to the surrounding high intensity land use. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 38. Wetland AJ Summary

WETLAND AJ – INFORMATION SUMMARY		
Location:	Wetland AJ is located on the central portion of the subject property, with the OHW of Edgecomb Creek, on tax parcel numbers 31053400200600, and 31053400200500.	
	**Local Jurisdiction**	City of Marysville
	WRIA	7 – Snohomish
	WSDOE Rating (Hruby, 2014)	III
	Marysville Rating	III
	Marysville Buffer Width	75 feet
	Wetland Size	2,471 SF
	Cowardin Classification	PEMA
	HGM Classification	Riverine
	Wetland Data Sheet(s)	DP-85
	Upland Data Sheet (s)	DP-88
	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass.	
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F6 (Redox Dark Surface) were observed.	
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, surface runoff from adjacent uplands, and occasional flooding from Edgecomb Creek.	
Rationale for Delineation	Wetland boundaries were determined by topographic breaks and a transition to wetland hydrology and hydric soils.	
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.	
Wetland Functions Summary		
Water Quality	The wetland has little potential to provide water quality functions as less than half the wetland area contains depressions to trap sediments and pollutants during flooding events. However, greater than 2/3 of the wetland area is covered in herbaceous plants, which can capture sediment and pollutants. There is substantial opportunity and value for the wetland to treat pollutants due to the immediate surrounding area that generates pollutants and location in a watershed with an approved TMDL. This wetland scores 8 out of 9 points, a high score for water quality functions.	
Hydrologic	This wetland provides moderate hydrologic functions due to the presence of vegetation that greatly reduces water velocities. In addition, the ability of the wetland to provide water storage is valuable as the unit is in a sub-basin with flooding problems farther down-gradient. However, this function is limited by the narrow width of the wetland unit compared to the stream width which reduces overbank storage. This wetland scores 6 out of 9 points, a moderate score for hydrologic functions.	
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland is dominated by non-native invasive vegetation, which also greatly reduces habitat suitability and complexity. The wetland contains a few special habitat features (undercut and steep banks) and is located within 100 m of a WDFW Priority Habitat (Instream); however, the connectivity to surround habitat is low due to the surrounding high intensity land use. This wetland scores 4 out of 9 points, a low score for habitat functions.	
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.	

Table 39. Wetland AK Summary

WETLAND AK – INFORMATION SUMMARY			
Location:	Wetland AK is located centrally on the eastern boundary of the subject property on tax parcel number 31053400200300.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	696 SF
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-91
		Upland Data Sheet (s)	DP-92
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by tall fescue, creeping buttercup, common velvetgrass, and shortawn foxtail.		
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), F3 (Depleted Matrix), and F6 (Redox Dark Surface) were observed.		
Hydrology	Hydrology is likely provided by a seasonally high water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and the presence of stunted and sparse vegetation.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and MMC 22E.010.060.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a watershed with an approved TMDL. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. Additionally, more than 25 percent of the unit consists of non-native invasive vegetation, and the unit lacks special habitat features that provide greater habitat suitability and complexity. The value of habitat is minimal due to a lack of WDFW Priority Habitats within 100 m of the unit. This wetland scores 3 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 40. Wetland AL Summary

WETLAND AL – INFORMATION SUMMARY			
Location:	Wetland AL is located on the northwestern portion of the subject property on the western portion of tax parcel number 31052700100300.		
		**Local Jurisdiction**	City of Marysville
		WRIA	7 – Snohomish
		WSDOE Rating (Hruby, 2014)	IV
		Marysville Rating	IV
		Marysville Buffer Width	35 feet
		Wetland Size	11,835 SF onsite
		Cowardin Classification	PEMA
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-101
		Upland Data Sheet (s)	DP-100, 102
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by maintained agricultural crops during the growing season, most recently corn, and otherwise remains relatively devoid of vegetation following harvest.		
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology is likely provided by direct precipitation and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and onsite hydrology present in early March.		
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.		
Wetland Functions Summary			
Water Quality	This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.		
Hydrologic	This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.		
Habitat	This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. The wetland is dominated by agricultural row crops and the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is moderate as two WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 4 out of 9 points, a low score for habitat functions.		
Buffer Condition	The onsite buffer is degraded due to the location within an actively managed agricultural field.		

Table 41. Wetland AM Summary

<table>
<tr><th colspan="3">WETLAND AM – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Wetland AM is located on the northwestern portion of the subject property on the northwestern portion of tax parcel number 31052700100300.</td></tr>
<tr><td colspan="2" rowspan="10">  </td><td>Local Jurisdiction</td><td>City of Marysville</td></tr>
<tr><td>WRIA</td><td>7 – Snohomish</td></tr>
<tr><td>WSDOE Rating (Hruby, 2014)</td><td>IV</td></tr>
<tr><td>Marysville Rating</td><td>IV</td></tr>
<tr><td>Marysville Buffer Width</td><td>35 feet</td></tr>
<tr><td>Wetland Size</td><td>3,021 SF onsite</td></tr>
<tr><td>Cowardin Classification</td><td>PEMA</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>DP-103</td></tr>
<tr><td>Upland Data Sheet (s)</td><td>DP-102</td></tr>
<tr><td>Boundary Flag color</td><td>Orange</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland vegetation is dominated by maintained agricultural crops during the growing season, most recently corn, and otherwise remains relatively devoid of vegetation following harvest.</td></tr>
<tr><td>Soils</td><td colspan="2">Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology is likely provided by direct precipitation and surface runoff from adjacent uplands.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland boundaries were determined by slight topographic drop and onsite hydrology present in early March.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Local rating is based upon WSDOE's current rating system and AMC 20.93.800.b.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">This wetland can only provide minimal pollutant filtration as persistent, ungrazed plants cover less than 1/10 of the wetland and the unit lacks seasonal ponding. However, the area immediately surrounding the wetland does generate pollutants, providing some potential for water quality improvement. The value of any water quality improvement functions within the wetland is increased as the wetland is located in a sub-basin where water quality is an issue. This wetland scores 6 out of 9 points, a moderate score for water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">This wetland provides minimal hydrologic functions due to the limited storage during wet periods and the minimal contribution of storage within the watershed despite the lack of a surface water outlet. However, the immediate surrounding area generates excessive runoff and least 25 percent of the contributing basin is covered in intensive human land uses which supports some hydrologic functions of the site. The hydrologic functions provided onsite are also valuable to society as surface flooding problems are present in a sub-basin farther down-gradient. This wetland scores 5 out of 9 points, a low score for hydrologic functions.</td></tr>
<tr><td>Habitat</td><td colspan="2">This wetland is likely to provide limited forage and cover for small terrestrial mammals and birds as the wetland consists entirely of emergent vegetation. The wetland is dominated by agricultural row crops and the unit lacks special habitat features that provide greater habitat suitability and complexity. The diversity of niches within the wetland is also limited by the presence of only one Cowardin class. The value of habitat is low as no WDFW Priority Habitats are located within 100 m of the unit. This wetland scores 3 out of 9 points, a low score for habitat functions.</td></tr>
<tr><td>Buffer Condition</td><td colspan="2">The onsite buffer is degraded due to the location within an actively managed agricultural field.</td></tr>
</table>

5.2 Streams

Edgecomb Creek

The site investigation identified an onsite stream (Edgecomb Creek) that flows onsite through a culvert beneath the BNSF railroad in the northeast corner of the subject property, continues through agricultural ditches in a southwesterly direction, turns south, and then crosses beneath the BNSF Railroad and flows offsite to the southeast. The segments of Edgecomb Creek onsite consist of linear, excavated channels (i.e., ditches) connected by artificial 90-degree turns. The linear channels run north-south and east-west, with faster flows observed in the north-south channels and slower or stagnant flows in the east-west channels. During the April and May site investigations, the channels had an average 6-foot wetted width. Several beaver dams were observed during site investigations with apparent influence on Edgecomb Creek hydrology. During the Summer 2020 site investigations, the streambed was observed to be dry downgradient of beaver dams between OHW flags Z-76 and Z-96 on the northern portion of the project area. Hydrology was regained lower down in the stream channel, near Wetland AH at the southern project extent.

Four culverts convey flows beneath sections of agricultural field across the subject property; these culverts are approximately 10 to 25 feet long. The WDFW fish passage assessment program identifies that two of these culverts act as partial fish passage barriers (33 and 67 percent passable) due to slope and depth limitations (Culvert ID No. 99430 and 999431), while the other two are passable by fish (Culvert ID No. 999428 and 999429). WDFW also documents that the culvert beneath the BNSF railroad adjacent to the northeast corner of the subject property (Culvert ID No. 102 Q0004) as a partial fish barrier (33 percent) due to slopes; the culvert beneath 152nd Street Northeast (Culvert ID No. 102 Q016), which traverses the central portion of the subject property, (Culvert ID No. 102 Q016) as a partial fish barrier (67 percent passable) due to slopes; and the culvert beneath railroad section traversing the southeast corner of the subject property is documented as a partial fish barrier (67 percent passable) due to restrictions associated with stream velocities.

Most of site is mowed/farmed to the edge of the onsite streambanks, with a narrow strip of riparian vegetation below the bankfull width dominated by redosier dogwood, willows, non-native invasive reed canarygrass, non-native invasive Himalayan blackberry, and creeping buttercup. The adjacent onsite agricultural fields extend up to the streambanks across most of the subject property. South of 152nd Street, the stream is separated from the nearby agricultural fields to the west by greater than 100 feet. Riparian vegetation along this stream section is dominated by non-native, invasive species (e.g. Himalayan blackberry and reed canarygrass). Habitat units vary throughout Edgecomb Creek and are described below with location reference given by the OHW flag location set by SVC. Habitat unit assessment was performed for the delineated section of Edgecomb Creek on the northern and central portions of the subject property:

- OHW Z-1 through Z-17 contains a relatively natural (i.e., non-linear) stream channel that meanders through degraded riparian vegetation adjacent to the BNSF railroad. Pool and riffle sequencing is consistent throughout the reach, and substrate consists of sorted gravels. Some LWD is present in the stream. Riparian vegetation is dominated by Himalayan blackberry with a few native red alder and red elderberry (*Sambucus racemosa*). The stream gradient is relatively steep compared to the flat topography of the subject property.
- OHW Z-18 through Z-40 consists of a primarily linear channel with a slightly steeper gradient compared to the flat topography of the subject property. The substrate consists of sorted

gravels and sands with some pools and riffles. Riparian vegetation is dominated by Himalayan blackberry and reed canarygrass with willows and red alder becoming more prevalent near the upgradient section of the reach.

- OHW Z-41 through Z-50 consists of an east-west linear channel with substrates dominated by silts and containing some intermixed sands. The stream morphology consists of all run habitat with no pools or riffles present. Riparian vegetation is dominated by Himalayan blackberry and reed canarygrass.
- OHW Z-51 through Z-58 consists of a north-south linear channel with substrates dominated by sands. Some pools and riffles are present. The streambank vegetation is dominated by Himalayan blackberry and reed canarygrass.
- OWH Z-59 through Z-75: Flow within this east-west linear channel is impounded by beaver dams. The substrates are dominated by silt, and the channel lacks pool and riffle features. The streambank vegetation is dominated by Himalayan blackberry and reed canarygrass.
- OHW Z-76 through Z-96 consists of an impounded section of flows along a north-south linear channel with a silt/sand substrate bottom. The stream morphology consists of all run habitat with no pools or riffles present. Four beaver dams were observed throughout this reach. The bankfull width is 15 to 20 feet on average. There is an approximately 20-foot-wide riparian strip between the stream and the adjacent onsite agricultural field. Dominant riparian vegetation includes red alder, salmonberry, and non-native invasive Himalayan blackberry.
- OHW Z-96 through Z-114 is along a north-south linear channel with a 10-foot bankfull width on average. This reach exhibited a silt/sand substrate bottom. 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.
- OHW Z-115 through Z-118 is along a north-south linear channel with sand/pea gravel substrate bottom, 10-foot bankfull width, and riffle and pool habitat. Lamprey (*Petromyzontiformes*), sculpin (*Cottoidea*), and salmonids were observed during the April 23, 2020 site visit. Dominant streambank vegetation consists of reed canarygrass and Himalayan blackberry.
- OHW Z-118 through Z-137 is an east-west linear channel with 10-foot bankfull width and adjacent levee. Stream substrates were dominated by sand. Dominant vegetation consisted of reed canarygrass and Himalayan blackberry.
- OHW Z-137 through Z-143 is along a north-south linear channel and exhibits a greater gradient and incision than the other reaches, with a sand/pea gravel substrate and adjacent concrete levee. Dominant streambank vegetation throughout this reach consisted of reed canarygrass and Himalayan blackberry.
- OHW Z-143 to Z-168 continues along a north-south linear channel, and is deeply incised, with the channel migrating slightly west from Z-147 to Z-153. Substrate consisted of sand/silt material. The banks are undercut, and the average bankfull width was approximately 8.5 feet on average. Downstream of Z-155, no water was observed within the channel. Dominant vegetation along the streambank consisted of reed canarygrass and Himalayan blackberry.

- OHW Z-169 to Z-178 continues along a north-south linear channel, with the channel becoming more entrenched and with more apparent evidence of excavation. The bankfull width was approximately 8.5 feet on average. Substrate consisted of silt/sand material. The channel was observed without water extending to Z-174, after which flows are present again. Few pools and riffles were observed within the wetted portions of this reach, and approximately halfway through the channel, the reach is conveyed through a culvert beneath 152nd Street Northeast (Culvert ID No. 102 Q016). Streambank vegetation was dominated by reed canarygrass and Himalayan blackberry.
- OHW Z-179 to Z-194b and ZZ-19 begins as a north-south linear channel that shifts to a meandering and braided main-stem channel with connecting side channels as the channel enters Wetland AH. The bankfull width of this reach was ranges from approximately 10-20 feet on average, largely due to beaver influence. Substrate within this reach consists of sand and gravel, and pools and riffles were observed during the site investigation. A few beaver dams were observed along the southern boundary of the subject property. The beaver dams are located at channel junctures and likely contribute to the observed channel morphologies. Observed woody debris was localized to these beaver dams. Streambank vegetation along this reach transitions to a community of Pacific willow, hardhack, twinberry honeysuckle, and reed canarygrass.
- Offsite swales connected to Edgecomb Creek were observed on tax parcel number 31052700200900, west of the northern portion of the subject property. Historic aerial imagery indicates that this area appears to have been an agricultural field until at least 1990. These swales were likely created as buffer enhancement for Edgecomb Creek during commercial development on tax parcel 31052700200900. Preliminary design plans for voluntary buffer enhancement described excavated swales that would meander and connect to Edgecomb Creek, providing backwater fish habitat and stormwater storage during flooding events (Brock, 2001 and Davis, 2001). Vegetation surrounding the swales consists of red alder and salmonberry. The beaver dams located along Edgecomb Creek have raised the water levels such that the offsite swales currently provide some function as back-channel habitat.

Water Quality

Previous water quality sampling by WSDOE recorded low dissolved oxygen levels, high fecal coliform levels, and high temperature in Edgecomb Creek (Appendix G). SVC installed continuous data loggers in Edgecomb Creek to measure streamflow, water temperature and dissolved oxygen (Appendix H). The streamflow data logger was installed upstream of the beaver dams and dry section of Edgecomb Creek observed during Summer 2020. Summer baseflows were below 1 cubic foot per second (cfs) (Appendix H, Figure 2). Water temperature and dissolved oxygen levels show that the summer stream conditions provide suitable temperature ranges for salmonid use; however, the dissolved oxygen concentrations are not suitable for salmonid use and were below the WAC 173-201A-200(1)(d) threshold for core summer salmonid habitat use for 67 days (Appendix H, Figures 3 and 4). Along with the summer interruption in streamflow, the poor water quality likely limits salmonid use of the onsite Edgecomb Creek during the summer.

Water Typing

Lamprey, sculpin, and salmonids were observed in Edgecomb Creek during the April 8, 2020 site visit. The City of Marysville, Snohomish County, WDFW SalmonScape, and DNR map identify Edgecomb

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 42 below.

Table 40. Stream Summary – Edgecomb Creek.

STREAM INFORMATION SUMMARY		
	**Feature Name**	Edgecomb Creek
	WRIA	7 – Snohomish
	WA Stream Catalog #	1,221,617,481,051
	Local Jurisdiction	City of Marysville and City of Arlington
	DNR Stream Type	Type F (Fish-Bearing)
	Local Stream Rating	Type F-ESA (Arlington) Type F (Marysville)
	Buffer Width	150 feet (Arlington and Marysville)
	Documented Fish Use	Coho salmon and cutthroat trout
Location of Feature	Edgecomb Creek is centrally located on the subject property, flowing onsite through a culvert beneath the BNSF railroad in the northeast corner of the subject property, continuing through agricultural ditches in a southwesterly direction, turning south, and then crossing beneath the BNSF Railroad and flowing offsite to the southeast.	
Connectivity (where water flows from/to)	Edgecomb Creek originates from a pasture located on hillslopes to the east of the subject property, discharges into the Middle Fork of Quilceda Creek, and then discharges into the main stem of Quilceda Creek. Quilceda Creek drains into Ebey Slough at the mouth of the Snohomish River.	
Riparian/Buffer Condition	The onsite buffer area consists of relatively narrow riparian vegetation strips dominated by shrubs and non-native invasive species (e.g. Himalayan blackberry and reed canarygrass) and is also degraded due to the adjacent agricultural fields.	

5.3 Artificial Features

Stormwater Ponds

The site investigation identified two stormwater ponds on the northern portion of the site, adjacent to offsite commercial development to the west and within the City of Arlington jurisdictional limits. These stormwater ponds 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 this feature as these two ponds 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. In 1998 USACE confirmed an offsite wetland delineation covering the northern portion of the subject property that identified a detention pond in the location of the two stormwater ponds (Aqua-Terr Systems, 2000). Per AMC 20.93.810(a)(1), "wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities." Therefore, the offsite stormwater ponds are not considered regulated wetlands under AMC 20.93 Part VIII.

Tributary X

The site investigations identified an agricultural drainage ditch (Tributary X) on the northern portion of the subject property. Tributary X is located on tax parcel number -0100 and is entirely within the City of Arlington jurisdictional limits. The ditch on the subject property begins along State Route 531, runs west at the northern boundary of tax parcel -0100, turns south approximately halfway across the parcel, and continues south, flowing into Edgecomb Creek in the middle of the parcel. Bankfull width along Tributary X is approximately 4 to 6 feet, and the water depth was as deep as 2 feet in some areas during the April 2020 site investigations. The ditch exhibits steep vertical edges with a mucky bottom and appears to be intentionally and artificially excavated. Fish were observed at the time of the site visit, and the ditch appears to support amphibian habitat. Algae, scum, and debris were observed throughout this ditch. Along the north-south portion of the ditch, vegetation consisted of cattails (*Typha* sp.), reed canarygrass, and algae. Water quality in the ditch is extremely poor. During the May 13, 2020 site visit, the water temperature exceeded salmonid thresholds and dissolved oxygen was below salmonid thresholds (Table 43). Summer temperatures are likely to likely to be warmer than the observed spring water temperature.

Water from an artificial drainage system north of State Route 531 flows into Tributary X from a culvert beneath State Route 531. The City of Arlington Stormwater Map (Appendix B9) documents this artificial drainage system north of State Route 531 as consisting of ditches and piped conveyances. The map shows that the flow into Tributary X is directed from ditches on the west and east sides of the railroad tracks, conveyed through approximately 900 feet of pipe through the Washington Trucking, Inc. site and adjacent development sites, and then drains into a linear ditch. This linear ditch north of State Route 531 and Tributary X are connected by a culvert that WDFW has identified as a fish passage barrier due to depth.

Tributary X is mapped by the City of Marysville, DNR, and USFWS NWI; DNR classifies this ditch as a Type N (non-fish bearing) water and the City of Marysville classifies it as a Type Ns (non-fish bearing, seasonal) water. However, based on the observations of fish presence and hydrology, Tributary X provides off-channel habitat for Edgecomb Creek and is therefore likely considered a Type F-ESA water per AMC 20.93.700.b due to the presumed ESA-listed salmonid species use in Edgecomb Creek. Per AMC20.93.730, Type F-ESA waters are subject to a 150-foot standard buffers. A summary for Tributary X is provided in Table 44 below.

Table 41. Water Quality Sampling Data for Tributary X

Date	Water Quality Sampling Point	Temperature (°C)	Dissolved Oxygen (mg/L)	pH
5/13/2020	WQ-DX1	19	3	N/A

Table 42. Drainage Summary – Tributary X.

DRAINAGE INFORMATION SUMMARY		
	**Feature Name**	Tributary X
	WRIA	7 – Snohomish
	WA Stream Catalog #	1,221,442,481,499.00
	Local Jurisdiction	City of Arlington
	DNR Watercourse Type	Type N (Non-fish Bearing)
	Local Watercourse Rating	Type F-ESA
	Buffer Width	150 feet
	Documented Fish Use	Fish observed during site investigations.
Location of Feature	Tributary X is located on the northern portion of the subject property.	
Connectivity (where water flows from/to)	Tributary X begins along State Route 531 running west at the northern boundary of tax parcel -0100, turning south approximately halfway across the parcel, and continuing south and flowing into Edgecomb Creek in the middle of the parcel.	
Riparian/Buffer Condition	The onsite buffer area consists of active agricultural land and State Route 531.	

51st Avenue East Ditch

The site investigation identified an onsite ditch (51st Avenue East Ditch) running parallel to 51st Avenue Northeast on the western property boundary. 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 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 likely not regulated as a stream under MMC 22E.010.210.1.

WSDOE believes the roadside ditch was likely constructed from a wetland in the early 1900s (email correspondence between SVC and Neil Molstad, WSDOE, 10/28/2020). The Applicant has indicated their disagreement with WSDOE's determination; however, the Applicant has decided to accept the positive wetland determination for the Cascade Business Park project. The 51st Avenue East Ditch crosses beneath 152nd Street Northeast with unidirectional flow to the south through the culvert crossing. The 51st Avenue East Ditch has been preliminarily rated as two Category III wetland units to the north and south of 152nd Street Northeast. The USACE issued an approved jurisdictional determination (AJD) in 2020 that identifies the 51st Avenue East Ditch north of 152nd Street Northeast as a non-jurisdictional water (USACE, 2020; Appendix J).

Ditch U

The site investigation identified an agricultural drainage ditch (Ditch U) on the central portion of the subject property. Ditch U is located on tax parcel number 31053400200600 and is entirely within the City of Marysville jurisdictional limits. Ditch U begins as an east-west linear channel and is connected to the non-jurisdictional 51st Avenue East Ditch. The ditch is separated from Edgecomb Creek by a 10- to 15-foot wide upland bench that prevents the features from sharing hydrology. The ditch exhibits steep vertical edges and appears to be intentionally and artificially excavated. It appears to convey ephemeral groundwater including from drain tile. Two culverts are located on Ditch U. Ditch U is not identified by the City of Marysville critical areas map, the DNR stream typing map, or the WDFW SalmonScape map. Ditch U lacks natural stream characteristics (i.e. defined bed and bank) and does not meet the definition of a typed waterbody according to WAC 222-16-030. As such, Ditch U is likely not regulated as a stream under MMC 22E.010.210.1.

152nd Street Ditches

Two roadside ditches are located to the west (152nd Street Ditch 1) and east (152nd Street Ditch 2) of Edgecomb Creek along the northern side of 152nd Street Northeast. The ditches exhibit steep vertical edges and appear to be intentionally and artificially excavated. The roadside ditches appear to convey ephemeral storm runoff only. No indications of surface flows were identified; the ditch bottoms are well vegetated with no scour marks, sorting, or other indicators of flow. The ditches are not identified by the City of Marysville critical areas map, the DNR stream typing map, or the WDFW SalmonScape map. The 152nd Street Ditches lack natural stream characteristics (i.e. defined bed and bank) and do not meet the definition of a typed waterbody according to WAC 222-16-030. As such, 152nd Street Ditches are likely not regulated as streams under MMC 22E.010.210.1.

Chapter 6. Regulatory Considerations

The site assessments in spring, summer, and fall of 2020 identified a total of 40 potentially-regulated wetlands (Wetlands A-Z and AA-AK), one stream (Edgecomb Creek), one fish-bearing ditch (Tributary X) and 1 roadside ditch (51st Avenue East Ditch) that will be treated as a wetland for local and state permitting purposes. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were identified in the project area.

The proposed project area crosses the jurisdictional boundary between the City of Arlington and the City of Marysville. A total of 13 delineated wetlands (Wetlands A-H, P-R, V and Y) are located entirely in the City of Arlington jurisdiction, and 25 delineated wetlands (Wetlands I-N, S-U, W, X, Z, and AA-AM) are located entirely in the City of Marysville jurisdiction. One delineated wetland (Wetland O) is located on the jurisdictional boundary between the two cities. Tributary X is located in the City of Arlington, and the onsite 51st Avenue East Ditch is located in the City of Marysville. Edgecomb Creek is located in both the City of Arlington and the City of Marysville.

6.1 Local Critical Areas Requirements

6.1.1 Wetland Buffers

City of Arlington

AMC 20.93.800(a) has adopted the 2014 *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). Under the 2014 wetland rating system, Category IV wetlands are those that generally provide low levels of function and score less than 16 points. Category IV wetlands are often heavily disturbed and are wetlands that should be replaceable. Category III wetlands are those that generally provide moderate levels of function and score between 16 and 19 points. Category III wetlands have generally been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands. Category III wetlands can often be adequately replaced with a well-planned mitigation project. Category II wetlands provide high levels of some functions and score between 20 and 22 points. Category II wetlands are difficult, though not impossible, to replace. AMC 20.93.830 identifies standard buffers for wetlands based on habitat score assuming the implementation of all minimization measures listed in AMC Table 20.93-5 (Table 38 below). Category II, III, and IV wetlands were identified during the site investigations:

- Category II wetland with habitat score of 6 (Wetland H)
- Category III wetlands with habitat score of 5 (Wetland G and Wetland V)
- Category III wetlands with habitat score of 4 (Wetlands E, F, Offsite Wetland O, and Y)
- Category IV wetlands with habitat scores of 4 or less (Wetlands A-D and P-R)

The standard buffer for a Category IV wetland is 40 feet; a Category III wetland with habitat score less than 5 points is 60 feet; a Category III wetland with habitat score of 5 is 105 feet; and a Category II wetland with a habitat score of 6 or 7 points is 165 feet. Per AMC 20.93.830(b)(2), if the minimization measures listed in AMC Table 20.93-5 are not implemented, then a 33-percent increase in the width of all wetland buffers is required.

Per AMC 20.93.340, a 15-foot building setback is required from the edge of any critical area buffer. The proposed project will implement minimization measures as identified in Table 45.

Table 43. Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Lights	•Parking lots •Warehouses •Manufacturing •Residential •Parks	•Direct lights away from critical areas and buffers •Day use only regulations preventing the need for lights •Timer on lights
Noise	•Manufacturing •Residential	•Locate activity that generates noise away from wetlands •Seasonal limitations on hours of operation
Toxic runoff*	•Parking lots •Roads •Manufacturing •Residential areas •Application of agricultural pesticides •Landscaping	•Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered •Establish covenants limiting use of pesticides within 150 ft of critical area or buffer •Apply integrated pest management
Stormwater runoff	•Parking lots •Roads •Manufacturing •Residential areas •Commercial •Landscaping	•Retrofit stormwater detention and treatment for roads and existing adjacent development •Prevent channelized flow from lawns that directly enters the buffer
Change in water regime	•Impermeable surfaces •Lawns •Tilling •Forest and forest duff removal	•Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns •Retain minimum forest and forest duff
Pets and human disturbance	•Residential areas •Parks	•Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract
Dust	•Construction sites	•Use best management practices to control dust

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Disruption of corridors or connections	•Roads •Residential •Commercial •Manufacturing •Landscaping •Stormwater	•Maintain connection to offsite areas that are undisturbed •Restore corridors or connections to offsite habitats by replanting

City of Marysville

MMC 22E.010.060.1 has also adopted the 2014 wetland rating system (Hruby, 2014). The following Category II, III and IV wetlands were delineated during the site investigations:

- Category II wetland with a habitat score of 6 (Wetland AH)
- Category III wetland with habitat score of 4 (Wetlands AA, AB, AI, AJ, I, and Z and Offsite Wetland O)
- Category IV wetlands with habitat score of 4 or less (Wetlands AC, AE-AG, AK - AM, J-N, U, W, and X and Offsite Wetlands U, S and T)

Although the 51st Avenue East Ditch is an artificially and intentionally created drainage feature, WSDOE believes that the ditch meets of the definition of a wetland under the Revised Code of Washington (RCW) 36.70A.030 and RCW 90.48. WSDOE has concluded the roadside ditch was likely constructed from a wetland in the early 1900s (email correspondence between Soundview Consultants and Neil Molstad, WSDOE, 10/28/2020). The Applicant has indicated their disagreement with WSDOE's determination; however, the Applicant has decided to accept the positive wetland determination for the Cascade Business Park project. The 51st Avenue East Ditch is being treated as a Category III wetland and subject to a standard 75-foot buffer per MMC 22E.010.100(4).

Per MMC 22E.010.380, a 15-foot building and structure setback is required from the edge of critical area buffers.

6.1.2 Stream Buffers

City of Arlington

Per AMC 20.93.700, the City of Arlington has adopted the state water classification system specified in WAC 222-16-030. Per AMC 20.93.700(b), a Type F water includes segments of natural waters that are not classified as Type S (shoreline) and have a substantial fish, wildlife, or human use. Per AMC 20.93.700(a)(2), Type F-ESA water is a water that meets the criteria of a Type F stream and has been identified as having presumed use by ESA-listed fish species. Edgecomb Creek is likely considered a Type F-ESA water due to modeled Chinook and steelhead presence identified by the WDFW SalmonScape inventory. While Tributary X is an artificially created feature, this ditch is likely considered a Type F-ESA water due to the provision of off-channel habitat for salmonids. Per AMC

Table 20.93-3, the standard buffer for a Type F-ESA water is 150 feet. Per AMC 20.93.440(a)(1) this 150-foot buffer shall consist of a 100-foot designated native growth protection easement in which no human activity is allowed (unless specified by AMC 20.93.430) and a 50-foot management zone in which vegetation may be managed for public health and safety reasons.

City of Marysville

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(1)(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(1)(a), Type F streams are subject to a standard 150-foot buffer.

Per MMC 22E.010.220(3)(a) and 22E.010.220(3)(b), stream buffers shall be measured from the ordinary high water mark as defined in the field, or, if that cannot be determined, from the top of the bank. In braided channels and alluvial fans, the OHW mark or top of bank shall be determined so as to include the entire stream feature. As Edgecomb Creek enters Wetland AH, the channel begins to braid and contains several side channels. As such, the standard 150-foot Type F stream buffer will be applied from the OHW of the main stem and side channels of Edgecomb Creek throughout Wetland AH.

6.2 State and Federal Considerations

6.2.1 State Requirements

WSDOE regulates surface waters of the state under RCW 90.48 and WAC 173-201A for potential impacts to water quality. WAC-173-201A-020 provides definitions of surface waters of the state and wetlands.

Per WAC 173-201A-020, surface waters of the state are defined as:

> *"includes lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses within the jurisdiction of the state of Washington.*"

Per WAC 173-201A-020, wetlands are defined as:

> *"wetlands means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. 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. (Water bodies not included in the definition of wetlands as well as those mentioned in the definition are still waters of the state.)"*

All identified onsite wetlands (including the 51st Avenue East Ditch), Edgecomb Creek, and Tributary X are likely to be regulated as waters of the state of Washington under the RCW 90.48 and WAC 173-201A. Ditch U acts as a feeder ditch to the 51st Avenue East Ditch, indirectly contributing surface water runoff to a downgradient tributary (Edgecomb Creek). As such, Ditch U is likely to be regulated as a waters of the state as a non-wetland water. The 152nd Street Ditches are artificially and intentionally created ditches that convey only ephemeral flow. These ditches are not likely regulated as waters of the state. An Administrative Order (AO) will be sought from WSDOE for the proposed impacts to the waters of the state (e.g., Ditch U and the 51st Avenue East Ditch) that are not considered federally jurisdictional.

6.2.2 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 was the second step in reviewing and revising the definition of 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 became effective June 22, 2020.

The Navigable Waters Protection Rule effectively replaced the "Definition of Waters of the United States – Recodification of Pre-Existing Rules" rule published on October 22, 2019 (repealing the Clean Water Rule) and the 2008 joint guidance memorandum from USACE and EPA. The following describes potential regulatory classifications for the onsite stream, wetlands, and ditches under the Navigable Waters Protection Rule. Of note, the proposed project is assuming USACE jurisdiction over Edgecomb Creek and all onsite wetlands in order to support an expedited permitting process. Due to the proposed fill of the existing stream channel and onsite wetlands, the proposed project will require an Individual Section 404 Permit from the USACE. No direct impacts are proposed to the offsite wetlands or ditches; thus, potential regulatory classification for these offsite features is not described in this report.

Under the final Navigable Waters Protection Rule, 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.

The Navigable Waters Protection Rule specifies that WOTUS do not include: a) groundwater, including groundwater drained through subsurface drainage systems; b) ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools; c) diffuse stormwater runoff and directional sheet flow over upland; d) ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations; e) prior converted cropland; f) artificially irrigated areas that would revert to upland if artificial irrigation ceases; g) artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters; h) water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel; i) stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff; j) groundwater recharge,

water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and k) waste treatment systems.

Under the Navigable Waters Protection Rule, Edgecomb Creek is likely regulated through category 2 of WOTUS because it is a perennial, natural tributary within a stream network that eventually drains into Puget Sound, a traditionally navigable water. It will be assumed that Tributary X is regulated to expedite the overall permitting process. The onsite ditches (Ditches U and X; 51st Avenue East Ditch, and the two 152nd Street Ditches) are artificially excavated ditches constructed for agricultural or roadside drainage purposes; these ditches are not constructed within tributaries nor do they relocate a tributary. USACE has determined that the 51st Avenue East Ditch is not a WOTUS because it is an excluded non-waters of the U.S. per 33 CFR Part 328.3(b) (USACE, 2020 and USACE, 2021; Appendix J). Similarly, the onsite stormwater ponds are artificial features that have been excavated for the purposes of collecting stormwater runoff and are likely non-jurisdictional by USACE through category i above of waters that are not considered to be WOTUS.

Of the delineated wetlands, Wetlands E, F, G, H, I, L, Y, Z, AA, AB, AD, AH, AI, AJ, and AL abut or are adjacent and contribute surface water runoff to Edgecomb Creek and are likely regulated by USACE through category 3 above. The remaining onsite delineated wetlands (Wetlands A, B, C, D, J, K, M, N, Q, R, U, V, W, X, AC, AE, AF, AG, AK, and AM) do not abut Edgecomb Creek, are not located within a FEMA mapped floodplain, and are therefore potentially not regulated by USACE.

The Navigable Waters Protection Rule establishes that prior converted cropland is not considered WOTUS (category e above). Prior converted cropland means any area that, prior to December 23, 1985, was drained or otherwise manipulated for the purpose, or having the effect, of making production of an agricultural product possible. USACE and the EPA will recognize designations of prior converted cropland made by the Secretary of Agriculture. All of the onsite wetlands, except for Wetland AH, are located within active agricultural fields and may be eligible for prior converted cropland status, although no prior converted cropland determination has been made for these wetlands according to documents received from local public records requests for wetland documentation on the subject property.

Due to the proposed fill of the jurisdictional Edgecomb Creek and other wetlands under the Navigable Waters Protection Rule, the proposed project presumes the need for an Individual Permit application with USACE. While several onsite wetlands are potentially not regulated as WOTUS and most of the onsite wetlands may be eligible for prior converted cropland status under the Navigable Waters Protection Rule (excluding Wetland AH), the proposed project is assuming USACE jurisdiction over all onsite wetlands in order to support a streamlined and expedited permitting process. An administrative order from WSDOE will be required for required impacts to the 51st Avenue East Ditch and Ditch U.

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.

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Appendix A — Methods and Tools

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

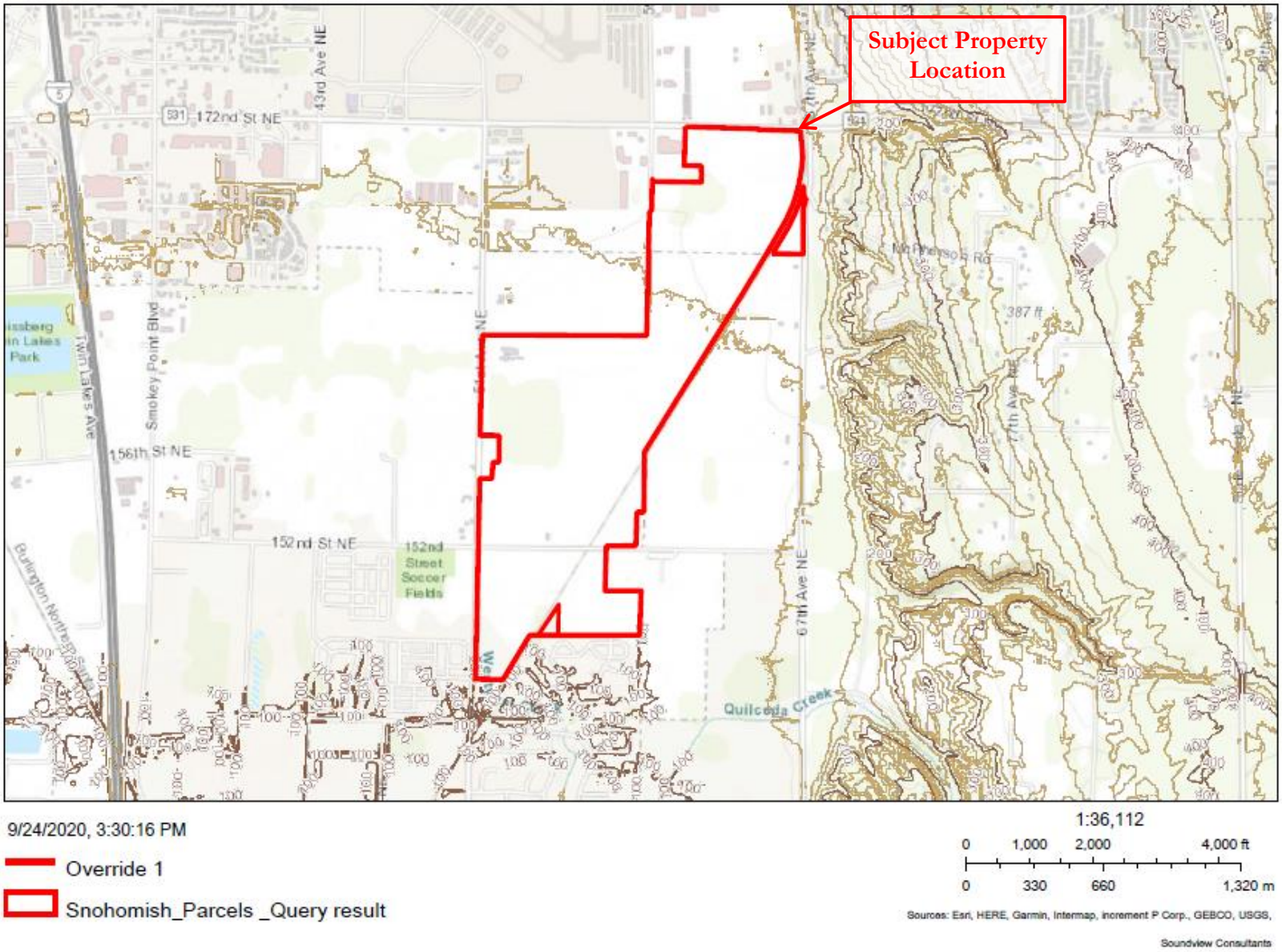
Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf	**Environmental Laboratory.** 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Core of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)	http://www.usace.army.mil/CECW/Documents/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/Pubs_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/publications/documents/1406029.pdf	**Hruby**, T. (2014). *Washington State Wetland Rating System for Western Washington: 2014 Update.* (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
	Arlington Municipal Code	https://library.municode.com/wa/arlington/codes/code_of_ordinances?nodeId=TIT20ZO_CH20.93ENCRAR_PTVIISTCRRILAOTSUWA	Most current wetland rating system adopted per AMC 20.93.800.a
	Marysville Municipal Code	https://www.codepublishing.com/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. *The National Wetland Plant List: 2016 wetland ratings.* Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
Stream Delineation	Determining the OHW	https://fortress.wa.gov/ecy/publications/documents/1606029.pdf	**Anderson**, P.S., S. Meyer, P. Olson, and E. Stockdale. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Publication No. 16-06-029. Final Review Draft. Shorelands and Environmental Assistance Program, Washington State Department of Ecology. Olympia, Washington.
Stream Classification	Department of Natural Resources Water Typing System	Forest Practices Water Typing: http://www.stage.dnr.wa.gov/forestpractices/watertyping/	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
Plant Names and Identification	USDA Plant Database	http://plants.usda.gov/	Website
	Flora of the Pacific Northwest	http://www.washington.edu/uwpress/search/books/HITFLC.html	**Hitchcock**, C.L. and A. Cronquist. 2018. *Flora of the Pacific Northwest: An Illustrated Manual, 2nd Edition.* University of Washington Press. Seattle, Washington.

Parameter	Method or Tool	Website	Reference
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.
	Soil Color Charts		**Munsell®** Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
	Field Indicators of Hydric Soils	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_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/Internet/FSE_DOCUMENTS/nrcseprd1316620.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/datasets/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/phspage.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/ESA-Salmon-Listings/Salmon-Populations/Index.cfm and http://www.nmfs.noaa.gov/pr/species/	Website
	USFWS species lists by County	http://www.fws.gov/westwafwo/se/SE_List/endangered_Species.asp	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/salmonscape/	Website
Report Preparation	Arlington Municipal Code	https://library.municode.com/wa/arlington/codes/code_of_ordinances?nodeId=TIT20ZO_CH20.93ENCRAR_PTVIISTCRRILAOTSUWA	AMC Chapter 20.93 Environmentally Critical Areas
	Marysville Municipal Code	https://www.codepublishing.com/WA/Marysville/	MMC Chapter 22E.010 Critical Areas

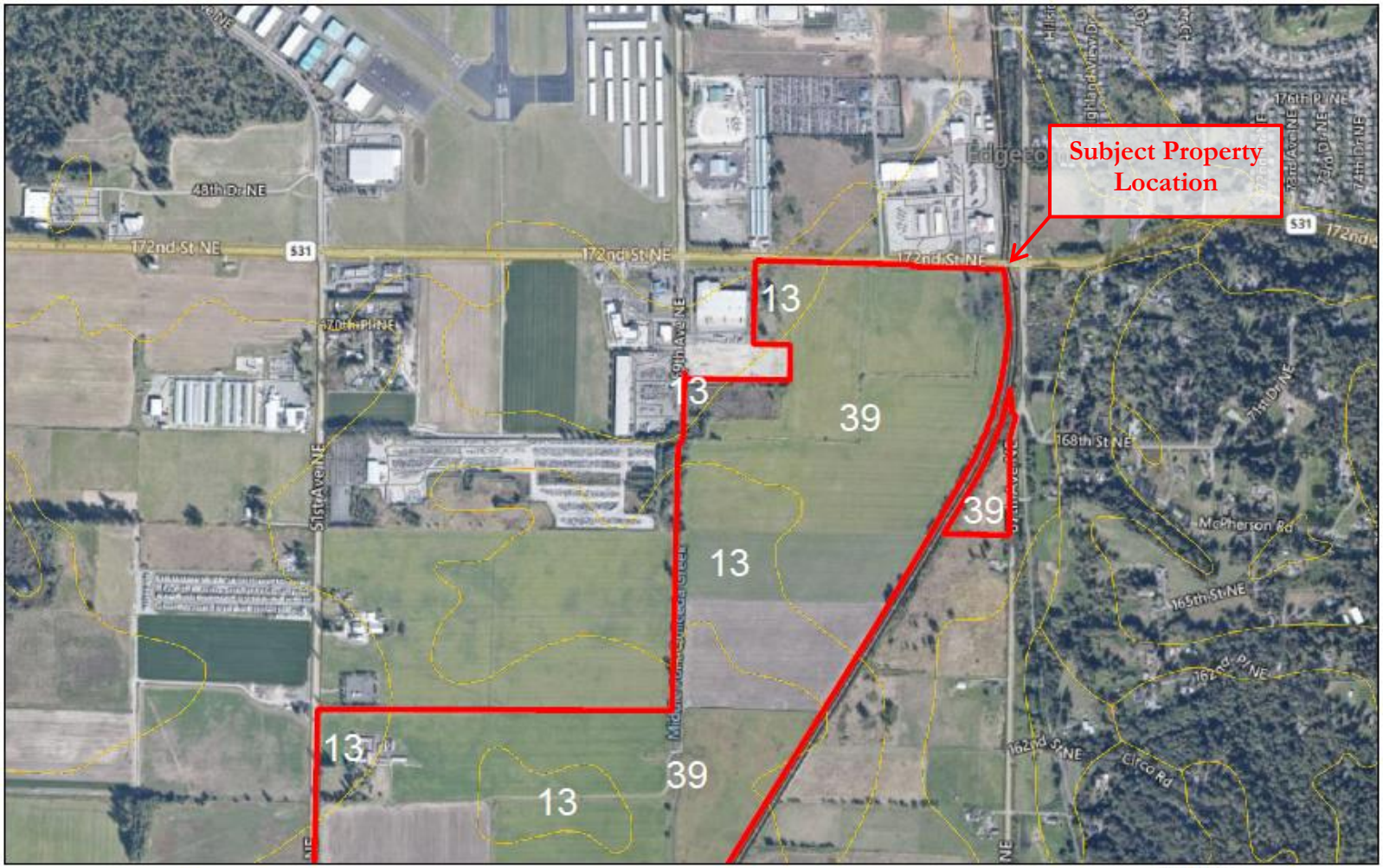
Appendix B — Background Information

This appendix includes a USGS Topographic Map (B1); NRCS Soil Survey Map (B2); City of Marysville Critical Areas Inventory (B3); Snohomish County Critical Areas Inventory (B4); WDFW PHS Map (B5); WDFW SalmonScape Map (B6); DNR Stream Typing Map (B7); USFWS NWI Map (B8); and City of Arlington Stormwater Maps (B9). [Note: Parcel 31052700300400 and parcels east of the BNSF railroad tracks are not within current project area.]

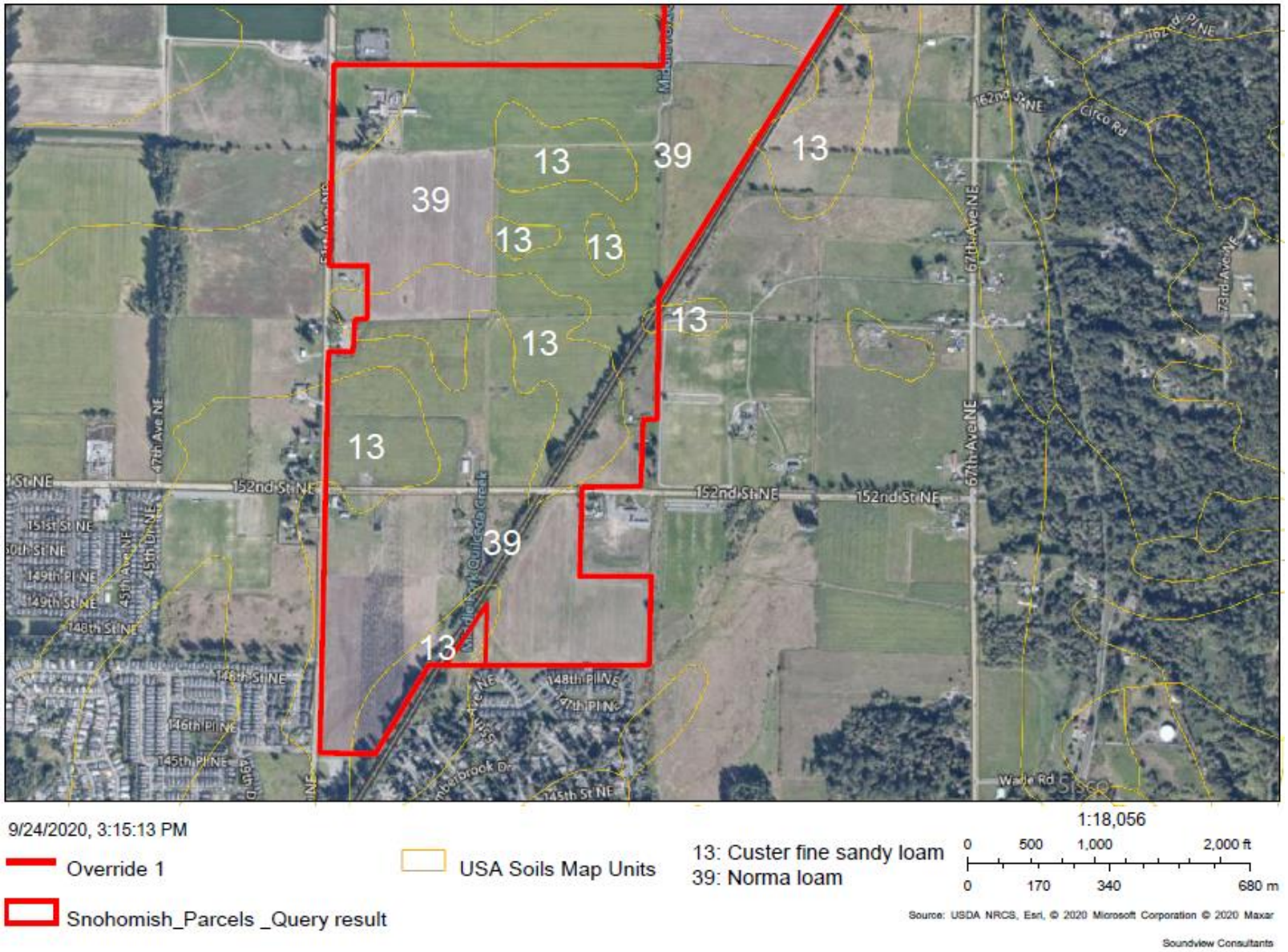
Appendix B1 – USGS Topographic Map



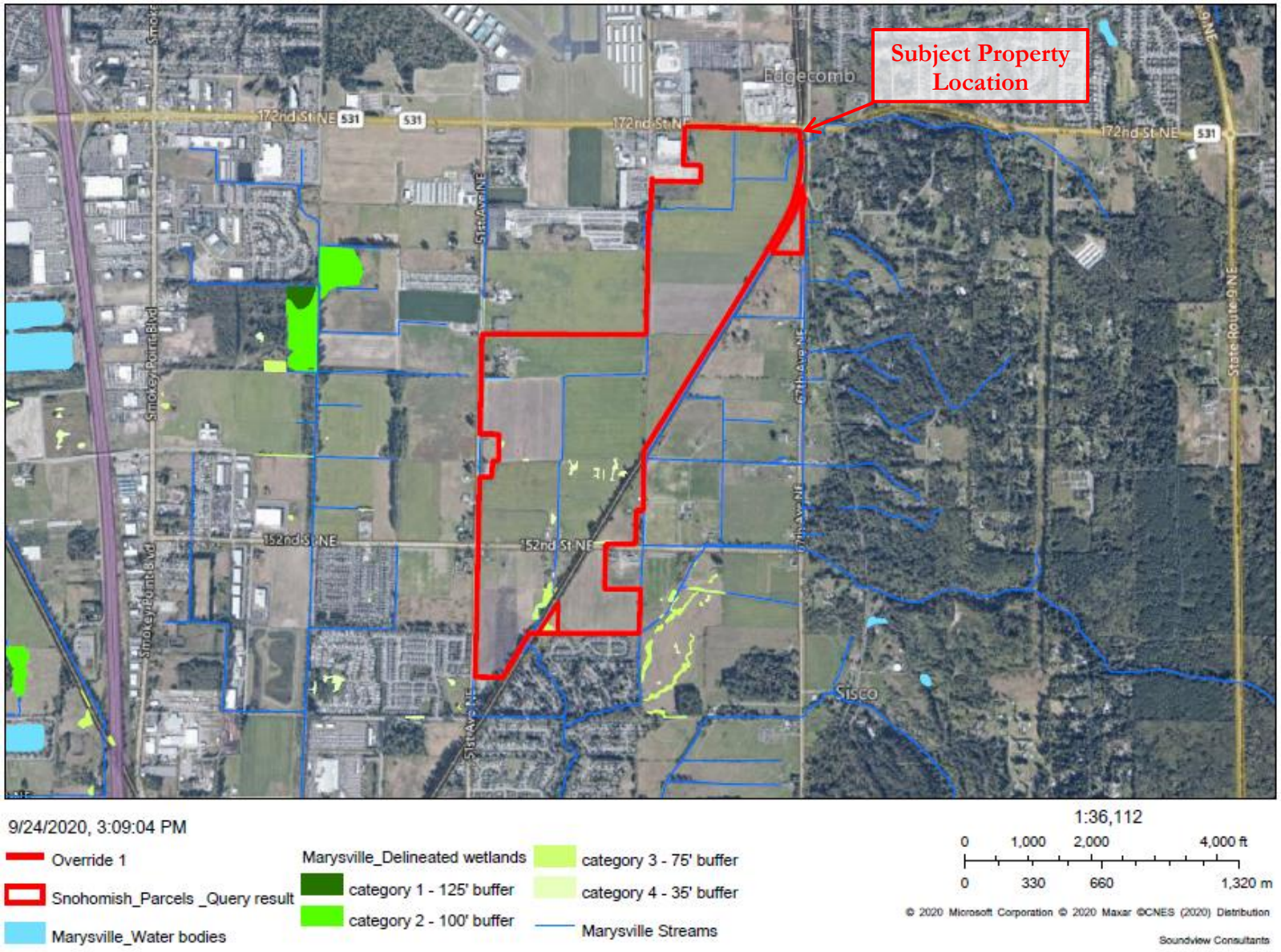
Appendix B2-1 – NRCS Soil Survey Map



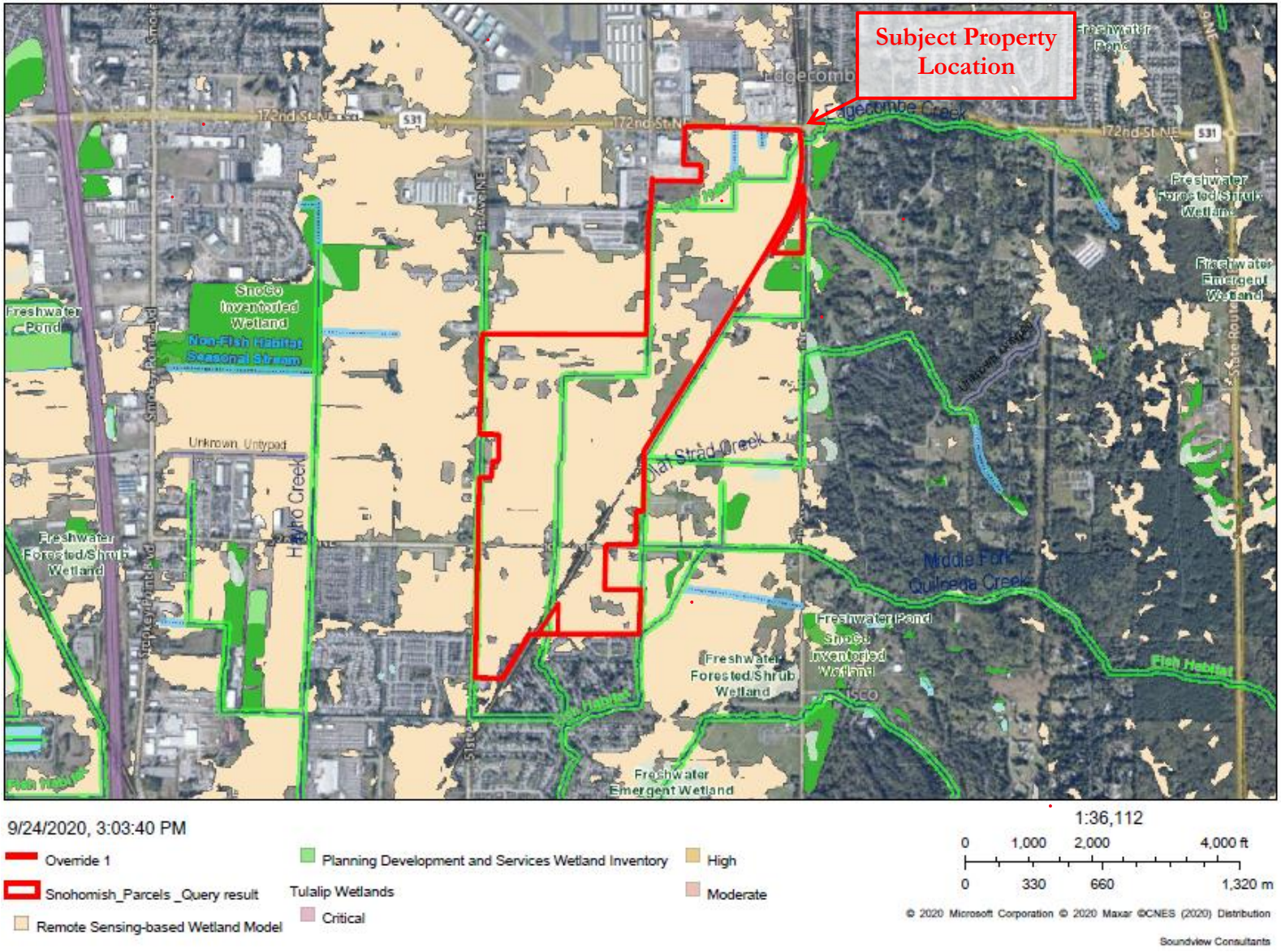
Appendix B2-2 – NRCS Soil Survey Map



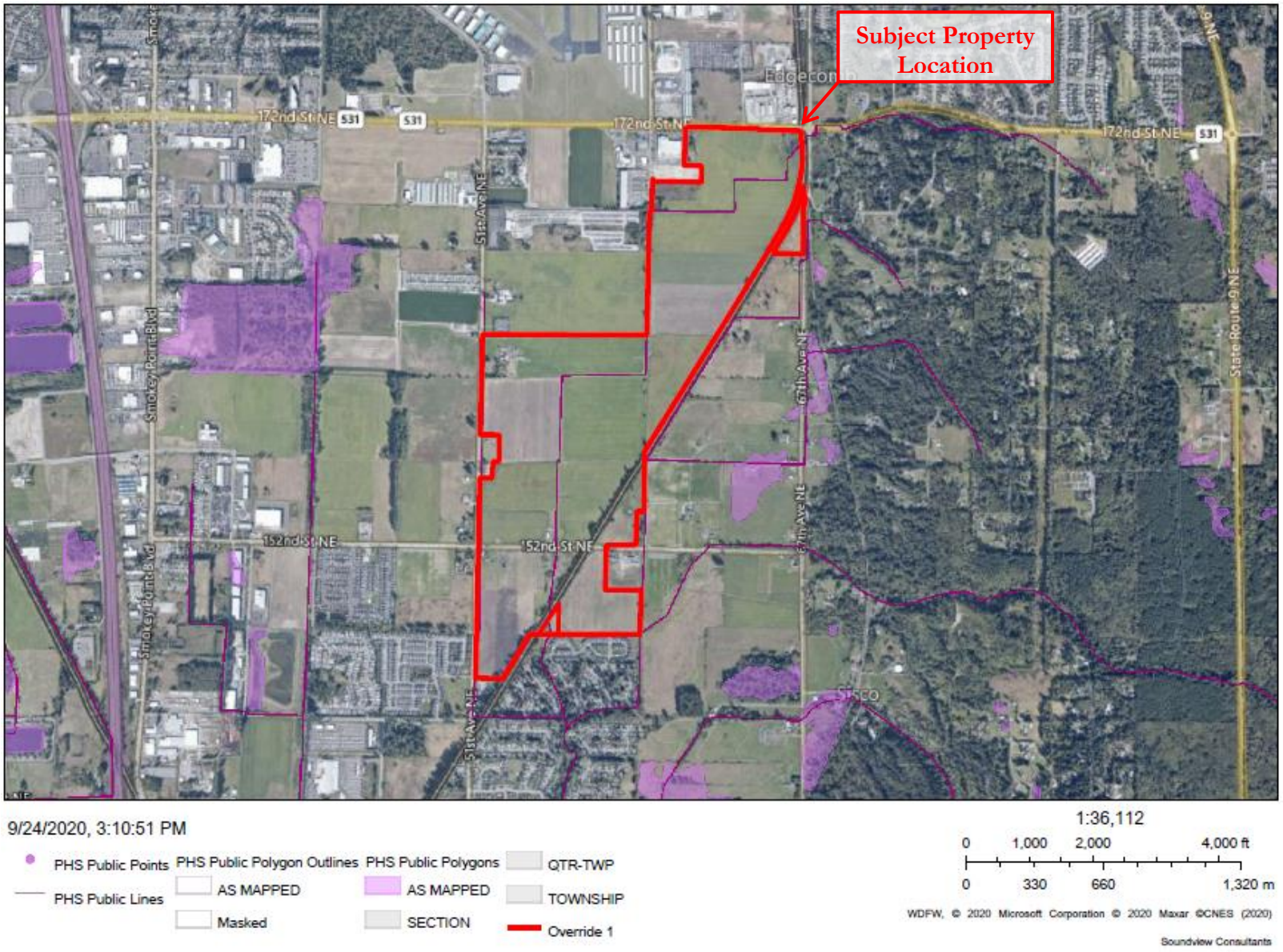
Appendix B3 – City of Marysville Critical Areas Inventory



Appendix B4 – Snohomish County Critical Areas Inventory



Appendix B5 – WDFW PHS Map



Priority Habitats and Species on the Web

PHS Species/Habitats Overview:

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

PHS Species/Habitats Details:

Fall Chum	
Scientific Name	*Oncorhynchus keta*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Chum Salmon, Run Time: Fall, Life History: Anadromous
Source Record	32730
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Chinook Salmon, Run Time: Summer, Life History: Anadromous
Source Record	32732
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	32734
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	33298
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	*Salvelinus malma/S. confluentus*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	33299
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	33301
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Winter Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Steelhead Trout, Run Time: Winter, Life History: Anadromous
Source Record	33302
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*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	N
SGCN	N
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
Accuracy	NA
Notes	LLID: 1221502481305, Stock Name: Snohomish Coho, Run: Unspecified, Status: Healthy
Source Record	3080
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Stock Name: Skykomish Chinook, Run: Sum/Fall, Status: Depressed
Source Record	1106
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Threatened
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*Oncorhynchus clarki*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221498481377, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	32700
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*Oncorhynchus clarki*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	33290
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Fall Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Chinook Salmon, Run Time: Fall, Life History: Anadromous
Source Record	33291
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*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	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	*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	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	33713
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Winter Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Steelhead Trout, Run Time: Winter, Life History: Anadromous
Source Record	33714
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	*Salvelinus malma/S. confluentus*
Priority Area	Occurrence/Migration
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	36809
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	36812
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Occurrence
Accuracy	NA
Notes	LLID: 1221551481266, Stock Name: Snohomish Coho, Run: Unspecified, Status: Healthy
Source Record	3080
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Occurrence
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Stock Name: Snohomish Coho, Run: Unspecified, Status: Healthy
Source Record	3080
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221498481377, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	32703
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Fall Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Chinook Salmon, Run Time: Fall, Life History: Anadromous
Source Record	32728
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	32735
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	32739
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Chinook Salmon, Run Time: Summer, Life History: Anadromous
Source Record	33295
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	33297
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*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	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Fall Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Chinook Salmon, Run Time: Fall, Life History: Anadromous
Source Record	33704
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence/Migration
Site Name	Middle Fork Quilceda Creek
Accuracy	NA
Notes	LLID: 1221617481051, Fish Name: Chinook Salmon, Run Time: Summer, Life History: Anadromous
Source Record	33708
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*Oncorhynchus clarki*
Priority Area	Occurrence/Migration
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	36797
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Winter Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Fish Name: Steelhead Trout, Run Time: Winter, Life History: Anadromous
Source Record	36814
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Occurrence
Accuracy	NA
Notes	LLID: 1221498481377, Stock Name: Snohomish Coho, Run: Unspecified, Status: Healthy
Source Record	3080
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Candidate
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

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

Dolly Varden/ Bull Trout	
Scientific Name	*Salvelinus malma/S. confluentus*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221498481377, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	32706
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat	
Scientific Name	*Oncorhynchus clarki*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	32727
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	*Salvelinus malma/S. confluentus*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	32737
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Winter Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1221502481305, Fish Name: Steelhead Trout, Run Time: Winter, Life History: Anadromous
Source Record	32740
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Fall Chum	
Scientific Name	*Oncorhynchus keta*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Chum Salmon, Run Time: Fall, Life History: Anadromous
Source Record	33293
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Breeding Area
Accuracy	NA
Notes	LLID: 1221551481266, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	33296
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

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	N
SGCN	N
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	33709
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Coho	
Scientific Name	*Oncorhynchus kisutch*
Priority Area	Breeding Area
Site Name	Quilceda Creek
Accuracy	NA
Notes	LLID: 1222137480420, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	36805
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

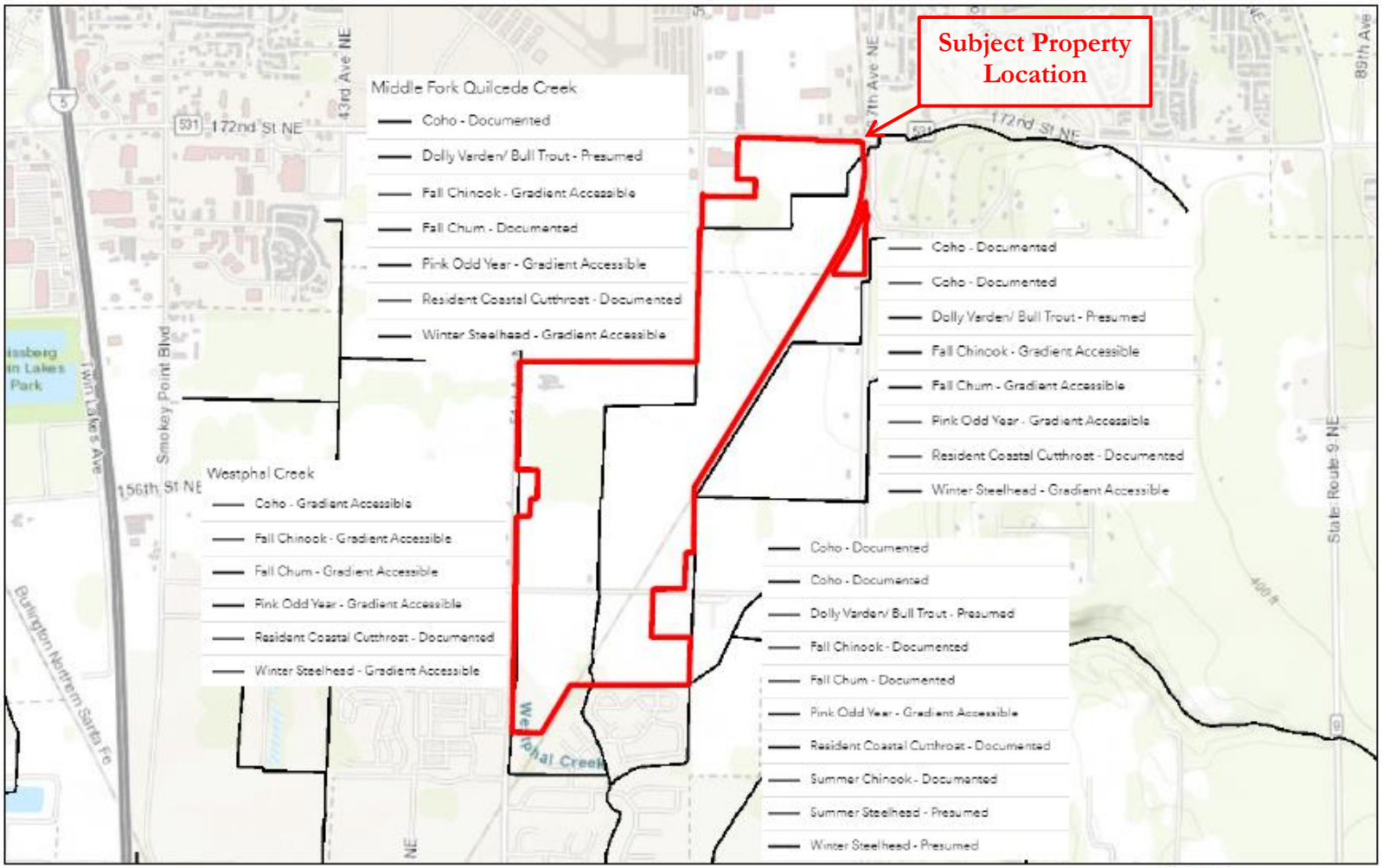
Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence
Accuracy	NA
Notes	LLID: 1221502481305, Stock Name: Skykomish Chinook, Run: Sum/Fall, Status: Depressed
Source Record	1106
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Threatened
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Chinook	
Scientific Name	*Oncorhynchus tshawytscha*
Priority Area	Occurrence
Accuracy	NA
Notes	LLID: 1221551481266, Stock Name: Skykomish Chinook, Run: Sum/Fall, Status: Depressed
Source Record	1106
Source Dataset	SASI
Source Name	Not Given
Source Entity	WDFW Fish Program
Federal Status	Threatened
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

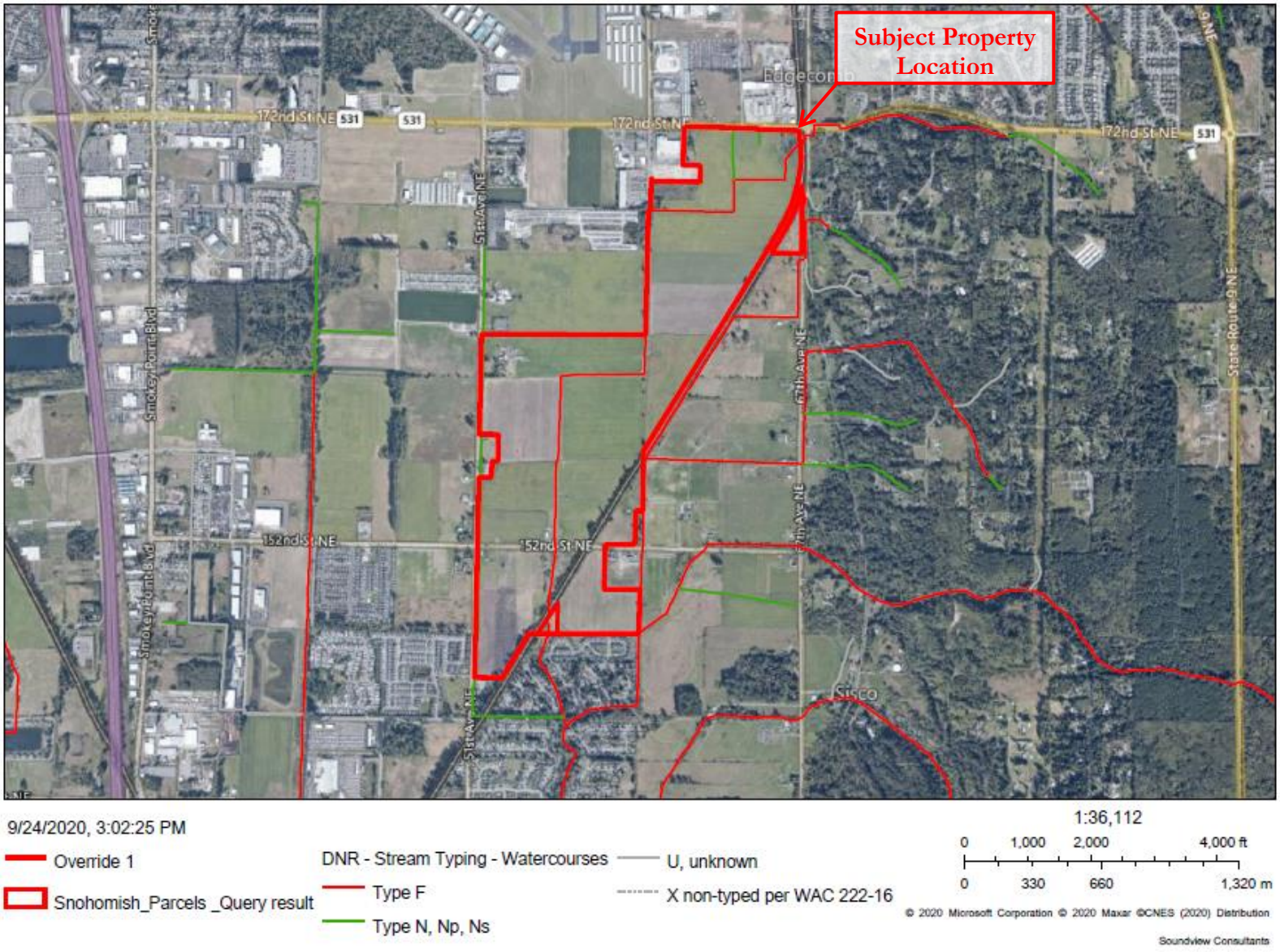
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents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

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	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

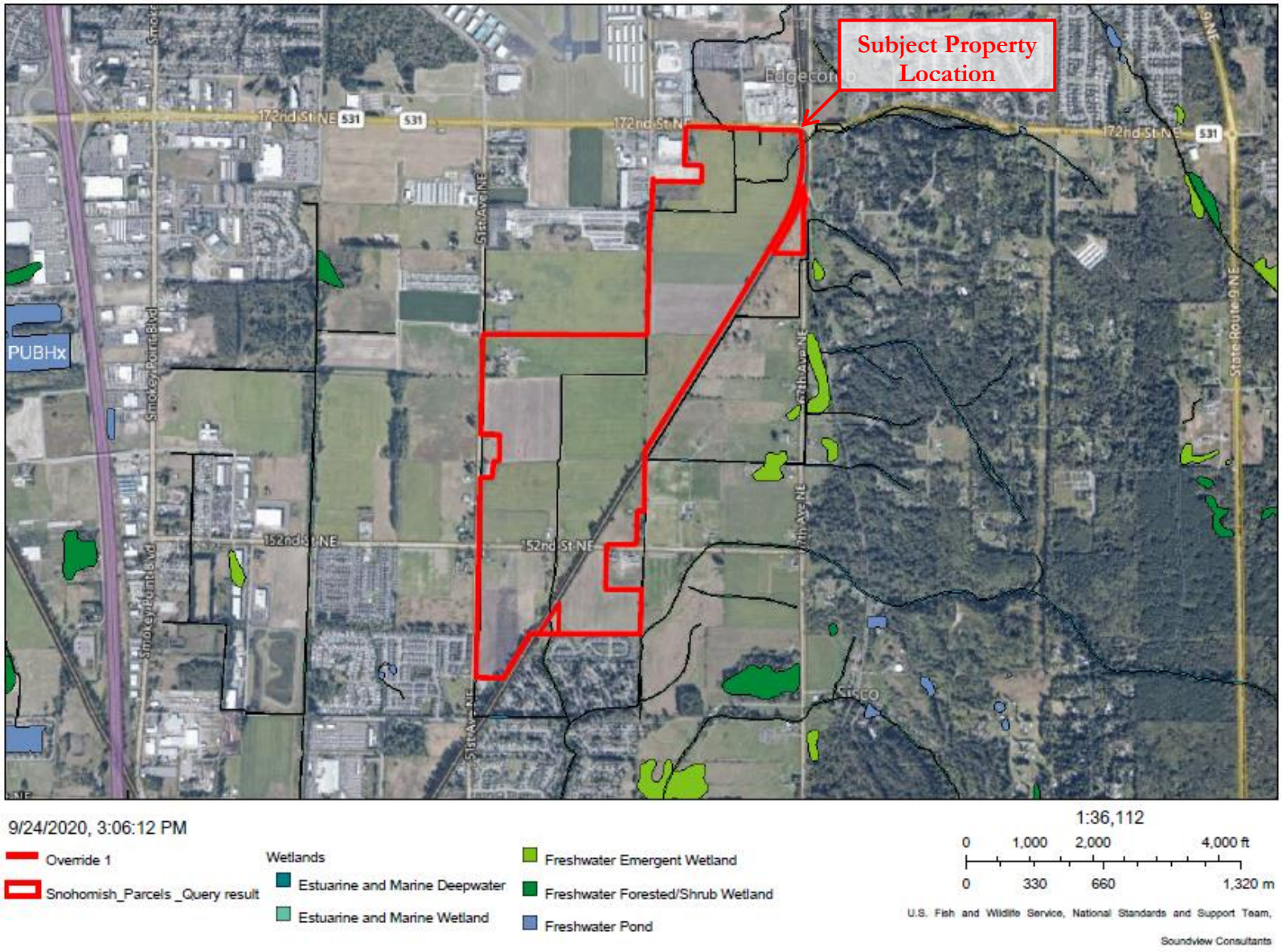
Appendix B6 – WDFW SalmonScape Map



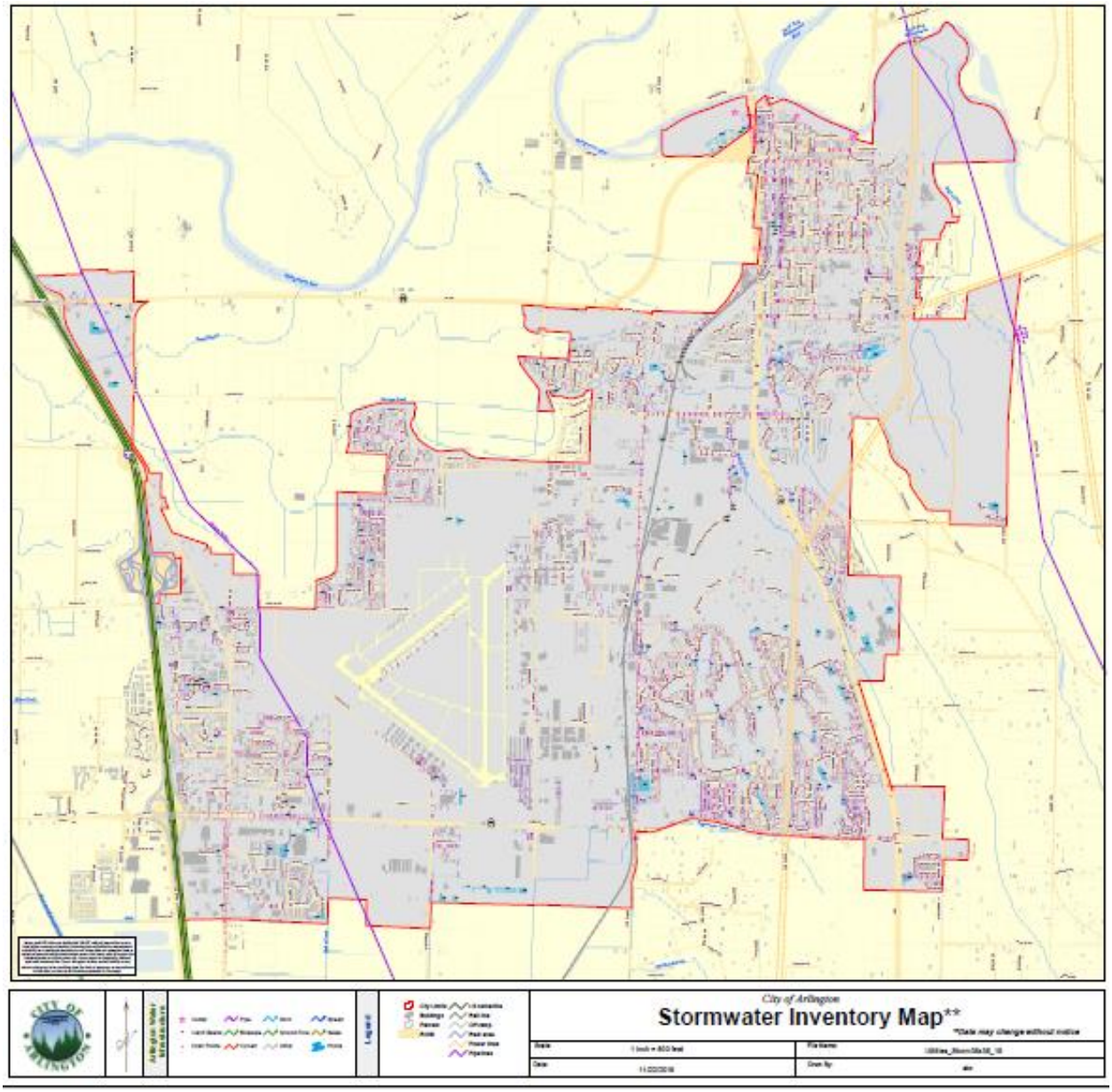
Appendix B7 – DNR Stream Typing Map

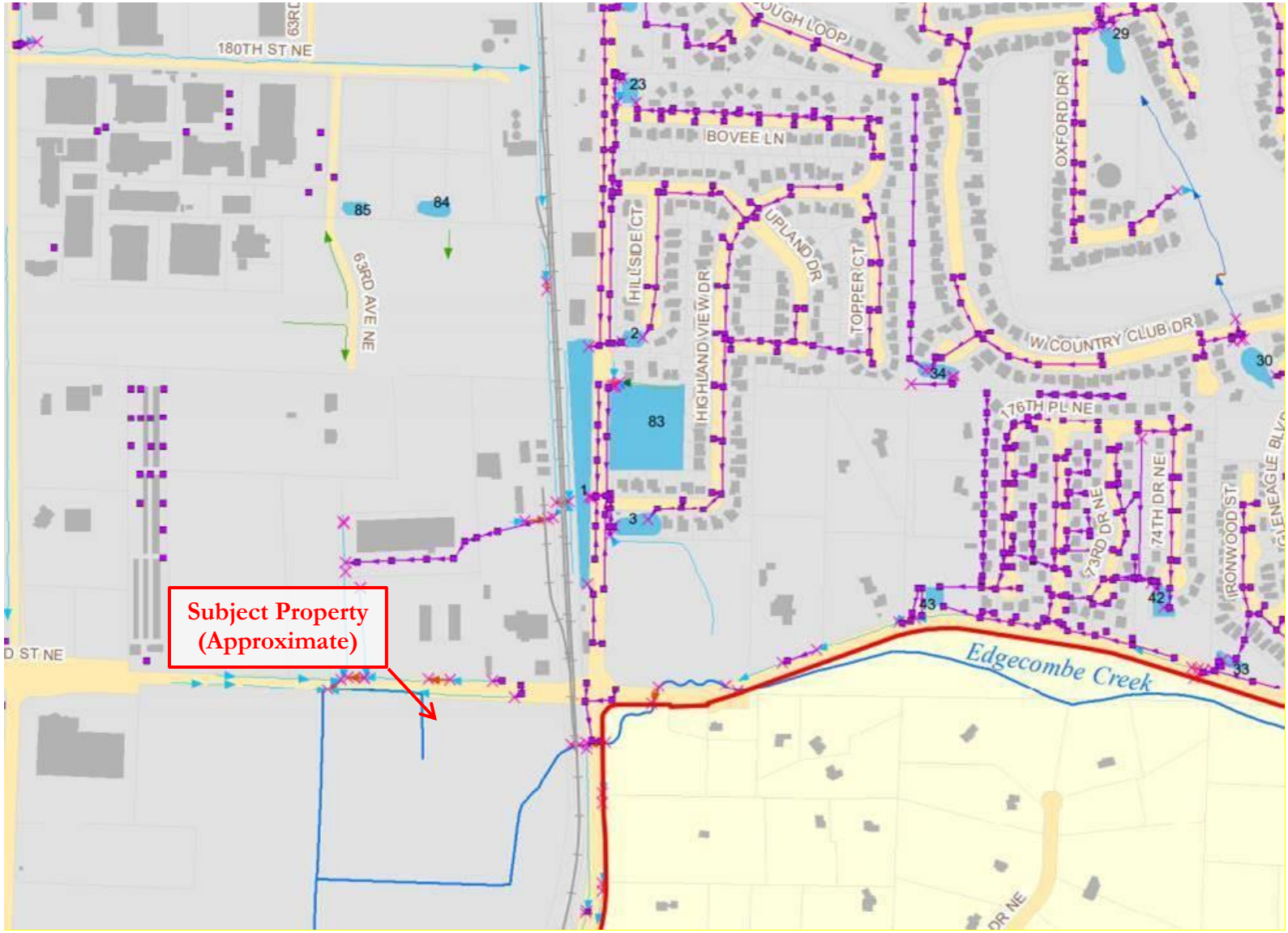


Appendix B8 – USFWS NWI Map



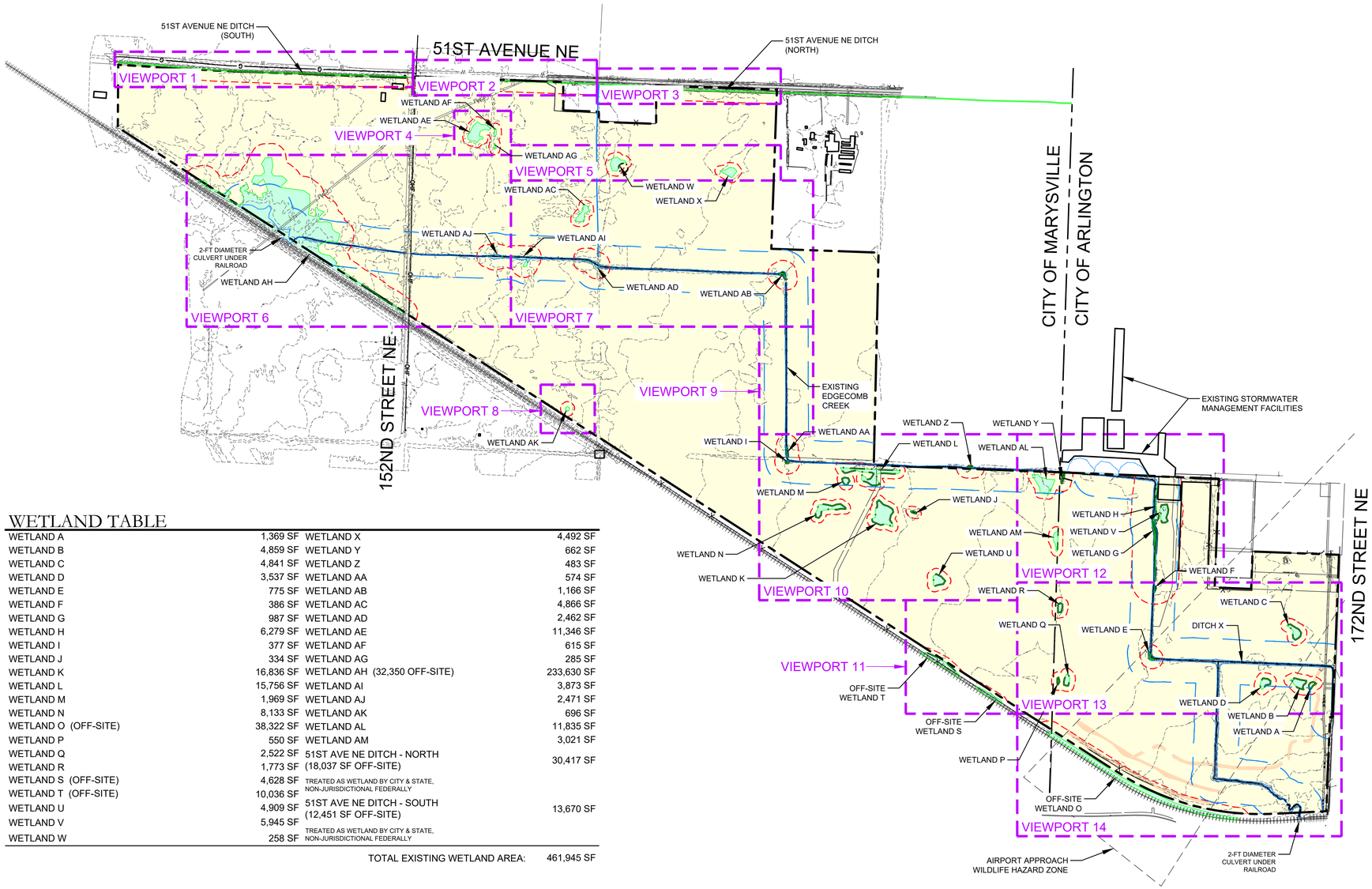
Appendix B9 – City of Arlington Stormwater Maps




180TH ST NE
63RD AVE NE
BOVEE LN
HILLSIDE CT
HIGHLAND VIEW DR
UPLAND DR
TOPPER CT
OXFORD DR
W COUNTRY CLUB DR
176TH PL NE
73RD DR NE
74TH DR NE
IRONWOOD ST
Edgecombe Creek
Subject Property
(Approximate)
83
84
85

Appendix C — Existing Conditions Exhibits

CASCADE BUSINESS PARK - EXISTING CONDITIONS OVERVIEW PLAN



WETLAND TABLE

WETLAND A	1,369 SF	WETLAND X	4,492 SF
WETLAND B	4,859 SF	WETLAND Y	662 SF
WETLAND C	4,841 SF	WETLAND Z	483 SF
WETLAND D	3,537 SF	WETLAND AA	574 SF
WETLAND E	775 SF	WETLAND AB	1,166 SF
WETLAND F	386 SF	WETLAND AC	4,866 SF
WETLAND G	987 SF	WETLAND AD	2,462 SF
WETLAND H	6,279 SF	WETLAND AE	11,346 SF
WETLAND I	377 SF	WETLAND AF	615 SF
WETLAND J	334 SF	WETLAND AG	285 SF
WETLAND K	16,836 SF	WETLAND AH (32,350 OFF-SITE)	233,630 SF
WETLAND L	15,756 SF	WETLAND AI	3,873 SF
WETLAND M	1,969 SF	WETLAND AJ	2,471 SF
WETLAND N	8,133 SF	WETLAND AK	696 SF
WETLAND O (OFF-SITE)	38,322 SF	WETLAND AL	11,835 SF
WETLAND P	550 SF	WETLAND AM	3,021 SF
WETLAND Q	2,522 SF	51ST AVE NE DITCH - NORTH (18,037 SF OFF-SITE)	30,417 SF
WETLAND R	1,773 SF		
WETLAND S (OFF-SITE)	4,628 SF	TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	
WETLAND T (OFF-SITE)	10,036 SF		
WETLAND U	4,909 SF	51ST AVE NE DITCH - SOUTH (12,451 SF OFF-SITE)	13,670 SF
WETLAND V	5,945 SF		
WETLAND W	258 SF	TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	
		TOTAL EXISTING WETLAND AREA:	461,945 SF

STREAM/DITCH TABLE

EDGECOMB CREEK	10,723 LF
	(157,317 SF)
DITCH X	1,167 LF
	(18,074 SF)
TOTAL EXISTING TYPE F STREAMS:	12,340 LF
(OPEN CHANNEL)	(175,391 SF)
DITCH U	1,223 LF
	(4,891 SF)

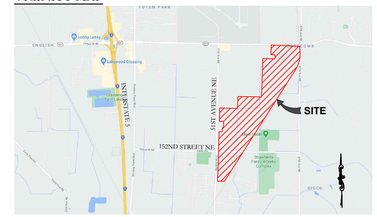
PLAN LEGEND

- PROJECT AREA
- EXISTING WETLANDS
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- WETLAND BUFFER
- STREAM ORDINARY HIGH WATER LINE (OHW)
- STREAM BUFFER
- DITCH CENTERLINE
- EXISTING CONTOUR

0 200 400 800

GRAPHIC SCALE
1"= 400'

VICINITY MAP



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 11/4/2020)

APPLICANT

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SITE ADDRESS/PARCEL #

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ARLINGTON, WASHINGTON 98223
15223 & 16015 51ST AVENUE NORTHEAST
5415 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

SNOHOMISH COUNTY TAX PARCELS:
31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, 31053400300300
SNOHOMISH COUNTY TAX PARCELS (NOT ASSESSED): 31052700100900, 31053400200100, 31053400200900, 31053400201300

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CASCADE BUSINESS PARK
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NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

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JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 1

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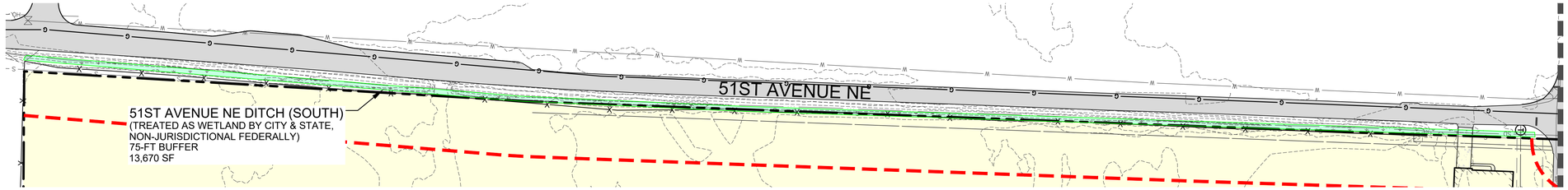
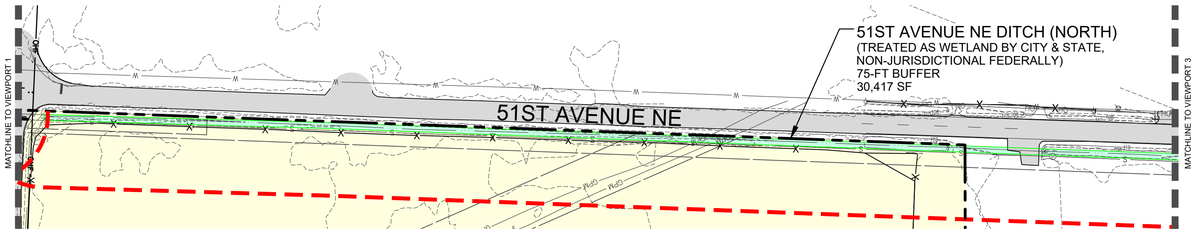


VIEWPORT 1

SCALE: 1"=80'



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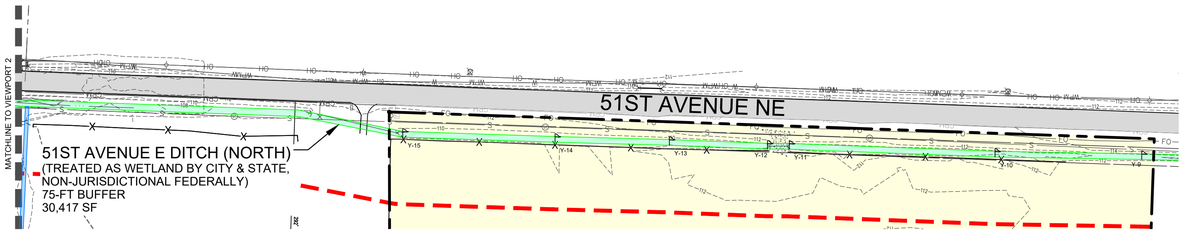

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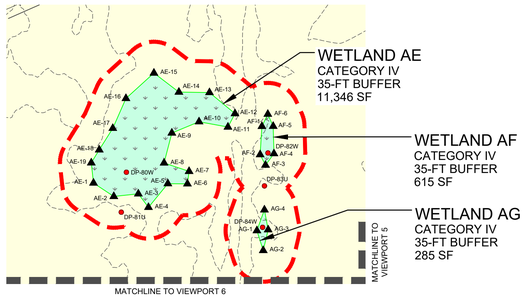
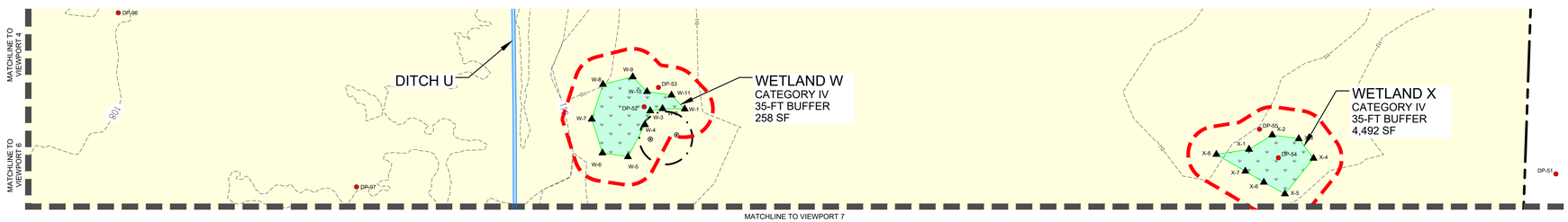


VIEWPORT 4

SCALE: 1"=80'



VIEWPORT 5

0 80 160 320

GRAPHIC SCALE
1"= 80'

PLAN LEGEND

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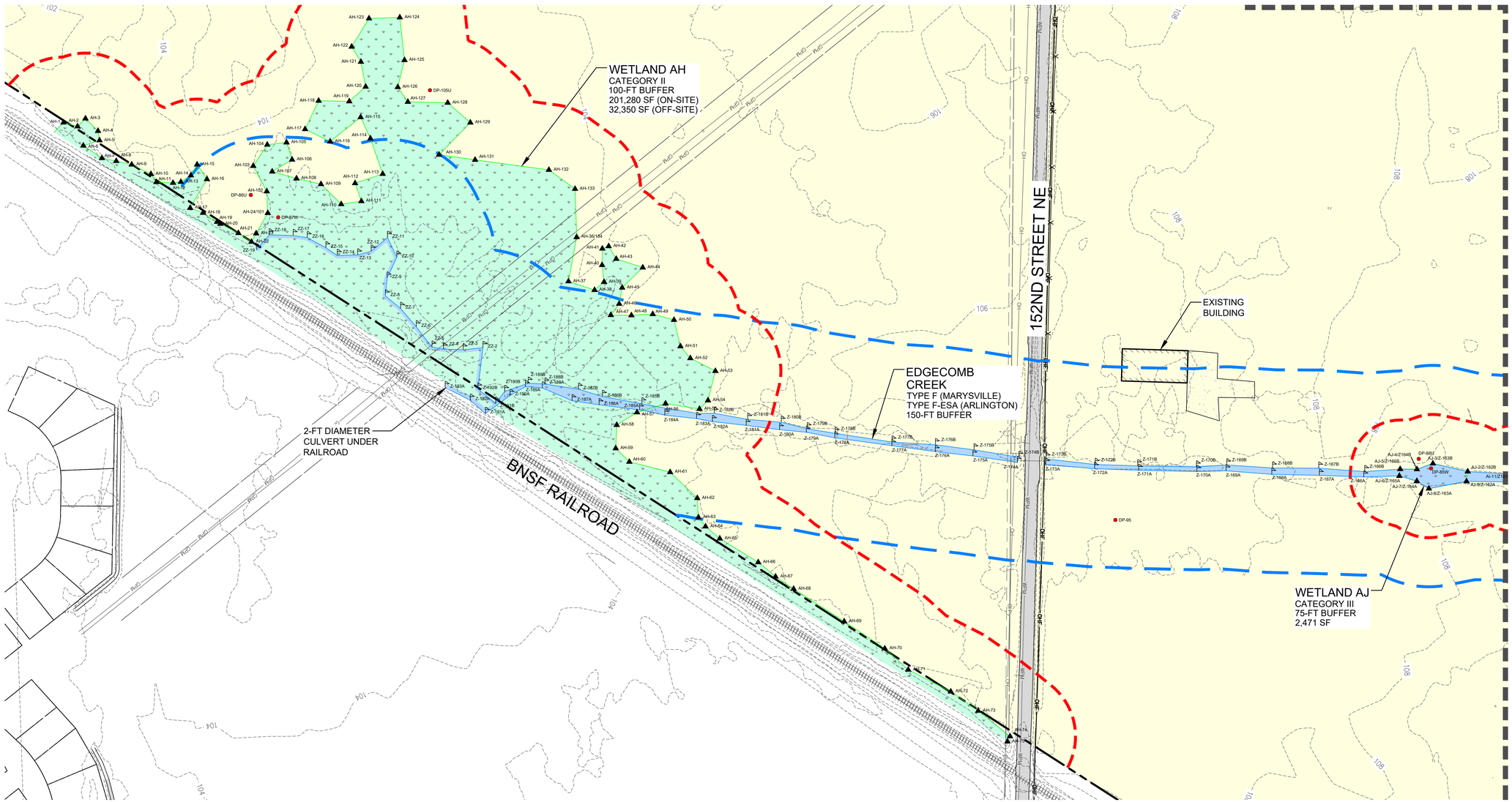

VIEWPORT 6

0 80 160 320

GRAPHIC SCALE
1" = 80'

PLAN LEGEND

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SHEET:	3

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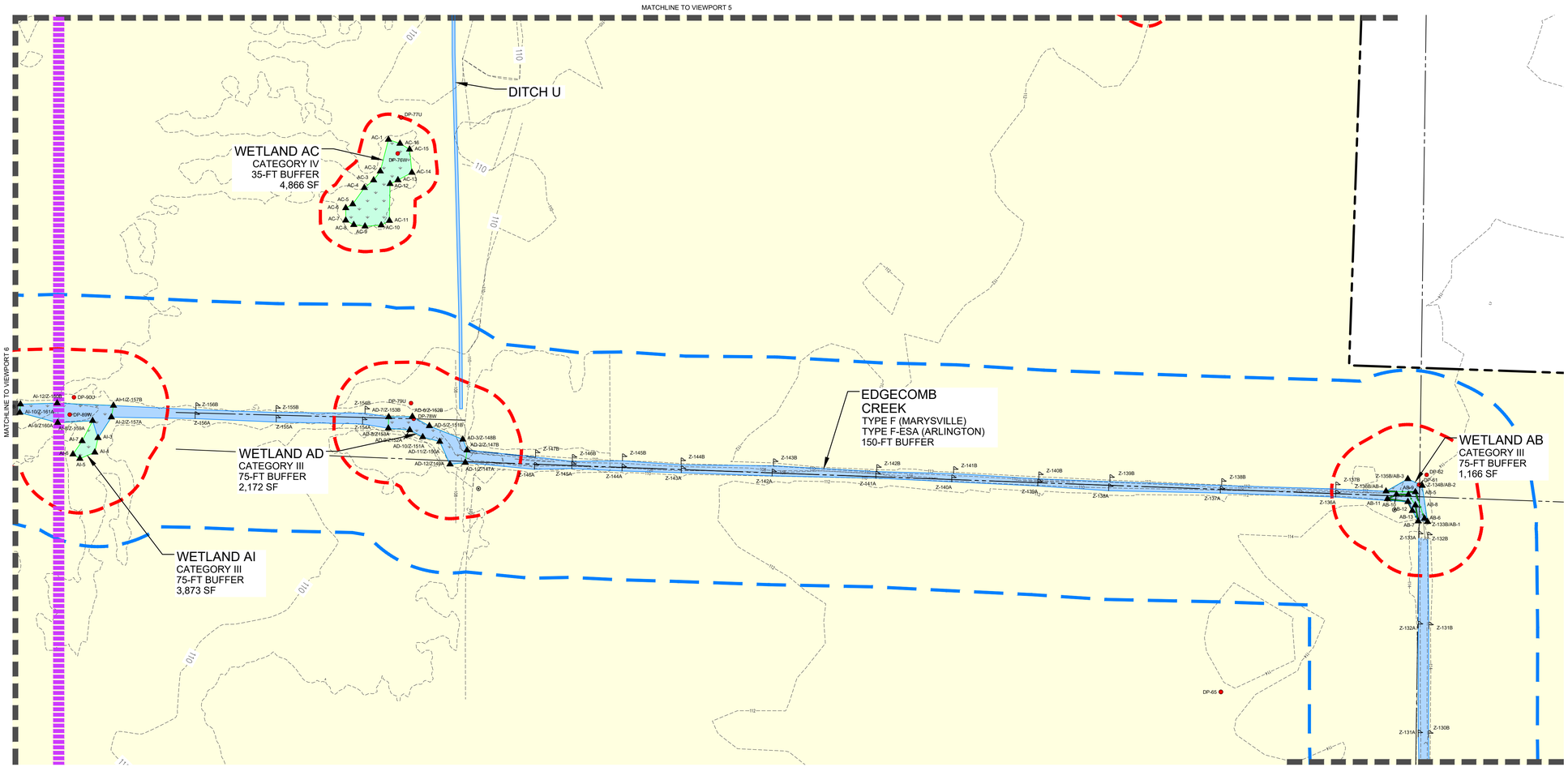

VIEWPORT 7

0 80 160 320

GRAPHIC SCALE
1"= 80'

PLAN LEGEND

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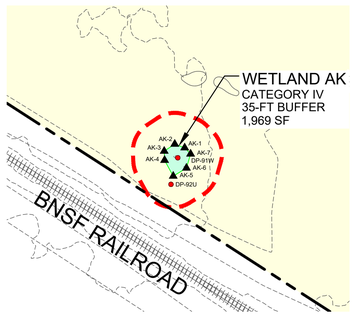

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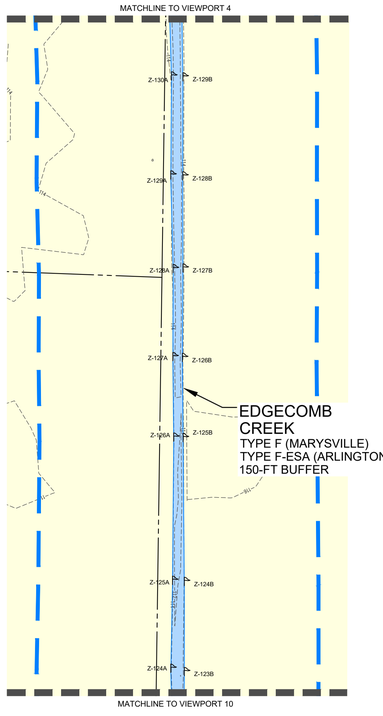

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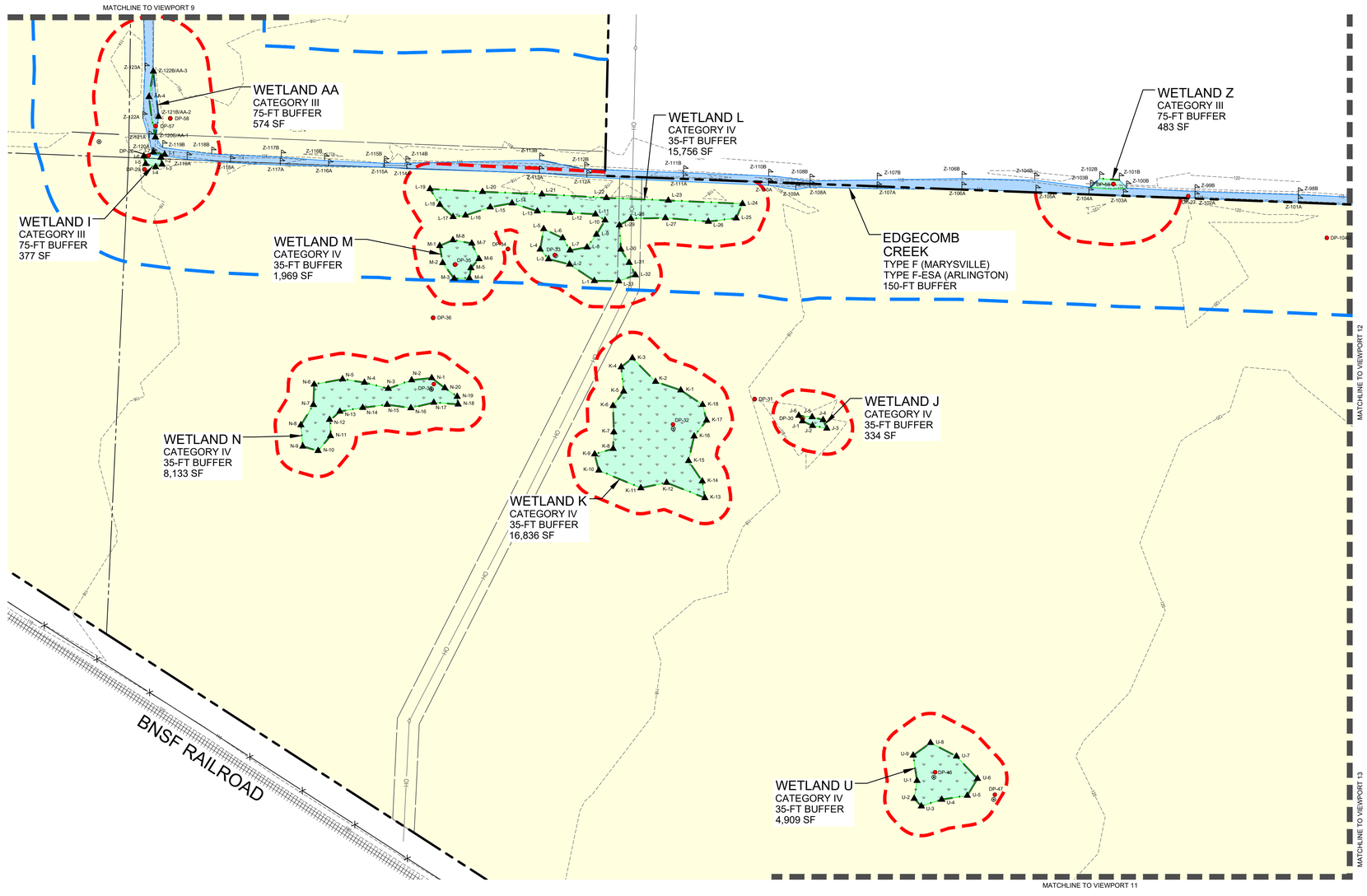

VIEWPORT 10

SCALE: 1"=80'

0 200 400 800

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

- PROJECT AREA
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BY: MW
SCALE: AS SHOWN
SHEET: 5

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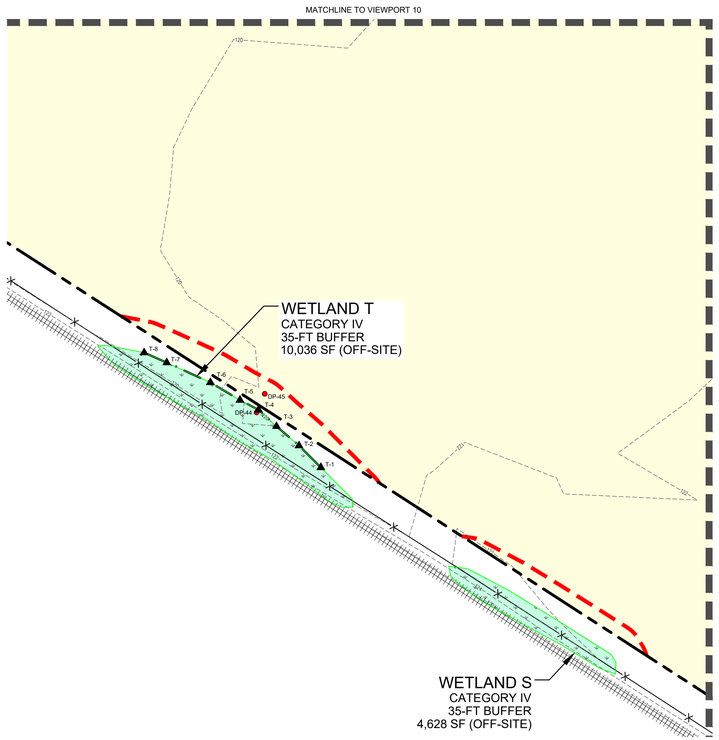

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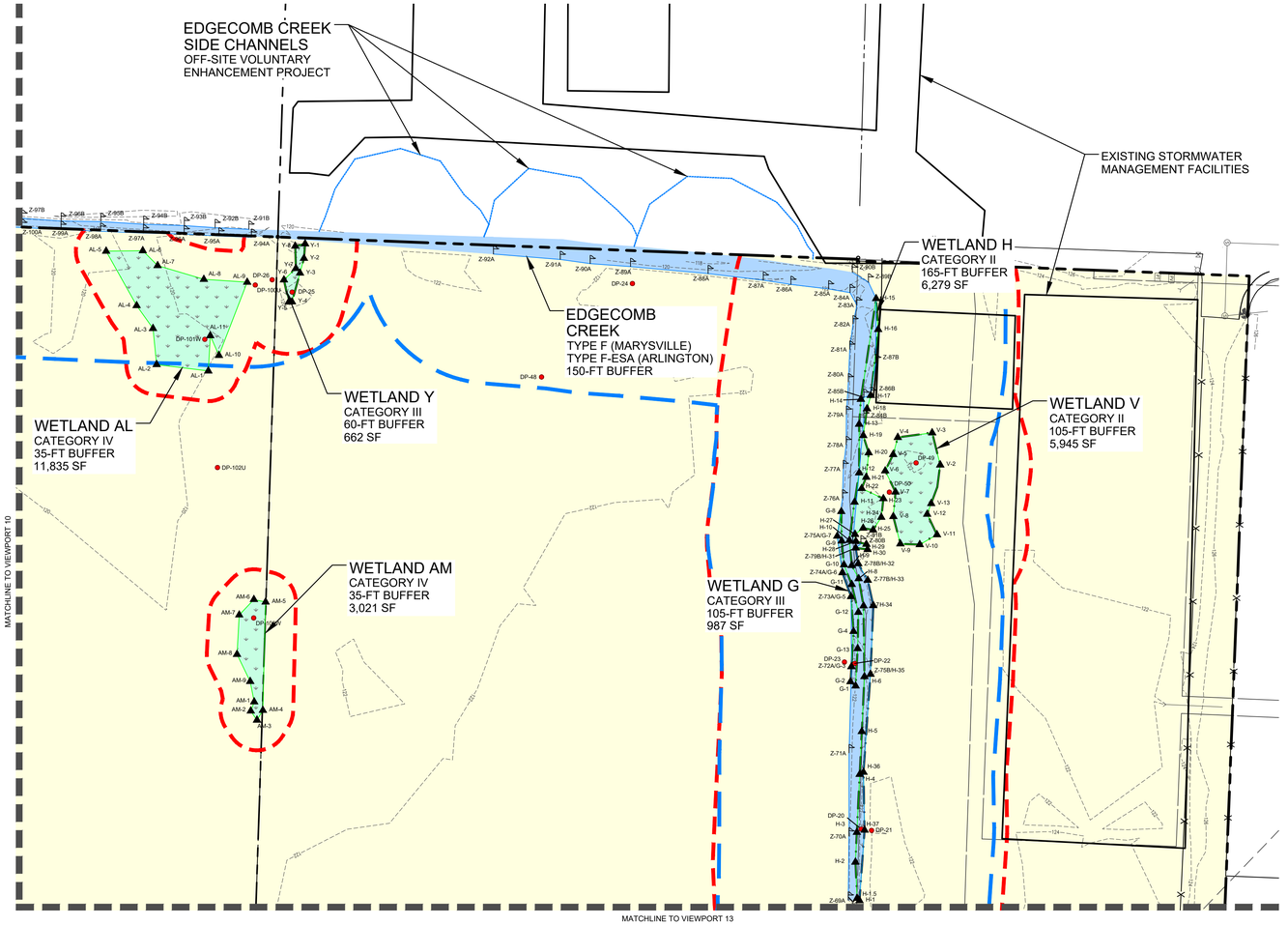

VIEWPORT 12

SCALE: 1"=80'

0 200 400 800

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

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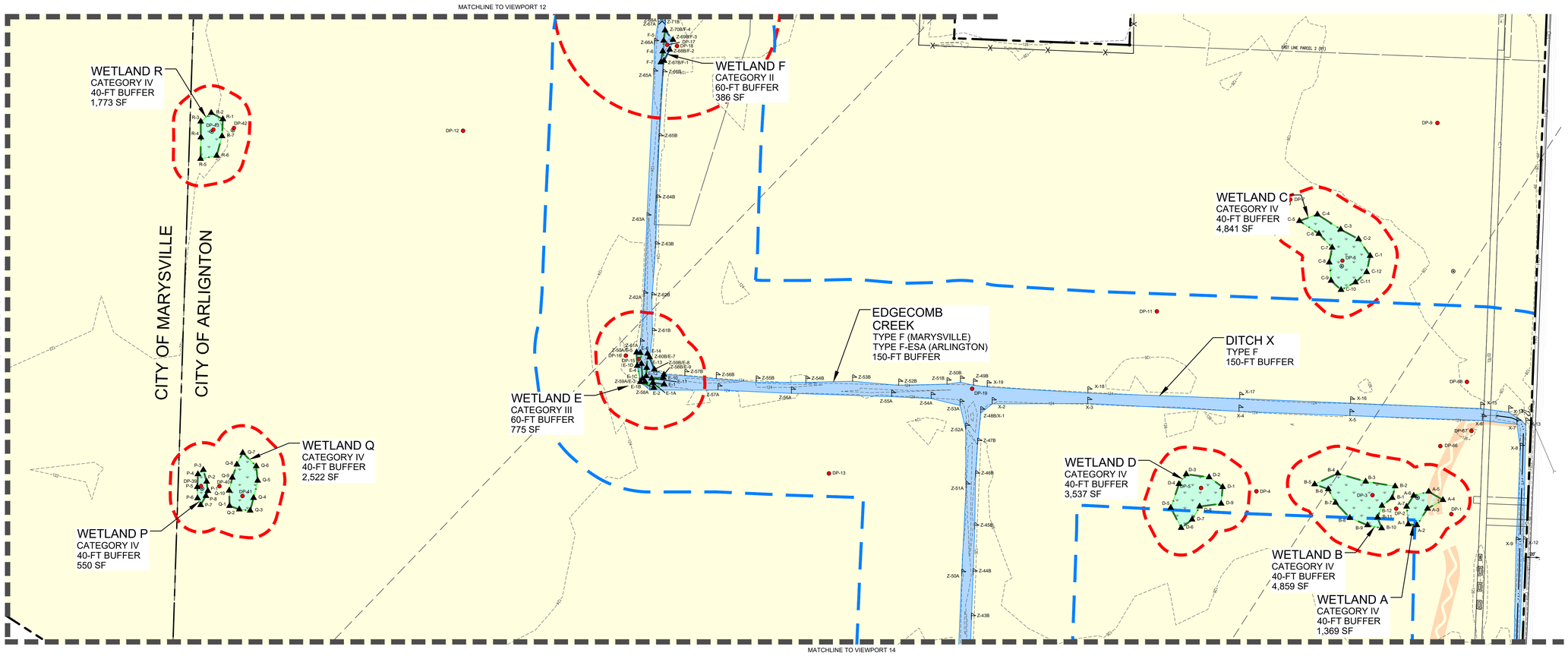

VIEWPORT 13

0 200 400 800

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

- PROJECT AREA
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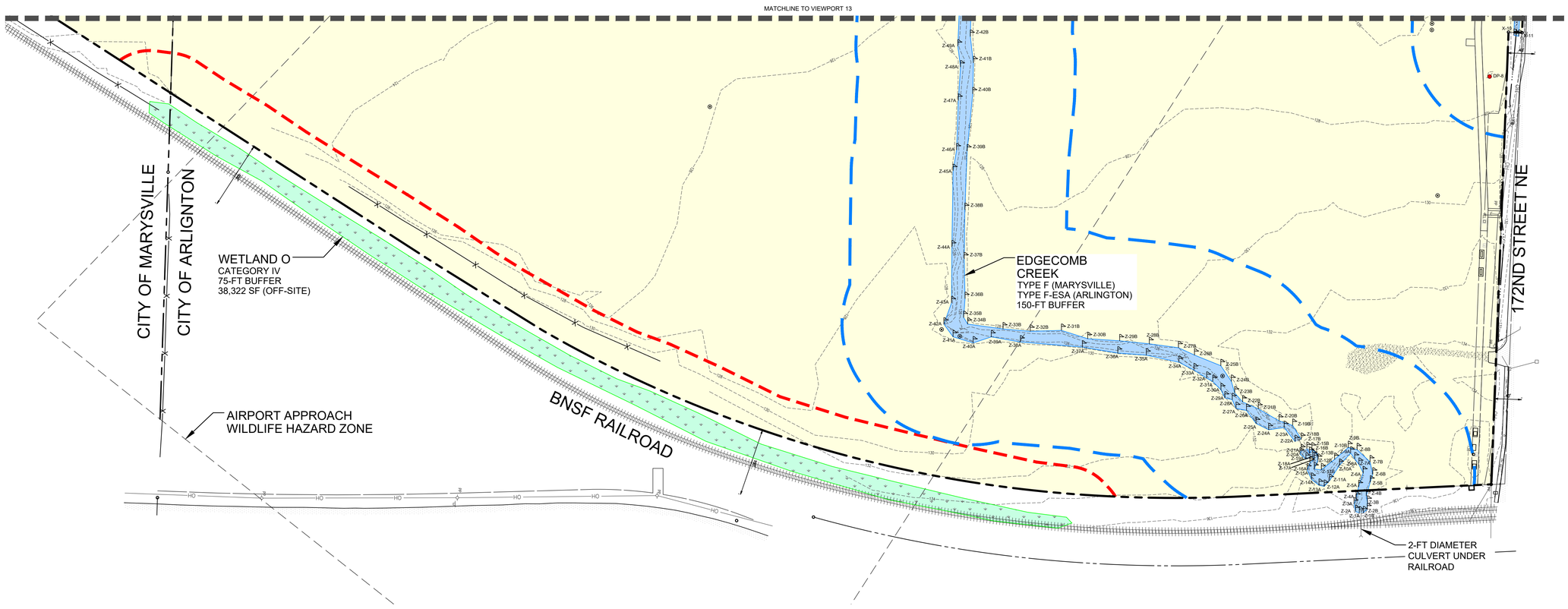

VIEWPORT 14

0 200 400 800

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

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Appendix D — Data Sheets

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: NorthPoint Holdings State: WA Sampling Point: DP-1

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.151472 Long: -122.14489010 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland A within a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100	-	-	-	-	SiLo	Silt loam
7 - 14	10YR 4/2	90	7.5YR 4/4	3	C	M	SiLo	Silt loam (ash), mixed
	10YR 3/1	7	-	-	-	-	SiLo	Silt loam, mixed matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 10

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-2

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.151378 Long: -122.14482891 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected between Wetland A and B in a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/1	100	-	-	-	-	SiLo	Silt loam
9 - 12	10YR 4/2	95	10YR 3/3	1	C	M, PL	SiLo	Silt loam (ash), mixed matrix
	10YR 2/1	4	-	-	-	-	SiLo	Silt loam, mixed matrix
12 - 14	10YR 3/2	95	7.5YR 4/6	1	C	M	SiLo	Silt loam, mixed matrix from layer above
	10YR 4/2	4	-	-	-	-	SiLo	Silt loam (ash), mixed matrix from layer above

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Second layer does not have enough redox (<2%) and is not thick enough (<6 inches) to meet A11 or F3. Third layer does not have enough redox (<5%) and is too deep (>10 inches deep) to meet F6. Minor mixing of layers observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No primary or secondary wetland indicators observed.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 4/8/20 & 4/14/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-3

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.151307 Long: -122.14488628 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland B within a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 2/1	100	-	-	-	-	SiLo	Silt loam
13 - 16+	10YR 4/2	98	10YR 4/4	2	C	M	SiLo	Silt loam (ash)

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A4 and A12.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 4

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2, A3, and C1. Water table and saturation observed on 4/8 after pit was left open overnight.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-4

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.150817 Long: -122.14490487 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected between Wetland B and Wetland D in a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	95	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
4 - 9	10YR 2/2	90	7.5YR 3/3	3	C	M, PL	SiLo	Silt loam, mixed matrix
	10YR 4/1	7	-	-	-	-	SiLo	Silt loam (ash), mixed matrix from layer below
9 - 14	10YR 4/1	60	7.5YR 3/3	3	C	M	SiLo	Silt loam (ash), mixed matrix
	10YR 5/2	37	-	-	-	-	SiLo	Silt loam (ash), mixed matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No primary or secondary wetland hydrology indicators observed.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 4/8/20 & 4/14/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-5

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.150596 Long: -122.14494337 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland D within a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	70	Yes	FACW
2. Alopecurus pratensis	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100	-	-	-	-	SiLo	Silt loam
7 - 10	10YR 2/1	96	5YR 3/3	4	C	M	SiLo	Silt loam
10 - 17	10YR 2/1	93	5YR 3/3	7	C	M, PL	SiLo	Silt loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 10

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met though primary indicators A2 and A3. Hydrology observed on 4/8 after pit was left open overnight.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 4/8/20 & 4/14/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-6

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.151147 Long: -122.14629587 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland C within a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	60	Yes	FAC
2. Juncus effusus	30	Yes	FACW
3. Taraxacum officinale	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
7 - 12	10YR 2/2	93	10YR 4/4	5	C	M	SiLo	Silt loam
			10YR 5/2	2	D	M		
12 - 16	2.5Y 5/2	95	10YR 4/4	5	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F6.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 10

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met though primary indicators A2 and A3. Hydrology observed on 4/8 after pit was left open overnight.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-7

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.150933 Long: -122.14665952 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected south of Wetland C in a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
7 - 16	2.5Y 4/1	>99	7.5YR 4/6	<1	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil indicators met. Second layer does not have enough redox (<2%) to meet A11 criteria.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No primary or secondary wetland hydrology indicators observed.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-8

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.151766 Long: -122.14365049 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected south of roadside ditch adjacent to utility access road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	2	Yes	FAC
2.			
3.			
4.			
5.			
	2	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	60	Yes	FACW
2. Cardamine hirsuta	25	Yes	FACU
3. Lamium purpureum	15	No	UPL
4. Vicia americana	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
6 - 14	10YR 2/2	94	7.5YR 4/6	1	C	M	SiLo	Silt loam
6 - 14	10YR 5/1	5	-	-	-	-	SiLo	Silt loam, pockets of ash, not true depletion

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Not enough redox (<5%) in second layer to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No primary or secondary wetland hydrology indicators observed.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-9

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.151507 Long: -122.14717361 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected northwest of Wetland C in well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
6 - 14	10YR 2/2	95	-	-	-	-	SiLo	Silt loam, pockets of ash mixed in matrix
	10YR 5/1	5	-	-	-	-	SiLo	Silt loam, pockets of ash mixed in matrix
14 - 16	10YR 4/3	96	10YR 4/1	4	D	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Lighter color in second layer is pockets of ash, not true depletions.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No primary or secondary wetland hydrology indicators observed.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-10

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.15128 Long: -122.14829495 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected near northwest property boundary in previously disturbed area with evidence of excavation and soil stockpiling.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	25	Yes	FAC
2.			
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	50	Yes	FACW
2. Tanacetum vulgare	25	Yes	FACU
3. Lamium purpureum	10	No	UPL
4. Poa palustris	10	No	FAC
5. Rumex crispus	5	No	FAC
6. Cardamine hirsuta	5	No	FACU
7. Vicia americana	5	No	FAC
8. Ranunculus repens	3	No	FAC
9. Cirsium vulgare	2	No	FACU
10.			
11.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 2/2	100	-	-	-	-	MeLo	Medium loam
13 - 16	10YR 3/4	100	-	-	-	-	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-11

Investigator(s): Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.150412 Long: -122.14597475 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected in in topographic low point south of Wetland C and west of ditch in a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	95	Yes	FACU
2. Trifolium pratense	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
Hydrophytic vegetation criteria not met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100	-	-	-	-	SiLo	Silt loam
6 - 16	2.5Y 5/2	60	7.5YR 4/4	2	C	M	SaLo	Sandy loam, mixed matrix
6 - 16	10YR 3/2	38	-	-	-	-	SiLo	Silt loam, mixed matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met. Pit left open for over 1 hour and no groundwater observed to 16" below ground surface.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/14/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-12

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): ____

Subregion (LRR): A2 Lat: 48.147603 Long: -122.14702318 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected south of Edgecomb Creek in representative portion of the well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
11 - 16	2.5Y 5/2	80	10YR 4/6	5	C	M	LoSa	Loamy sand
			N 5/1	15	D	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met. Pit left open for 30 minutes and no groundwater observed to 16" below ground surface.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 4/9/20 & 4/14/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-13

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.149093 Long: -122.14498271 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in topographic low point east of Edgecomb Creek in a well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	70	Yes	FAC
2. Ranunculus repens	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	2.5Y 3/1	95	10GY 4/1	2	D	M	SiLo	Silt loam (ashy)
			2.5Y 5/2	2	D	M		
			10YR 3/4	1	C	M		
9 - 14	2.5Y 3/1	90	10GY 5/1	3	D	M	SiLo	Silt loam, depletions appear as distinct chunks
			2.5Y 5/1	3	D	M		
			10YR 3/4	4	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox in first layer is not prevalent enough (<2%) to meet F6, and depletions are not prevalent enough (<10%) to meet F7. Additionally, while the redox in the second layer does meet F6 criteria, it begins too deep (>8") in the soil profile to meet F6 depth requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met. Pit left open overnight on 4/9/20 and no groundwater observed to 16" below ground surface on 4/10/20. Additionally, no hydrology observed on 4/14/20.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-14

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.150710 Long: -122.14183490 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected within a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	20	Yes	FAC
2. Spiraea douglasii	1	No	FACW
3.			
4.			
5.			
	21	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	95	Yes	FACW
2. Urtica dioica	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/2	100	-	-	-	M	Si	Silt
12 - 20	10YR 2/2	99	7.5YR 4/4	1	C	M	SiLo	Silt loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox is not prevalent enough (<5%) and too deep (>8") to meet F6 requirements. The bench along the creek appears to be built up silt deposits or spoils. This area is included within Edgecomb Creek's OHW.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met. No evidence of groundwater to 20" below ground surface.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-15

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.148315 Long: -122.14565730 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland E, a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Physocarpus capitatus	15	Yes	FACW
2. Alnus rubra	5	Yes	FAC
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
9 - 16	10Y 4/1	98	10YR 4/4	2	C	M	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A4 and A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 11

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 9

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2, A3, and C1.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-16

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.148283 Long: -122.14567798 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected south of Wetland E and Edgecomb Creek, in well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	60	Yes	FAC
2. Dactylis glomerata	35	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	2.5Y 3/1	100	-	-	-	-	SaLo	Sandy loam
12 - 16	2.5Y 3/1	98	7.5YR 3/3	2	C	M, PL	SaLo	Sandy loam. Buried top soil, lots of roots

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox is too deep (>8") to meet F6 criteria.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-17

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.148405 Long: -122.14754846 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland F, a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Spiraea douglasii	2	Yes	FACW
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	98	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through rapid test.

SOIL

Sampling Point: DP-17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100	-	-	-	-	Silt	Silt
8 - 16	10Y 4/1	100	-	-	-	-	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 8

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-18

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.148436 Long: -122.14753715 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected north of Wetland F and Edgecomb Creek, in well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	85	Yes	FACU
2. Taraxacum officinale	10	No	FACU
3. Ranunculus repens	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-18

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

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

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/17/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-19

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.149667 Long: -122.14551703 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected within a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	90	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through rapid test.

SOIL

Sampling Point: DP-19

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/2	100	-	-	-	-	Silt	Silt
9 - 16	N 3/1	100	-	-	-	-	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Soils value too low (<4) to meet gley matrix criteria for A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 13

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met. Saturation and water table are too deep (>12") to meet A2 or A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-20

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.148410 Long: -122.14812398 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland G on a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

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

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through rapid test. Willows rooted outside of wetland on opposite bank of stream.

SOIL

Sampling Point: DP-20

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	5Y 3/2	100	-	-	-	-	MeLo	Medium loam, lots of roots
8 - 16	10Y 4/1	100	-	-	-	-	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 10

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-21

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.148446 Long: -122.14811847 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected north of Wetland G and Edgecomb Creek, in well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	50	Yes	FACU
2. Holcus lanatus	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-21

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
12 - 13	2.5Y 4/2	100	-	-	-	-	Sand	Coarse sand
13 -14+	2.5Y 3/1	100	-	-	-	-	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-22

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.148385 Long: -122.14886408 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland G on a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Salix scouleriana	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. Solanum dulcamara	5	Yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-22

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	5Y 3/1	100	-	-	-	-	SaLo	Sandy loam
8 - 16	N 4/1	100	-	-	-	-	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-23

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.148347 Long: -122.14888950 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected north of Wetland G and Edgecomb Creek, in well-maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	40	Yes	FAC
2. Dactylis glomerata	30	Yes	FACU
3. Holcus lanatus	30	Yes	FAC
4. Trifolium repens	15	No	FAC
5. Taraxacum officinale	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	117	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-23

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	2.5Y 3/1	100	-	-	-	-	SaLo	Sandy loam
12 - 16	2.5Y 4/1	100	-	-	-	-	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. No redox in second layer to meet A11 criteria.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-24

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.147658 Long: -122.15068543 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected east of Edgecomb Creek, at toe of slope of berm paralleling the creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus spectabilis	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	70	Yes	FACW
2. Ranunculus repens	25	Yes	FAC
3. Urtica dioica	15	No	FAC
4. Gallium aparine	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-24

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	2.5Y 3/1	100	-	-	-	-	SaLo	Sandy loam
11 - 13	2.5Y 3/1	84	2.5Y 4/1	15	D	M	SaLo	Sandy loam
			2.5Y 4/3	1	C	M		
13 - 15	10YR 3/1	88	Charcoal	10	C	M	SiLo	Silt loam with chunks of charcoal
			7.5YR 3/2	2	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Depletions in second layer too dark (value 4) and too deep (>8") in the soil profile to meet F7 requirements. Redox in second layer not abundant enough (<2%) and too deep (8") in the soil profile to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-25

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146580 Long: -122.15061493 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland Y, east of Edgecomb Creek, in abandoned ditch leading into the creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	10	Yes	FACU
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Spiraea douglasii	30	Yes	FACW
2. Rubus armeniacus	15	Yes	FAC
3.			
4.			
5.			
	45	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-25

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	2.5Y 4/1	90	7.5YR 3/3	10	C	M	SaLo	Sandy loam
8 - 14	2.5Y 4/1	83	7.5YR 3/3	15	C	M	SaLo	Sandy loam
			10YR 5/3	2	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-26

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.146514 Long: -122.15067747 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected east of Edgecomb Creek, and south of Wetland Y.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	5	Yes	FACU
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Holcus lanatus	60	Yes	FAC
2. Schedonorus arundinaceus	30	Yes	FAC
3. Lotus corniculatus	5	No	FAC
4. Ranunculus repens	2	No	FAC
5. Taraxacum officinale	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	99	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 1

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-26

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/1	>99	7.5YR 3/3	<1	C	M	SaLo	Sandy loam, trace amounts of redox
8 - 11	10YR 3/1	95	7.5YR 4/3	2	C	M	SaLo	Sandy loam
			7.5YR 3/3	3	C	M		
11 - 14	10YR 4/1	95	10YR 4/4	5	C	M	SaLo	Sandy loam
14 - 16+	2.5Y 5/3	95	7.5YR 3/4	5	C	M	SiLo	Silt loam (ash)

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Trace amounts of redox observed in first layer amount to less than 1% and do not meet F6 requirements. Second layer meets redox requirements of F6 but does not meet depth requirements (<4" thick), the third layer is not thick enough to meet depleted matrix requirements of A11 (<4" thick), and the fourth layer is too bright too bright (chroma >2) to meet depleted matrix requirements of A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 15

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met; saturation too deep in the profile (>12") to meet primary indicator A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-27

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.145084 Long: -122.15091575 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected on bench along eastern side of Edgecomb Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Spiraea douglasii	10	Yes	FACW
2. Rubus spectabilis	10	Yes	FAC
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2. Urtica dioica	1	No	FAC
3. Gallium aparine	1	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	102	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-27

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	2.5Y 3/1	100	-	-	-	-	SiLo	Silt loam
9 - 14	10YR 4/1	>99	10YR 4/4	<1	C	M	SaLo	Sandy loam, trace amounts of redox

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Trace amounts (<1%) of redox in second layer are not prevalent enough to meet depleted matrix requirements for A11 of F3 indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met; pit dug to 16" with no evidence of groundwater.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-28

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.141210 Long: -122.15105841 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in bench east of Edgecomb Creek, in Wetland I.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.		Yes	
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Cornus alba	35	Yes	FACW
2.		Yes	
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through rapid test.

SOIL

Sampling Point: DP-28

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	2.5Y 3/1	100	-	-	-	-	SaLo	Sandy loam
12 - 16	10YR 4/1	96	10YR 4/4	4	C	M	Sand	Coarse sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11. Soil appears to be fill material.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 12

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicator A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/23/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-29

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): A2 Lat: 48.141195 Long: -122.15098514 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected on berm of spoils adjacent to Wetland I.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Holcus lanatus	40	Yes	FAC
2. Cardamine hirsuta	20	Yes	FACU
3. Poa pratesnsis	20	Yes	FAC
4. Schedonorus arundinaceus	20	Yes	FAC
5. Lamium purpureum	10	No	FACU
6. Taraxacum officinale	1	No	FACU
7.			
8.			
9.			
10.			
11.			
	111	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-29

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 3/2	100	-	-	-	-	LoSa	Loamy sand
4 - 10	2.5Y 3/1	100	-	-	-	-	SaLo	Loamy sand
10 - 14	2.5Y 3/1	93	2.5Y 5/6	2	C	M	SaLo	Sandy loam, mixed matrix
	2.5Y 5/1	10	-	-	-	-	SaLo	Sandy loam, mixed matrix
	2.5Y 3/2	5	-	-	-	-	SaLo	Sandy loam, mixed matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Soils appear historically disturbed, berm appears to be formed from spoils from excavating the stream sediment. Third layer exhibits mixed matrices; redox begins too deep (>8") in the profile to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met; pit dug to 16" with no evidence of groundwater.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-30

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.142289 Long: -122.14979878 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland J in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-30

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
9 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators B6 and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-31

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.143484 Long: -122.14975998 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected between Wetland J and K in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	90	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-31

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
10 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-32

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.143181 Long: -122.14959716 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:

All three wetland criteria met. Data collected in Wetland K in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-32

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
9 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators B6 and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-33

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.143181 Long: -122.14959716 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland L in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks:
Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-33

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
10 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators B6 and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-34

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.142560 Long: -122.15056825 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected between Wetland J and K in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	90	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-34

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
10 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-35

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.142389 Long: -122.15048139 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland M in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-35

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
10 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators B6 and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-36

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.142274 Long: -122.15008658 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected between Wetland M and N in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	90	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-36

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
11 - 15	2.5YR 4/1	95	7.5YR 4/6	5	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/27/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-37

Investigator(s): Ryan Krapp, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.143670 Long: -122.14966331 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:

All three wetland criteria met. Data collected in Wetland N in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-37

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
10 - 15	2.5YR 6/1	93	7.5YR 4/6	7	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators B4, B6, and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-38

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Streambank Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.149660 Long: -122.14203052 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in bench along eastern side of Edgecomb Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Lonicera involucrata	15	Yes	FAC
2. Salix lasiandra	10	Yes	FACW
3. Cornus alba	5	No	FACW
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	65	Yes	FACW
2. Urtica dioica	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-38

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 15	10YR 3/1	100	-	-	-	-	SiLo	Silt loam, silt buildup
9 - 15	10YR 3/1	99	10YR 3/3	1	C	PL	SiLo	Silt loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox begins too deep (>8") and is not prevalent enough (<5%).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-39

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146557 Long: -122.14481964 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland P in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopercus pratensis	40	Yes	FAC
2. Ranunculus repens	40	Yes	FAC
3. Agrostis capillaris	10	No	FAC
4. Schedonorus arundinaceus	5	No	FAC
5. Taraxacum officinale	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-39

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/1	98	10YR 5/6	1	C	M	MeLo	Medium loam
			10YR 5/2	1	D	M		
8 - 13	10YR 4/1	55	10YR 5/6	15	C	M	MeLo	Medium loam, mixed matrix
	10YR 5/2	30	-	-	-	-	MeLo	Medium loam, mixed matrix
13 - 16	10YR 5/2	93	10YR 5/6	7	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through indicator C1.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-40

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.146642 Long: -122.14484618 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected between Wetlands P and Q in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	70	Yes	FAC
2. Alopercus pratensis	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-40

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/1	98	10YR 5/6	1	C	M	MeLo	Medium loam
			10YR 5/2	1	D	M		
8 - 13	10YR 4/1	55	10YR 5/6	15	C	M	MeLo	Medium loam, mixed matrix
	10YR 5/2	30	-	-	-	-	MeLo	Medium loam, mixed matrix
13 - 16	10YR 5/2	93	10YR 5/6	7	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-41

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146725 Long: -122.14478166 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland Q in active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	50	Yes	FAC
2. Alopercus pratensis	40	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-41

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 4/1	93	10YR 5/6	2	C	M	MeLo	Medium loam
			10YR 5/1	5	D	M		
7 - 10	10YR 4/1	60	7.5YR 4/6	15	C	M	MeLo	Medium loam, mixed matrix
	10YR 5/1	25	-	-	-	-	MeLo	Medium loam, mixed matrix
10 - 16	10YR 5/1	85	7.5YR 4/6	15	C	M	SaClLo	Sandy clay loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through indicator C1.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-42

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.146665 Long: -122.14698216 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in active agricultural field that was recently tilled, north of Wetland R. Soils were mixed due to recent tilling.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-42

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
7 - 13	10YR 3/1	70	-	-	-	-	SiLo	Silt loam, mixed till layer
	10YR 5/1	28	10YR 4/6	2	C	M	SaLo	Sandy loam, mixed till layer
13 - 16	10YR 5/1	95	10YR 4/6	5	C	M	LoSa	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. The second and third layers appear mixed due to recent tilling of the field. However, the true depleted layer does not begin until 13", and therefore is too deep to meet A11 requirements, and the top layers are not dark enough (value <3) to meet A12 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-43

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146582 Long: -122.14697031 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland R in an active agricultural field that was recently tilled.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	80	Yes	FAC
2. Ranunculus repens	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-43

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 3/2	100	-	-	-	-	SiLo	Silt loam
7 - 13	10YR 5/1	65	10YR 4/6	5	C	M	LoSa	Loamy sand, mixed matrix due to tilling
	10YR 4/1	30	-	-	-	-	SiLo	Silt loam, mixed matrix due to tilling

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through indicator D1.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-44

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.144366 Long: -122.14526736 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland T in an active agricultural field that was recently tilled.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Carex obnupta	25	Yes	OBL
2. Ranunculus repens	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-44

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 3/2	99	10YR 5/6	1	C	M	SaLo	Sandy loam
7 - 9	10YR 4/2	45	10YR 5/6	25	C	M	LoSa	Loamy sand, mixed matrix due to tilling
	10YR 3/2	30	-	-	-	-	LoSa	Loamy sand, mixed matrix due to tilling
9 - 16	10YR 4/2	70	5YR 5/6	30	C	M	SaLo	Sandy loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through indicator B6.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-45

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.144370 Long: -122.14537046 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected in active agricultural field, west of Wetland T.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	90	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-45

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
6 - 12	10YR 2/2	80	-	-	-	-	SiLo	Silt loam
	10YR 5/1	15	10YR 4/6	5	C	M	LoSa	Loamy sand
12 - 16	10YR 5/1	90	10YR 4/6	10	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-46

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.144179 Long: -122.14768809 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland U in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	2	No	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 98

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-46

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
9 - 16	10YR 5/1	95	10YR 4/6	5	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through indicators B4, B6, and B8.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-47

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.144402 Long: -122.14756877 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected in active agricultural field, north of Wetland U.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Triticum aestivum	90	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-47

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
11 - 15	10YR 5/1	97	10YR 4/5	3	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-48

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.147372 Long: -122.15021616 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in active agricultural field, east of Edgecomb Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	50	Yes	FAC
2. Schedonorus arundinaceus	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-48

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
4 - 12	10YR 3/1	60	-	-	-	-	SaLo	Sandy loam, mixed matrix due to recent tilling
	10YR 4/2	39	10YR 3/6	1	C	M	LoSa	Loamy sand, mixed matrix due to recent tilling
12 - 16	10YR 4/2	99	10YR 3/6	1	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Second layer of soil mixed due to tilling. Not enough redox (<2%) in third layer to meet A11 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-49

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.148575 Long: -122.14986370 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland V within an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	40	Yes	FAC
2. Agrostis capillaris	30	Yes	FAC
3. Ranunculus repens	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-49

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
3 - 8	10YR 2/2	97	5YR 4/6	3	C	M,PL	SiLo	Silt loam
8 - 16	2.5Y 4/2	80	10YR 5/6	20	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 11

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 04/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-50

Investigator(s): Ryan Krapp, Jake Layman Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.148486 Long: -122.14972385 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected between Wetlands V and H within an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	70	Yes	FAC
2. Agrostis capillaris	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-50

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
9 - 12	10YR 2/2	98	7.5YR 4/6	2	C	M,PL	SiLo	Silt loam
12 - 16	10YR 4/1	95	7.5YR 4/6	5	C	M	LoSa	Loamy sand

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 4/9/20 & 5/12/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-52

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.137905 Long: -122.15946922 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland W in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	30	Yes	FAC
2. Epilobium ciliatum	10	No	FACW
3. Cardamine sp.*	10	No	FAC
4. Ranunculus repens	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 45

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.
*Could not be identified to species, assumed FAC for scoring purposes.

SOIL

Sampling Point: DP-52

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	2.5Y 3/2	55	7.5YR 3/3	5	C	M	SiLo	Silt loam, mixed matrix
	2.5Y 3/2	40	-	-	-	-	SaLo	Sandy loam, mixed matrix
7 - 11	2.5Y 3/2	73	10Y 4/1	20	D	M	SaLo	Sandy loam
			7.5YR 3/4	7	C	M,PL		Silt loam, mixed matrix
11 - 14+	5GY 4/1	85	7.5YR 4/6	15	C	M,PL	SaClLo	Sandy clay loam, cobbles

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11, F6, and F7.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 12

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hydrology criteria met through primary indicator A3 during 4/9 site visit, and D1.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 4/9/20 & 5/12/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-53

Investigator(s): Kyla Caddey Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR): A2 Lat: 48.137953 Long: -122.15957473 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected west of Wetland W in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	95	Yes	FACU
2. Alopecurus aequalis	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

SOIL

Sampling Point: DP-53

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	98	10YR 3/6	2	C	M	SiLo	Silt loam
6 - 12	10YR 3/2	95	10YR 3/6	5	C	M	SiLo	Silt loam
12 - 16	10YR 3/2	90	2.5Y 5/3	5	C	M	SaLo	Sandy loam with some gravel
			7.5YR 3/4	5	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No hydrology criteria met.

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

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 4/9/20 & 5/12/20

Applicant/Owner: NorthPoint Development State: WA Sampling Point: DP-54

Investigator(s): Kyla Caddey Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.140039 Long: -122.15941445 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:

All three wetland criteria met. Data collected in Wetland X in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	85	Yes	FACU
2. Alopecurus aequalis	15	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

Managed plant community in active agricultural field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators, and obligate species.

SOIL

Sampling Point: DP-54

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	99	10YR 3/6	1	C	M	SiLo	Silt loam
6 - 10	10YR 3/2	95	10YR 3/6	5	C	M	SiLo	Silt loam
10 - 15	2.5Y 5/2	80	10YR 3/6	10	C	M	SaLo	Sandy loam, mixed matrix
	10YR 3/2	10	-	-	-	-	SiLo	Silt loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11, F3, and F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☒ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 13

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 11

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicator A3 during 4/9 site visit and D1.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/12/2020

Applicant/Owner: NorthPoint Development State: WA Sampling Point: DP-55

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.137953 Long: -122.15957473 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected west of Wetland X in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	50	Yes	FAC
2. Dactylis glomerata	15	Yes	FACU
3. Alopecurus pratensis	5	No	FAC
4. Cerastium arvense	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-55

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
10 - 14	10YR 2/2	96	7.5YR 3/4	3	C	M	SiLo	Silt loam
			5Y 5/1	1	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; redox begins too deep (>8") and is not prevalent enough (<5%) to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-56

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.144812 Long: -122.15099245 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland Z on a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	90	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. Solanum dulcamara	5	Yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-56

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
10 - 16	10Y 4/1	100	-	-	-	-	Sa	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 13

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 11

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicator A3.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-57

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.141241 Long: -122.15120713 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland AA on a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	90	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. Solanum dulcamara	5	Yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-57

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
10 - 16	10Y 4/1	100	-	-	-	-	Sa	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 13

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 11

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicator A3.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-58

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.141302 Long: -122.15127758 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected north of Wetland AA in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	30	Yes	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	40	Yes	FACU
2. Dactylis glomerata	30	Yes	FACU
3. Galium aparine	10	No	FACU
4. Taraxacum officinale	10	No	FACU
5. Phalaris arundinacea	10	No	FACW
6. Geranium dissectum	2	No	UPL
7.			
8.			
9.			
10.			
11.			
	102	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum -2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-58

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100	-	-	-	-	SaLo	Sandy loam
6 - 7	10YR 4/4	100	-	-	-	-	SaLo	Sandy loam
7 - 14	10YR 2/2	70	-	-	-	-	SaLo	Sandy loam, mixed matrix
	10YR 2/1	30	-	-	-	-	SaLo	Sandy loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-59

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.142157 Long: -122.15344910 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	70	Yes	FACU
2. Agrostis sp.*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydrology.
*Could not identify to species, assumed FAC for scoring purposes.

SOIL

Sampling Point: DP-59

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SiLo	Silt loam, lots of roots
9 - 14+	7.5YR 5/1	85	7.5YR 4/6	15	C	M,PL	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: NorthPoint Development State: WA Sampling Point: DP-60

Investigator(s): Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.142122 Long: -122.15671144 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	93	Yes	FACU
2. Phalaris arundinacea	5	No	FACW
3. Ranunculus repens	2	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydrology.

SOIL

Sampling Point: DP-60

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
3 - 9	10YR 2/2	98	10YR 3/4	2	C	M,PL	SiLo	Silt loam
9 - 18	2.5Y 4/1	93	7.5YR 3/4	7	C	M	SiLo	Silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: NorthPoint Development State: WA Sampling Point: DP-61

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A2 Lat: 48.141124 Long: -122.15652433 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected within Wetland AB on a bench along Edgecomb Creek, below the OHW.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2. Galium aparine	10	No	FACU
3. Epilobium ciliatum	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. Solanum dulcamara	30	Yes	FAC
2.			
	30	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-61

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
8 - 16	10Y 4/1	100	-	-	-	-	Sa	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 11

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 9

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicators A2 and A3.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: NorthPoint Development State: WA Sampling Point: DP-62

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.141153 Long: -122.15658087 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: **No three wetland criteria met. Data collected west of Wetland AB in an active agricultural field. Berm likely consists of spoils from excavated channel.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	60	Yes	FACU
2. Galium aparine	40	Yes	FACU
3. Vicia sativa	20	No	UPL
4. Lolium perenne	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydrology.

SOIL

Sampling Point: DP-62

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 2/2	100	-	-	-	-	SaLo	Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Likely spoils from the excavated channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-63

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.138018 Long: -122.15339203 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in an active row crop field with patchy vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Brassica rapa	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydrology.

SOIL

Sampling Point: DP-63

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/2	99	7.5YR 4/6	1	C	M	SiLo	Silt loam
10 - 15+	10YR 5/1	90	7.5YR 4/6	10	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☒ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

While primary indicator D1 was observed, these stunted/stressed plants were not limited to low points and were inconsistent across the the topography throughout the field (i.e. crops at the top of small hills were similarly stressed). Additionally, no evidence of a water table was observed during any of the visits in April or May, and aerial imagery does not show consistent evidence of annual saturation or inundation. Therefore, it was determined that the stunted and stressed plants are likely not the result of a high water table or seasonal ponding and may be stunted by other factors.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-64

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.139954 Long: -122.15274074 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinceus	95	Yes	FAC
2. Holcus lanatus	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-64

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100	-	-	-	-	SiLo	Silt loam
6 - 9	10YR 3/2	99	7.5YR 4/6	1	C	M	SiLo	Silt loam
9 - 16	2.5Y 5/2	87	7.5YR 5/6	13	C	M	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-65

Investigator(s): Rachael Hyland, Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.140407 Long: -122.15534820 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in an active agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinceus	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-65

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
8 - 13	10YR 2/2	98	7.5YR 4/4	2	C	M	SiLo	Silt loam
13 - 16	2.5Y 5/3	90	7.5YR 4/6	10	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; redox in second layer is not prevalent enough (<5%) to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-66

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): A2 Lat: 48.151565 Long: -122.14520775 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected at WSDOT SP-3 location in an active agricultural field, west of Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinceus	40	Yes	FAC
2. Dactylis glomerata	30	Yes	FACU
3. Alopecurus pratensis	30	Yes	FAC
4. Equisetm arvense	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-66

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100	-	-	-	-	SiLo	Silt loam
10 - 14	10YR 2/1	>96	5YR 3/2	<1	C	M	SiLo	Silt loam
			7.5YR 3/1	5	C	M	SiLo	Silt loam
14 - 16+	10YR 4/2	>89	10YR 5/1	10	D	M	SiLo	Silt loam, ash
			10YR 4/4	<1	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox in second layer is too faint to meet F6 requirements. Redox in third layer is not prevalent enough (<2%) to meet depleted matrix requirements of A12.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary wetland hydrology indicators observed. No water table observed during 4/9, 4/14, and 5/13. The area appears to support some surface water (subsoils remain dry) during and immediately after rain events, however, it drains very quickly as evidenced by surface water observed on 4/23 which drained by the 4/27 site visit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-67

Investigator(s): Ryan Krapp Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.151672 Long: -122.14524772 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No hydrophytic vegetation or wetland hydrology. Data collected at WSDOT SP-4 location in an active agricultural field, northwest of Wetland A, east of the ditch, and south of an access road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	70	Yes	FACW
2. Galium aparine	20	Yes	FACU
3. Equisetum arvense	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of wetland hydrology.

SOIL

Sampling Point: DP-67

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16+	10YR 2/1	100	-	-	-	-	SiLo	Silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

No hydric soil criteria met, however, given the dark soil, indicator A12 cannot be precluded. Therefore, hydric soils conservatively assumed present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary wetland hydrology indicators observed. No water table observed during 4/9, 4/14, and 5/13. The area appears to support some surface water (subsoils remain dry) during and immediately after rain events, however, it drains very quickly as evidenced by surface water observed on 4/23 which drained by the 4/27 site visit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-68

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.151551 Long: -122.14576989 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: **No wetland criteria met. Data collected at WSDOT SP-1 location in an active agricultural field, northeast of Wetland C, and west of the ditch.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinceus	60	Yes	FAC
2. Dactylis glomerata	30	Yes	FACU
3. Alopecurus pratensis	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-68

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
14 - 16+	10YR 2/2	98	5GY 4/1	2	D	M	SiLo	Silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Depletions in second layer are not prevalent enough (<20%) and too deep (>8") to meet F7 requirements. Soil is not dark enough (chroma >1) to be considered for A12.
Agricultural additive observed on soil surface, appeared black and gritty.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary wetland hydrology indicators observed. No water table observed during 4/9, 4/14, and 5/13. The area appears to support some surface water (subsoils remain dry) during and immediately after rain events, however, it drains very quickly as evidenced by surface water observed on 4/23 which drained by the 4/27 site visit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-69

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.151792 Long: -122.14371073 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in WSDOT delineated wetland, south of the roadside ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Cardamine hirsuta	40	Yes	FACU
2. Poa pratensis	30	Yes	FAC
3. Equisetum arvense	30	Yes	FAC
4. Phalaris arundinacea	20	No	FACW
5. Holcus lanatus	20	No	FAC
6. Galium aparine	15	No	FACU
7. Dactylis glomerata	5	No	FACU
8. Lapsana communis	5	No	FACU
9. Vicia americana	2	No	FAC
10.			
11.			
	167	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-69

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
13 - 16	10YR 2/2	94	10YR 4/2	2	D	M	SiLo	Silt loam
			Charcoal	3	C	M		Charcoal mixed into soil
			10YR 3/4	1	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; redox and depletions begin too deep (>8") in the soil profile and are not prevalent enough to meet F6 or F7 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met. Pit was dug to 20" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-70

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.151813 Long: -122.14382844 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected in WSDOT delineated wetland, south of the roadside ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Galium aparine	85	Yes	FACU
2. Phalaris arundinacea	30	Yes	FACW
3. Poa pratensis	15	No	FAC
4. Equisetum arvense	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	140	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-70

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
9 - 11	10YR 2/2	98	10YR 5/2	2	D	M	SiLo	Silt loam
11 - 16	10YR 2/2	55	-	-	-	-	SiLo	Silt loam, mixed matrix
	10YR 3/2	40	10YR 5/2	5	D	M	SiLo	Silt loam, mixed matrix, ash pockets

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; depletions begin too deep (>8") in the soil profile and are not prevalent enough (<20%) to meet the F7 requirements. Third layer is very mixed and includes pockets of ash throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met. Pit was dug to 20" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-71

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.151766 Long: -122.14404845 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected in WSDOT delineated wetland, south of the roadside ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Galium aparine	50	Yes	FACU
2. Poa pratensis	30	Yes	FAC
3. Holcus lanatus	20	No	FAC
4. Phalaris arundinacea	10	No	FACW
5. Equisetum arvense	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	112	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-71

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/1	96	2.5Y 6/1	4	D	M	SiLo	Silt loam, pockets of ash
3 - 9	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
9 - 11	10YR 3/1	98	7.5YR 2.5/3	2	C	M	SiLo	Silt loam
11 - 14	10YR 3/2	100	-	-	-	-	SiLo	Silt loam, mixed with ash
14 - 16+	10YR 3/2	97	5YR 3/4	3	C	M	SiLo	Silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; depletions in the first layer of the soil profile are not prevalent enough (<10%) to meet the F7 requirements, additionally, they are pockets of ash and not depletions formed in place. Redox observed in the third layer is too deep (>8") and the layer does not meet the thickness (<4") requirement of the F6 indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met. Pit was dug to 22" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-72

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.151795 Long: -122.14474223 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Not all three wetland criteria met, only hydric soils. Data collected in WSDOT delineated wetland, south of the roadside ditch. Soils exhibit extensive mixing in the subsoil, likely from historical agricultural use or disturbance from construction of adjacent utility boxes.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	85	Yes	FACW
2. Galium aparine	30	Yes	FACU
3. Poa pratensis	5	No	FAC
4. Vicia hirsuta	2	No	UPL
5. Equisetum arvense	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	124	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of wetland hydrology.

SOIL

Sampling Point: DP-72

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100	-	-	-	-	SiLo	Silt loam
3 - 8	10YR 2/2	92	7.5YR 3/3	8	C	M	SiLo	Silt loam
8 - 12	10YR 2/2	94	5YR 3/3	5	C	M	SiLo	Silt loam
			2.5Y 7/2	1	D	M		
10 - 16+	10YR 3/2	60	-	-	-	-	SiLo	Silt loam, mixed matrix
	2.5Y 4/2	40	-	-	-	-	SiLo	Silt loam, ashy, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met. Pit was dug to 18" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-73

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.151795 Long: -122.14474223 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: **Not all three wetland criteria met, only hydrophytic vegetation. Data collected in WSDOT delineated wetland, south of the roadside ditch. Soils exhibit extensive mixing in the subsoil, likely from historical agricultural use or disturbance from construction of adjacent utility boxes.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	90	Yes	FACW
2. Poa pratensis	25	No	FAC
3. Galium aparine	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-73

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
3 - 6	10YR 3/1	98	10YR 6/2	2	D	M	SiLo	Silt loam, pockets of ash
6 - 10	10YR 2/1	86	10YR 4/2	10	D	M	SiLo	Silt loam
			N 8.5/	2	D	M		
			10YR 3/2	2	C	M		
10 - 16+	10YR 3/2	61	N 8.5/	2	D	M	SiLo	Silt loam, mixed matrix, pockets of ash
	10YR 5/2	20	10YR 3/4	2	C	M	SiLo	Silt loam, mixed matrix, pockets of ash
	N 2.5/	10	Charcoal	5	C	M	SiLo	Silt loam, mixed matrix, pockets of ash

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Depletions in the second layer are not prevalent enough (<10%) to meet F7 requirements. While there are 12% depletions in the third layer, the depletions do not meet F7 requirements which state that 10% or more depletions must be value 5 or more, there are only 2% depletions (N 8.5/) meeting this criteria. Additionally, the redox (10YR 3/2) in the third layer is considered faint, and therefore does not meet F6 requirements. The depleted color in the fourth layer is too deep in the profile to meet F7 requirements and not thick enough to meet depleted matrix requirements of A11 or F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 17

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 16

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met. Saturation and water table are too deep to meet A2 or A3 requirements.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-74

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.151763 Long: -122.14496787 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected in WSDOT delineated wetland, south of the roadside ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	80	Yes	FACW
2. Poa pratensis	60	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	140	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-74

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	90	10YR 6/2	10	D	M	SiLo	Silt loam, pockets of ash
7 - 11	10YR 2/2	88	5YR 3/4	7	C	M,PL	SiLo	Silt loam
			5YR 3/2	2	C	M		
			5Y 5/1	3	D	M		
11 - 16+	10YR 3/1	78	10YR 4/2	10	D	M	SiLo	Silt loam, pockets of ash
			10YR 6/2	5	D	M		Pockets of ash
			5YR 3/4	7	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6. Depletions not prevalent enough (<20%) to meet F7 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary wetland hydrology indicators observed. Pit was dug to 18" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 05/28/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-75

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.151834 Long: -122.14493448 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected in WSDOT delineated wetland, south of the roadside ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	80	Yes	FACW
2. Galium aparine	35	Yes	FACU
3. Cardamine hirsuta	35	Yes	FACU
4. Poa pratensis	30	No	FAC
5. Equisetum arvense	10	No	FAC
6. Dipsacus fullonum	2	No	FAC
7.			
8.			
9.			
10.			
11.			
	192	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and wetland hydrology.

SOIL

Sampling Point: DP-75

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
8 - 10	10YR 3/1	95	10YR 4/2	5	D	M	SiLo	Silt loam, ash pockets
10 - 16	10YR 3/1	98	10YR 4/2	2	D	M	SiLo	Silt loam, very patchy ash pockets

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Depletions not prevalent enough (<10%) or light enough (value 5+) to meet F7 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary wetland hydrology indicators observed. Pit was dug to 20" and left open for over 30 minutes with no evidence of groundwater. No surface or groundwater observed in this area during any of the investigations.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 3/5/20 & 8/13/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-76

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.137250 Long: -122.15830607 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
All three wetland criteria met. Data collected in Wetland AC.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinceus	60	Yes	FAC
2. Phalaris arundinacea	20	Yes	FACW
3. Agrostis capillaris	20	Yes	FAC
4. Alopecurus pratensis	20	Yes	FAC
5. Elymus repens	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	125	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-76

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	92	7.5YR 3/4	8	C	M,PL	SiLo	Silt loam
6 - 9	10YR 3/2	90	7.5YR 3/4	10	C	M	SiLo	Silt loam
9 - 13	5Y 5/2	65	7.5YR 4/4	15	C	M	SaClLo	Sandy clay loam, mixed matrix
	5Y 5/1	20	-	-	-	-	SaClLo	Sandy clay loam, mixed matrix
13 - 14+	5YR 3/4	50	Charcoal	10	C	M	SaClLo	Sandy clay loam, mixed matrix
	5Y 5/1	40	-	-	-	-	SaClLo	Sandy clay loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6. Third layer is not thick enough (<6") to meet A11 or F3 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicators A2 and A3 met during March 2020 investigation. Secondary indicators C9, D2, and D5 observed during August 2020 investigation.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 3/5/20 & 8/13/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-77

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.137260 Long: -122.15850857 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected west of Wetland AC.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Elymus repens	60	Yes	FAC
2. Dactylus glomerata	30	Yes	FACU
3. Schedonorus arundinaceus	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of hydric soils and wetland hydrology.

SOIL

Sampling Point: DP-77

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
6 - 13	10YR 3/2	95	10YR 4/6	5	C	M	SiLo	Silt loam
13 - 16	2.5Y 4/2	93	10YR 4/3	5	C	M	SaLo	Sandy loam
			7.5YR 3/3	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-78

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.137323 Long: -122.15682149 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
All three wetland criteria met. Data collected in Wetland AD.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-78

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	2.5Y 3/1	99	10YR 3/2	1	C	M	SiLo	Silt loam
7 - 10	2.5Y 3/1	97	7.5YR 3/3	3	C	M,PL	SiLo	Silt loam
10 - 16	2.5Y 5/1	97	7.5YR 4/3	3	C	M,PL	SaLo	Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators D2 and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-79

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): A2 Lat: 48.137315 Long: -122.15690252 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: PEM1Cx

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 ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected west of Wetland AD.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	40	Yes	FACU
2. Schedonorus arundinaceus	30	Yes	FAC
3. Equisetum arvense	10	No	FAC
4. Agrostis capillaris	10	No	FAC
5. Trifolium repens	8	No	FAC
6. Trifolium pratense	2	No	FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met; prevalence index not warranted due to lack of hydric soils and hydrology.

SOIL

Sampling Point: DP-79

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	100	-	-	-	-	SaLo	Sandy loam
4 - 10	2.5Y 3/1	98	7.5YR 3/3	2	C	M,PL	SaLo	Sandy loam
10 - 14	2.5Y 4/2	40	10YR 3/3	5	C	M,PL	SaLo	Sandy loam, mixed matrix
10 - 14	2.5Y 4/3	55	-	-	-	-	SaLo	Sandy loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 3/5/20 & 8/13/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-80

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.135010 Long: -122.16030443 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
All three wetland criteria met. Data collected in Wetland AE.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alaopecurus aequalis	60	Yes	OBL
2. Agrostis capillaris	40	Yes	FAC
3. Phalaris arundinacea	20	No	FACW
4. Plantago major	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-80

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	2.5Y 4/2	89	7.5YR 3/3	3	C	M,PL	SiLo	Silt loam; buried organics at 7"
			5YR 3/4	8	C	M		
11 - 14	10GY 5/1	70	10YR 4/6	30	C	M	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicators A2 and A3 met during March 2020 investigation. Secondary indicators C9, D2, and D5 observed during August 2020 investigation.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-81

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.135020 Long: -122.16011979 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected east of Wetland AE.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	50	Yes	FACU
2. Schedonorus arundinaceus	20	Yes	FAC
3. Elymus repens	20	Yes	FAC
4. Holcus lanatus	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-81

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	2.5Y 3/2	100	-	-	-	-	SiLo	Silt loam
5 - 11	2.5Y 4/2	93	7.5YR 3/4	7	C	M,PL	SiLo	Silt loam
11 - 14	2.5Y 5/2	90	10YR 3/6	10	C	M,PL	SaLo	Sandy loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 3/5/20 & 8/13/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-82

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.135467 Long: -122.16037828 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
All three wetland criteria met. Data collected in Wetland AF.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	30	Yes	FAC
2. Alaopecurus aequalis	20	Yes	OBL
3. Schedonorus arundiaceus	20	Yes	FAC
4. Phalaris arundinacea	15	No	FACW
5. Alopecurus pratensis	8	No	FAC
6. Holcus lanatus	5	No	FAC
7. Ranunculus repend	2	No	FAC
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-82

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 4/2	85	5YR 3/4	15	C	M,PL	SiLo	Silt loam
5 - 11	2.5Y 4/1	85	5YR 3/4	15	C	M,PL	SiLo	Silt loam
11 - 14	2.5Y 4/1	75	5YR 3/4	25	C	M	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators C9, D2, and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-83

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.135020 Long: -122.16011979 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected between Wetland AF and Wetland AG.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	20	Yes	FAC
2. Schedonorus arundinaceus	20	Yes	FAC
3. Elymus repens	5	No	FAC
4. Trifolium repens	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	47	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 53

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-83

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	2.5Y 4/2	95	10YR 4/4	5	C	M	SiLo	Silt loam
6 - 12	2.5Y 4/2	85	7.5YR 4/6	15	C	M	SiLo	Silt loam
12 - 14	10YR 4/2	65	10YR 4/6	15	C	M	LoSa	Loamy sand
			5Y 5/1	20	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-84

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.135467 Long: -122.16004815 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland AG.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	30	Yes	FAC
2. Agrostis capillaris	30	Yes	FAC
3. Alopecurus aequalis	30	Yes	OBL
4. Phalaris arundinacea	10	No	FACW
5. Schedonorus arundinaceus	10	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-84

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 4/2	95	10YR 4/6	5	C	M,PL	SaLo	Sandy loam
4 - 10	2.5Y 4/1	65	2.5YR 3/6	35	C	M,PL	SaLo	Sandy loam
10 - 14	5Y 5/1	90	5YR 4/6	10	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria meth through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators C9, D2, and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/13/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-85

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.135474 Long: -122.15690033 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland AJ.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through rapid test.

SOIL

Sampling Point: DP-85

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	7.5YR 2/2	100	-	-	-	-	SiLo	Silt loam
6 - 11	2.5Y 3/1	92	7.5YR 3/3	8	C	M,PL	SiLo	Silt loam
11 - 14	10GY 4/1	60	10YR 3/6	10	C	M	SaClLo	Sandy clay loam, mixed matrix
	10Y 4/1	30	-	-	-	-	SaClLo	Sandy clay loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria meth through indicators A11 and F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators D2, and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/18/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-86

Investigator(s): Rachael Hyland Section, Township, Range: 34 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.130524 Long: -122.15847314 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected south/west of Wetland AH.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Holcus lanatus	50	Yes	FAC
2. Agrostis capillaris	30	Yes	FAC
3. Plantago lanceolata	30	Yes	FACU
4. Equisetum arvense	5	No	FAC
5. Hypochaeris radicata	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	117	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-86

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 3/2	100	-	-	-	-	SaLo	Sandy loam
3 - 12	2.5Y 3/2	93	7.5YR 3/4	7	C	M	SaLo	Sandy loam
12 - 14	2.5Y 3/2	100	-	-	-	-	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 3/5/20 & 8/18/20

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-87

Investigator(s): Rachael Hyland Section, Township, Range: 34 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.130647 Long: -122.15833175 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland AH.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	5	Yes	FAC
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Alnus rubra	10	Yes	FAC
2. Rubus armeniacus	5	Yes	FAC
3. Rosa nutkana	2	No	FAC
4.			
5.			
	17	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2. Equisetum arvense	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-87

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	2.5Y 3/2	100	-	-	-	-	SaLo	Sandy loam, lots of roots
7 - 12	2.5Y 3/2	100	-	-	-	-	LoSa	Loamy sand
12 - 16+	2.5Y 4/1	85	7.5YR 3/4	15	C	M	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Sandy clay loam

Depth (inches): 12

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria meth through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 0 / None

Water Table Present? Yes ☒ No ☐ Depth (inches): 0 / None

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0 / None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through primary indicators A1, A2 ,and A3 met during March 2020 investigation. Secondary indicators C9, D2, and D5 observed during August 2020 investigation.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/25/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-88

Investigator(s): Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.135434 Long: -122.15696076 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: PEM1Cx

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 ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, lacking hydrology. Data collected west of Edgecomb Creek and Wetland AJ.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	65	Yes	FAC
2. Holcus lanatus	25	Yes	FAC
3. Rubus armeniacus	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-88

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 3/2	100	-	-	-	-	SaLo	Sandy loam
5 - 14	2.5Y 4/1	90	5YR 4/4	8	C	M	LoSa	Loamy sand
			2.5YR 3/6	2	PL	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/25/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-89

Investigator(s): Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.136022 Long: -122.15680667 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
All three wetland criteria met. Data collected in Wetland AI.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through rapid test.

SOIL

Sampling Point: DP-89

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	7.5YR 3/2	95	5YR 4/4	5	C	M	SaLo	Sandy loam
6 - 14	10YR 5/2	85	2.5YR 4/6	15	C	M,PL	GrSaLo	Gravelly sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11, F3, and F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators D2 and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/25/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-90

Investigator(s): Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.136044 Long: -122.15690387 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: PEM1Cx

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 ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected west of Edgecomb Creek and Wetland AI.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus pratensis	60	Yes	FACU
2. Holcus lanatus	25	Yes	FAC
3. Agrostis capillaris	10	No	FAC
4. Poa pratensis	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met; prevalence index not warranted due to lack of hydric soil and hydrology.

SOIL

Sampling Point: DP-90

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 3/2	99	7.5YR 6/8	1	C	M	SaLo	Sandy loam
7 - 14	10YR 5/2	80	5YR 4/6	20	C	M	SaLo	Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicators A11 and F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/18/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-91

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.136971 Long: -122.15246374 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in Wetland AK.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	50	Yes	FAC
2. Alopecurus aequalis	20	Yes	OBL
3. Ranunculus repens	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-91

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 3/2	95	10YR 4/4	5	C	M	SiLo	Silt loam, extremely compacted
5 - 12	5Y 4/1	92	10YR 4/4	8	C	M	SiClLo	Silty clay loam
12 - 16+	5Y 5/2	90	10YR 4/6	10	C	M	SaClLo	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria meth through indicators A11, F3, and F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology criteria met through secondary indicators C9, D2, and D5.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/18/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-92

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.136925 Long: -122.15233592 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected east of Wetland AK.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Rubus armeniacus	20	Yes	FAC
2. Lonicera involucrata	5	No	FAC
3. Populus balsamifera	5	No	FAC
4. Salix scouleriana	5	No	FAC
5.			
	35	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	50	Yes	FAC
2. Dactylis glomerata	50	Yes	FACU
3. Cirsium arvense	5	No	FAC
4. Ranunculus repens	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-92

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100	-	-	-	-	SiLo	Silt loam
2 - 13	10YR 3/2	99	5YR 4/6	1	C	M	SaLo	Sandy loam
13 - 16	2.5Y 5/3	75	5YR 4/6	20	C	M	LoSa	Loamy sand
			2.5YR 3/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; not enough redox (<5%) in second layer to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 08/25/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-93

Investigator(s): Rachael Hyland, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.134938 Long: -122.15400884 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected in excavated swale at base or railroad embankment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	60	Yes	FACW
2.			
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Lonicera involucrata	20	Yes	FAC
2. Rubus armeniacus	20	Yes	FAC
3. Prunus emarginata	15	Yes	FACU
4. Malus fusca	15	Yes	FACW
5. Cornus alba	2	No	FACW
	72	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	20	Yes	FAC
2. Rubus ursinus	20	Yes	FACU
3. Epilobium ciliatum	10	No	FACW
4. Polystichum munitum	5	No	FACU
5. Equisetum arvense	2	No	FAC
6. Oemleria cerasiformis	2	No	FACU
7.			
8.			
9.			
10.			
11.			
	59	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. Rubus ursinus	50	Yes	FACU
2.			
	50	= Total Cover	

% Bare Ground in Herb Stratum 41

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 63% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-93

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
10 - 12	10YR 3/1	98	10YR 3/3	2	C	M	SaLo	Sandy loam
12 - 14+	7.5YR 4/4	70	5YR 3/3	22	C	M	SaClLo	Sandy clay loam
			2.5Y 5/2	8	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; second layer is too deep (>8") and not thick enough (<4") to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 09/01/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-95

Investigator(s): Jake Layman, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.134323 Long: -122.15647198 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in active agriculture field east of Edgecomb Creek, east of access road, and north of 152nd Street NE.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	60	Yes	FAC
2. Dactylis glomerata	30	Yes	FACU
3. Trifolium repens	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met; prevalence index not warranted due to lack of hydric soil and hydrology.

SOIL

Sampling Point: DP-95

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 4/2	99	5YR 5/6	1	C	M	SiLo	Silt loam
7 - 16	10YR 4/2	85	5YR 5/6	15	C	M	GrSaLo	Gravelly sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 09/01/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-96

Investigator(s): Jake Layman, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A2 Lat: 48.136075 Long: -122.16003644 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in active agriculture field north of Wetland AF.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	50	Yes	FACU
2. Elymus repens	30	Yes	FAC
3. Schedonorus arundinaceus	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-96

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	7.5YR 3/2	99	5YR 4/6	1	C	M	SiLo	Silt loam
9 - 16	7.5YR 3/2	85	5YR 4/6	15	C	M	GrSiLo	Gravelly silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met; second layer begins too deep (>8") in profile to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Marysville / Snohomish Sampling Date: 09/01/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-97

Investigator(s): Jake Layman, Ben Wright Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.136950 Long: -122.15923523 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soil. Data collected in old ditch within active agriculture field west of Wetland AC.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	40	Yes	FACU
2. Schedonorus pratensis	40	Yes	FACU
3. Elymus repens	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met; prevalence index not warranted due to lack of hydric soil and hydrology.

SOIL

Sampling Point: DP-97

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 4/2	90	5YR 4/6	10	C	M,PL	MeLo	Medium loam
9 - 14	10YR 4/2	50	5YR 4/6	30	C	M	GrSiLo	Medium loam
			10YR 5/2	20	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 10/09/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-98

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.142279 Long: -122.16108445 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met, only hydric soils. Data collected in western portion of the site, adjacent to a farm access road. Precipitation levels elevated for prior 30 days (160 percent of normal).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	40	Yes	FAC
2. Taraxacum officinale	30	Yes	FACU
3. Trifolium repens	15	No	FAC
4. Elymus repens	15	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria is met. Prevalence index not warranted due to lack of combined hydric soil and hydrology.

SOIL

Sampling Point: DP-98

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/1	70	-	-	-	-	SiLo	Silt loam, mixed matrix
0 - 4	10YR 2/1	30	-	-	-	-	SaLo	Sandy loam, mixed matrix, soil ammendment
4 - 13	10YR 3/2	93	7.5YR 3/3	7	C	M	SiLo	Silt loam
13 - 15	10YR 5/2	90	7.5YR 4/4	10	C	M	SiClLo	Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 10/09/2020

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-99

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 48.142279 Long: -122.16108445 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
No wetland criteria met. Data collected in western portion of the site in annually hayed field. Precipitation levels elevated for prior 30 days (160 percent of normal).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	70	Yes	FAC
2. Dactylis glomerata	20	Yes	FACU
3. Taraxacum officinale	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	100 (A)		330 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met. Prevalence index not warranted due to lack of combined hydric soil and hydrology.

SOIL

Sampling Point: DP-99

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	2.5Y 3/2	100	-	-	-	-	SaLo	Sandy loam
9 - 15	2.5Y 3/2	95	7.5YR 3/3	5	C	PL, M	SaLo	Sandy loam
15 - 16	2.5Y 4/2	100	-	-	-	-	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met, redox begins too deep (>8") to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology criteria met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Arlington MIC City/County: Arlington / Snohomish Sampling Date: 2/9, 2/25 & 3/10/21

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-100

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.146458 Long: -122.15062811 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: _____

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 ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
Not all three wetland criteria met, lacks hydrology. Data collected adjacent to Wetland AL. Area observed to be inundated during 2/9/21 site visit, data collected on 2/25/21, and a follow up visit on 3/10/21 confirmed lack of wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Alopecurus pratensis	40	Yes	FAC
2. Schedonorus arundinaceus	15	Yes	FAC
3. Ranunculus repens	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
10 - 12	10YR 3/1	98	7.5YR 3/3	2	C	M	SaLo	Sandy loam
12 - 16	2.5Y 4/2	90	7.5YR 4/4	10	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1 / None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology criteria met during the growing season. Perched surface water (1") observed on 2/9/21 and 2/25/2021, no true water table observed, surface water filled in pit. Area appears flood due to rain events and potentially poorly maintained drain tile, but drains quickly during growing season. No surface water or groundwater observed on 3/10/2021

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 3/10/2021

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-101

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146301 Long: -122.15036664 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in eastern portion of Wetland AL. Located within an actively maintained cornfield.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Zea mays	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Managed plant community in active corn field. Assumed hydrophytic plant community if it was not actively managed based on presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: DP-101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/2	83	2.5Y 4/3	15	C	M	SaLo	Sandy loam
			10YR 3/3	2	C	M		
11 - 16	2.5Y 3/1	77	10YR 4/4	3	C	M	MeLo	Medium loam, mixed matrix
	2.5Y 4/2	10	-	-	-	-	SaLo	Sandy loam, mixed matrix
	2.5Y 4/3	10	-	-	-	-	SaLo	Sandy loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator F6.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria met through primary indicators A2 and A3.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 03/10/2021

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-102

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): A2 Lat: 48.146349 Long: -122.14976035 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected between Wetland AL and Wetland AM. Located within an actively maintained cornfield.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Zea mays*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Managed plant community in active corn field. Hydrophytic vegetation criteria met through dominance test.
*No indicator status assigned to this species, assumed FAC for scoring purposes.

SOIL

Sampling Point: DP-102

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
9 - 11	2.5Y 4/2	75	10YR 4/4	5	C	M	LoSa	Loamy sand, mixed matrix
	2.5Y 3/1	20	-	-	-	-	SaLo	Sandy loam, mixed matrix
11 - 15	10YR 3/1	98	2.5Y 4/3	2	C	N	SaLo	Sandy loam
15 - 16+	2.5Y 4/3	85	10YR 4/4	15	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Second layer is not thick enough (<6") to meet A11 requirement. Redox in third layer begins too deep (>8") to meet F6 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology criteria met. No groundwater observed, pit left open for 30+ minutes.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 3/10/2021

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-103

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.146471 Long: -122.14905060 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. Data collected in eastern portion of Wetland AM. Located within an actively maintained cornfield.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Zea mays*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Managed plant community in active corn field. Hydrophytic vegetation criteria met through dominance test.
*No indicator status assigned to this species, assumed FAC for scoring purposes.

SOIL

Sampling Point: DP-103

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
7 - 14	2.5Y 4/2	90	7.5YR 3/4	10	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria met through primary indicators A2 and A3.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 03/10/2021

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-104

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 48.145602 Long: -122.15069694 Datum: WGS 84

Soil Map Unit Name: Custer fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected adjacent to farm access road. Located within an actively maintained cornfield.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Zea mays*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Managed plant community in active corn field. Hydrophytic vegetation criteria met through dominance test.
*No indicator status assigned to this species, assumed FAC for scoring purposes.

SOIL

Sampling Point: DP-104

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/1	100	-	-	-	-	SaLo	Sandy loam
11 - 16	2.5Y 4/3	80	-	-	-	-	LoSa	Loamy sand, mixed matrix
	2.5Y 4/4	20	-	-	-	-	SaLo	Sandy loam, mixed matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☐ No ☒ Depth (inches): None

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): None

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology criteria met. No groundwater observed, pit left open for 30+ minutes.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1703.0004 - Cascade Business Park City/County: Arlington / Snohomish Sampling Date: 03/10/2021

Applicant/Owner: Northpoint Holdings State: WA Sampling Point: DP-105

Investigator(s): Rachael Hyland Section, Township, Range: 27 / 31N / 05E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 48.131264 Long: -122.15913077 Datum: WGS 84

Soil Map Unit Name: Norma loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
Not all three wetland criteria met, only hydrophytic vegetation. Data collected west of Wetland AH. Located within an actively maintained agricultural field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Schedonorus arundinaceus	95	Yes	FAC
2. Ranunculus repens	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through dominance test.

SOIL

Sampling Point: DP-105

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	83	10YR 3/4	2	C	M	SaLo	Sandy loam
	Charcoal	15	-	-	-	-		
10 - 15	2.5Y 3/1	91	10YR 3/4	7	C	PL	SaLo	Sandy loam, mixed matrix
			2.5Y 4/1	2	D	M		
15 - 16+	2.5Y 5/1	98	10YR 4/6	2	C	M	LoSa	Loamy sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): --

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met. Redox in second layer begins too deep (>8") to meet F6 requirements. Depleted layer begins too deep (>12") to meet A11 requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): None

Water Table Present? Yes ☒ No ☐ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 14

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology criteria met. Water table and saturation too deep (>12") to meet A2 or A3 requirements.

Appendix E — Wetland Rating Forms

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 51st Ave. East Ditch - North and South of 152nd Date of site visit: 10-9-20

Rated by Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	L	L	
Landscape Potential	H	H	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	8	6	3	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 51st Ave. East Ditch - North and South of 152nd

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	2
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: _X_ **3 or 4 = H** ___ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: _X_ **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4	Add the points in the boxes above	5

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 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

Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____Aquatic bed	4 structures or more: points = 4
__x__Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____Permanently flooded or inundated	4 or more types present: points = 3
__x__Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	2 types present: points = 1
____Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
____Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

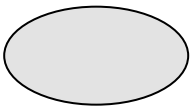
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

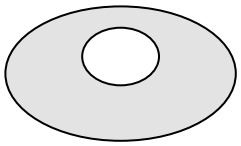
0

H 1.4. Interspersion of habitats

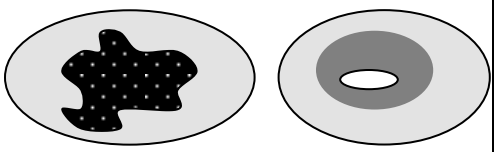
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

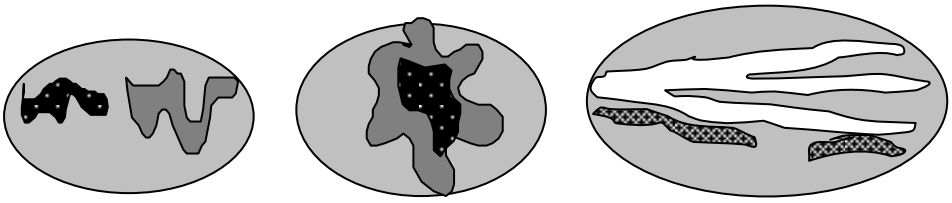


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



0

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

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) ____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*)	0
Total for H 1 Add the points in the boxes above	0

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?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [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 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [6.02] /2] **=** 5.47 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	0
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 2 Add the points in the boxes above	-2

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? *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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number 51st Ave. East Ditch - North and South of 152nd

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number A, B, D, J, K, L, M, N

RATING SUMMARY – Western Washington

Name of wetland (or ID #): A, B, D, J, K, L, M, N Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number A, B, D, J, K, L, M, N

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number A, B, D, J, K, L, M, N

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 A, B, D, J, K, L, M, N

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A, B, D, J, K, L, M, N

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number A, B, D, J, K, L, M, N

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

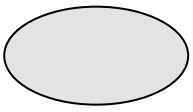
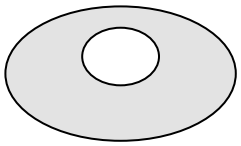
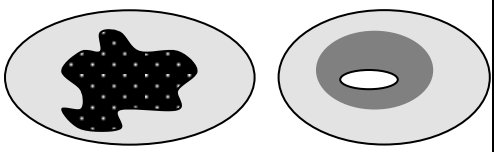
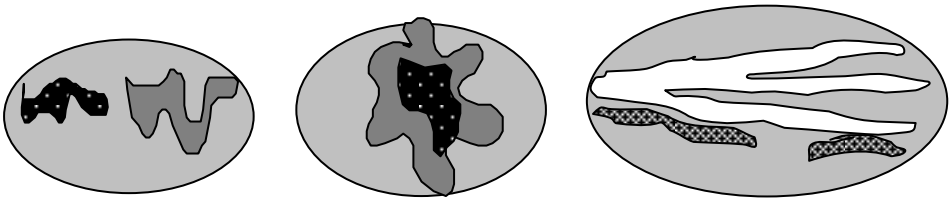
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number A, B, D, J, K, L, M, N

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number A, B, D, J, K, L, M, N

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) ____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*)	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** __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?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [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 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26] /2] **=** 15 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number A, B, D, J, K, L, M, N

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 A, B, D, J, K, L, M, N

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number A, B, D, J, K, L, M, N

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AC

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AC Date of site visit: 08/13/20

Rated by Rachael Hyland, Ben Wright Trained by Ecology? ✔ Yes ___No Date of training 03/2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AC

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AC

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AC

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AC

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number AC

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4	Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- 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

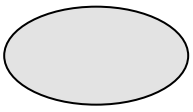
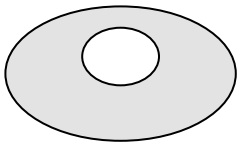
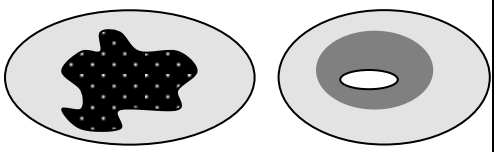
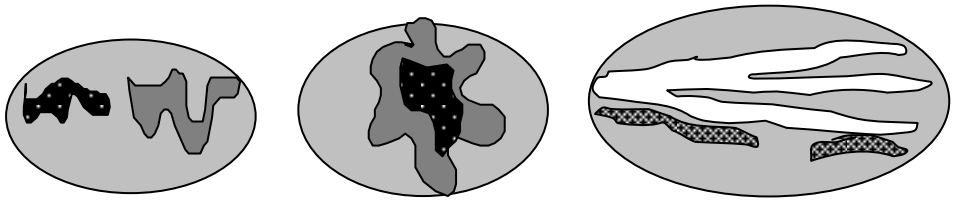
1

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

Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AC

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number AC

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) ____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*)	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** __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?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [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 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [0.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [20.68] /2] **=** 10.8 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AC

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 AC

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number AC

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AD, AJ

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AD, AJ Date of site visit: 08/13/20

Rated by Rachael Hyland, Ben Wright, Jacob Layman Trained by Ecology? ✔ Yes ___No Date of training 03/2019

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	M	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AD, AJ

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AD, AJ

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AD, AJ

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

AD

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AD, AJ

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___ **12-16 = H** X **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AD, AJ

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 If the ratio is 10-20 If the ratio is 5-<10 If the ratio is 1-<5 If the ratio is < 1	 points = 9 points = 6 points = 4 points = 2 points = 1	2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area Plants do not meet above criteria	 points = 7 points = 4 points = 0	7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

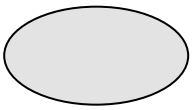
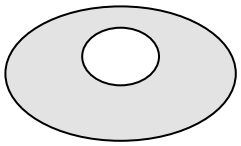
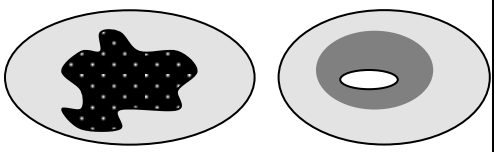
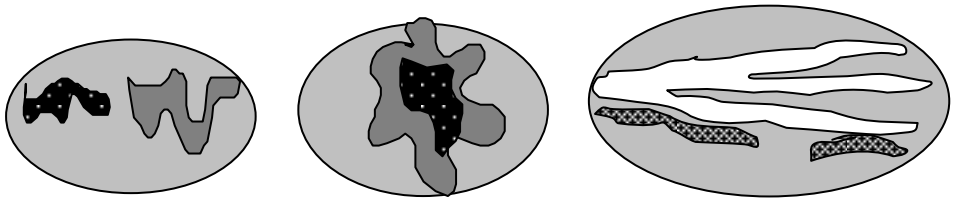
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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	 points = 2 points = 1 points = 0	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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AD, AJ

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland __x__Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number AD, AJ

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) __×__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*)	2
Total for H 1 Add 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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [0.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [20.68] /2] **=** 10.8 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AD, AJ

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 AD, AJ

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number AD, AJ

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AE

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AE Date of site visit: 08/13/20

Rated by Rachael Hyland, Ben Wright Trained by Ecology? ✔ Yes ___No Date of training 3/2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	6	5	3	14

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AE

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AE

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AE

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AE

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number AE

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

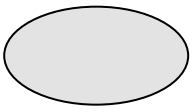
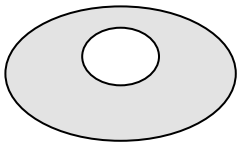
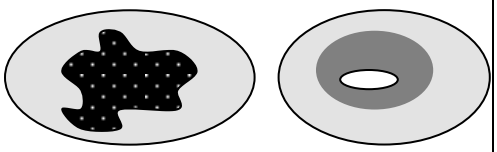
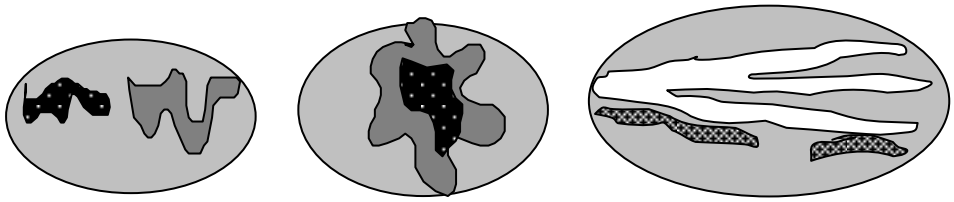
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AE

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number AE

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) ____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*)	0
Total for H 1 Add the points in the boxes above	1

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?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [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 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [0.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [20.68] /2] **=** 10.8 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** X **< 1 = L** *Record the rating on the first page*

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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number AE

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number AE

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number AE

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AF, AG, AK

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AF, AG, AK Date of site visit: 08/13/20

Rated by Rachael Hyland, Ben Wright Trained by Ecology? ✔ Yes ___No Date of training 3/2019

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	6	5	3	14

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AF, AG, AK

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AF, AG, AK

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AF, AG, AK

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AF, AG, AK

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number AF, AG, AK

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AF, AG, AK

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____Aquatic bed	4 structures or more: points = 4
_×_Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____Permanently flooded or inundated	4 or more types present: points = 3
____Seasonally flooded or inundated	3 types present: points = 2
_×_Occasionally flooded or inundated	2 types present: points = 1
____Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
____Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

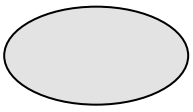
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

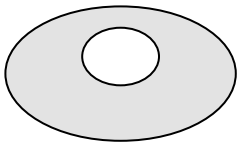
0

H 1.4. Interspersion of habitats

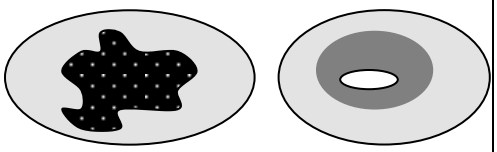
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

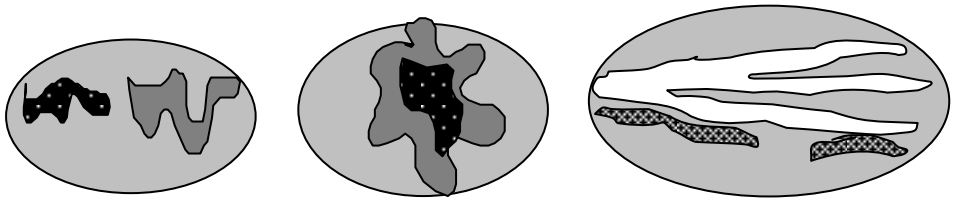


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



0

Wetland name or number AF, AG, AK

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) ____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*)	1
Total for H 1 Add the points in the boxes above	1

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?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [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 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [0.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [20.68] /2] **=** 10.8 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** __X__**0 = L** *Record the rating on the first page*

Wetland name or number AF, AG, AK

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number AF, AG, AK

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number AF, AG, AK

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AH

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AH Date of site visit: 08/25/20

Rated by Rachael Hyland, Ben Wright Trained by Ecology? ✔ Yes ___No Date of training 3/2019

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY II (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

__X__**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	H	M	
Landscape Potential	H	M	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	8	7	6	21

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AH

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AH

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AH

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

AH

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AH

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover > $^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	4
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AH

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 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		6
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0		7
Total for R 4	Add the points in the boxes above	13

Rating of Site Potential If score is: X **12-16 = H** ___**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	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	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___**3 = H** X **1 or 2 = M** ___**0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0		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 6	Add the points in the boxes above	1

Rating of Value If score is: ___**2-4 = H** X **1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AH

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____Aquatic bed	4 structures or more: points = 4
__×__Emergent	3 structures: points = 2
__×__Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
__×__Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

__×__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____Permanently flooded or inundated	4 or more types present: points = 3
__×__Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	2 types present: points = 1
__×__Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
__×__Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

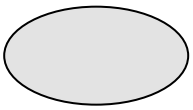
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

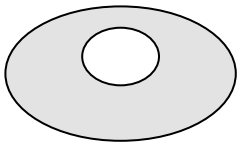
1

H 1.4. Interspersion of habitats

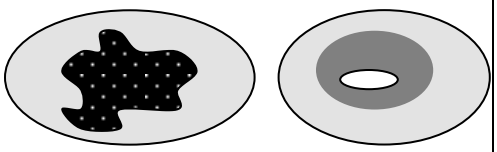
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

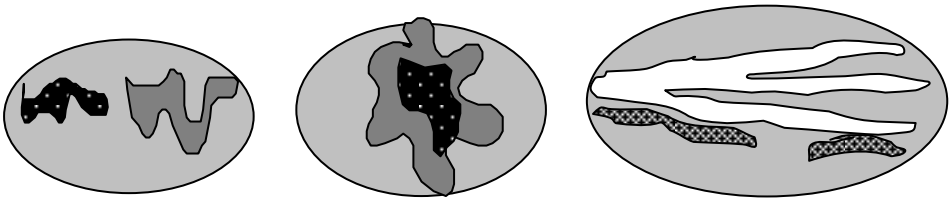


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



2

Wetland name or number AH

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) __×__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*)	5
Total for H 1 Add the points in the boxes above	14

Rating of Site Potential If score is:___**15-18 = H** __X__**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 *only habitat that directly abuts wetland unit*). *Calculate:* [0.00] % undisturbed habitat **+** [(% moderate and low intensity land uses) [0.48] /2] **=** 0.24 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [0.46] % undisturbed habitat **+** [(% moderate and low intensity land uses) [20.68] /2] **=** 10.8 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	2

Rating of Value If score is: __X__**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AH

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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.

X **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 AH

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number AH

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AI

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AI Date of site visit: 8/20/20

Rated by Ben Wright, Jake Layman Trained by Ecology? ✔ Yes ___No Date of training 3/2019

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	M	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AI

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AI

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AI

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

AI

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AI

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AI

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 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		2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0		7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **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	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0		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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AI

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____Aquatic bed	4 structures or more: points = 4
__×__Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____Permanently flooded or inundated	4 or more types present: points = 3
____Seasonally flooded or inundated	3 types present: points = 2
__×__Occasionally flooded or inundated	2 types present: points = 1
__×__Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
__×__Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

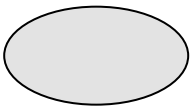
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

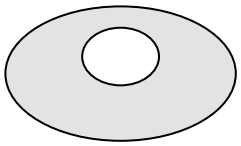
1

H 1.4. Interspersion of habitats

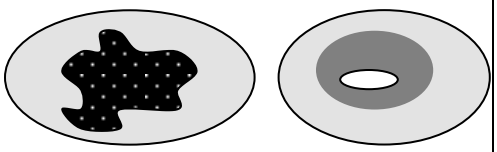
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

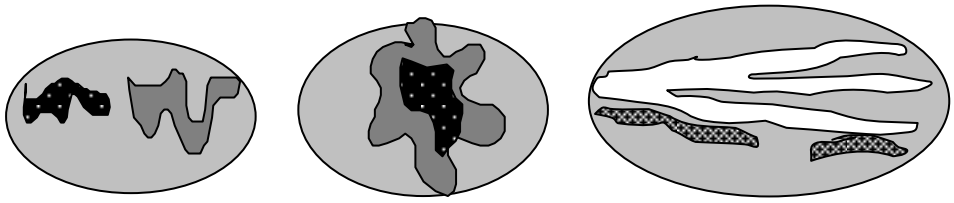


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



0

Wetland name or number AI

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) __×__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*)	2
Total for H 1 Add the points in the boxes above	5

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?

H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: 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 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? *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 — 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	1

Rating of Value If score is:___**2 = H** _X_**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AI

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 AI

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number AI

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AL

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AL Date of site visit: 3-10-2021

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AL

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AL

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AL

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AL

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	2
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number AL

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	5

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

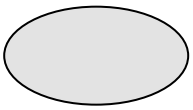
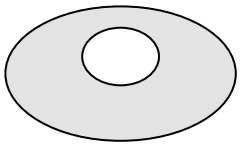
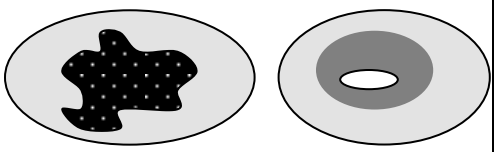
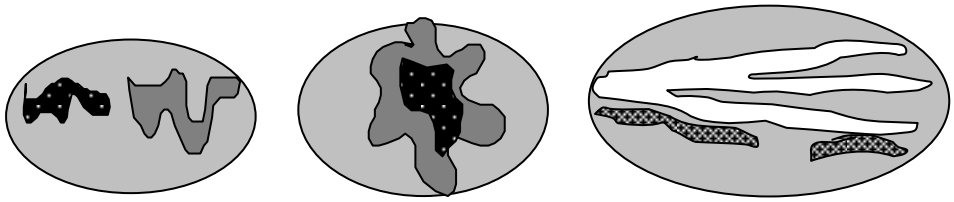
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AL

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number AL

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) ____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*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2.30] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26] /2] **=** 15.3 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number AL

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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 AL

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number AL

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number AM

RATING SUMMARY – Western Washington

Name of wetland (or ID #): AM Date of site visit: 3/10/2021

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	6	5	3	14

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number AM

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number AM

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 AM

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AM

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	2
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number AM

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	5

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

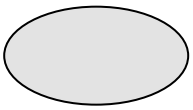
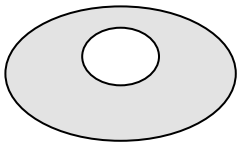
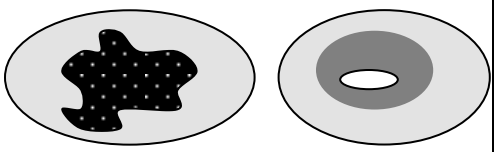
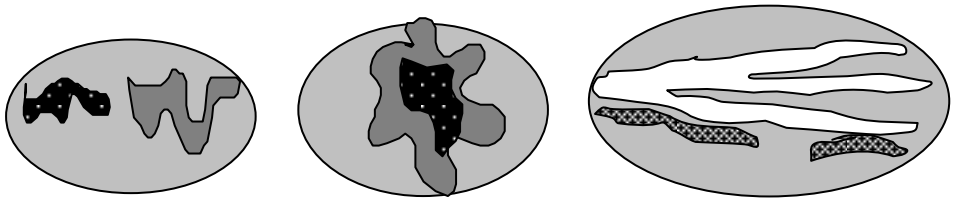
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number AM

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number AM

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) ____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)* __x__Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2.30] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26] /2] **=** 15.3 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** __X__**0 = L** *Record the rating on the first page*

Wetland name or number AM

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number AM

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number AM

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number C

RATING SUMMARY – Western Washington

Name of wetland (or ID #): C Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 6/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number C

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number C

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 C

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	2
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	2

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

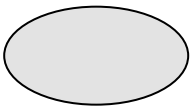
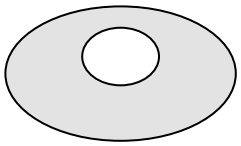
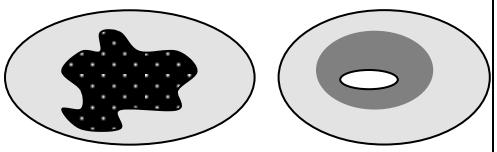
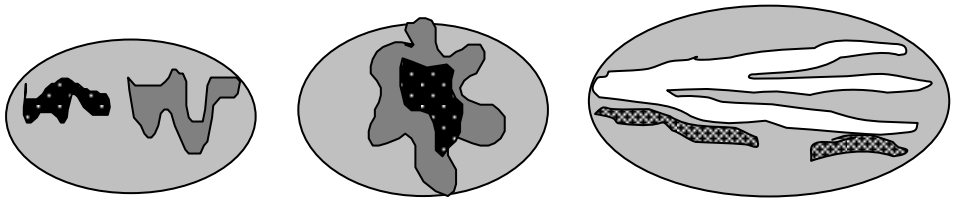
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number C

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number C

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) ____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*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number C

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number C

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number E,F

RATING SUMMARY – Western Washington

Name of wetland (or ID #): E,F Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro, Ryan Krapp Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	M	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number E,F

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number E,F

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 E,F

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

E,F

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number E,F

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** X **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: X **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number E,F

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 If the ratio is 10-20 If the ratio is 5-<10 If the ratio is 1-<5 If the ratio is < 1	 points = 9 points = 6 points = 4 points = 2 points = 1	2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area Plants do not meet above criteria	 points = 7 points = 4 points = 0	7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

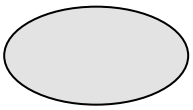
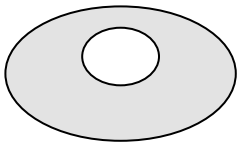
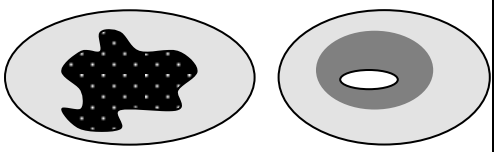
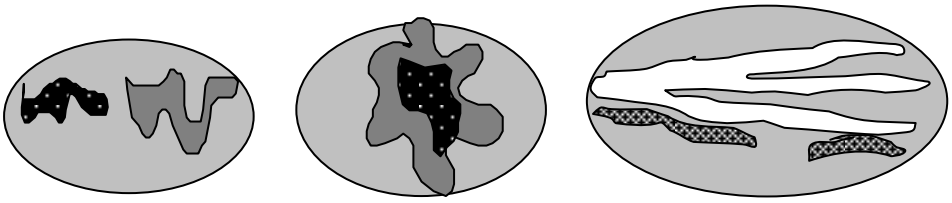
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** _X_ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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	 points = 2 points = 1 points = 0	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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** _X_ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number E,F

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 __x__Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number E,F

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) __×__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*)	2
Total for H 1 Add 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?	
H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number E,F

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 E,F

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number E,F

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number G

RATING SUMMARY – Western Washington

Name of wetland (or ID #): G Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	H	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number G

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number G

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 G

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

G

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number G

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number G

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 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		2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0		7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

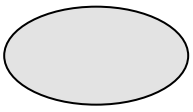
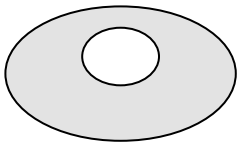
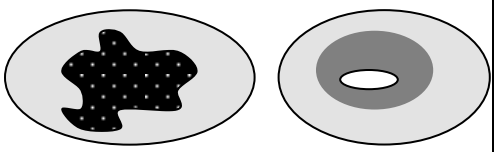
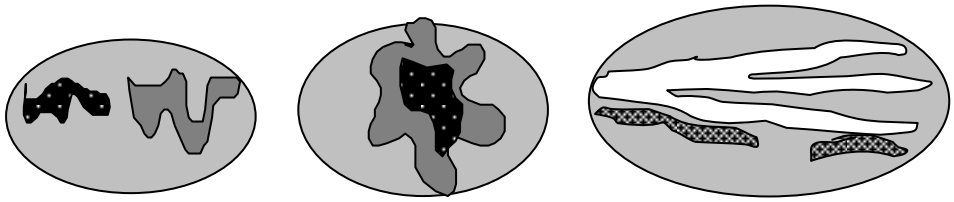
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0		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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number G

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 __x__Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number G

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 __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 *(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*)	2
Total for H 1 Add 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?	
H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** _X_**< 1 = L** *Record the rating on the first page*

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 __x__ 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 = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: _X_ **2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number G

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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.

X **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 G

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number G

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number H

RATING SUMMARY – Western Washington

Name of wetland (or ID #): H Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY II (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

__X__**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	M	
Landscape Potential	H	M	L	
Value	H	M	H	**TOTAL**
Score Based on Ratings	8	6	6	20

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number H

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number H

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 H

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

H

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number H

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number H

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 NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area	points = 7	7
Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area	points = 4	
Plants do not meet above criteria	points = 0	
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **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	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** _X_ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2	1
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** _X_ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number H

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____	Aquatic bed	4 structures or more: points = 4
__×__	Emergent	3 structures: points = 2
__×__	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
__×__	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____	Permanently flooded or inundated	4 or more types present: points = 3
__×__	Seasonally flooded or inundated	3 types present: points = 2
__×__	Occasionally flooded or inundated	2 types present: points = 1
____	Saturated only	1 type present: points = 0
__×__	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

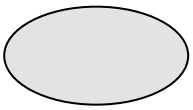
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

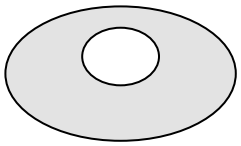
1

H 1.4. Interspersion of habitats

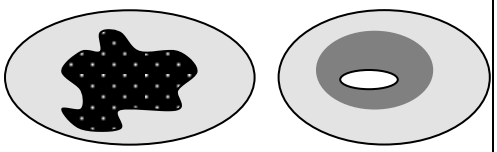
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

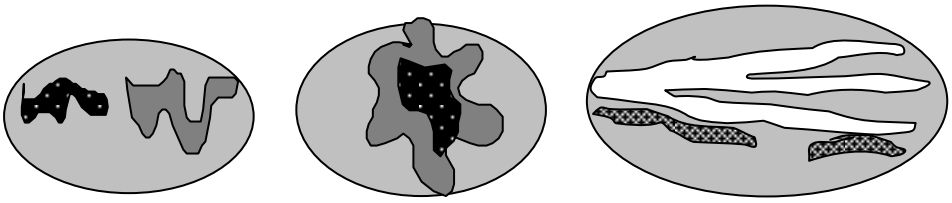


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



2

Wetland name or number H

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) __×__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*)	3
Total for H 1 Add the points in the boxes above	10

Rating of Site Potential If score is:___**15-18 = H** __X__**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 *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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	2

Rating of Value If score is: __X__**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number H

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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.

X **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 H

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number H

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number I

RATING SUMMARY – Western Washington

Name of wetland (or ID #): I Date of site visit: 04/10/20

Rated by Rachael Hyland Trained by Ecology? ✔ Yes ___No Date of training 3/2019

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	M	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number I

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number I

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 I

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

I

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number I

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number I

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 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	2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0	7
Total for R 4 Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **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	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0		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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number I

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____Aquatic bed	4 structures or more: points = 4
____Emergent	3 structures: points = 2
_×_Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

____Permanently flooded or inundated	4 or more types present: points = 3
____Seasonally flooded or inundated	3 types present: points = 2
_×_Occasionally flooded or inundated	2 types present: points = 1
____Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
_×_Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

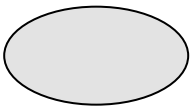
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

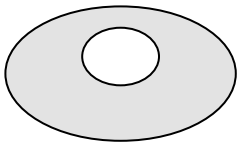
1

H 1.4. Interspersion of habitats

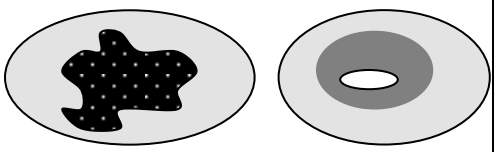
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

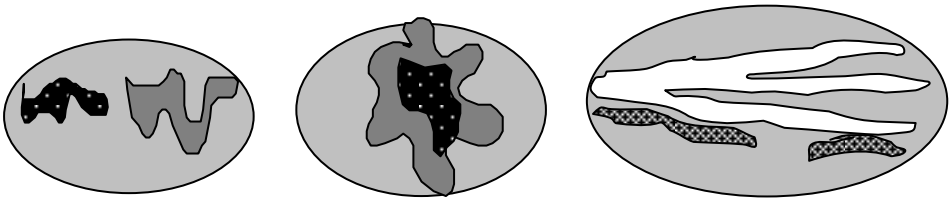


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



0

Wetland name or number I

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) __×__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*)	2
Total for H 1 Add 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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [1.22] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26.43] /2] **=** 14.435 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number I

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 I

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number I

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number O

RATING SUMMARY – Western Washington

Name of wetland (or ID #): O Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	M	M	L	
Value	H	M	M	TOTAL
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number O

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number O

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 O

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number O

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** _X_ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: _X_ **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number O

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4	Add the points in the boxes above	7

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 = H** _X_ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- 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

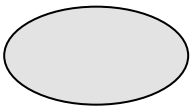
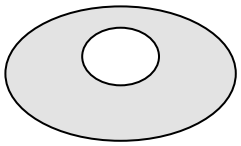
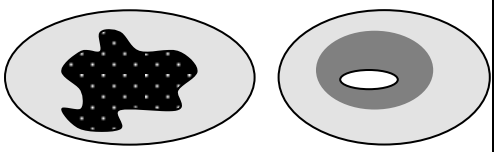
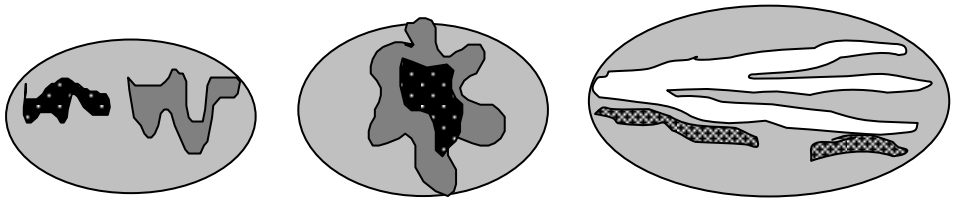
1

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

Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** _X_ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number O

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 __X__Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* __X__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __X__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 __X__Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number O

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) ____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*)	2
Total for H 1 Add the points in the boxes above	5

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?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* [ ]% 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 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around 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 points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** _X_**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** _X_**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number O

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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.

X **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 O

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number O

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number Q,P

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Q,P Date of site visit: 04/28/20

Rated by Ryan Krapp, Jacob Layman Trained by Ecology? ✔ Yes ___No Date of training 10/2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	L	TOTAL
Score Based on Ratings	6	5	3	14

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number Q,P

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number Q,P

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 Q,P

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Q,P

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number Q,P

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

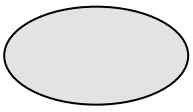
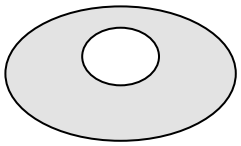
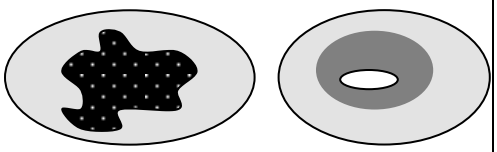
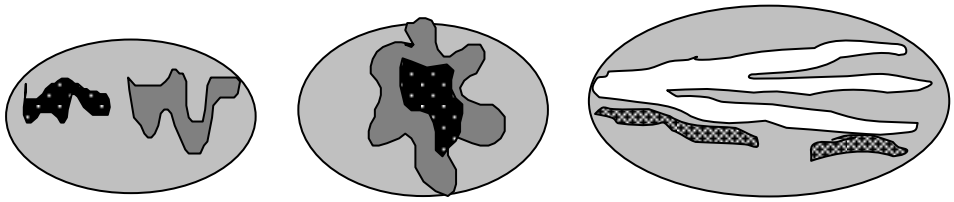
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Q,P

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number Q,P

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ____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 *(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)* __x__Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: 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 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? *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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** __X__**0 = L** *Record the rating on the first page*

Wetland name or number Q,P

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Q,P

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number Q,P

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number R,U,W,X

RATING SUMMARY – Western Washington

Name of wetland (or ID #): R,U,W,X Date of site visit: 04/28/20

Rated by Ryan Krapp, Jacob Layman Trained by Ecology? ✔ Yes ___No Date of training 10/2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	L	**TOTAL**
Score Based on Ratings	6	5	3	14

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number R,U,W,X

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number R,U,W,X

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 R,U,W,X

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number R,U,W,X

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number R,U,W,X

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

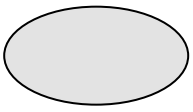
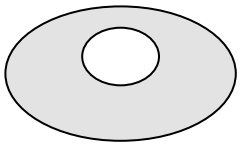
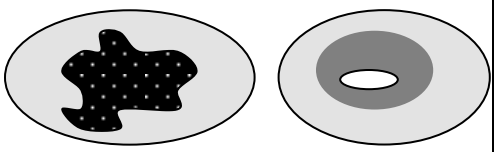
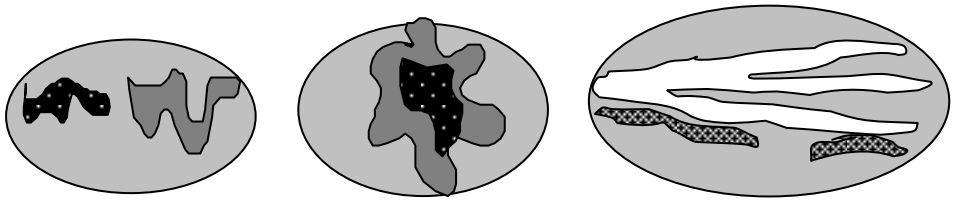
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number R,U,W,X

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number R,U,W,X

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) ____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*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [1.22] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26.43] /2] **=** 14.435 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	0

Rating of Value If score is:___**2 = H** ___**1 = M** __X__**0 = L** *Record the rating on the first page*

Wetland name or number R,U,W,X

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number R,U,W,X

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number R,U,W,X

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number S,T

RATING SUMMARY – Western Washington

Name of wetland (or ID #): S,T Date of site visit: 04/28/20

Rated by Ryan Krapp, Rachael Hyland Trained by Ecology? ✔ Yes ___No Date of training 10/2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	M	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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number S,T

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number S,T

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 S,T

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number S,T

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number S,T

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 4 Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

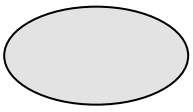
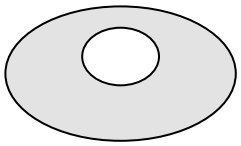
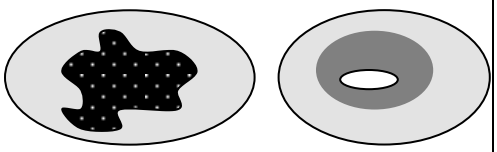
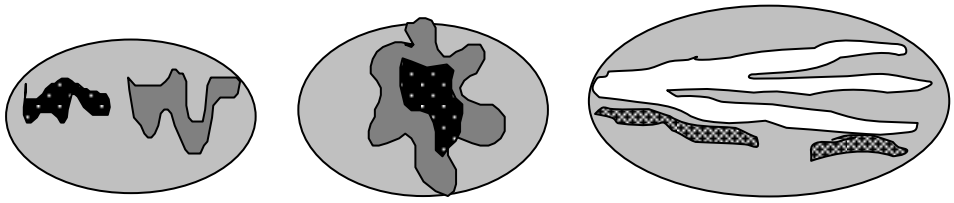
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% 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	0
Total for D 5 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • 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
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number S,T

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number S,T

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) ____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*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [1.22] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26.43] /2] **=** 14.435 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number S,T

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

X **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 S,T

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐Yes **– Go to SC 2.2** ☒No **– Go to SC 2.3** 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** ☒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? ☐Yes **= Category I** ☒No **= Not a WHCV**	
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? ☐Yes – Go to **SC 3.3** ☒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** ☐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**	

Wetland name or number S,T

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number V

RATING SUMMARY – Western Washington

Name of wetland (or ID #): V Date of site visit: 04/28/20

Rated by Rachael Hyland, Matt DeCaro, Ryan Krapp Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	M	H	TOTAL
Score Based on Ratings	6	5	5	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number V

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number V

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 V

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number V

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. 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). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. 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	3
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 Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	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 > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number V

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4	Add the points in the boxes above	4

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- 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

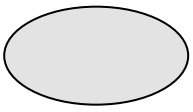
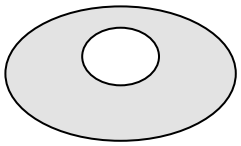
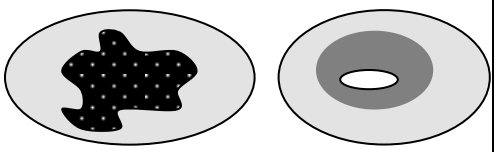
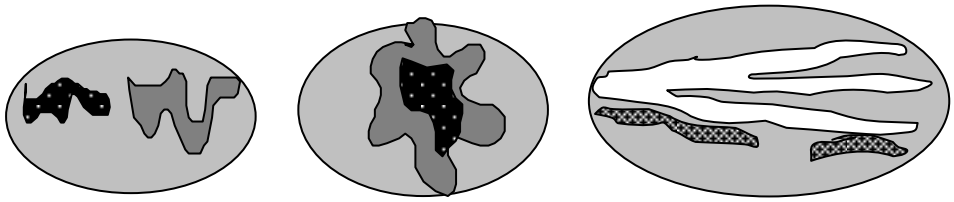
1

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

Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number V

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	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 threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number V

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) ____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)* __x__Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	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** __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?	
H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2.30] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26] /2] **=** 15.3 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** __X__**< 1 = L** *Record the rating on the first page*

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 __x__ 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 = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: __X__**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number V

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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.

X **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 V

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number V

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number Y

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Y Date of site visit: 5/13/20

Rated by Rachael Hyland, Ryan Krapp Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	H	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number Y

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number Y

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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 Y

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

Y

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Y

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover > $^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	4
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** X **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: X **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number 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 If the ratio is 10-20 If the ratio is 5-<10 If the ratio is 1-<5 If the ratio is < 1	 points = 9 points = 6 points = 4 points = 2 points = 1	2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area Plants do not meet above criteria	 points = 7 points = 4 points = 0	7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

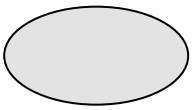
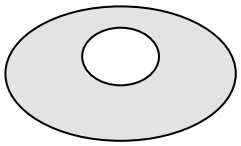
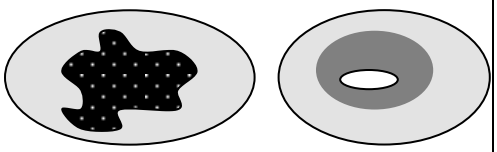
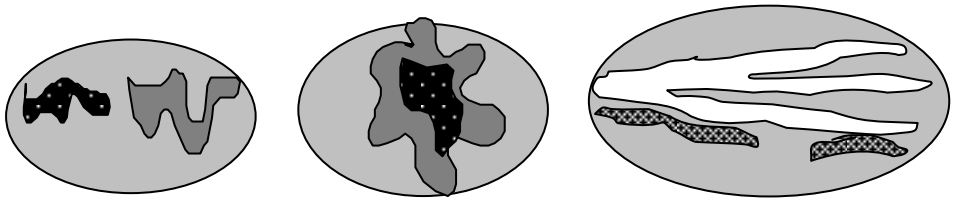
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

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	 points = 2 points = 1 points = 0	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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Y

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 __×__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __×__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 __×__Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	0
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number Y

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.* __x__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 *(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*)	3
Total for H 1 Add 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?

H 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 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [2.30] % undisturbed habitat **+** [(% moderate and low intensity land uses) [26] /2] **=** 15.3 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
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 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** _X_**< 1 = L** *Record the rating on the first page*

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 __x__ 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 = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: _X_**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number Y

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

X **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.

X **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 Y

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number Y

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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Wetland name or number Z,AA, AB

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Z,AA, AB Date of site visit: 04/10/20

Rated by Rachael Hyland, Matt DeCaro Trained by Ecology? ✔ Yes ___No Date of training 9/2016

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

__X__**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	M	L	
Landscape Potential	H	M	L	
Value	H	M	M	**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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number Z,AA, AB

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	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 (*can be added to figure above)*	S 4.1	
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	

Wetland name or number Z,AA, AB

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as 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,AA, AB

☐ NO – go to 6 ☒ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

Z,A

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Z,AA, AB

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover < ½ area of wetland points = 2 No depressions present points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in high) > $^2/_3$ area of the wetland points = 6 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	6
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** _X_ **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 2 Add 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 the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	2

Rating of Value If score is: _X_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number Z,AA, AB

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 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		2
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0		7
Total for R 4	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

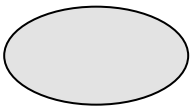
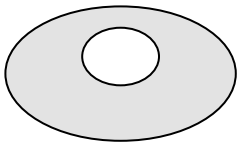
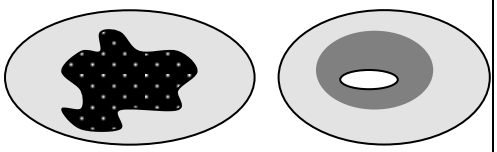
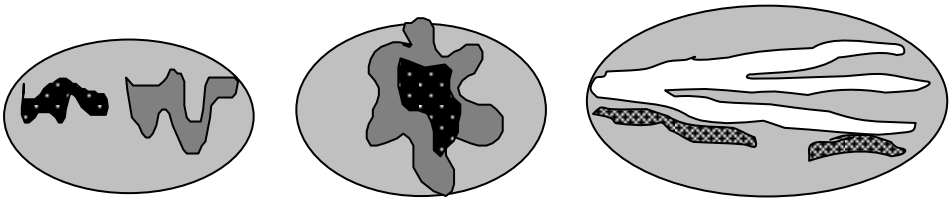
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site*. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0		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 6	Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Z,AA, AB

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 __x__Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland __x__Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number Z,AA, AB

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) __×__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*)	2
Total for H 1 Add 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?	
H 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 < 10% of 1 km Polygon points = 0	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 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: 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 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? *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 — 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	1

Rating of Value If score is:___**2 = H** __X__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number Z,AA, AB

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

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 Z,AA, AB

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
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? ☐ 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? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** 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** ☒ 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? ☐ Yes **= Category I** ☒ No **= Not a WHCV**	
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? ☐ Yes – Go to **SC 3.3** ☒ 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** ☐ 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**	

Wetland name or number Z,AA, AB

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre 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** ☒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 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** ☒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 6.2. 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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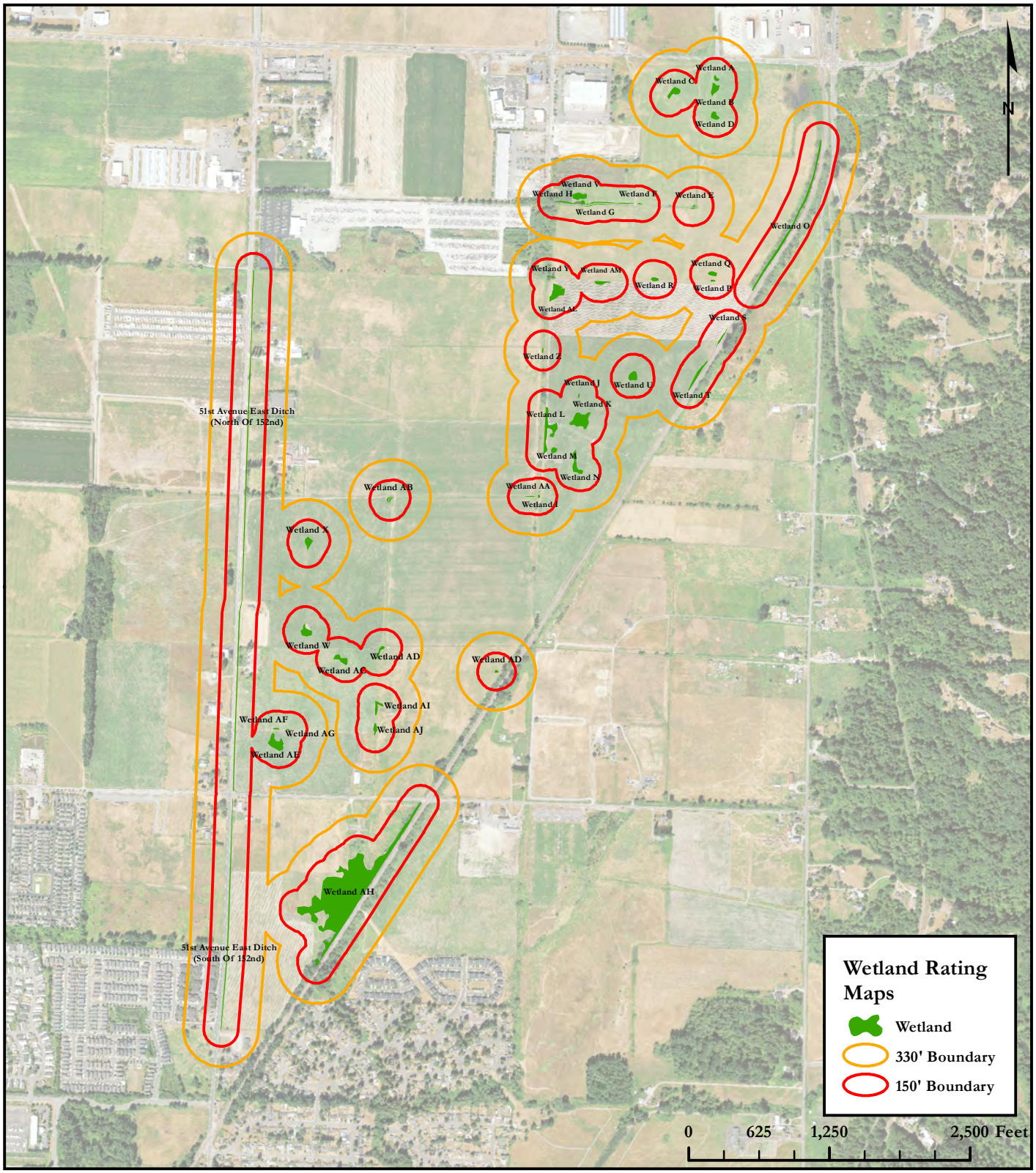
Appendix F — Wetland Rating Maps

CASCADE BUSINESS PARK - WETLAND RATING MAP SET (OVERVIEW)



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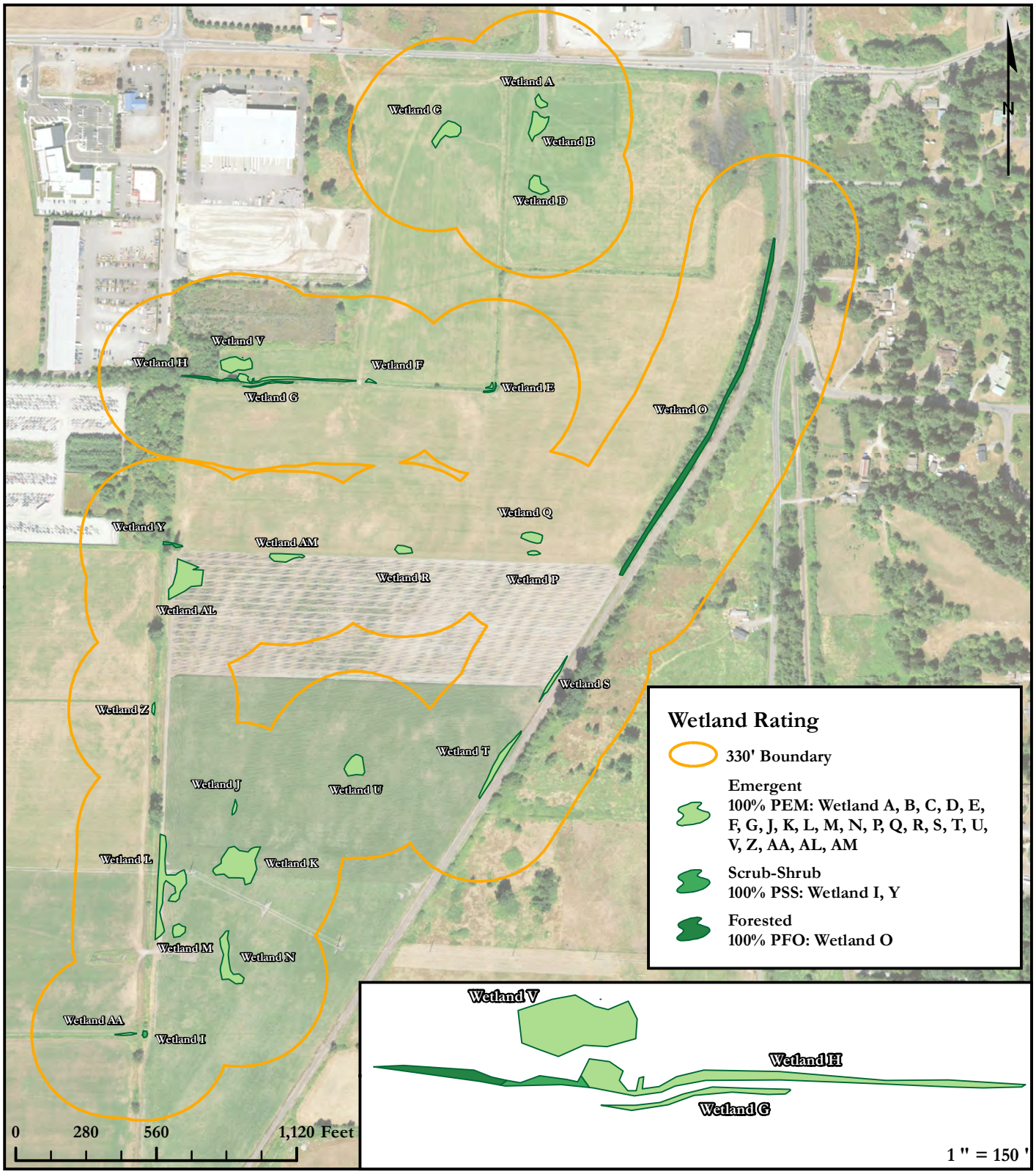
www.soundviewconsultants.com

CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 1,250 '
FIGURE NO.	1

CASCADE BUSINESS PARK - COWARDIN MAP



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CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 560 '
FIGURE NO.	2

CASCADE BUSINESS PARK - COWARDIN MAP

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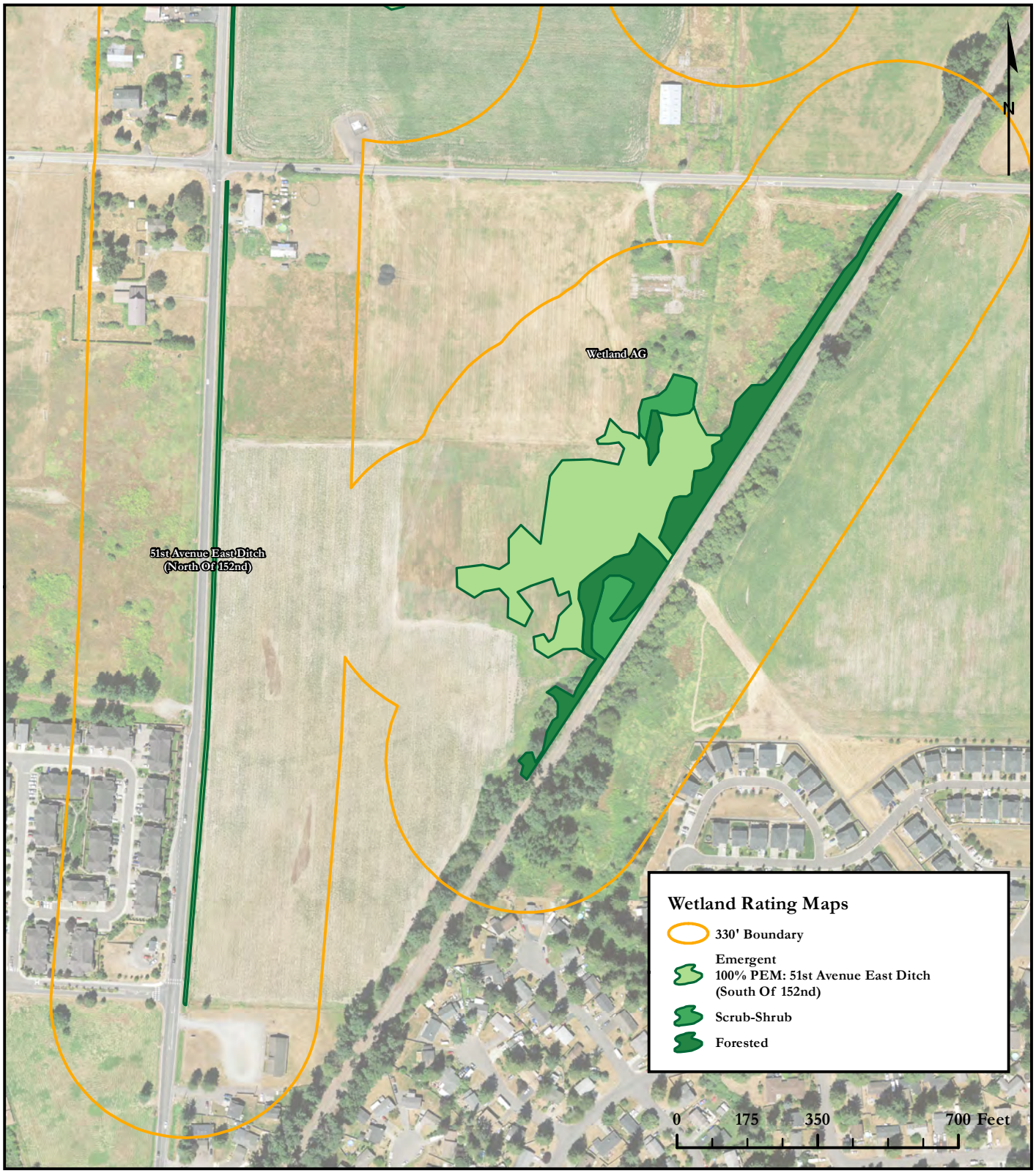
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 320 '
FIGURE NO.	3

CASCADE BUSINESS PARK - COWARDIN MAP



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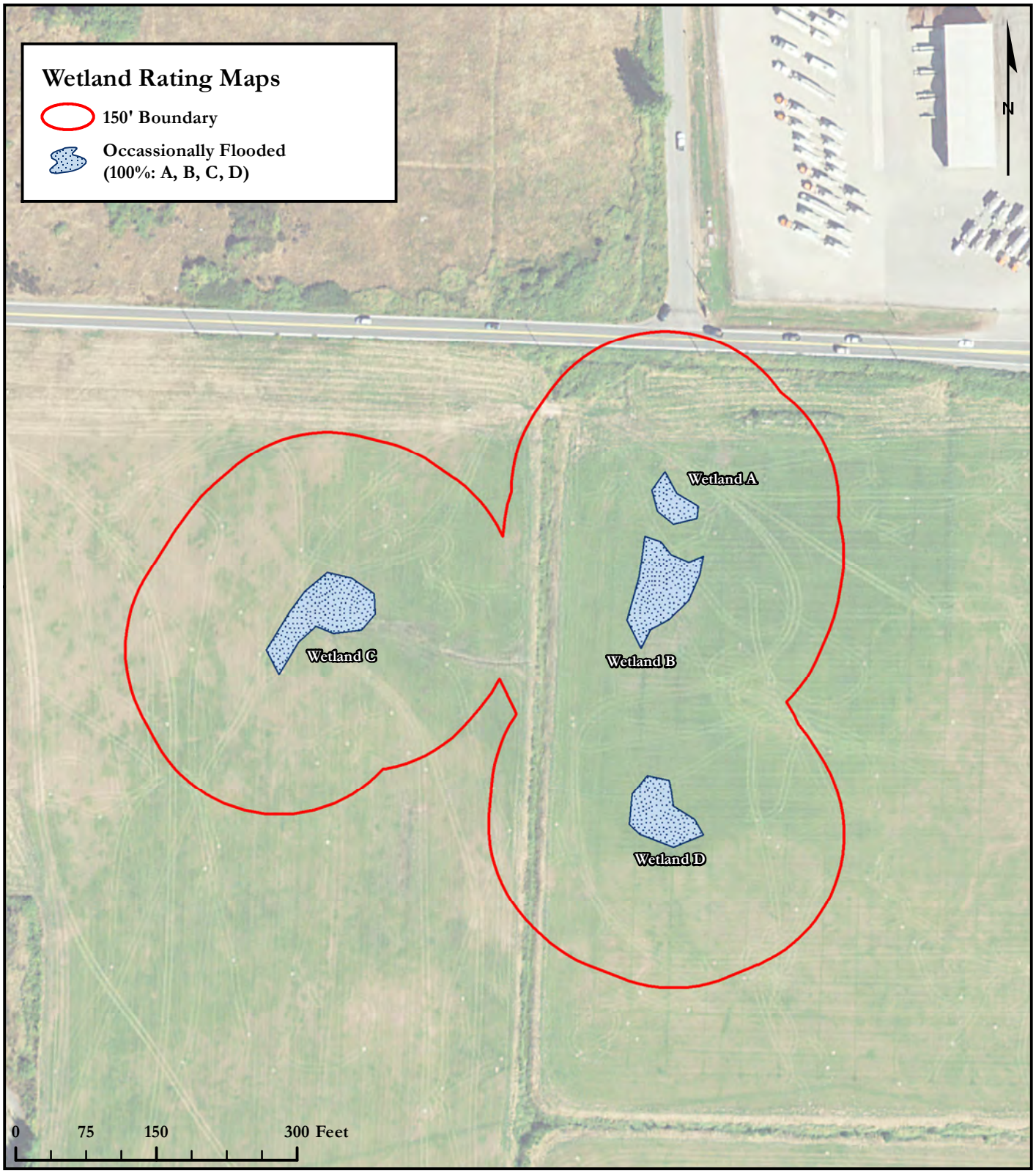
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 350 '
FIGURE NO.	4

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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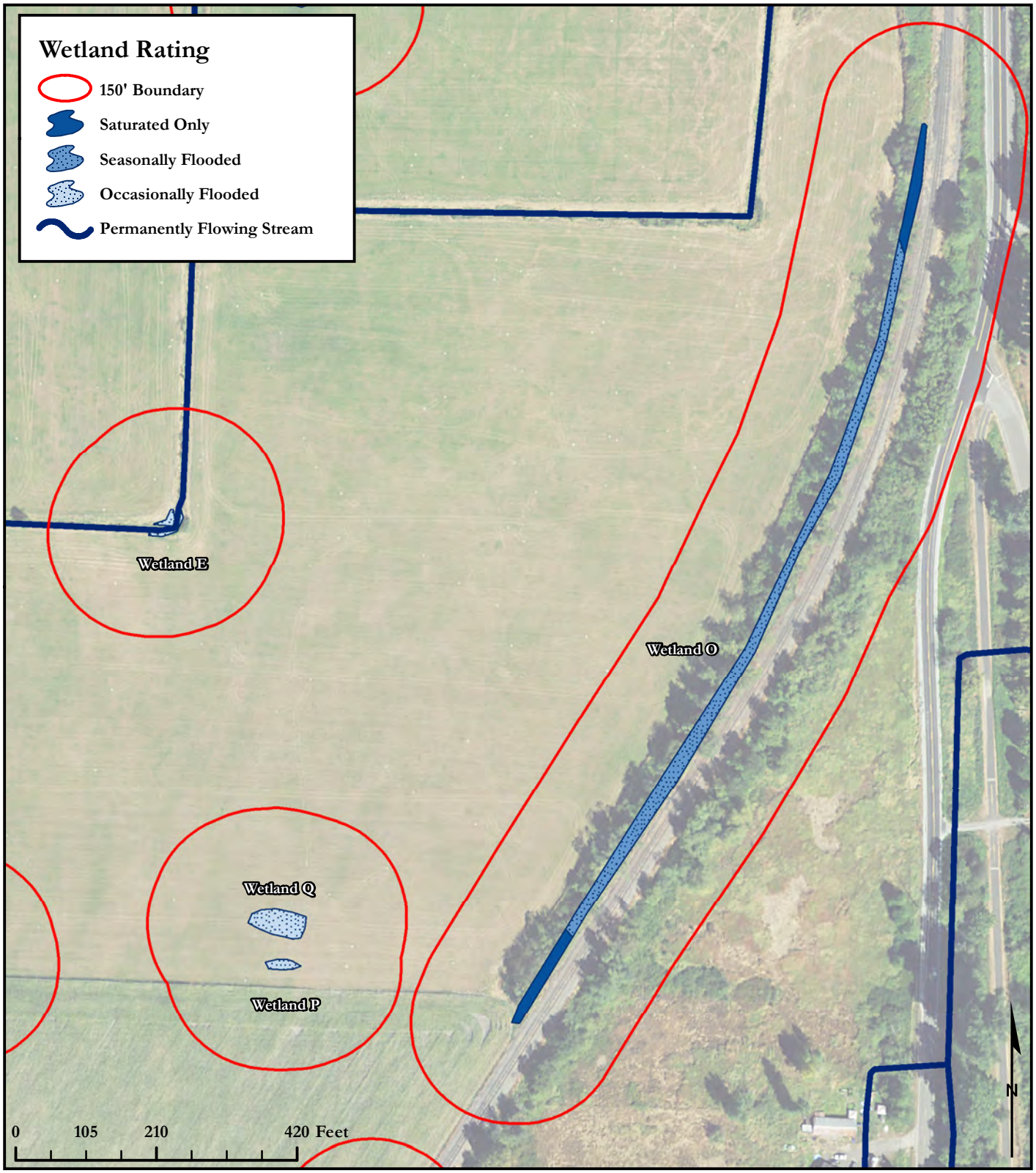
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 150 '
FIGURE NO.	5

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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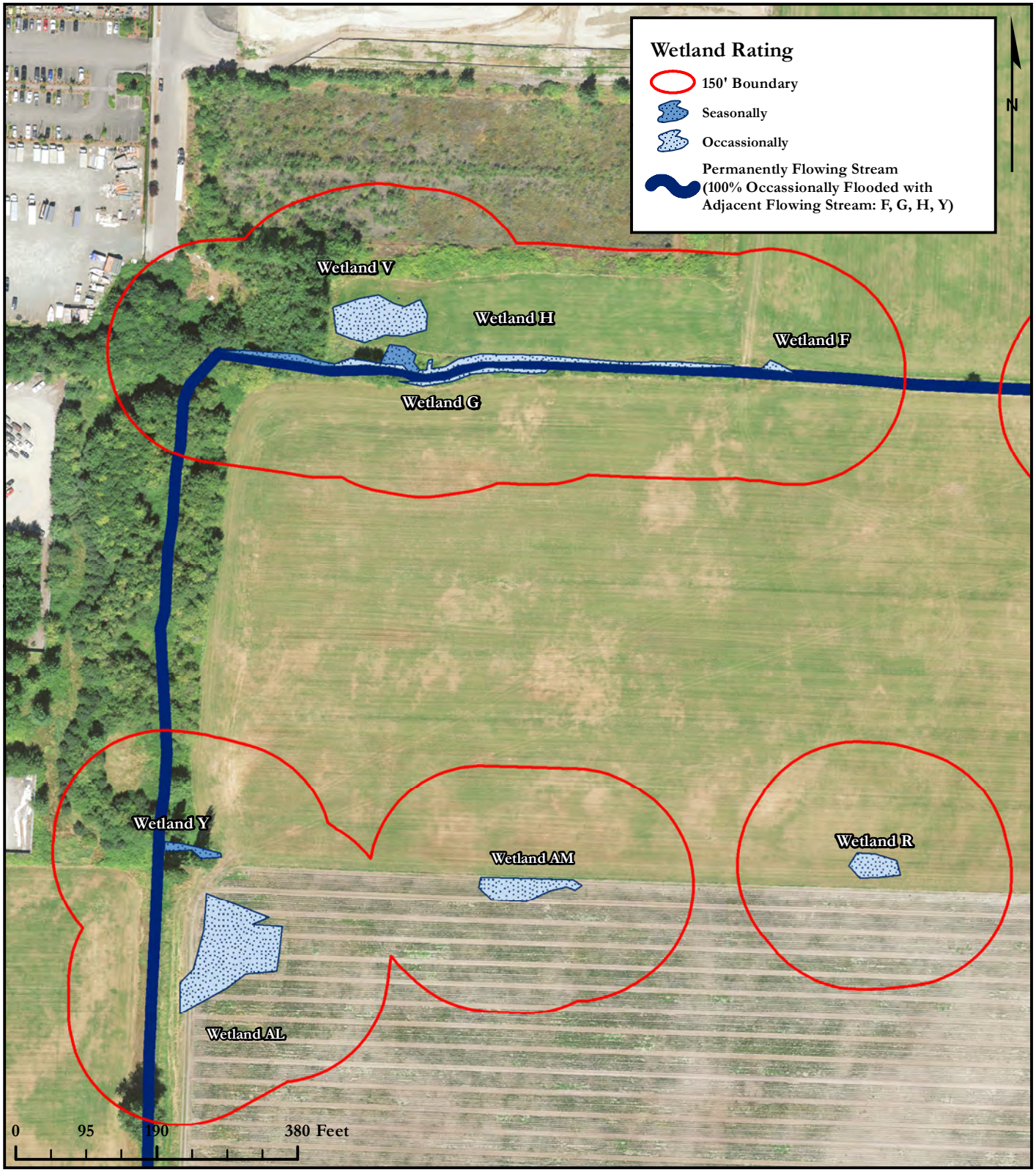
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 210 '
FIGURE NO.	6

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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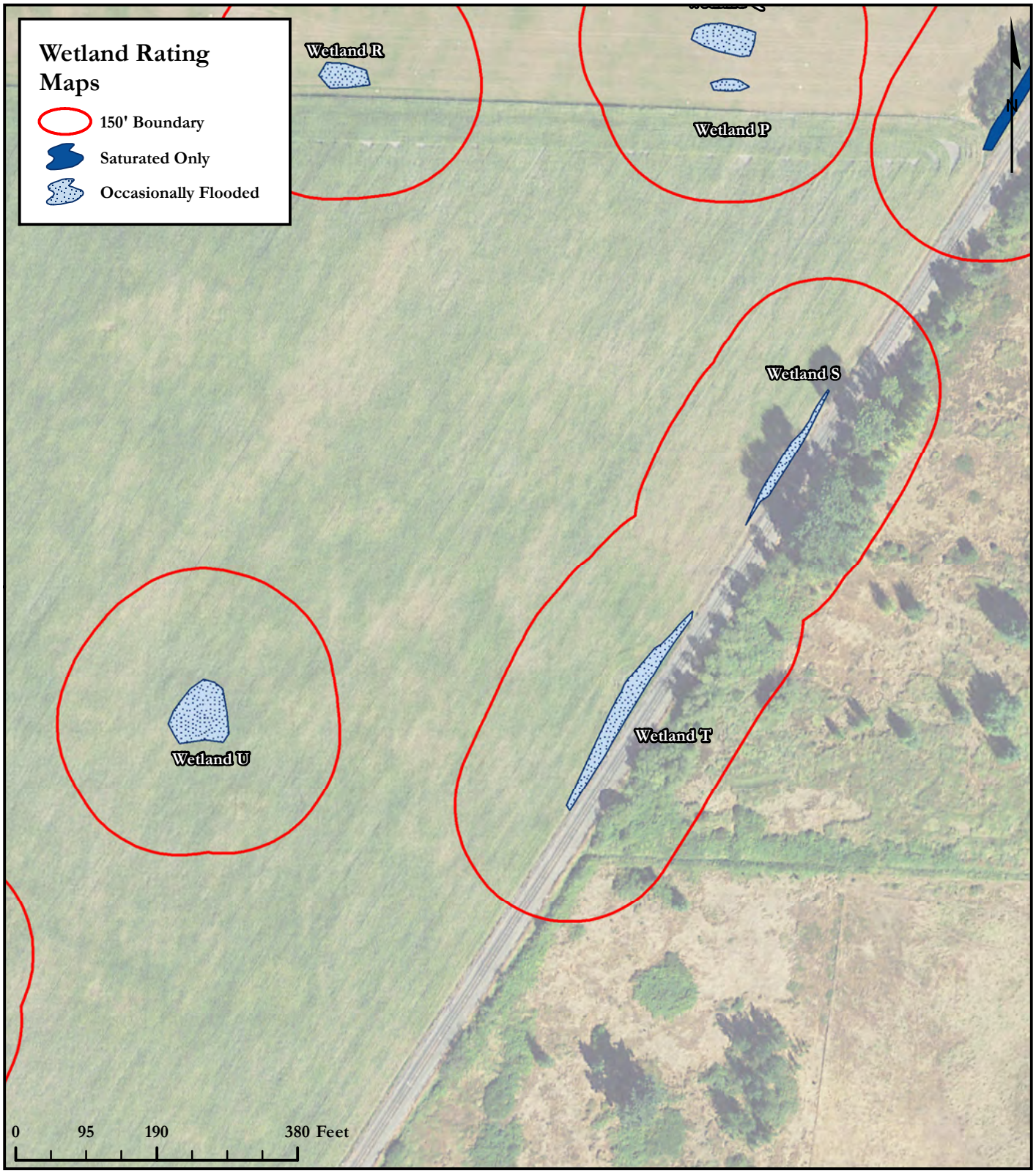
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 190 '
FIGURE NO.	7

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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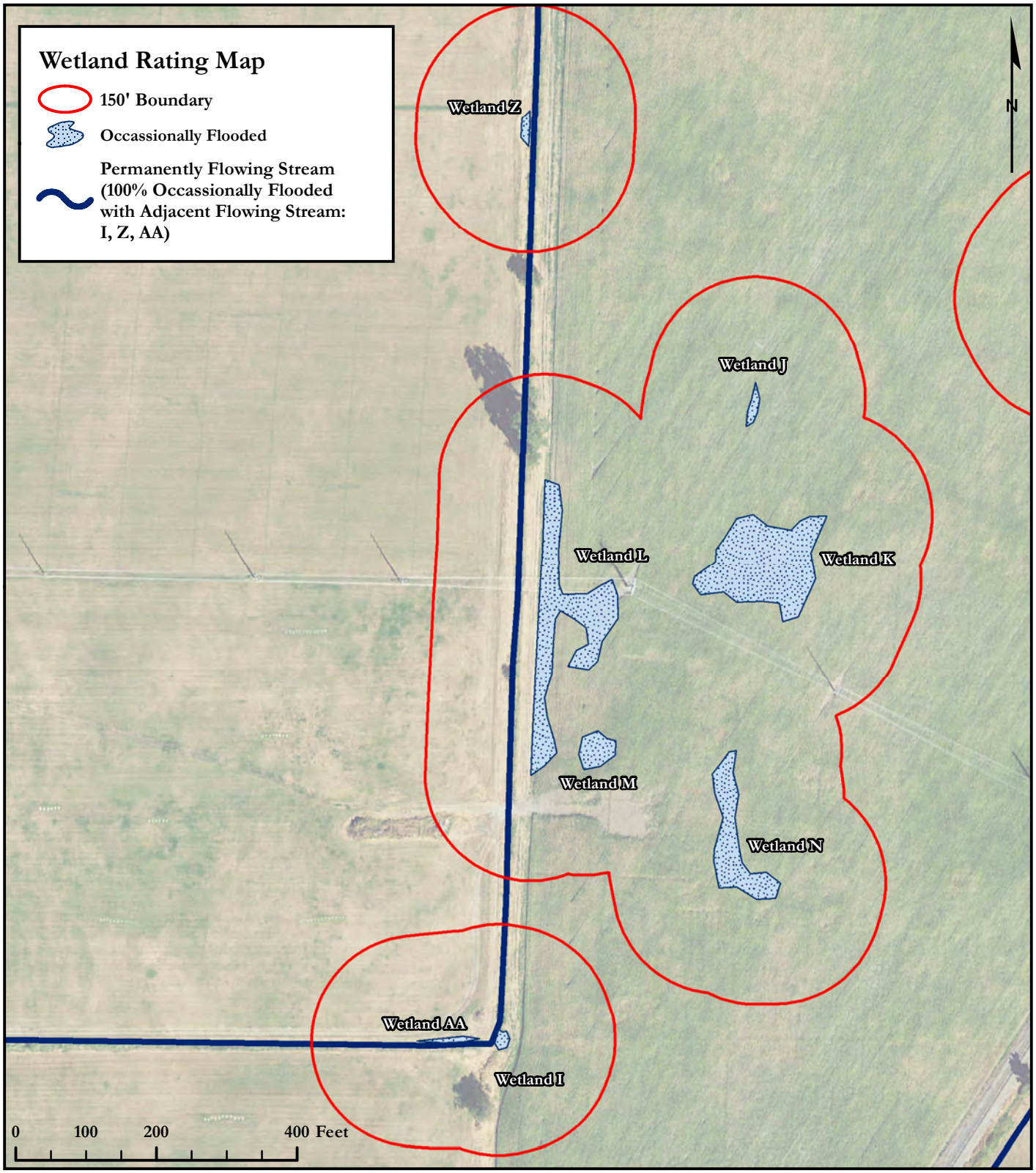
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 190 '
FIGURE NO.	8

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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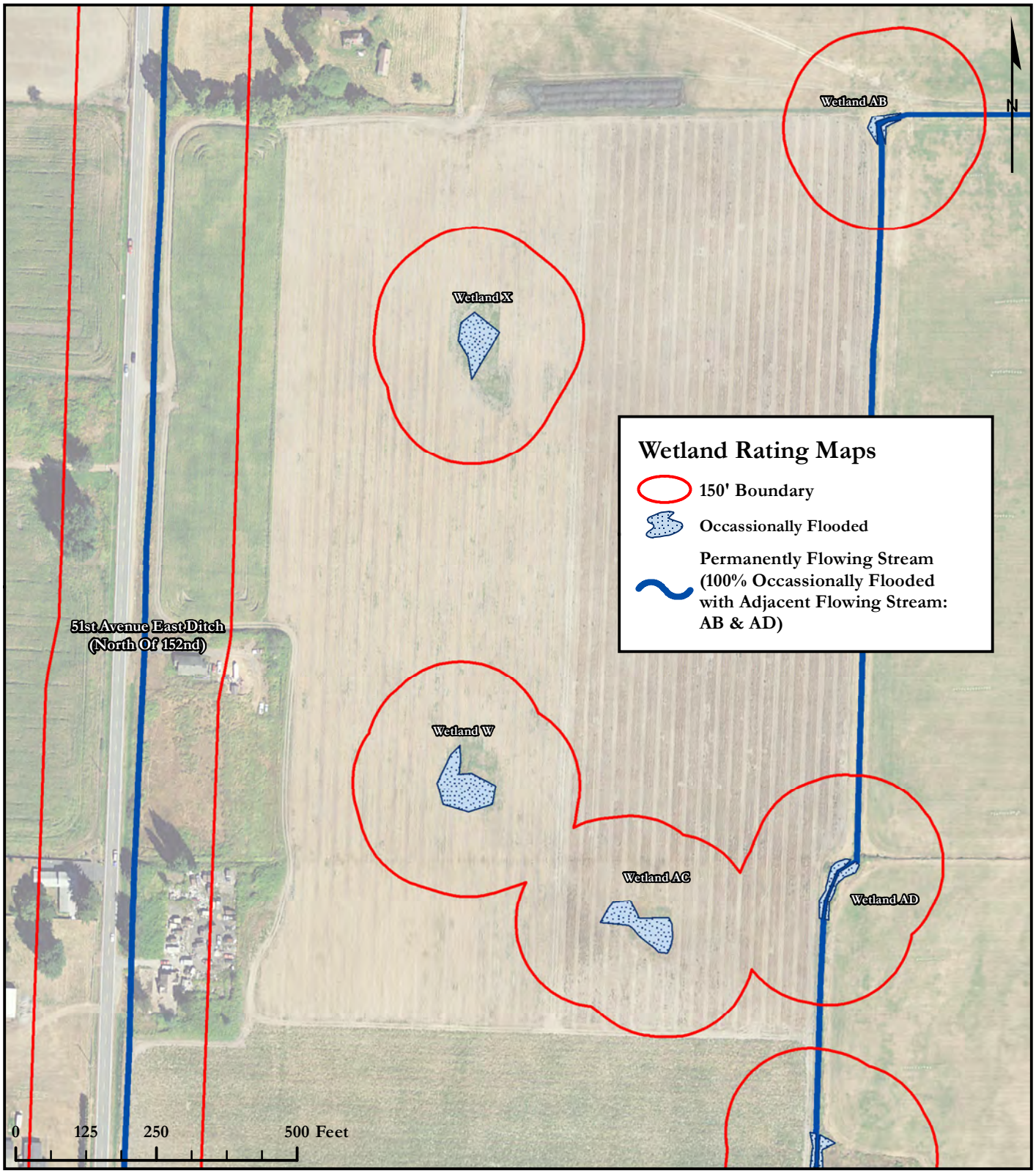
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 200 '
FIGURE NO.	9

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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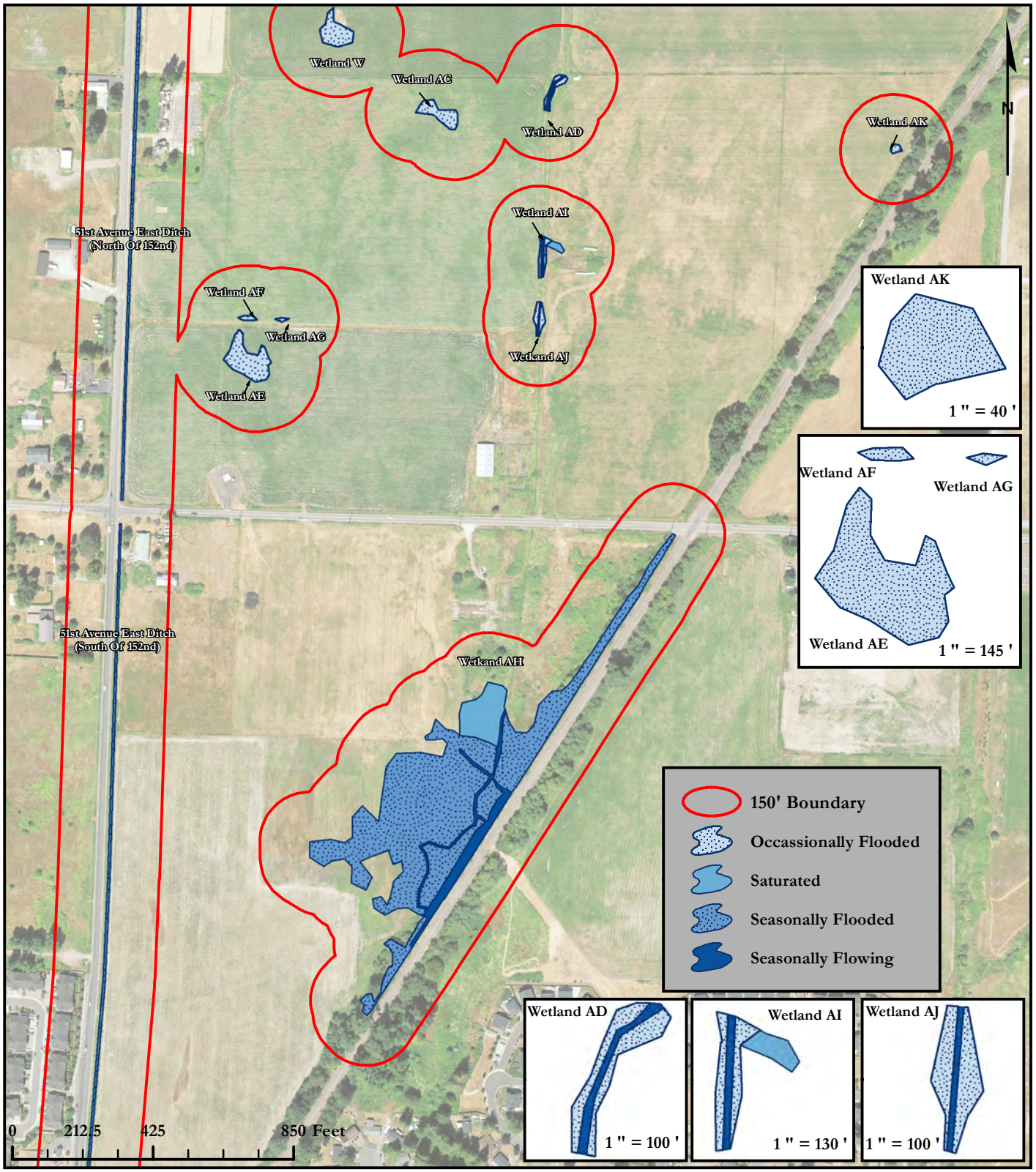
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 250 '
FIGURE NO.	10

CASCADE BUSINESS PARK - HYDROPERIOD MAP



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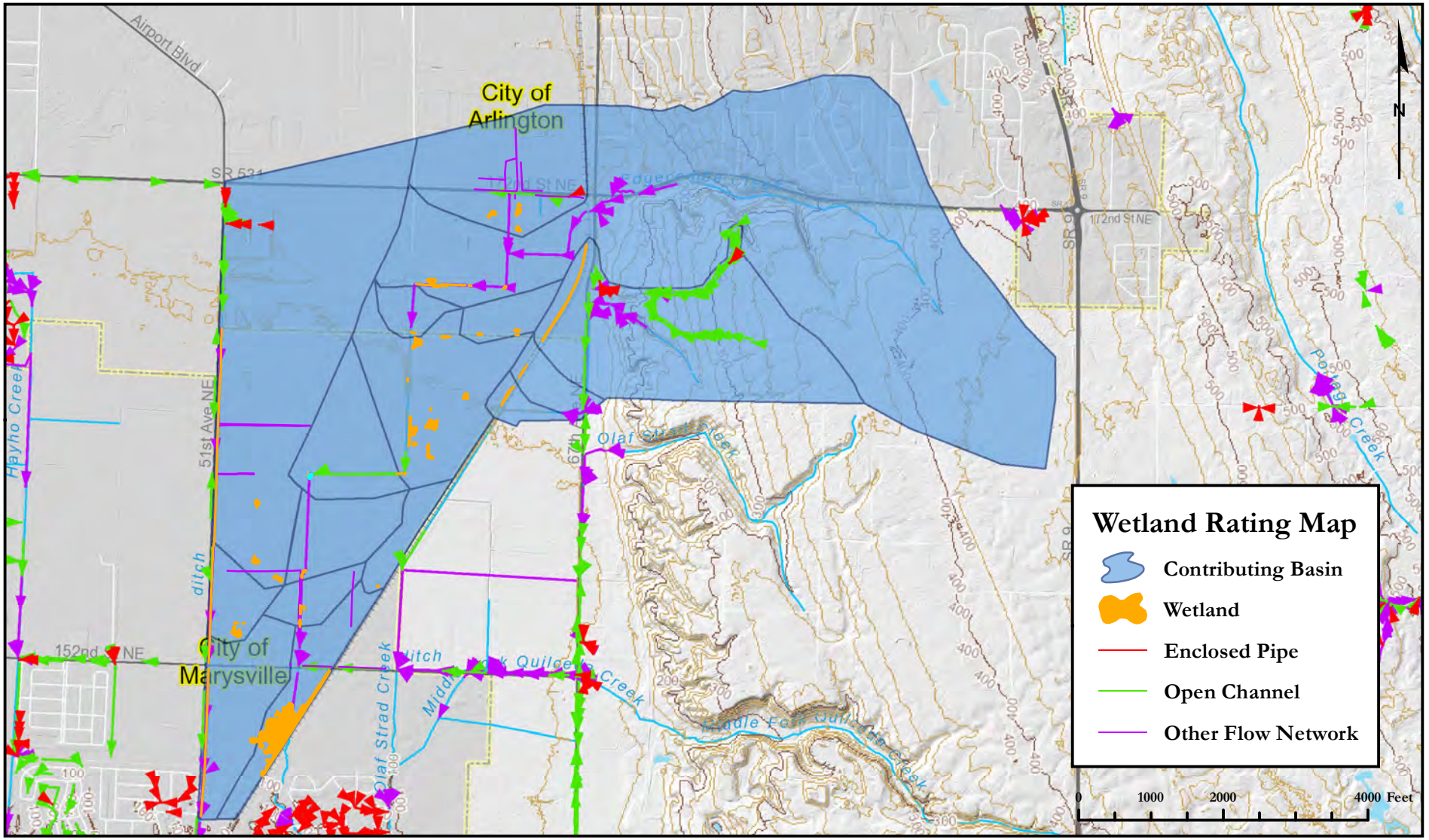
CASCADE BUSINESS PARK

DATE:	3/15/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 425 '
FIGURE NO.	11

CASCADE BUSINESS PARK - CONTRIBUTING BASIN



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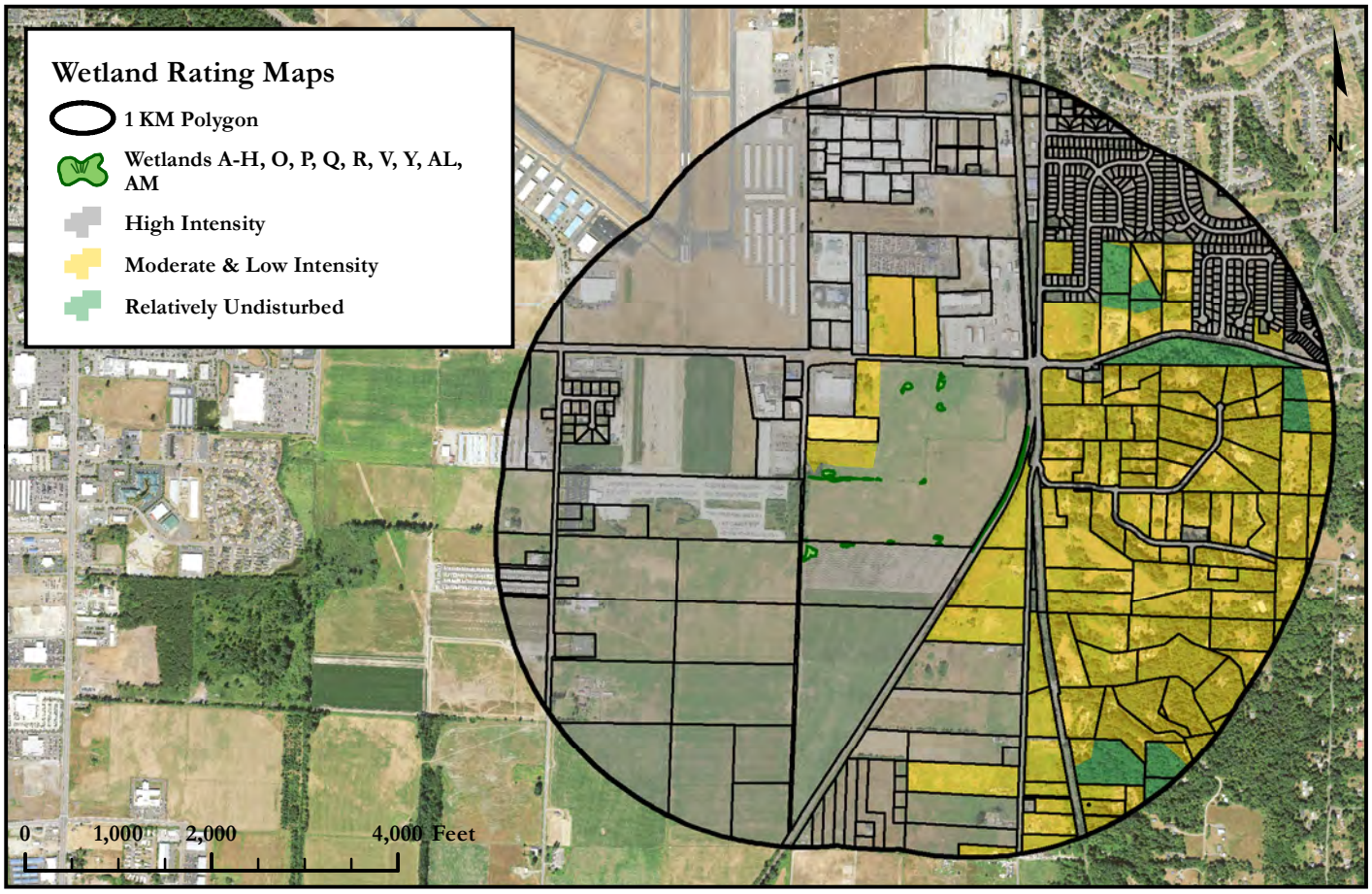
CASCADE BUSINESS PARK

DATE:	03/16/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 2,000 '
FIGURE NO.	12

CASCADE BUSINESS PARK - HABITAT MAP



H.2.0 Wetlands A-H, P, Q, R, V, Y, AL, AM		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	**0.00%**
H.2.2		
	Undisturbed Habitat	2.30%
	Moderate & Low Intensity Land Uses	26.00%
	Undisturbed Habitat in 1 KM Polygon	**15.30%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**71.70%**

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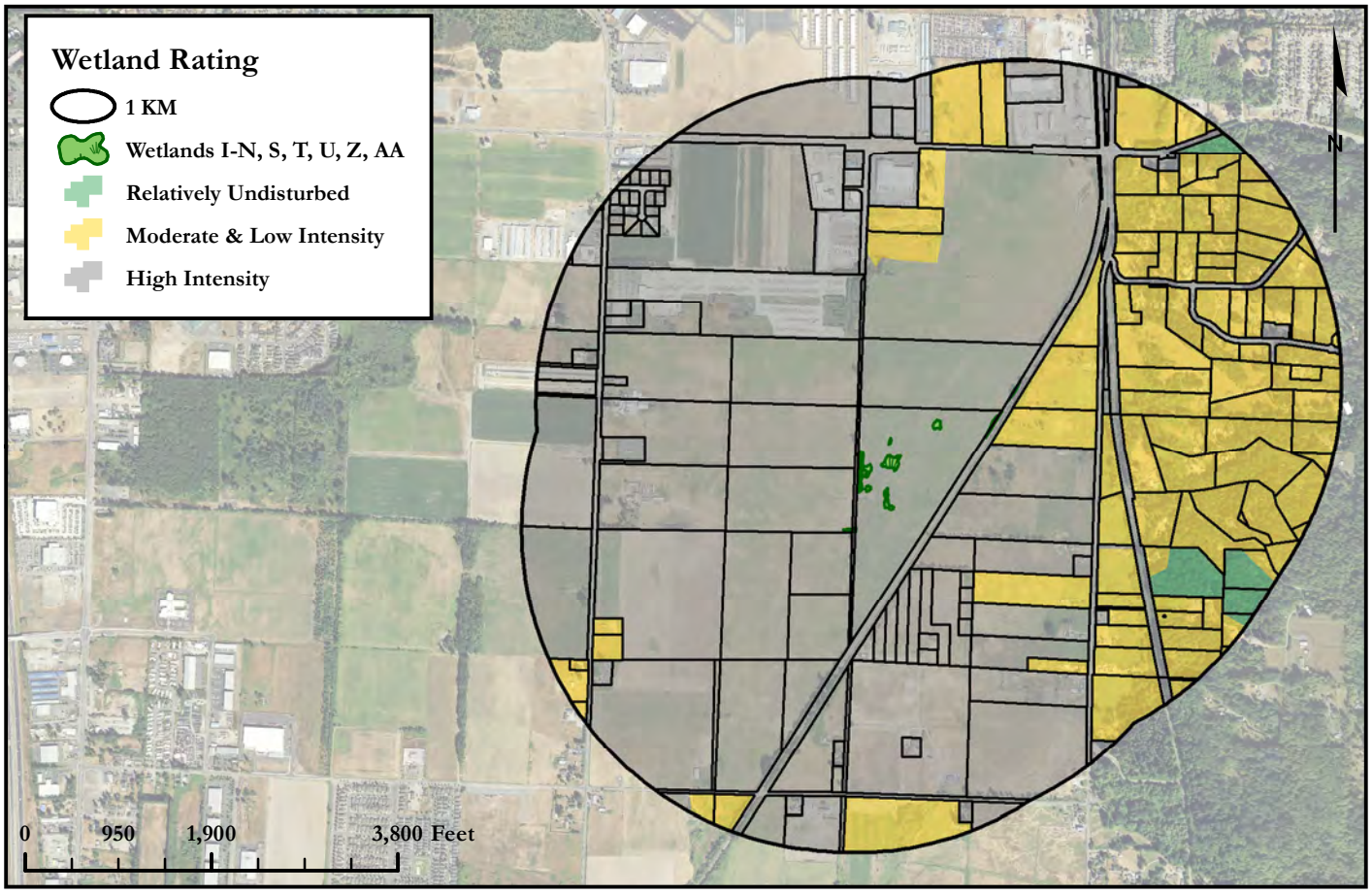
CASCADE BUSINESS PARK

DATE: 3/16/2021
JOB: 1703.0004
BY: DLS
SCALE: 1 " = 2,000 '
FIGURE NO. 13

CASCADE BUSINESS PARK - HABITAT MAP



H.2.0 Wetlands I-N, S, T, U, Z, AA		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	**0.00%**
H.2.2		
	Undisturbed Habitat	1.22%
	Moderate & Low Intensity Land Uses	26.43%
	Undisturbed Habitat in 1 KM Polygon	**14.44%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**72.35%**

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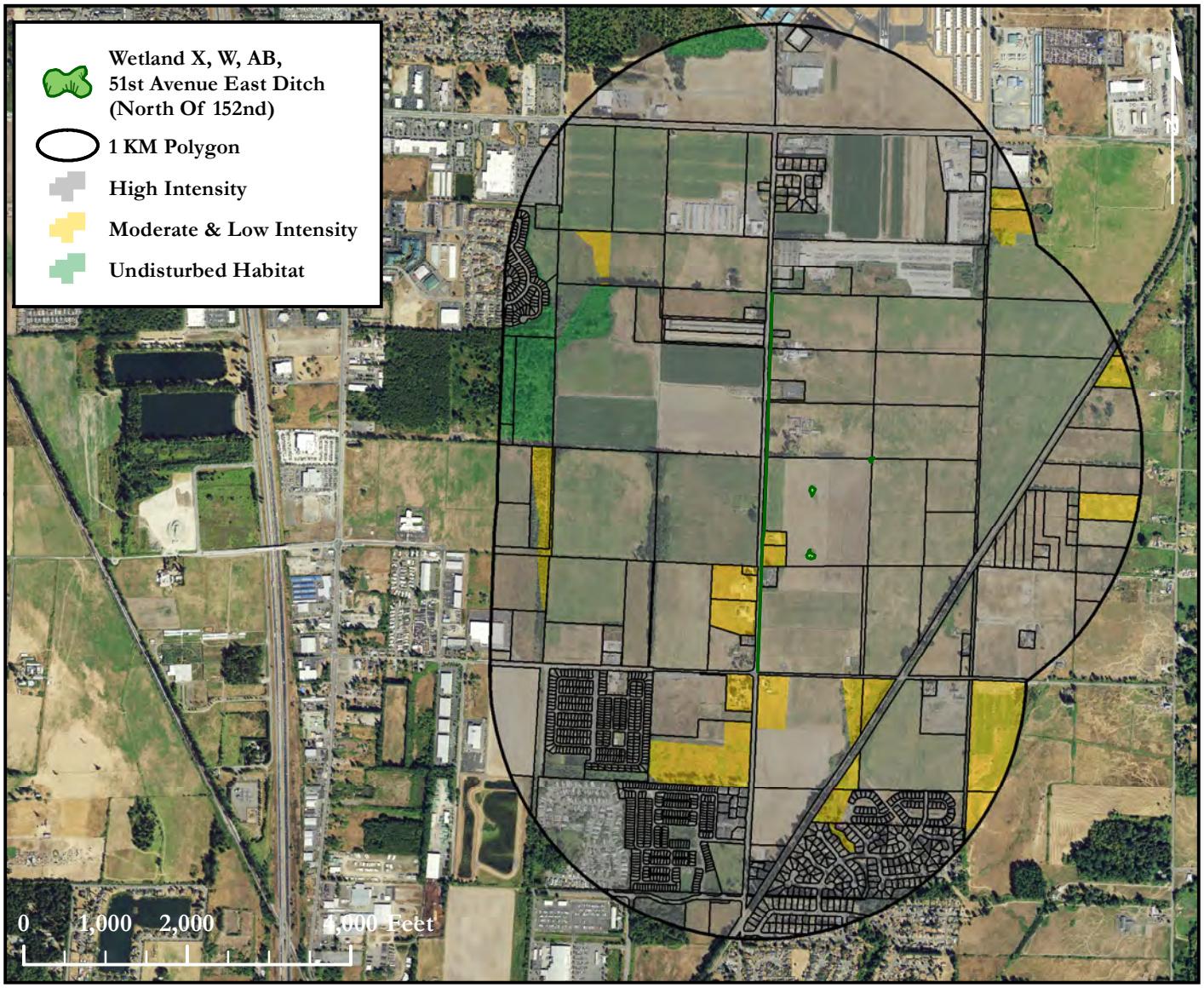
CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: 1 " = 1,900 '
FIGURE NO. 14

CASCADE BUSINESS PARK - HABITAT MAP



H.2.0 Wetland X, W, and AB		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	**0.00%**
H.2.2		
	Undisturbed Habitat	0.14%
	Moderate & Low Intensity Land Uses	4.58%
	Undisturbed Habitat in 1 KM Polygon	**2.43%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**95.28%**

H.2.0 51st Avenue East Ditch (North Of 152nd)		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	**0.00%**
H.2.2		
	Undisturbed Habitat	2.46%
	Moderate & Low Intensity Land Uses	6.02%
	Undisturbed Habitat in 1 KM Polygon	**5.47%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**91.51%**

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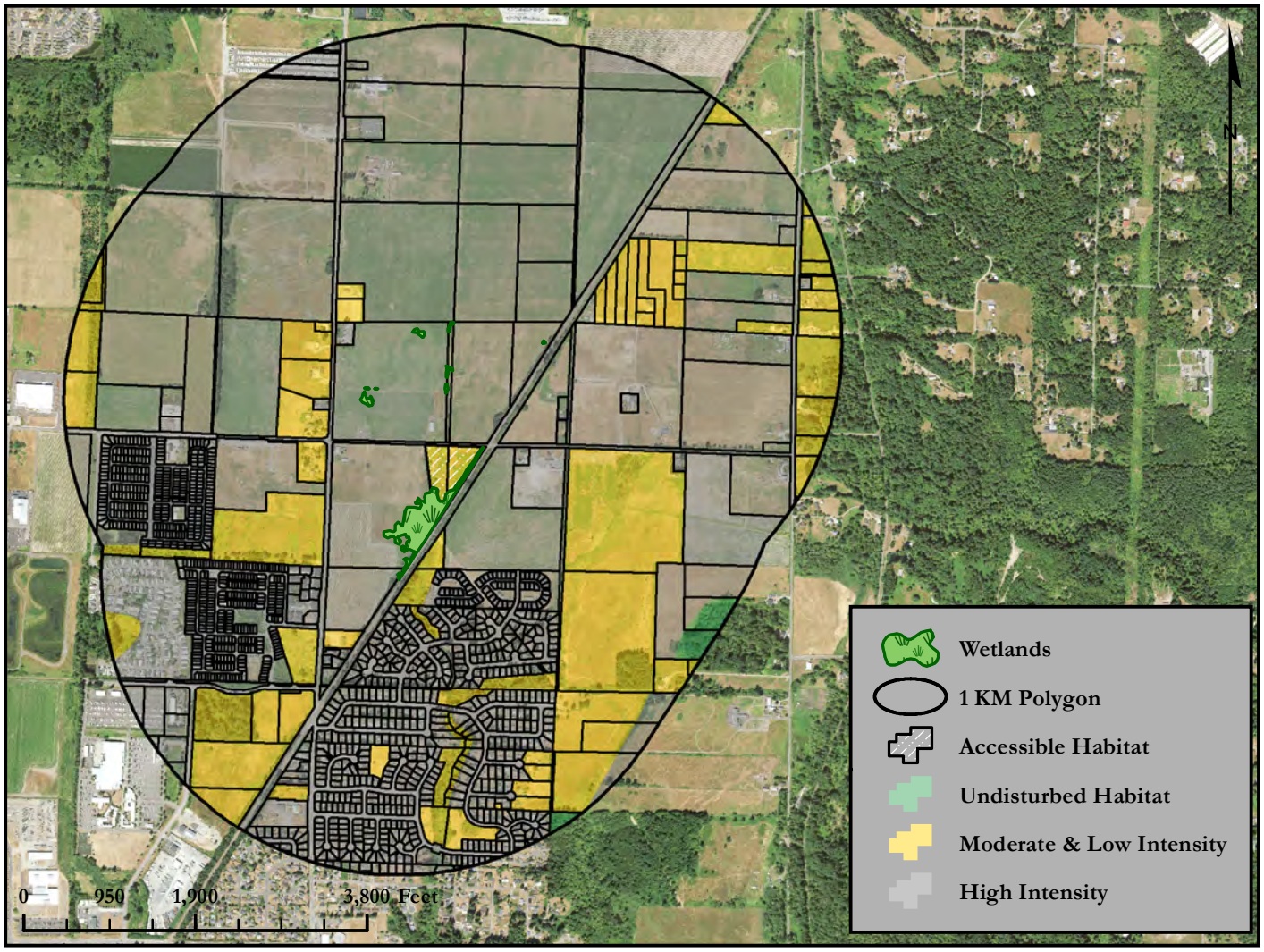
CASCADE BUSINESS PARK

DATE: 03/16/2020
JOB: 1703.0004
BY: DLS
SCALE: 1 " = 2,000 '
FIGURE NO. 15

CASCADE BUSINESS PARK- HABITAT MAP



H.2.0		
H.2.1	Wetland AC-AG; Wetland AH-AK	
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	**0.00%**
H.2.1	Wetland AH	
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.48%
	Accessible Habitat	**0.24%**
H.2.2		
	Undisturbed Habitat	0.46%
	Moderate & Low Intensity Land Uses	20.68%
	Undisturbed Habitat in 1 KM Polygon	**10.80%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**78.86%**

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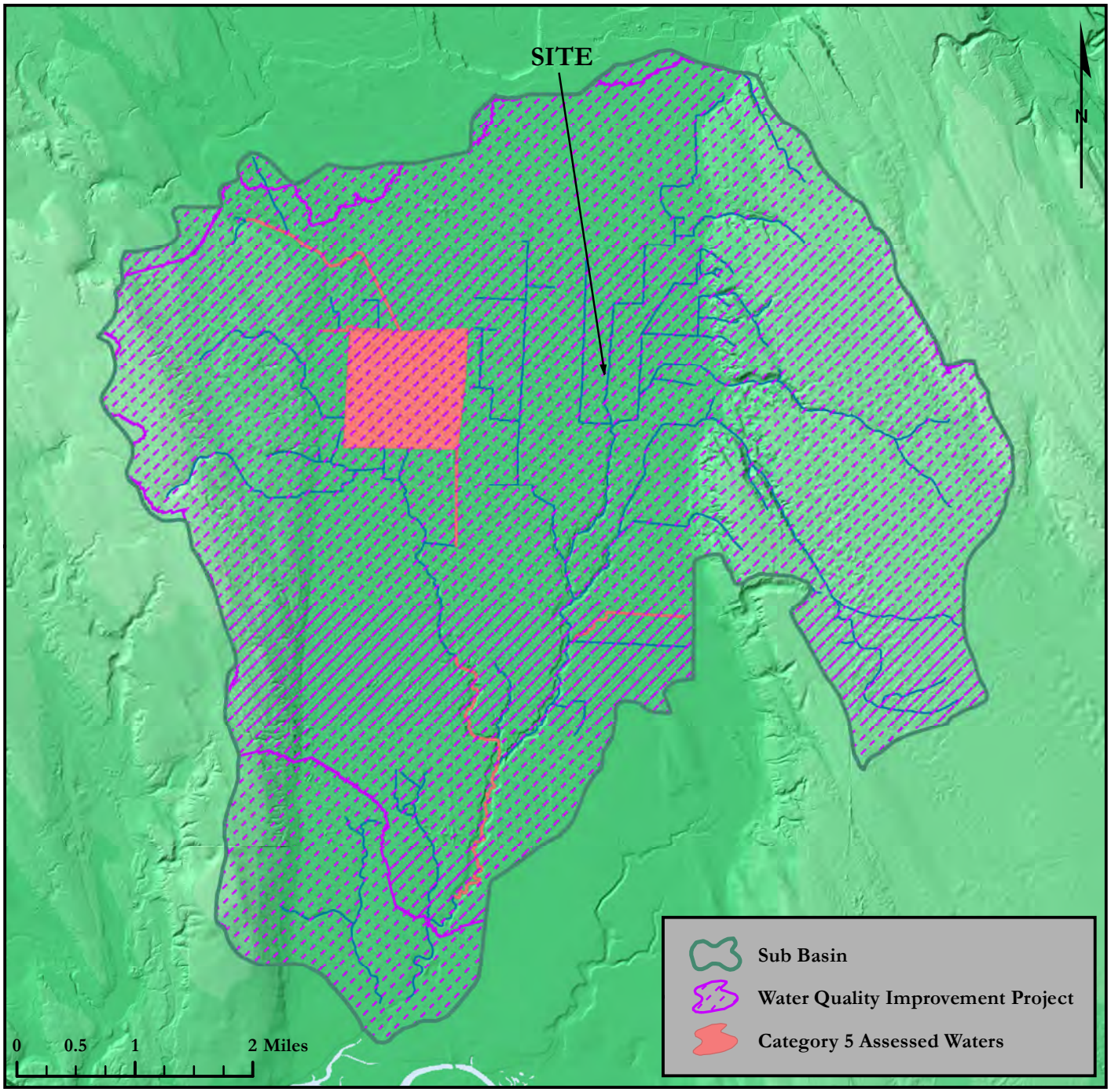
CASCADE BUSINESS PARK

DATE: 3/16/2021
JOB: 1703.0004
BY: DLS
SCALE: 1 " = 1,900 '
FIGURE NO. 16

CASCADE BUSINESS PARK- 303(D) MAP



Name	Pollutants	TMDL ID	Year Approved
Snohomish River Tributaries Bacteria TMDL	Bacteria	34	2001
Stillaguamish River Watershed Temperature TMDL	Temperature	73	2006
Snohomish River Estuary Multiparameter TMDL	Ammonia-N, CBOD, Dissolved Oxygen	48	2002
Stillaguamish River Watershed Multiparameter TMDL	Bacteria, Dissolved Oxygen, pH, Mercury, Arsenic	75	2006

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CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: 1 " = 1 mi
FIGURE NO. 17

CASCADE BUSINESS PARK - CONTRIBUTING BASIN TABLE

D.4.		
D.4.3		
	Area of Contributing Basin (SF)	3,279,726
	Area of Wetland A (SF)	1,369
	Percent of Wetland A within Contributing Basin	**0.042%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	3,279,726
	Area of Wetland B (SF)	4,859
	Percent of Wetland B within Contributing Basin	**0.148%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	3,279,726
	Area of Wetland C (SF)	4,841
	Percent of Wetland C within Contributing Basin	**0.148%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	3,279,726
	Area of Wetland D (SF)	3,537
	Percent of Wetland D within Contributing Basin	**0.108%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	24,795,648
	Area of Wetland E (SF)	775
	Percent of Wetland E within Contributing Basin	**0.003%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	24,795,648
	Area of Wetland F (SF)	386
	Percent of Wetland F within Contributing Basin	**0.002%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	24,795,648
	Area of Wetland G (SF)	987
	Percent of Wetland G within Contributing Basin	**0.004%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	24,795,648
	Area of Wetland H (SF)	6,279
	Percent of Wetland H within Contributing Basin	**0.025%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland I (SF)	377
	Percent of Wetland I within Contributing Basin	**0.001%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland J (SF)	334
	Percent of Wetland J within Contributing Basin	**0.001%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**

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CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: N/A
TABLE NO. 1

CASCADE BUSINESS PARK - CONTRIBUTING BASIN TABLE

D.4.		
D.4.3		
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland K (SF)	16,836
	Percent of Wetland K within Contributing Basin	**0.057%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland L (SF)	15,756
	Percent of Wetland L within Contributing Basin	**0.053%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland M (SF)	1,969
	Percent of Wetland M within Contributing Basin	**0.007%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland N (SF)	8,133
	Percent of Wetland N within Contributing Basin	**0.028%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	6,337,356
	Area of Wetland O (SF)	38,322
	Percent of Wetland O within Contributing Basin	**0.605%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**No**
	Area of Contributing Basin (SF)	25,466,096
	Area of Wetland P (SF)	550
	Percent of Wetland P within Contributing Basin	**0.002%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	25,466,096
	Area of Wetland Q (SF)	2,522
	Percent of Wetland Q within Contributing Basin	**0.010%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	25,466,096
	Area of Wetland R (SF)	1,773
	Percent of Wetland R within Contributing Basin	**0.007%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	6,975,641
	Area of Wetland S (SF)	4,628
	Percent of Wetland S within Contributing Basin	**0.066%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**No**
	Area of Contributing Basin (SF)	7,348,610
	Area of Wetland T (SF)	10,036
	Percent of Wetland T within Contributing Basin	**0.137%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**No**

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CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: N/A
TABLE NO. 2

CASCADE BUSINESS PARK - CONTRIBUTING BASIN TABLE

D.4.0 / D.4.3		
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland U (SF)	4,909
	Percent of Wetland U within Contributing Basin	**0.017%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	24,795,648
	Area of Wetland V (SF)	5,945
	Percent of Wetland V within Contributing Basin	**0.024%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	9,821,171
	Area of Wetland W (SF)	258
	Percent of Wetland W within Contributing Basin	**0.003%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	9,821,171
	Area of Wetland X (SF)	4,492
	Percent of Wetland X within Contributing Basin	**0.046%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	25,311,068
	Area of Wetland Y (SF)	662
	Percent of Wetland Y within Contributing Basin	**0.003%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland Z (SF)	483
	Percent of Wetland Z within Contributing Basin	**0.002%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	29,495,145
	Area of Wetland AA (SF)	574
	Percent of Wetland AA within Contributing Basin	**0.008%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	31,400,626
	Area of Wetland AB (SF)	1,166
	Percent of Wetland AB within Contributing Basin	**0.004%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	9,769,363
	Area of Wetland AC (SF)	4,866
	Percent of Wetland AC within Contributing Basin	**0.050%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	30,962,565
	Area of Wetland AD (SF)	2,462
	Percent of Wetland AD within Contributing Basin	**0.008%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**

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CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: N/A
TABLE NO. 3

CASCADE BUSINESS PARK - CONTRIBUTING BASIN TABLE

D.4.0 / D.4.3		
	Area of Contributing Basin (SF)	10,557,706
	Area of Wetland AE (SF)	11,346
	Percent of Wetland AE within Contributing Basin	**0.107%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	10,557,706
	Area of Wetland AF (SF)	615
	Percent of Wetland AF within Contributing Basin	**0.006%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	10,557,706
	Area of Wetland AG (SF)	285
	Percent of Wetland AG within Contributing Basin	**0.003%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	48,227,668
	Area of Wetland AH (SF)	233,630
	Percent of Wetland AH within Contributing Basin	**0.484%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	44,257,343
	Area of Wetland AI (SF)	3,873
	Percent of Wetland AI within Contributing Basin	**0.009%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	44,257,343
	Area of Wetland AJ (SF)	2,471
	Percent of Wetland AJ within Contributing Basin	**0.006%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	2,871,222
	Area of Wetland AK (SF)	696
	Percent of Wetland AK within Contributing Basin	**0.023%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	10,839,096
	Area of 51st Avenue East Ditch (North Of 152nd) (SF)	30,417
	Percent of 51st Avenue East Ditch (North Of 152nd) within Contributing Basin	**0.281%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	16,008,190
	Area of 51st Avenue East Ditch (South Of 152nd) (SF)	13,670
	Percent of 51st Avenue East Ditch (South Of 152nd) within Contributing Basin	**0.085%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: N/A
TABLE NO. 4

CASCADE BUSINESS PARK - CONTRIBUTING BASIN TABLE

D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	25,311,068
	Area of Wetland AL (SF)	11,835
	Percent of Wetland AL within Contributing Basin	**0.047%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**
	Area of Contributing Basin (SF)	25,311,068
	Area of Wetland AM (SF)	3,021
	Percent of Wetland AM within Contributing Basin	**0.012%**
	Is More Than 25% Of The Contributing Basin Of The Wetland Covered With Intensive Human Land Uses?	**Yes**

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CASCADE BUSINESS PARK

DATE: 3/15/2021
JOB: 1703.0004
BY: DLS
SCALE: N/A
TABLE NO. 5

Appendix G — WSDOE Water Quality Monitoring Data on Edgecomb Creek

Date	Air Temperature (°C)	Water Temperature (°C)[1,2]	Dissolved Oxygen (mg/L)	Specific Conductivity (uS/cm @ 25°C)	Turbidity (NTU)	pH	Fecal Coliform (col/100 ml)
1/27/2015	0	5	9.89	152.3	7.27	NA	23
2/24/2015	10	9.1	5.69[5]	141	3.73	NA	19
3/31/2015	5.5	6.5	9.1	132.6	2.24	NA	15
4/28/2015	5	6.3	9.35	156.2	8.28	NA	10
6/10/2015	7	8.2	8.12[4,5]	111.7	NA	NA	121
6/24/2015	9	10.1	3.62[4,5]	NA	8.26	NA	62
7/21/2015	8.5	9.5	8.1[4,5]	86	NA	NA	33
7/28/2015	16	11.6	2.58[4,5]	162.8	2.67	NA	57
8/20/2015	14.5	11.9	8.45[4,5]	177.5	NA	NA	51
8/27/2015	16	14[2]	8.96[4]	182.6	NA	7.83	108

9/15/2015	16	13.3[2]	9.72	183	8.16	NA	127
10/6/2015	22	14.1[2]	11.47	183.2	3.29	NA	81
11/3/2015	13	13.1[2]	8.98	185.1	1.83	7.65	408.5
12/1/2015	16	14.3[2]	6.61[5]	182.4	1.34	NA	0
1/5/2016	18	13.2[2]	9.94	182.3	1.71	NA	130
2/2/2016	13	12.9[2]	8.02[5]	188.8	2.17	7.63	155
3/1/2016	17	13.6[2]	7.65[5]	183	3.04	NA	152
4/5/2016	19	12.5[2]	9.96	181.3	8.4	NA	1000
5/3/2016	13	10.9	9.7	160.3	NA	NA	78
6/7/2016	6	9.9	6.75[4,5]	179.3	1.67	7.65	NA
7/19/2016	11	12.2[2]	NA	186.5	1.91	7.65	53
8/10/2016	8	10.7	7.82[4,5]	186.6	1.74	7.54	16

9/20/2016	NA	9	10.87	NA	1.94	NA	1333
9/27/2016	3	8.7	8.67	158.3	1.61	NA	11.5
10/4/2016	4	8.4	5.44[5]	105.8	2.12	7.07	74
11/30/2016	4	6.1	8.48[5]	168.9	4.22	NA	8
12/27/2016	4	5	6.51[5]	102.8	1.32	7.23	4

Notes:

1. No temperature measurements exceeded thresholds for high quality core summer salmonid habitat (16 °C).
2. No temperature measurements exceeded thresholds for salmonid spawning, rearing, and migration (17.5 °C).
3. Temperature exceeds threshold for high quality native char spawning and rearing (12 °C).
4. Dissolved oxygen is lower than threshold for high quality core summer salmonid and high quality native char and spawning and rearing (9.5 mg/L).
5. Dissolved oxygen is lower than threshold for salmonid spawning, rearing, and migration (8.5 mg/L)

Appendix H — Edgecomb Creek Streamflow and Water Quality Data

Figure H1. Data Logger Locations

Figure H2. Edgecomb Creek Streamflow

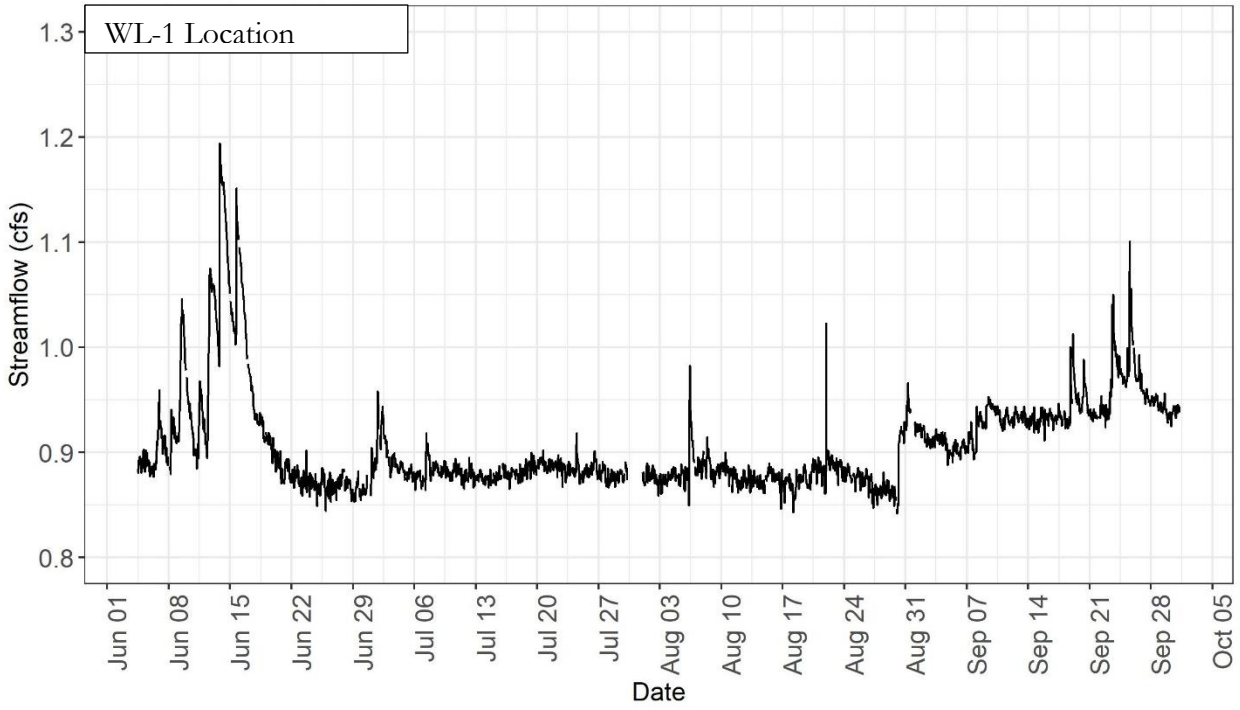
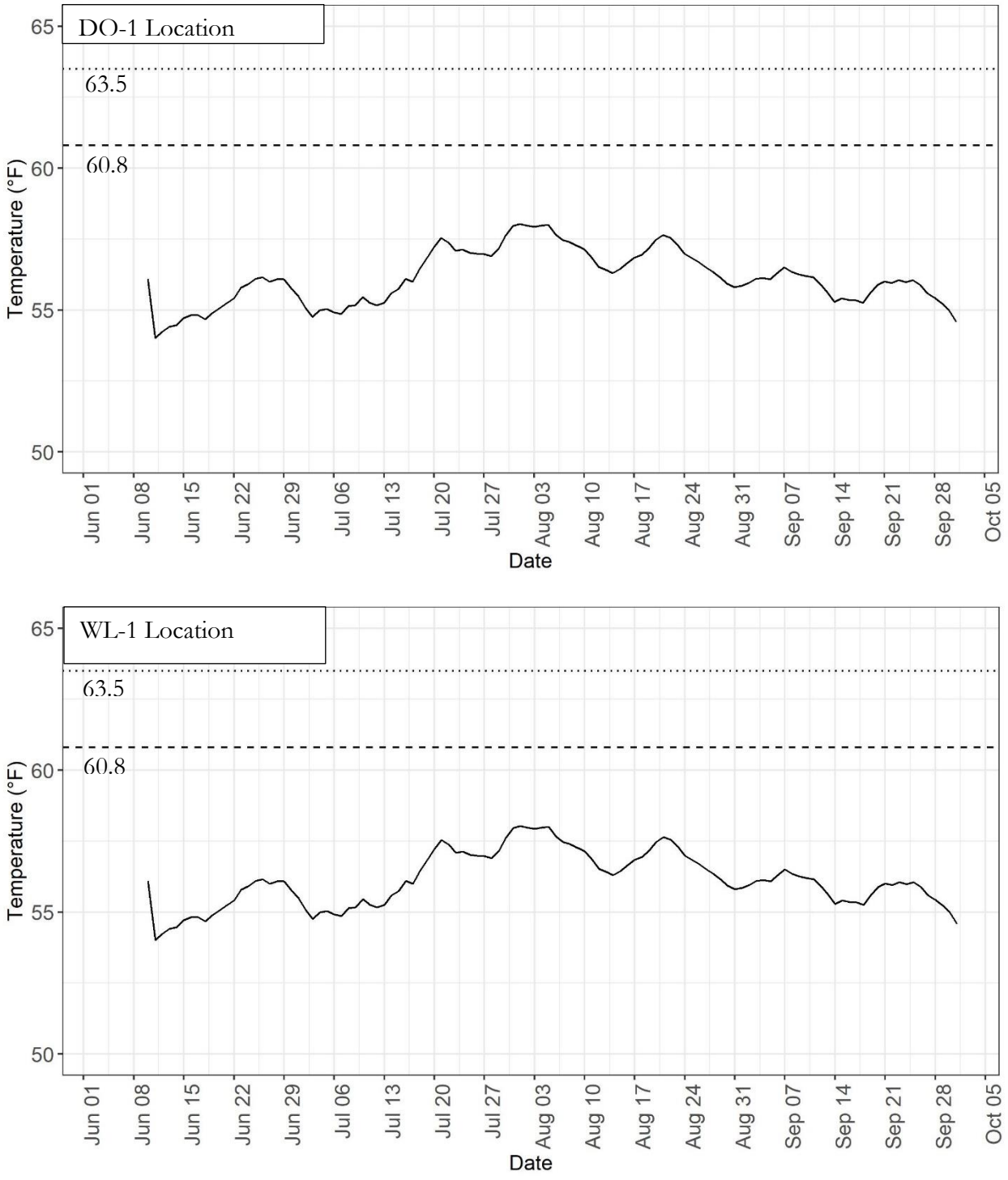
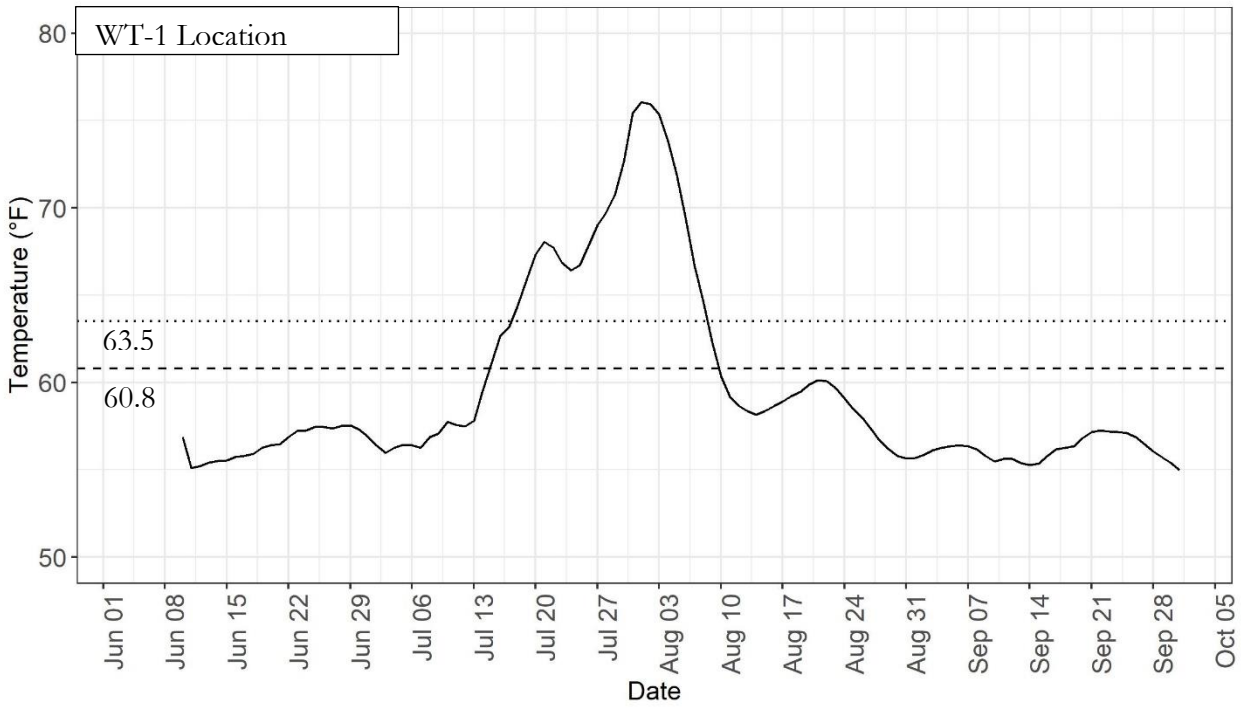


Figure H3. 7-Day Average of Daily Maximum Temperature

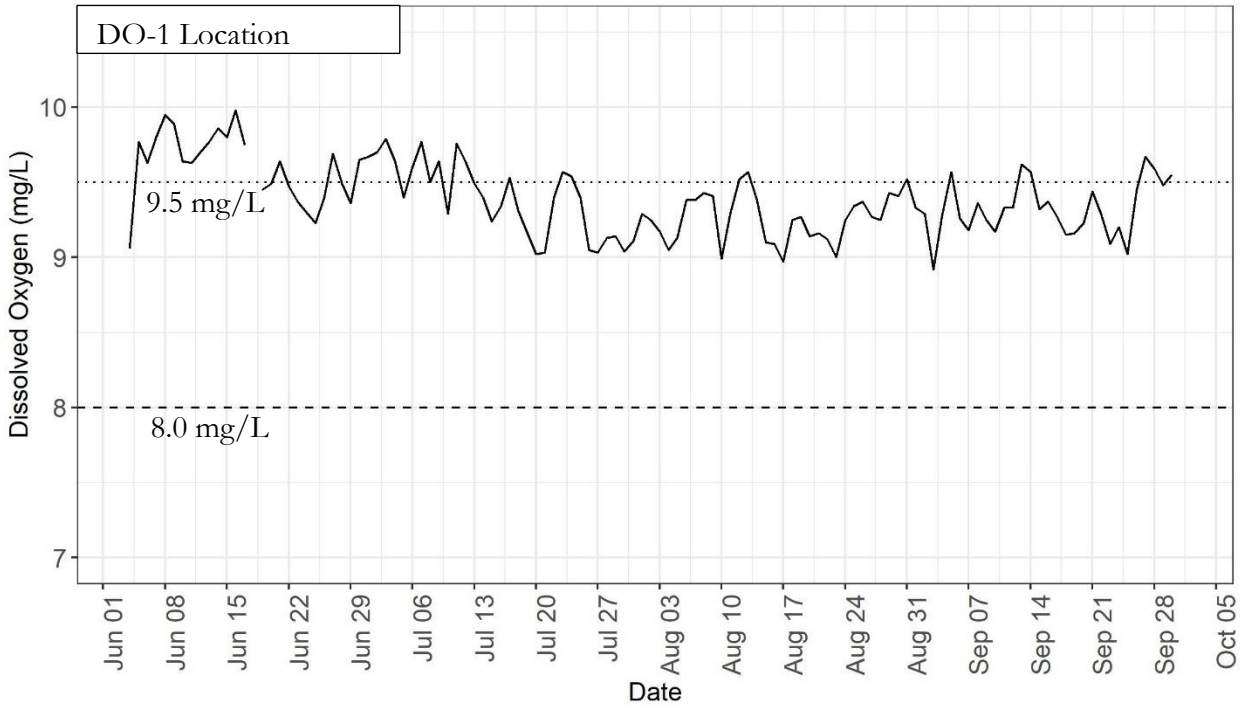




Notes:

1. Per WAC 173-201A-200(1)(c), the water temperature thresholds for aquatic life uses are measured by the 7-day-average of the daily maximum temperature (7-DADMax). The temperature threshold for core summer salmonid habitat and char spawning and rearing is 60.8°F and for salmonid rearing, spawning and migration is 63.5 °F.
2. 28 days were above the 63.5°F threshold for core summer salmonid habitat between June 15 and September 15, 2020 at the WT-1 location. Water temperatures at the DO-1 and WL-1 locations were in range for water quality thresholds.

Figure H4. Daily Minimum Dissolved Oxygen



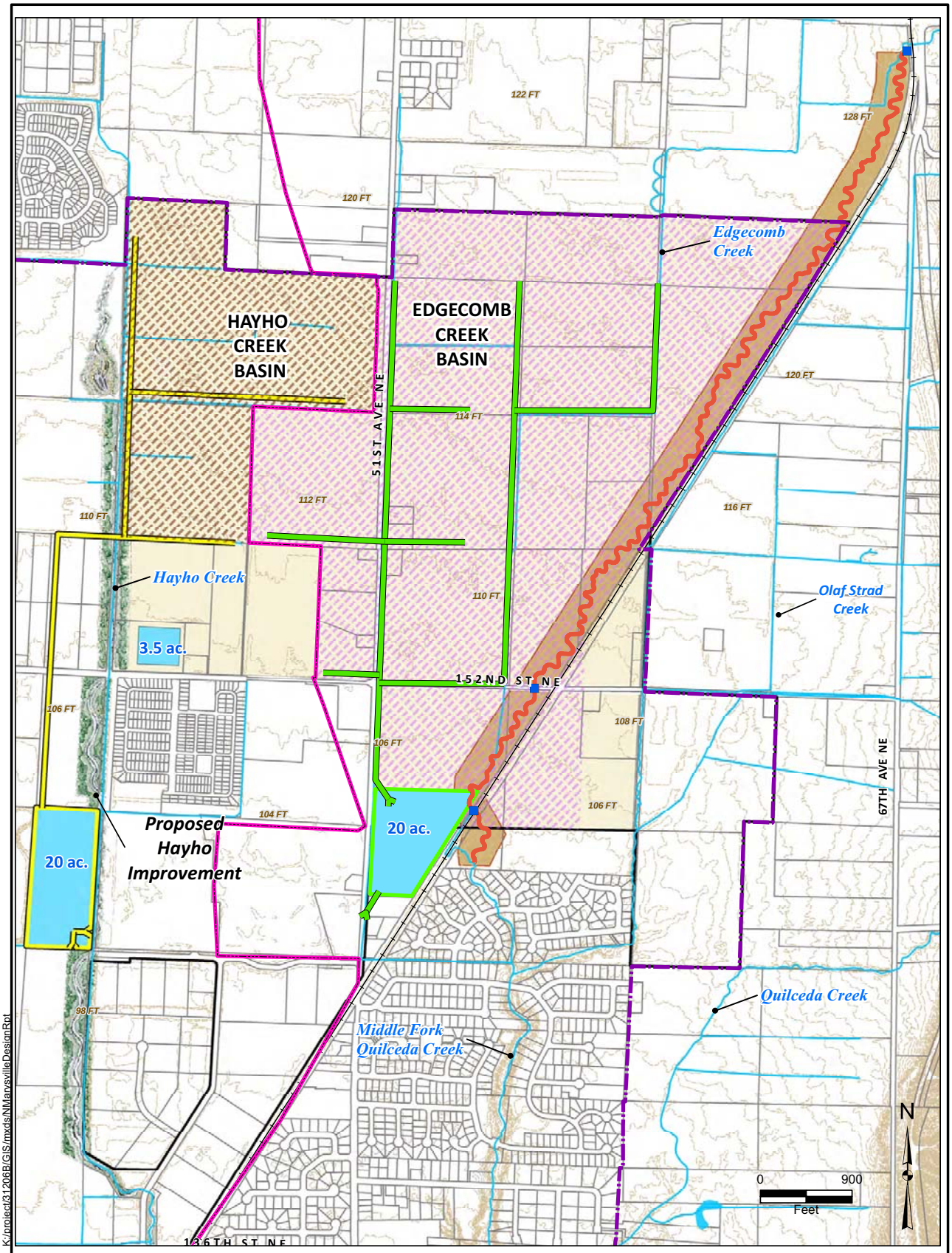
Notes:

1. Per WAC 173-201A-200(1)(d), the dissolved oxygen thresholds for aquatic life uses are measured by the 1-day-minimum of dissolved oxygen. The dissolved oxygen threshold for core summer salmonid habitat and char spawning and rearing is 9.5 mg/L and for salmonid rearing, spawning and migration is 8.0 mg/L.
2. 67 days were below the 9.5 mg/L threshold for core summer salmonid habitat between June 15 and September 15, 2020.

Table H1. WAC 173-201A-200(1) Water Quality Parameters.

Aquatic Life Use	7-Day Average of Daily Maximum Temperature (°C)	Daily Minimum Dissolved Oxygen (mg/L)	pH
Salmonid spawning, rearing, and migration (waters used by salmonid spawning that occurs outside of the summer season between September 16 and June 14; waters may also be used by rearing and migrating salmonids)	17.5	8.5	6.5 – 8.5, with human caused variation less than 0.5 units
Salmonid rearing and migration (waters used by salmonids for rearing and migration, not used for spawning)	17.5	6.5	6.5 – 8.5, with human caused variation less than 0.5 units
Core summer salmonid habitat (waters used for summer salmonid spawning, emergence, or adult holding between June 15 and September 15; use as important summer rearing habitat by one or more salmonids, or foraging by adult and subadult native char, waters include spawning outside the summer season, rearing, and migration by salmonids)	16	9.5	6.5 – 8.5, with human caused variation less than 0.2 units
Native char (bull trout and Dolly Varden) spawning and rearing (waters used by spawning and early rearing native char; waters also used for summer foraging and migration of native char, and spawning/rearing/migration by other salmonid species)	12	9.5	6.5 – 8.5, with human caused variation less than 0.2 units

Appendix I — City of Marysville Re-Alignment Alternatives for Edgecomb Creek



K:/project/312206B/GIS/mxds/NMarysvilleDesignRpt

LEGEND

- MARYSVILLE CITY LIMITS (2008)
- URBAN GROWTH BOUNDARY
- PARCEL BOUNDARY
- RAILROAD
- STREAMS
- TRIBUTARY TO POND 2
- ALTERNATIVE 1 - WEST ALIGNMENT
- BASIN DIVIDE
- FLOODPLAIN, WETLAND AND BUFFER ALONG EDGECOMB CK.
- PROJECT AREA
- CONTOUR 2FT (LIDAR)
- TRIBUTARY TO EDGECOMB POND(S)
- FISH PASSAGE CULVERT

EDGECOMB 1 - POND SCENARIO

- EDGECOMB CONVEYANCE
- EDGECOMB POND

HAYHO IMPROVEMENTS

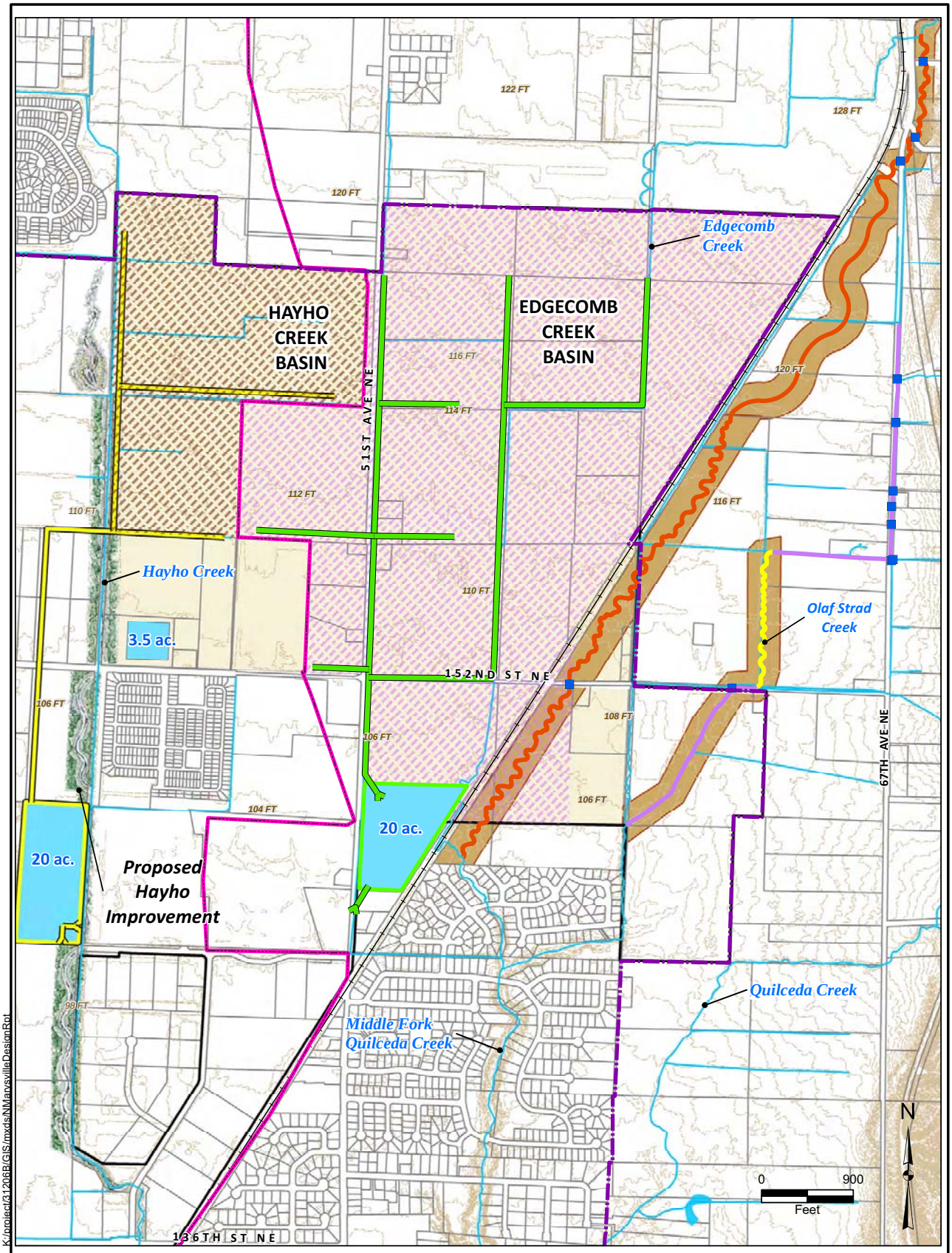
- HAYHO CONVEYANCE
- HAYHO POND

CITY OF MARYSVILLE

NORTH MARYSVILLE MASTER DRAINAGE PLAN

FIGURE 3.

ALTERNATIVE 1 - WEST ALIGNMENT
PREFERRED ALTERNATIVE



K:\project\812068\GIS\mxds\NMarysvilleDesignRpt

LEGEND

- MARYSVILLE CITY LIMITS (2008)
- URBAN GROWTH BOUNDARY
- PARCEL BOUNDARY
- RAILROAD
- STREAMS
- TRIBUTARY TO POND 2
- ALTERNATIVE 2 - EAST ALIGNMENT
- BASIN DIVIDE
- FLOODPLAIN, WETLAND AND BUFFER ALONG EDGECOMB CK.
- PROJECT AREA
- CONTOUR 2FT (LIDAR)
- TRIBUTARY TO EDGECOMB POND(S)
- FISH PASSAGE CULVERT
- OLAF STRAD RELOCATION
- REQUIRED REHABILITATION
- EDGECOMB CONVEYANCE
- EDGECOMB POND

HAYHO IMPROVEMENTS

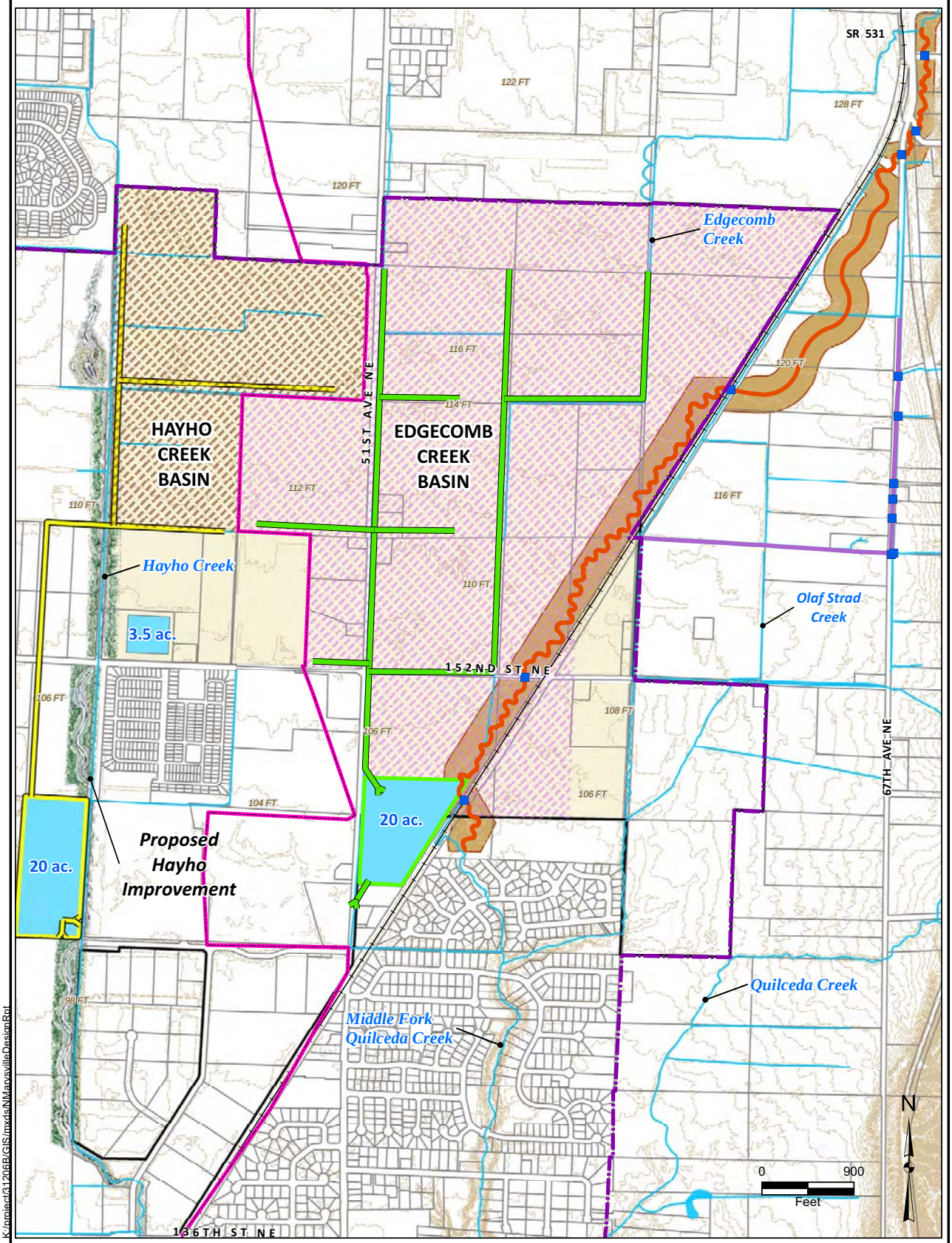
- HAYHO CONVEYANCE
- HAYHO POND

CITY OF MARYSVILLE

NORTH MARYSVILLE MASTER DRAINAGE PLAN

FIGURE 4.

ALTERNATIVE 2 - EAST ALIGNMENT



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LEGEND

- MARYSVILLE CITY LIMITS (2008)
- URBAN GROWTH BOUNDARY
- PARCEL BOUNDARY
- RAILROAD
- STREAMS
- TRIBUTARY TO POND 2
- ALTERNATIVE 3 - EAST - WEST ALIGNMENT
- BASIN DIVIDE
- FLOODPLAIN, WETLAND AND BUFFER ALONG EDGECOMB CK.
- PROJECT AREA
- CONTOUR 2FT (LIDAR)
- TRIBUTARY TO EDGECOMB POND(S)
- FISH PASSAGE CULVERT
- REQUIRED REHABILITATION

EDGECOMB 1 - POND SCENARIO

- EDGECOMB CONVEYANCE
- EDGECOMB POND

HAYHO IMPROVEMENTS

- HAYHO CONVEYANCE
- HAYHO POND

CITY OF MARYSVILLE

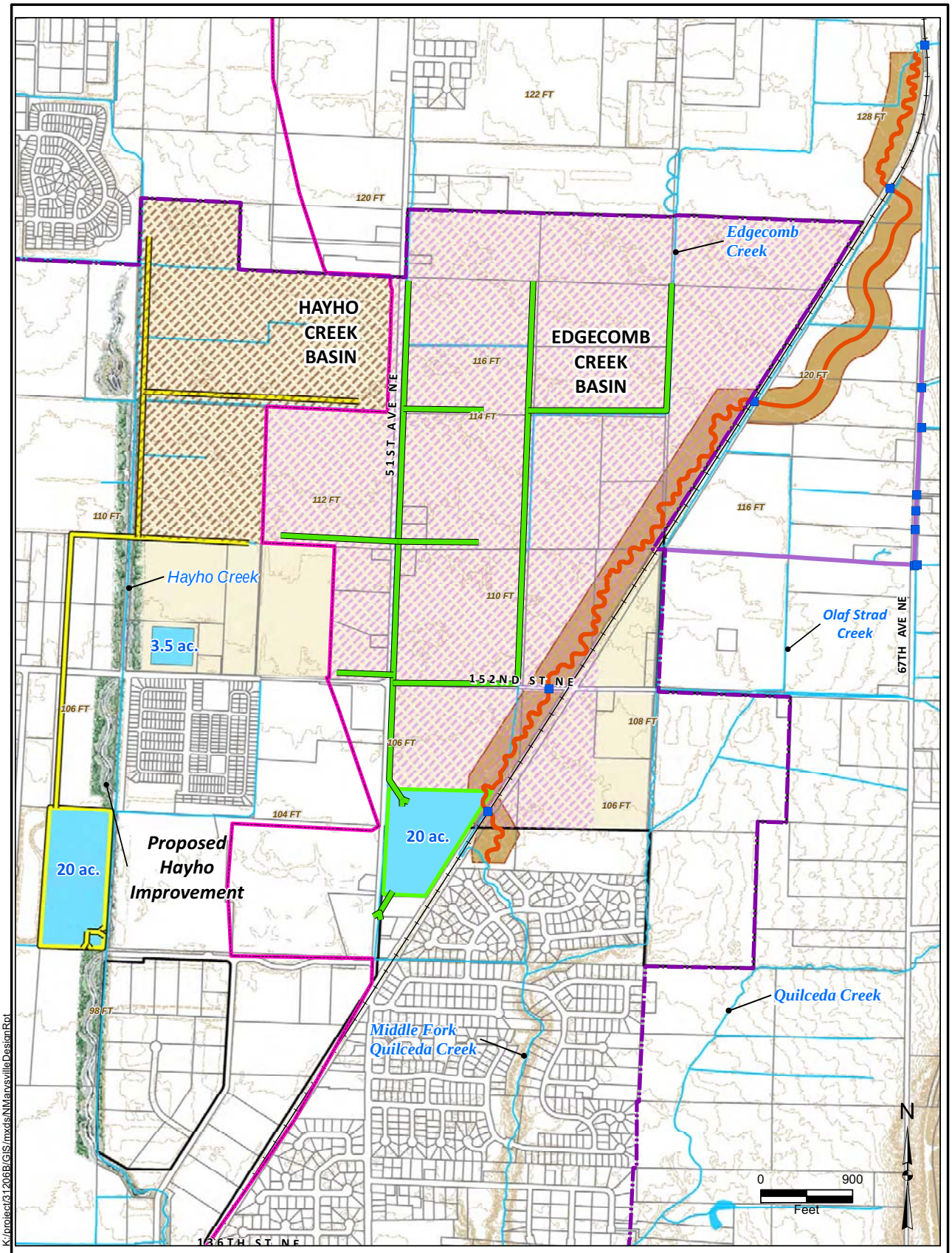
NORTH MARYSVILLE MASTER DRAINAGE PLAN

FIGURE 5.

ALTERNATIVE 3 - EAST - WEST ALIGNMENT

otak

City of Marysville Washington



K:/project/312068/GIS/mxds/NMarysvilleDesignRpt

LEGEND

- MARYSVILLE CITY LIMITS (2008)
- URBAN GROWTH BOUNDARY
- PARCEL BOUNDARY
- RAILROAD
- STREAMS
- TRIBUTARY TO POND 2
- ALTERNATIVE 4 - WEST - EAST ALIGNMENT
- BASIN DIVIDE
- FLOODPLAIN, WETLAND AND BUFFER ALONG EDGECOMB CK.
- PROJECT AREA
- CONTOUR 2FT (LIDAR)
- TRIBUTARY TO EDGECOMB POND(S)
- FISH PASSAGE CULVERT
- REQUIRED REHABILITATION

EDGECOMB 1 - POND SCENARIO

- EDGECOMB CONVEYANCE
- EDGECOMB POND

HAYHO IMPROVEMENTS

- HAYHO CONVEYANCE
- HAYHO POND

CITY OF MARYSVILLE

NORTH MARYSVILLE MASTER DRAINAGE PLAN

FIGURE 6.

ALTERNATIVE 4 - WEST - EAST ALIGNMENT

otak

City of Marysville Washington

Appendix J — USACE Approved Jurisdictional Determination for Onsite Ditches

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch July 30, 2020

Mr. Thane Smith
NorthPoint Development
2265 East Murray Holladay Road
Holladay, Utah 84117

Reference: NWS-2020-571
NorthPoint Development

Dear Mr. Smith:

On July 22, 2020, we conducted a desk review of your Technical Memorandum for 51st Avenue Northeast Ditch Network, dated June 24, 2020, for the property at Marysville, Washington in response to your request for verification of the jurisdictional limits of waters of the U.S. in the review area as shown on the enclosed drawing dated June 24, 2020. The U.S. Army Corps of Engineers has determined that 51st Avenue East Ditch, Ditch V, and Ditch W are not waters of the U.S. because they are excluded non-waters of the U.S. per 33 CFR Part 328.3 (b). As such, work that would occur within these areas does not require Department of the Army authorization under Section 404 of the Clean Water Act. This determination applies only to the review area. Other waters and wetlands that may occur on this property outside the review area are not the subject of this determination.

This approved jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination. A copy of this jurisdictional determination, dated July 22, 2020, can be found on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Jurisdictional Determinations". If you object to this determination, you may request an administrative appeal under our regulations (33 Code of Federal Regulations, Part 331) as described in the enclosed *Notification of Administrative Appeal Options and Process and Request for Appeal* form.

A copy of this letter with drawings will be furnished to Mr. Matt DeCaro at matt@soundviewconsultants.com. If you propose to do any work in the areas identified to be waters of the U.S., you should contact our office prior to commencing work to determine permit

requirements. If you have any questions, please contact Ms. Amanda Barbieri at amanda.n.barbieri@usace.army.mil or at (206) 316-3156.

Sincerely,

Kristina G. Tong

Kristina G. Tong, Section Chief
Regulatory Branch

Enclosures

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 7/30/2020
ORM Number: NWS-2020-571 NorthPoint Development
Associated JDs: N/A
Review Area Location[1]: State/Territory: Washington City: Marysville County/Parish/Borough: Snohomish
Center Coordinates of Review Area: Latitude 48.141228 Longitude -122.161746

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
51st Avenue East Ditch	3,280	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	51st Avenue East Ditch is a constructed, excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portions of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.
Ditch V	1,260	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	Ditch V is a constructed, excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portions of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.
Ditch W	520	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	Ditch W is a constructed, excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portions of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: Technical Memorandum, submitted by Soundview Consultants LLC, dated 24 June 2020.

This information Select. sufficient for purposes of this AJD.

Rationale: N/A or describe rationale for insufficiency (including partial insufficiency).

☐ Data sheets prepared by the Corps: Title(s) and/or date(s).

[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

☒ Photographs: Aerial: Google Earth Aerial Imagery, accessed 14 June 2020
☐ Corps site visit(s) conducted on: Date(s).
☐ Previous Jurisdictional Determinations (AJDs or PJDs): ORM Number(s) and date(s).
☐ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.
☒ USDA NRCS Soil Survey: Web Soil Survey Soil Report, Marysville, WA; accessed 28 July 2020
☒ USFWS NWI maps: NWI Map, Marysville, WA; accessed 28 July 2020
☒ USGS topographic maps: Mount Vernon, Washington 1911; Marysville, Washington 1943; Arlington West, Washington 1956; Arlington West, Washington 2017

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	Letter from Washington State Department of Fish and Wildlife, entitled "Deregulation of 51st Avenue Watercourse", dated 16 January 2009.
Other Sources	N/A.

B. Typical year assessment(s): N/A

C. Additional comments to support AJD: Historically, a wetland mosaic existed in this portion of Snohomish County. Agricultural practices began in 1916, and drainage tiles were installed to effectively drain the wetland mosaic. When the subject ditches were excavated between 1942 and 1957, the drainage tiles were still operational and wetlands were not present. Based on a USFWS NWI Map for the review area, accessed 28 July 2020, there are no wetlands adjacent to the subject ditches. In addition, Soundview Consultants LLC conducted extensive wetland studies in the immediate, larger vicinity (over 250) acres which identified over 30 wetlands, none of which were adjacent to the subject ditches. Although soils within the review area are mapped as hydric, per USDA NRCS Soil Survey data for the review area, accessed 28 July 2020, documented site history demonstrates that the subject ditches were not excavated within wetlands.

The 51st Avenue East ditch was constructed between the years of 1942 and 1957, based on historical USGS topographic maps, for the purpose of seasonal stormwater conveyance. It is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. The subject ditch has been identified as "Westphal Creek" on a 2017 USGS topographic map. Based on historic aerial imagery and topographic maps, there is no history of this creek or evidence to support that a creek was diverted into the subject ditch. The WDFW has determined that the ditch is not a natural watercourse and is entirely artifical. The WDFW found no recorded hisotry that the ditch was a natural watercourse, and thus determined that it is not regulated under their jurisdiction. In addition, the City of Marysville has determined that the subject ditch is not a regulated waterbody under their jurisdiction. Based on historical aerial imagery and topographic maps, the subject ditch does not relocate a tributary, is not constructed in a tributary, and is not constructed in an adjacent wetland; thus the subject ditch does not meet the definition of a tributary.

Ditch V is an excavated ditch that provides artificial drainageways for drain tile in the adjacent, actively manged agricultural fields. The subject ditch is not subject to tidal ebb and flow and has no potential to be

used in interstate or foreign commerce. Based on historical aerial imagery and topographic maps, the subject ditch does not relocate a tributary, is not constructed in a tributary, and is not constructed in an adjacent wetland thus the subject ditch does not meet the definition of a tributary.

Ditch W is an excavated ditch that provides artificial drainageways for drain tile in the adjacent, actively manged agricultural fields. The subject ditch is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. Based on historical aerial imagery and topographic maps, the subject ditch does not relocate a tributary, is not constructed in a tributary, and is not constructed in an adjacent wetland thus the subject ditch does not meet the definition of a tributary.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch March 31, 2021

Mr. Thane Smith
NorthPoint Development
2265 East Murray Holladay Road
Holladay, Utah 94117

Reference: NWS-2020-571
NorthPoint Development
(AJD Request)

Dear Mr. Smith:

On March 22, 2021, we conducted a desk review of your Technical Memorandum for 51st Avenue Northeast Ditch and Ditch U, dated February 4, 2021, for the property at Marysville, Washington in response to your request for verification of the jurisdictional limits of waters of the U.S. in the review area as shown on the enclosed drawing dated February 4, 2021. The U.S. Army Corps of Engineers has determined that 51st Avenue East Ditch and Ditch U are not waters of the U.S. because they are excluded non-waters of the U.S. per 33 CFR Part 328.3 (b). As such, work that would occur within these areas does not require Department of the Army authorization under Section 404 of the Clean Water Act. This determination applies only to the review area. Other waters and wetlands that may occur on this property outside the review area are not the subject of this determination.

Other state and local regulations may still apply to these areas. For example, the Washington State Department of Ecology (Ecology) may regulate these areas. For information on how to obtain State approval for your project, you should contact Ecology's Federal Permit Coordinator at ecyrefedpermits@ecy.wa.gov or at (360) 407-6068. Information regarding State permitting requirements can also be found at the following website: https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations. We are sending a copy of this letter to Ecology and to the Environmental Protection Agency's Aquatic Resources Unit.

This approved jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination. A copy of this jurisdictional determination, dated March 31, 2021, can be found on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Jurisdictional Determinations". If you object to this determination, you may request an administrative appeal under our regulations (33 Code of Federal Regulations, Part 331) as

described in the enclosed Notification of Administrative Appeal Options and Process and Request for Appeal form.

A copy of this letter with drawings will be furnished to Mr. Matt DeCaro at matt@soundviewconsultants.com. If you have any questions, please contact me at Amanda.N.Nadjkovic@usace.army.mil or at (206) 316-3156.

Sincerely,

Amanda Nadjkovic

Amanda Nadjkovic, Project Manager
Regulatory Branch

Enclosures

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 3/31/2021
ORM Number: NWS-2020-571
Associated JDs: AJD dated July 30, 2020 for NWS-2020-571 (51st Avenue East Ditch, Ditch V, Ditch W)
Review Area Location[1]: State/Territory: Washington City: Marysville County/Parish/Borough: Snohomish
Center Coordinates of Review Area: Latitude 48.132575 Longitude -122.161641

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
51st Avenue East Ditch	2,039	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	51st Avenue East Ditch is a constructed, excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portion of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.
Ditch U	1,016	linear feet	(b)(5) Ditch that is not an (a)(1) or (a)(2) water, and those portions of a ditch constructed in an (a)(4) water that do not satisfy the conditions of (c)(1).	Ditch U excavated channel used to convey water. The subject ditch is not subject to tidal ebb and flow. It does not meet the definition of a tributary, was not constructed in a tributary, and does not relocate a tributary. No portion of the subject ditch is constructed in an adjacent wetland. See Section III.C. for additional discussion.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: Technical Memorandum for 51st Avenue East Ditch and Ditch U, dated February 4, 2021

This information is sufficient for purposes of this AJD.

Rationale: N/A or describe rationale for insufficiency (including partial insufficiency).

☐ Data sheets prepared by the Corps: Title(s) and/or date(s).

☒ Photographs: Aerial: Historic aerial imagery accessed via Google Earth, March 2021; Historic Aerials accessed via NETR Online, March 2021; Site photographs provided by Soundview Consultants, LLC dated February 4, 2021

☐ Corps site visit(s) conducted on: Date(s).

☒ Previous Jurisdictional Determinations (AJDs or PJDs): NWS-2020-571 (51st Avenue East Ditch, Ditch V, Ditch W) dated July 30, 2020

☐ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.

☐ USDA NRCS Soil Survey: Title(s) and/or date(s).

☐ USFWS NWI maps: Title(s) and/or date(s).

[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

☒ USGS topographic maps: Mount Vernon, Washington, 1911; Marysville, Washington, 1941, 1943; Arlington, Washington, 1956; Victoria, Washington, 1957; Port Townsend, Washington, 1975; Arlington West, Washington, 2020

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	Letter from Washington State Department of Fish and Wildlife, entitled "Deregulation of 51st Avenue Watercourse", dated January 16, 2009; Snohomish County PDS Map Portal accessed March 2021.
Other Sources	N/A.

B. Typical year assessment(s): N/A

C. Additional comments to support AJD:

The Corps previously determined that the portion of the 51st Avenue East ditch located north of 152nd Street Northeast is a (b)(5) ditch that is not an (a)(1) or (a)(2) water and was not constructed in an (a)(4) water (AJD for NWS-2020-571 dated July 30, 2020). The portion of the 51st Avenue East ditch located south of 152nd Street Northeast is the subject of this AJD.

Historically, a wetland mosaic existed in this portion of Snohomish County. Agricultural practices began in 1916, and drainage tiles were installed to effectively drain the wetland mosaic. The 51st Avenue East ditch was constructed between the years of 1943 and 1956, based on historical USGS topographic maps, for the purpose of seasonal stormwater conveyance. At the time of construction, the ditch appears to extend both to the north and south of 152nd Street Northeast. The 51st Avenue East ditch is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. The subject ditch has been identified as "Westphal Creek" on a 2017 USGS topographic map. Based on historic aerial imagery and topographic maps, there is no history of this creek or evidence to support that a creek was diverted into the subject ditch. The WDFW has determined that the ditch is not a natural watercourse and is entirely artificial. The WDFW found no recorded history that the ditch was a natural watercourse, and thus determined that it is not regulated under their jurisdiction. In addition, the City of Marysville has determined that the subject ditch is not a regulated waterbody under their jurisdiction. Based on historical aerial imagery and topographic maps, the subject ditch does not relocate a tributary, is not constructed in a tributary, and is not constructed in an adjacent wetland; thus the subject ditch does not meet the definition of a tributary.

Ditch U is an excavated ditch located north of and parallel to 152nd Street Northeast. The subject ditch provides an artificial drainageway for drain tiles presumably located in the adjacent, actively managed agricultural fields. The subject ditch is not subject to tidal ebb and flow and has no potential to be used in interstate or foreign commerce. Based on a review of historic aerial imagery and topographic maps, the subject ditch does not relocate a tributary and is not constructed in a tributary. The subject ditch is not present on any USGS historic topographic maps dated 1911 through 2020; however, based on a review of aerial imagery the subject ditch was likely constructed concurrent with or after the construction of the 51st Avenue East ditch and other on-site artificial ditches between the years of 1943 and 1956. Due to the

presence of drainage tiles at the subject property since the early 1900s, it is likely that any historic wetlands would have been drained prior to construction of the subject drainage ditch. Based on this information, the subject ditch does not relocate a tributary, was not constructed in a tributary, and was not constructed in an adjacent wetland.

Appendix K — WSDOE Wetland/Waters of the State Concurrence

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

March 17, 2021

Thane Smith
NorthPoint Holdings, LLC
2265 East Murray Holladay Road
Holladay, UT 84117

Re: Wetlands/Waters of the State Concurrence
Cascade Business Park (Formerly Cascade Logistics Park)
Tax Parcels 31052700100300, 31052700400300, 31052700300200, 31052700300900, 31052700300500, 31052700300400, 31052700300800, 31052700300700, 31053400200100, 31053400200600, 31053400200700, 31053400200800, 31053400200900, 31053400201300, 31053400300300, 31052700100100, 31052700100900, 31053400200300, 31053400200400, and 31053400200500
Cities of Arlington and Marysville, Snohomish County

Dear Thane Smith:

The Department of Ecology (Ecology) has received and reviewed the revised December 2020 Wetland and Fish and Wildlife Habitat Assessment Report prepared by Soundview Consultants for the proposed Cascade Business Park project (reviewed area) referenced above. This letter will serve as confirmation that the boundaries of the wetlands (as defined in state law RCW 90.58.030(2)(h)) and features considered to be waters of the state (as defined in state law RCW 90.48.020) as shown on Figure 1 below are acceptable.

Forty-one (41) wetlands and/or waters of the state are present within the reviewed area. Three additional wetlands (depicted on Figure 1 as Off-Site Wetlands O, S, and T) are located adjacent to but not within the reviewed area. Ecology confirms that the boundaries of these wetlands do not extend into the reviewed area.

This concurrence is based on site visits conducted by Ecology staff on October 9, 2020, February 9, 2021, and March 10, 2021, and is valid for five years from the date of this letter unless altered site conditions warrant a new assessment.

Please be aware that this letter provides concurrence for only the wetlands and waters of the state within the reviewed area. There are additional environmental features located adjacent to the reviewed area that are regulated by Ecology and other government agencies. Lastly, this letter

does not replace required environmental permits for proposed activity within the reviewed area or resolve environmental violations within the reviewed area, if any exist.

Any questions or correspondence regarding this letter should be directed to Neil Molstad at neil.molstad@ecy.wa.gov or (425) 389-5549.

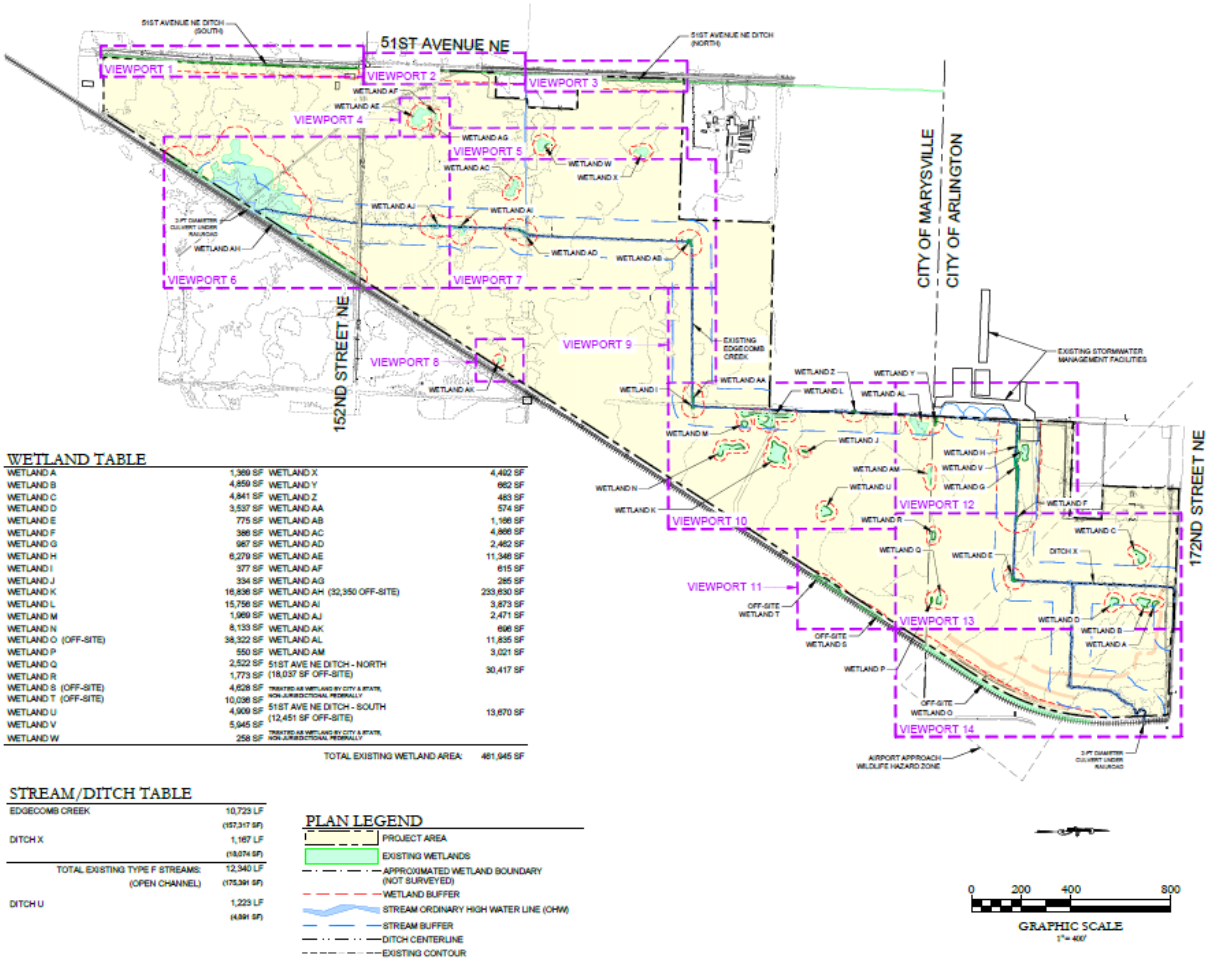
Sincerely,

Neil Molstad, PWS
Wetland Specialist
Shorelands and Environmental Assistance Program

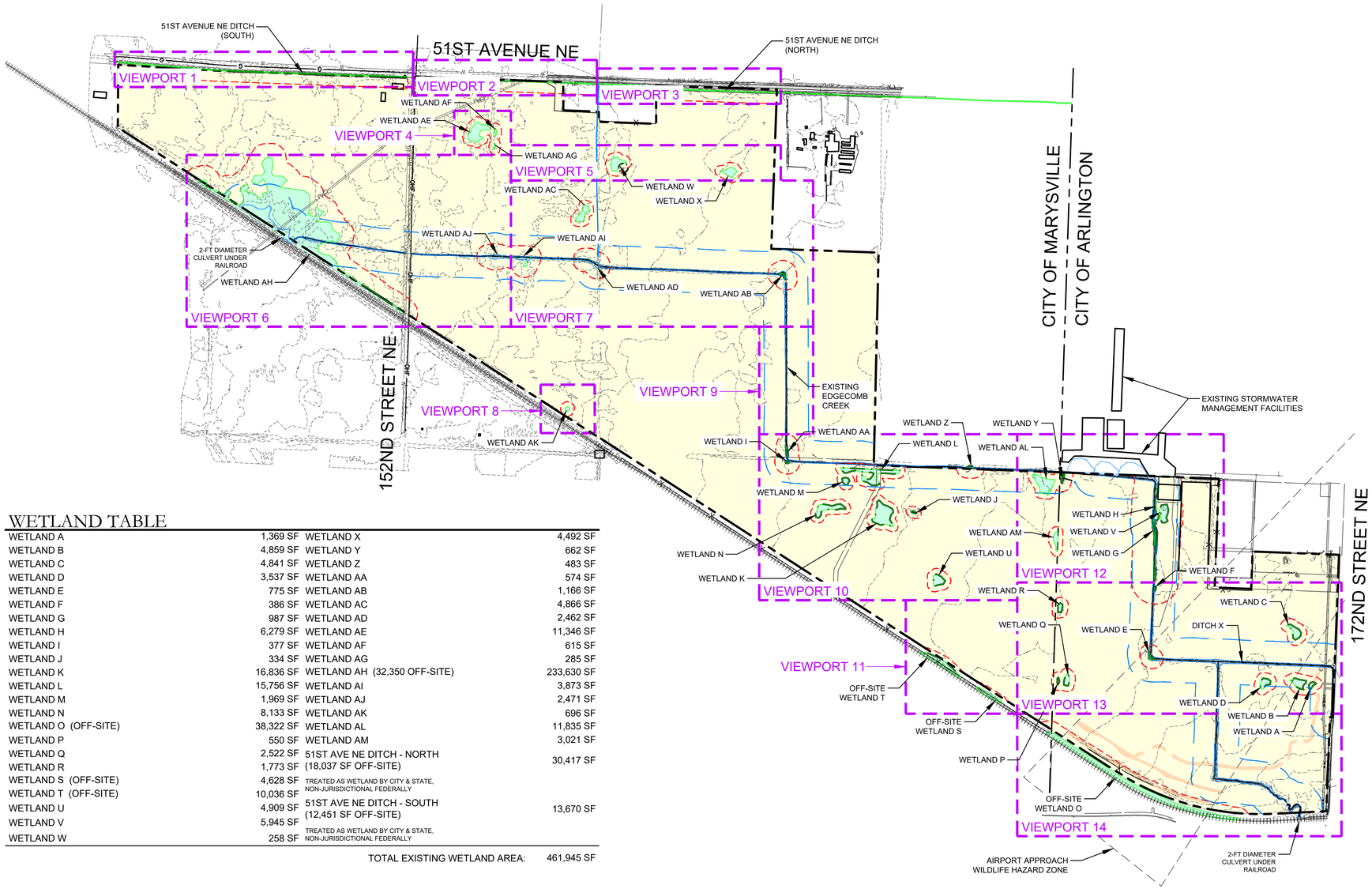
Sent by email to Thane smith:
tsmith@northpointkc.com

Ecc: Matt DeCaro, Soundview Consultants
Chris Holland, City of Marysville
Amanda Nadjkovic, U.S. Army Corps of Engineers
Marc Hayes, City of Arlington
Kevin Lee, Department of Fish and Wildlife
Kurt Nelson, Tulalip Tribes
Pat Stevenson, Stillaguamish Tribe

Figure 1: Wetland/Waters of the State Concurrence Exhibit



CASCADE BUSINESS PARK - EXISTING CONDITIONS OVERVIEW PLAN



WETLAND TABLE

WETLAND A	1,369 SF	WETLAND X	4,492 SF
WETLAND B	4,859 SF	WETLAND Y	662 SF
WETLAND C	4,841 SF	WETLAND Z	483 SF
WETLAND D	3,537 SF	WETLAND AA	574 SF
WETLAND E	775 SF	WETLAND AB	1,166 SF
WETLAND F	386 SF	WETLAND AC	4,866 SF
WETLAND G	987 SF	WETLAND AD	2,462 SF
WETLAND H	6,279 SF	WETLAND AE	11,346 SF
WETLAND I	377 SF	WETLAND AF	615 SF
WETLAND J	334 SF	WETLAND AG	285 SF
WETLAND K	16,836 SF	WETLAND AH (32,350 OFF-SITE)	233,630 SF
WETLAND L	15,756 SF	WETLAND AI	3,873 SF
WETLAND M	1,969 SF	WETLAND AJ	2,471 SF
WETLAND N	8,133 SF	WETLAND AK	696 SF
WETLAND O (OFF-SITE)	38,322 SF	WETLAND AL	11,835 SF
WETLAND P	550 SF	WETLAND AM	3,021 SF
WETLAND Q	2,522 SF	51ST AVE NE DITCH - NORTH (18,037 SF OFF-SITE)	30,417 SF
WETLAND R	1,773 SF		
WETLAND S (OFF-SITE)	4,628 SF	TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	
WETLAND T (OFF-SITE)	10,036 SF		
WETLAND U	4,909 SF	51ST AVE NE DITCH - SOUTH (12,451 SF OFF-SITE)	13,670 SF
WETLAND V	5,945 SF		
WETLAND W	258 SF	TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	
		TOTAL EXISTING WETLAND AREA:	461,945 SF

STREAM/DITCH TABLE

EDGECOMB CREEK	10,723 LF
	(157,317 SF)
DITCH X	1,167 LF
	(18,074 SF)
TOTAL EXISTING TYPE F STREAMS:	12,340 LF
(OPEN CHANNEL)	(175,391 SF)
DITCH U	1,223 LF
	(4,891 SF)

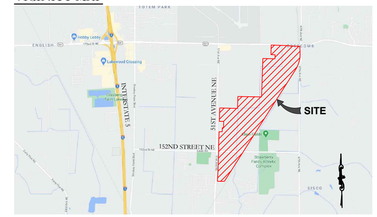
PLAN LEGEND

- PROJECT AREA
- EXISTING WETLANDS
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- WETLAND BUFFER
- STREAM ORDINARY HIGH WATER LINE (OHW)
- STREAM BUFFER
- DITCH CENTERLINE
- EXISTING CONTOUR

0 200 400 800

GRAPHIC SCALE
1"= 400'

VICINITY MAP



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 11/4/2020)

APPLICANT

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
RIVERSIDE, MISSOURI 6415

SITE ADDRESS/PARCEL #

6600 172ND STREET NORTHEAST
ARLINGTON, WASHINGTON 98223
15223 & 16015 51ST AVENUE NORTHEAST
5415 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

SNOHOMISH COUNTY TAX PARCELS:
31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, 31053400300300
SNOHOMISH COUNTY TAX PARCELS (NOT ASSESSED): 31052700100900, 31053400200100, 31053400200900, 31053400201300

ENVIRONMENTAL CONSULTANT

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98355
(253) 514-8952

SHEET INDEX

PRELIMINARY INFORMATION ONLY

NOT FOR CONSTRUCTION

SOUNDVIEW CONSULTANTS LLC ASSUMES NO LIABILITY OR RESPONSIBILITY FOR CONSTRUCTION, IMPROVEMENTS, OR ESTIMATES BASED ON THIS PLAN SET

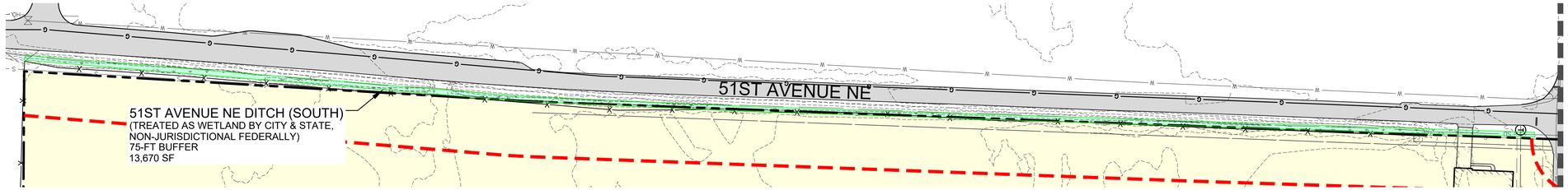
SOURCES:
LDC | Surveying Engineering Planning
Woodinville: 20210 142nd Avenue NE, Woodinville, WA 98072 | T 425.806.1869
Kent: 1851 Central Pl S, #101, Kent, WA 98030 | F 425.482.2893
www.LDCcorp.com

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98335
P. 253.514.8952
F. 253.514.8954
WWW.SOUNDVIEWCONSULTANTS.COM

CASCADE BUSINESS PARK
THE NE & SE¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

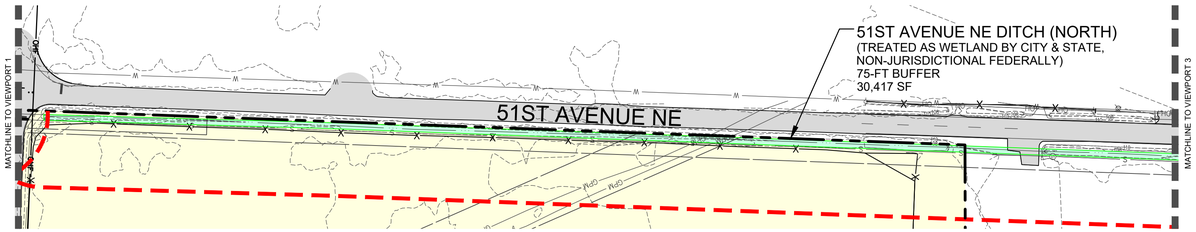
DATE: 3-12/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 1

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-03) base.dwg
Plotted March 10, 2021



VIEWPORT 1

SCALE: 1"=80'



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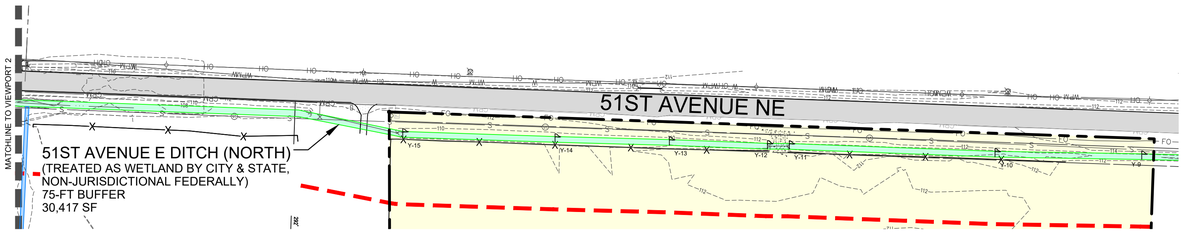

VIEWPORT 3

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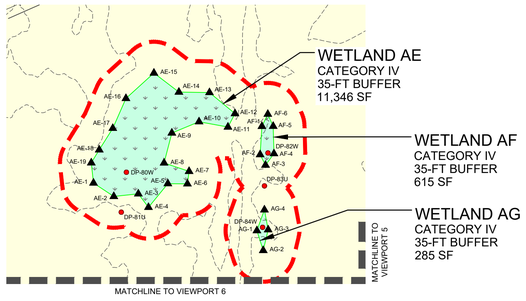

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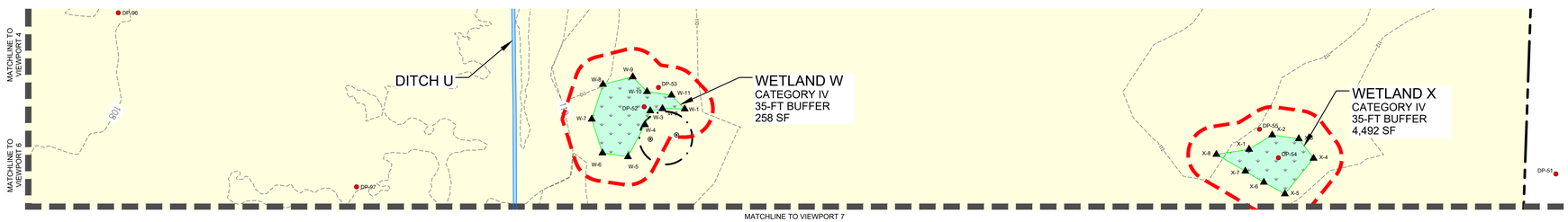

VIEWPORT 5

0 80 160 320

GRAPHIC SCALE
1"= 80'

PLAN LEGEND

- PROJECT AREA
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- WETLAND BUFFER
- WETLAND FLAG LOCATION
- SOIL TEST PIT LOCATION
- STREAM ORDINARY HIGH WATER LINE (OHW)
- STREAM BUFFER
- STREAM OHW (ORDINARY HIGH WATER) FLAG LOCATION
- DITCH CENTERLINE
- EXISTING CONTOUR

PRELIMINARY
INFORMATION ONLY

NOT FOR CONSTRUCTION

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SOURCES: LDC

LDC | Surveying Engineering Planning

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20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869

Kent
1851 Central Pl S, #101
Kent, WA 98030
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F. 253.514.8954
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CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

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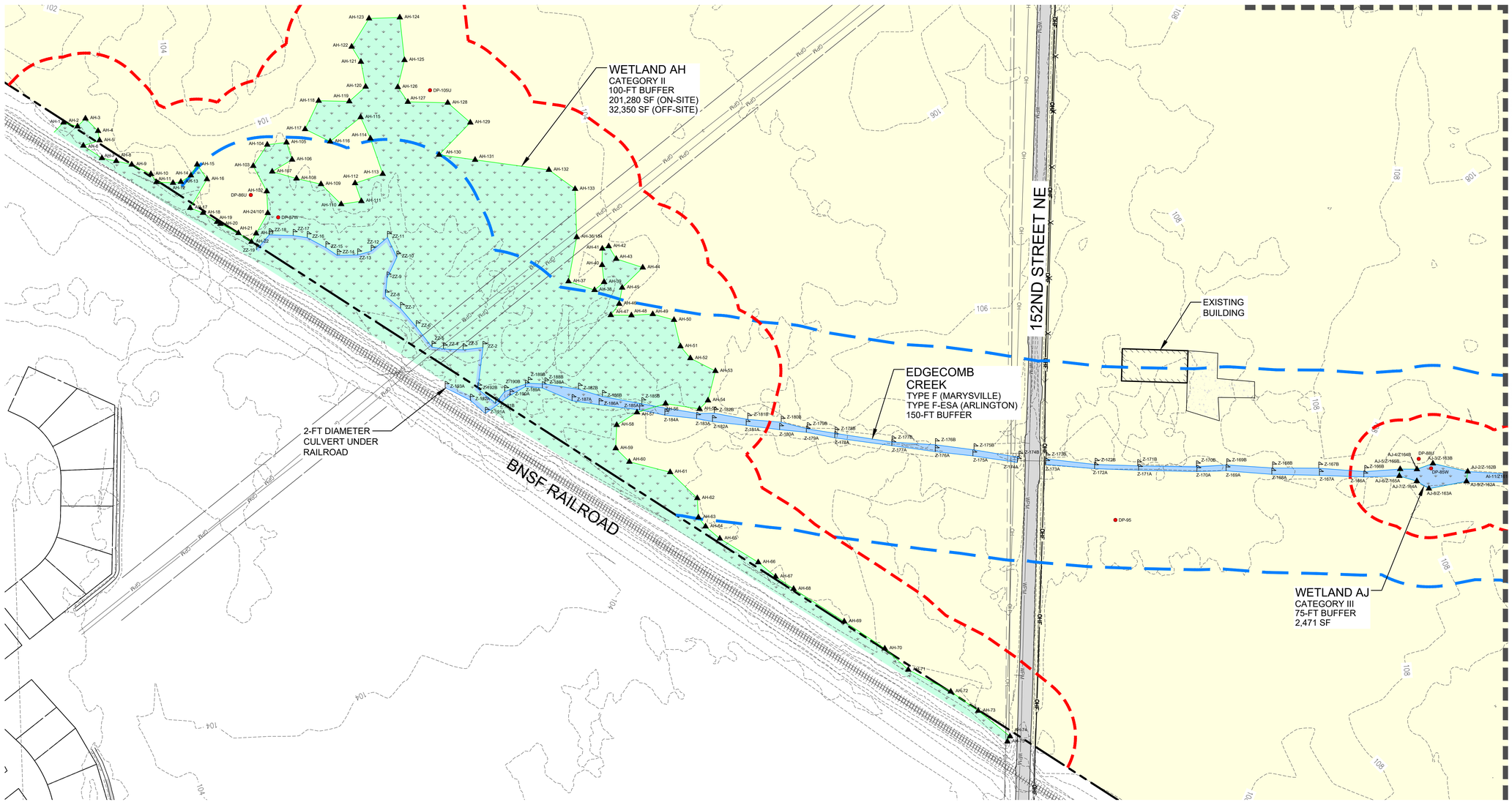
SCALE: AS SHOWN
SHEET: 2

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-03) base.dwg
Plotted March 10, 2021



VIEWPORT 6

0 80 160 320

GRAPHIC SCALE
1" = 80'

PLAN LEGEND

- PROJECT AREA
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- WETLAND BUFFER
- WETLAND FLAG LOCATION
- SOIL TEST PIT LOCATION
- STREAM ORDINARY HIGH WATER LINE (OHW)
- STREAM BUFFER
- STREAM OHW (ORDINARY HIGH WATER) FLAG LOCATION
- DITCH CENTERLINE
- EXISTING CONTOUR

PRELIMINARY INFORMATION ONLY

NOT FOR CONSTRUCTION

SOUNDVIEW CONSULTANTS LLC ASSUMES NO LIABILITY OR RESPONSIBILITY FOR CONSTRUCTION, IMPROVEMENTS, OR ESTIMATES BASED ON THIS PLAN SET

SOURCES:

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1851 Central Pl S, #101
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Soundview Consultants LLC
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WWW.SOUNDVIEWCONSULTANTS.COM

CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE:	3-12/2021
JOB:	1703.0004
BY:	MW
SCALE:	AS SHOWN
SHEET:	3

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SYC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-03) base.dwg
Plotted March 10, 2021

Appendix L — Biologist Qualifications

All field inspections, jurisdictional wetland boundary delineations, habitat assessments, and supporting documentation, including this ***Wetland and Fish and Wildlife Habitat Assessment*** prepared for the ***Cascade Business Park*** project site were prepared by, or under the direction of, Matt DeCaro of SVC. In addition, the site investigations were performed by Rachael Hyland, Ryan Krapp, Ben Wright, Jon Pickett, and Kyla Caddey and report preparation was completed by Laura Livingston, Kelly Kramer, Kyla Caddey, and Morgan Kentch.

Matt DeCaro

Associate Principal
Professional Experience: 12 years

Matt DeCaro is an Associate Principal and Senior Scientist with a diverse background in environmental planning, wetland science, stream ecology, water quality, site remediation, NEPA compliance, and project management. He manages a wide range of industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use projects from their planning stages through entitlement and construction. His local expertise, diverse professional background, and positive relationships with regulatory personnel are integral components of his successful project outcomes.

Matt earned a Bachelor of Science degree with a focus in Environmental Science from the Evergreen State College in Olympia, Washington, with additional graduate-level coursework and research in aquatic restoration and salmonid ecology. Matt has received 40-hour wetland delineation training (*Western Mountains, Valleys, & Coast and Arid West Regional Supplements*) and regularly performs wetland, stream, and shoreline delineations. Matt has been formally trained in the use of the *2014 Washington State Wetland Rating System* and *Determination of Ordinary High Water Mark* by WSDOE, and he is a Pierce County Qualified Wetland Specialist and Wildlife Biologist. He has attended USFWS survey workshops for multiple threatened and endangered species, and he is a Senior Author of WSDOT Biological Assessments. Matt holds 40-hour HAZWOPER training and has managed Phase I Environmental Site Assessments, subsurface investigations, and contaminant remediation projects throughout the Pacific Northwest. His diverse experience also includes NEPA compliance for federal permitting projects; noxious weed abatement; army ant research in the Costa Rican tropical rainforest; spotted owl surveys on federal and private lands; and salmonid spawning and migration surveys.

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.

Rachael Hyland

Environmental Scientist
Professional Experience: 6 years

Rachael Hyland is a Wetland Professional in Training (WPIT) through the Society of Wetland Scientists and a Certified Associated Ecologist through the Ecological Society of America. Rachael has a background in wetland and ecological habitat assessments in various states, most notably Connecticut, Massachusetts, Rhode Island, Ohio, and Washington. 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 Basic Wetland Delineator Training with the Institute for Wetland Education and Environmental Research, received 40-hour wetland delineation training (Western Mountains, Valleys, & Coast and Arid West Regional Supplement), and 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.

Ben Wright

Fisheries Biologist / Environmental Scientist
Professional Experience: 18 years

Ben Wright is a Fisheries Biologist and Environmental Scientist with a varied background in lake ecology, stream ecology, fisheries biology, water quality and climate science. Ben has 13 years of experience at the federal level providing technical assistance for both the development of infrastructure projects and management of aquatic resources. He has experience developing biological assessments, water quality monitoring plans, and fisheries management plans. Ben has an additional 10 years of experience working on long-term ecological monitoring programs related to lakes, streams, water quality and climate.

Ben earned a Bachelor of Science degree in Genetics and Cell Biology with an emphasis in aquatic ecology from Washington State University and has a graduate certificate in Fisheries Management from Oregon State University. Ben's expertise includes endangered species monitoring, assessments

and permitting, and NEPA documentation across disciplines gained during his work on federal highway projects. Ben also has experience in fish population assessments, utilizing genetic analysis, spawning escapement, and movement studies. Ben has 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, How to Conduct a Forage Fish Survey and Puget Sound Costal Processes, Shoreline Modifications and Beach Restoration.

Attachment I – Final Mitigation Plan (May 27, 2021)

FINAL MITIGATION PLAN

CASCADE BUSINESS PARK (NWS-2020-571)

MAY 2021

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

FINAL MITIGATION PLAN

CASCADE BUSINESS PARK (NWS-2020-571)

MAY 27, 2021

PROJECT LOCATION

6600 172ND STREET NORTHEAST
ARLINGTON, WASHINGTON 98223

15223 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

16015 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

5414 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

PREPARED FOR

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
RIVERSIDE, MISSOURI 64150

PREPARED BY

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98335
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Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting NorthPoint Holdings, LLC (Applicant) with this mitigation plan for the Cascade Business Park project located on a 361.19-acre site in the Cities of Arlington and Marysville, Washington. The subject property consists of 14 tax parcels situated in the Northeast and Southwest ¼ of Section 27 and Northwest and Southwest ¼ of Section 34, Township 31 North, Range 5 East, W.M. (Snohomish County Tax Parcel Numbers 31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, and 31053400300300).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, and other fish and wildlife habitat on multiple dates in March, April, May, June, July, August, September, and October of 2020 and January, February, and March of 2021. SVC delineated a total of 41 wetlands (Wetlands A-Z, AA-AM), one stream (Edgecomb Creek), and one fish-bearing agricultural ditch (Tributary X) and estimated the boundaries of four additional agricultural or roadside ditches (51st Avenue East Ditch, two 152nd Street Ditches, and Ditch U) in the project area. The 51st Avenue East Ditch is also being treated as a wetland at the local and state levels. Refer to SVC's *Wetland and Fish and Wildlife Habitat Assessment Report* (2021) for additional information including a detailed description of onsite aquatic features.

The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. Frontage improvements along 51st Avenue Northeast will include widening the existing two-lane road to a three-lane road and half street improvements (multi-modal path, curb, and gutter). Frontage improvements and roadway upgrades along 152nd Street East include expansion of the existing two-lane road to include up to five lanes with a curb, sidewalk, multi-modal path, and gutter.

The project was carefully designed in attempts to minimize impacts to wetlands and waterbodies to the greatest extent feasible, and the project will avoid impacts to existing meandering sections of Edgecomb Creek on the northeast and southeast corners of the site and one smaller onsite wetland. Project impacts to a large Category II wetland (Wetland AH) will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide necessary stormwater detention. These avoidance and minimization measures are targeted towards the higher functioning aquatic areas onsite. However, complete avoidance of aquatic features is not possible due to the central location of the ditched Edgecomb Creek on the subject property, the scattered distribution of wetlands throughout the subject property, and the large spatial footprints required for industrial buildings and associated utilities and road infrastructure. In order to accommodate the purpose and need for the industrial site development, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet), fill and realignment of Tributary X (1,167 linear feet), and total fill of 3.569 acres of federally jurisdictional wetlands (plus 0.707 acre of additional fill of the federally non-jurisdictional 51st Avenue East Ditch, which is being treated as a wetland at the local and state levels) for a total of 4.275 acres of direct wetland impacts. In addition, the proposed project will require 0.595 acre of indirect impacts to Wetland AH. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic

connection to offsite side channels on tax parcel number 31052700200900, resulting in 496 linear feet of direct impacts to these offsite side channels. The Applicant intends to directly fill the offsite side channels to align a public roadway through the proposed industrial development as desired by the Cities of Arlington and Marysville. While direct fill of the offsite side channels is not included in the proposed project action, the compensatory mitigation actions described below will offset the direct loss of side channel functions that will result from the proposed project. Onsite ditches will be filled or piped.

The compensatory mitigation actions outlined herein are intended to compensate for lost wetland and stream functions and values by providing an overall improvement in water quality, hydrologic, and habitat functions according to the needs of the site, local sub-basin, and overall Snohomish River watershed. To offset the necessary impacts to Edgecomb Creek, the project proposes to realign Edgecomb Creek within a restored riparian corridor on the eastern portion of the project area. The riparian corridor will be 215 feet wide in the City of Arlington and up to 315 feet wide in the City of Marysville, and a pedestrian trail extending from 172nd Street Northeast to 152nd Street Northeast will be partially located through the riparian corridor. Edgecomb Creek will be realigned through a restored stream channel that meanders through the riparian corridor; additional side channels will be created and connected to the mainstem stream channel to provide off-channel habitat and flood refugia for fish. Suitable streambed substrates will be added the new channels, and stream functions will be further enhanced by small and large woody debris placement within channels and in the flood terrace. Riparian functions will be restored by diverse native plantings to create forested, scrub-shrub, and emergent habitats. A box culvert will be added beneath 152nd Street Northeast to convey the re-aligned stream channel. A media filter drain will be installed along the eastern boundary of the riparian corridor between the re-aligned stream and the offsite BNSF railroad to the east of the riparian corridor to provide water quality treatment in addition to full dispersion treatment of pollutants from the railroad. The re-aligned main-stem stream channel and created side-channel habitat (16,494 linear feet) will provide mitigation that exceeds a 1:1 mitigation ratio for the fill of the existing Edgecomb Creek stream channel and the associated direct impacts to the offsite side channels. Tributary X will also be re-aligned, lengthened, and reconnected to the re-aligned Edgecomb Creek (2,094 linear feet). Impacts to Tributary X, including installation of several culverts along the new Tributary X alignment, will be mitigated for within the riparian corridor and through the lengthened Tributary X channel itself. A 100% stream design set and basis of design will be provided under separate cover.

Compensatory wetland re-establishment and creation will occur within the riparian corridor, meeting local, state, and federal mitigation ratios for direct wetland impacts. A minimum of 8.769 acres of wetland re-establishment/creation is required to compensate for the 4.275 acres of necessary wetland fill and 0.595 acre of indirect wetland impacts. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. [0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021).] Any excess wetland mitigation credits are proposed for use by the Applicant as advanced mitigation for any future wetland impact proposal(s) in accordance with a draft advance mitigation plan that has been submitted to the USACE under separate cover (SVC, 2021b). Compensatory wetland creation areas will be protected by a minimum of a 75-foot perimeter buffer fully contained within the riparian mitigation corridor.

SVC has coordinated extensively with USACE and WSDOE regarding the required protective buffer width for compensatory wetland creation areas. USACE and WSDOE stated during a phone conversation with SVC on April 5, 2021 that a 75-foot-wide perimeter buffer would be required for the compensatory wetland creation areas. While SVC has contended that a smaller buffer width should be applicable for the compensatory wetland creation areas based on the intention of the mitigation site to primarily compensate for the loss of primarily Category III and IV wetlands with low habitat scores, the Applicant is willing to accept a 75-foot perimeter buffer for compensatory wetland creation areas to expedite the project permitting. The proposed pedestrian trail will be located upland of the 75-foot perimeter buffer for compensatory wetland creation areas; stormwater dispersion devices may be located within the 75-foot perimeter buffer. Upland areas within the riparian corridor will be fully planted with native trees and shrubs. In addition to providing a functional lift over the existing agricultural buffer conditions onsite, the proposed upland plantings will also support the restoration of riparian habitat in the Cities of Arlington and Marysville. The proposed riparian corridor will be approximately 1.75 miles long and will encompass approximately 58% of the length of Edgecomb Creek mapped by Snohomish County. Upstream and downstream of the project area, Edgecomb Creek passes through varying intensities of residential development with varying degrees of surrounding vegetative cover. Given the existing agricultural conditions onsite, the length of the proposed protective riparian corridor, and the surrounding land uses, the restoration of riparian habitat will provide significant ecological benefit and protection within this urbanizing environment. During the same April 5, 2021 phone call with USACE and WSDOE, these regulatory agencies indicated that the upland buffer areas waterward of the 75-foot perimeter buffer for the compensatory mitigation site would generate mitigation credit. The 4.748 acres of "excess buffer creation" are therefore proposed for use by the Applicant as advanced mitigation for any future wetland and/or buffer impact proposal(s).

Non-compensatory mitigation measures are proposed to increase ecological functions of the stream, wetlands, and buffers within the riparian corridor. The proposed mitigation corridor will achieve an additional 1.982 acres of non-compensatory wetland creation areas and 0.594 acre of non-compensatory wetland enhancement areas that have less than 75 feet of protective buffer width and therefore will serve as buffers for the proposed compensatory wetland creation and enhancement areas. The Applicant also proposes to voluntarily enhance the remaining Wetland AH buffer by planting the existing degraded buffer with native trees and shrubs. As an additional non-compensatory mitigation measure, the Applicant proposes to replace two partial fish barrier culverts underneath the BNSF railroad with upgraded crossing designs to allow fish access and convey Edgecomb Creek beneath the railroad. The partial fish barrier culvert adjacent to the northern end of the subject property will be replaced with a bridge or box culvert up to 16 feet wide. The partial fish barrier culvert adjacent to the southern end of the subject property will be replaced with a bridge span up to approximately 20 feet wide. The final crossing designs and any associated stream re-alignment work will be coordinated with BNSF, the Project Engineer, Tulalip Tribes, and the Washington Department of Fish and Wildlife (WDFW).

The table below identifies the wetlands and other waters identified during the site investigations and summarizes the expected regulatory status.

Wetland / Waterbody	Size/Length Onsite	Local Jurisdiction Location	Category/ Type[1]	Regulated under Section 404 of the CWA[2]
A	1,369 SF	Arlington	IV	Assumed[3]
B	4,859 SF	Arlington	IV	Assumed[3]
C	4,841 SF	Arlington	IV	Assumed[3]
D	3,537 SF	Arlington	IV	Assumed[3]
E	775 SF	Arlington	III	Likely
F	386 SF	Arlington	III	Likely
G	987 SF	Arlington	III	Likely
H	6,279 SF	Arlington	II	Likely
I	377 SF	Marysville	III	Likely
J	334 SF	Marysville	IV	Assumed[3]
K	16,836 SF	Marysville	IV	Assumed[3]
L	15,756 SF	Marysville	IV	Likely
M	1,969 SF	Marysville	IV	Assumed[3]
N	8,133 SF	Marysville	IV	Assumed[3]
Offsite O	N/A	Arlington/ Marysville	III	Assumed[3]
P	550 SF	Arlington	IV	Assumed[3]
Q	2,522 SF	Arlington	IV	Assumed[3]
R	1,773 SF	Arlington	IV	Assumed[3]
Offsite S	N/A	Marysville	IV	Assumed[3]
Offsite T	N/A	Marysville	IV	Assumed[3]
U	4,909 SF	Marysville	IV	Assumed[3]
V	5,945 SF	Arlington	III	Assumed[3]
W	258 SF	Marysville	IV	Assumed[3]
X	4,492 SF	Marysville	IV	Assumed[3]
Y	662 SF	Arlington	III	Likely
Z	483 SF	Marysville	III	Likely

AA	574 SF	Marysville	III	Likely
AB	1,166 SF	Marysville	III	Likely
AC	4,866 SF	Marysville	IV	Assumed[3]
AD	2,462 SF	Marysville	III	Likely
AE	11,346 SF	Marysville	IV	Assumed[3]
AF	615 SF	Marysville	IV	Assumed[3]
AG	285 SF	Marysville	IV	Assumed[3]
AH	180,709 SF	Marysville	II	Likely
AI	3,873 SF	Marysville	III	Likely
AJ	2,471 SF	Marysville	III	Likely
AK	696 SF	Marysville	IV	Assumed[3]
Edgecomb Creek	10,723 LF	Arlington/ Marysville	F-ESA / F	Likely
51st Avenue East Ditch	44,087 LF	Marysville	N/A (non-typed)[5]	Non-Jurisdictional[6]
Ditch U	1,223 LF	Marysville	N/A (non-typed)	Non-Jurisdictional[6]
Tributary X	1,167 LF	Arlington	F-ESA	Assumed[3]
152nd Street Ditches	~0.33 mile	Marysville	N/A (non-typed)	Unlikely

Notes:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per MMC 22E.010.060.1 and AMC 20.93.800.a. DNR Water Typing system per MMC 22E.010.060.1. and AMC 20.93.700.
2. Per 2020 Navigable Waters Protection Rule.
3. Potentially non-jurisdictional federally; however, regulation under Section 404 of the CWA assumed in order to expedite permitting process.
4. Does not include approximately 732 linear feet of ditch located on Parcels 31052700300600, 31052700301000, and 31053400201400, outside of the project area but affected by frontage improvement requirements along 51st Avenue Northeast.
5. The 51st Avenue East Ditch, which is non-jurisdictional federally, is being treated as a Category III wetland to expedite the local and state permitting processes.
6. USACE has determined the 51st Avenue East Ditch and Ditch U to be non-jurisdictional under the Navigable Waters Protection Rule (USACE, 2020 and USACE, 2021).

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Tables

Appendices

Chapter 1. Regulatory Considerations

The site assessments in 2020 and 2021 identified a total of 40 potentially regulated wetlands (Wetlands A-Z and AA-AM), one stream (Edgecomb Creek), one fish-bearing ditch (Tributary X), one non-wetland agricultural ditch (Ditch U) that is likely considered a Water of the State, and one roadside ditch (51st Avenue East Ditch) that will be treated as a wetland for local and state permitting purposes. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were identified in the project area.

The proposed project area is located within both the City of Arlington and the City of Marysville. A total of 13 delineated wetlands (Wetlands A-H, P-R, V and Y) are located entirely in the City of Arlington jurisdiction, and 25 delineated wetlands (Wetlands I-N, S-U, W, X, Z, and AA-AM) are located entirely in the City of Marysville jurisdiction. One delineated wetland (Wetland O) is located on the jurisdictional boundary between the two cities. Tributary X is located in the City of Arlington, and the onsite 51st Avenue East Ditch is located in the City of Marysville. Edgecomb Creek is located in both the City of Arlington and the City of Marysville.

The City of Arlington has approved a development agreement with the Applicant, and the Applicant is currently negotiating a development agreement with the City of Marysville. The proposed mitigation actions specified herein have generally been designed according to the standards and conditions of the development agreements.

1.1 Local Regulations

1.1.1 Wetland Buffers

City of Arlington

Arlington Municipal Code (AMC) 20.93.800(a) has adopted the 2014 *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). Under the 2014 wetland rating system, Category IV wetlands are those that generally provide low levels of function and score less than 16 points. Category IV wetlands are often heavily disturbed and are wetlands that should be replaceable. Category III wetlands are those that generally provide moderate levels of function and score between 16 and 19 points. Category III wetlands have generally been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands. Category III wetlands can often be adequately replaced with a well-planned mitigation project. Category II wetlands provide high levels of some functions and score between 20 and 22 points. Category II wetlands are difficult, though not impossible, to replace. AMC 20.93.830 identifies standard buffers for wetlands based on habitat score assuming the implementation of all minimization measures listed in AMC Table 20.93-5. Category II, III, and IV wetlands were identified during the site investigations:

- Category II wetland with habitat score of 6 (Wetland H)
- Category III wetlands with habitat score of 5 (Wetland G and Wetland V)
- Category III wetlands with habitat score of 4 (Wetlands E, F, Offsite Wetland O, and Y)
- Category IV wetlands with habitat scores of 4 or less (Wetlands A-D and P-R)

The standard buffer for a Category IV wetland is 40 feet; a Category III wetland with a habitat score less than 5 points is 60 feet; a Category III wetland with habitat score of 5 is 105 feet; and a Category II wetland with a habitat score of 6 or 7 points is 165 feet. Per AMC 20.93.340, a 15-foot building setback is required from the edge of any critical area buffer.

City of Marysville

Marysville Municipal Code (MMC) 22E.010.060.1 has also adopted the 2014 wetland rating system. The following Category II, III and IV wetlands were delineated during the site investigations:

- Category II wetland with a habitat score of 6 (Wetland AH)
- Category III wetland with habitat score of 4 (Wetlands AA, AB, AI, AJ, I, and Z and Offsite Wetland O)
- Category IV wetlands with habitat score of 4 or less (Wetlands AC, AE-AG, AK-AM, J-N, U, W, and X and Offsite Wetlands U, S and T)

Although the 51st Avenue East Ditch is an artificially and intentionally created drainage feature, WSDOE believes that the ditch meets of the definition of a wetland under the Revised Code of Washington (RCW) 36.70A.030 and RCW 90.48. WSDOE has concluded the roadside ditch was likely constructed from a wetland in the early 1900s (email correspondence between Soundview Consultants and Neil Molstad, WSDOE, 10/28/2020). The Applicant has indicated their disagreement with WSDOE's determination; however, the Applicant has decided to accept the positive wetland determination for the Cascade Business Park project. The 51st Avenue East Ditch is being treated as a Category III wetland and subject to a standard 75-foot buffer per MMC 22E.010.100(4).

Per MMC 22E.010.380, a 15-foot building and structure setback is required from the edge of critical area buffers.

1.1.2 Stream Buffers

City of Arlington

Per AMC 20.93.700, the City of Arlington has adopted the state water classification system specified in WAC 222-16-030. Per AMC 20.93.700(b), a Type F water includes segments of natural waters that are not classified as Type S (shoreline) and have a substantial fish, wildlife, or human use. Per AMC 20.93.700(a)(2), Type F-ESA water is a water that meets the criteria of a Type F stream and has been identified as having presumed use by ESA-listed fish species. Edgecomb Creek is likely considered a Type F-ESA water due to modeled Chinook and steelhead presence identified by the WDFW SalmonScape inventory. While Tributary X is an artificially created feature, this ditch is likely considered a Type F-ESA water due to the provision of off-channel habitat for salmonids. Per AMC Table 20.93-3, the standard buffer for a Type F-ESA water is 150 feet. Per AMC 20.93.440(a)(1) this 150-foot buffer shall consist of a 100-foot designated native growth protection easement in which no human activity is allowed (unless specified by AMC 20.93.430) and a 50-foot management zone in which vegetation may be managed for public health and safety reasons.

City of Marysville

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(1)(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(1)(a), Type F streams are subject to a standard 150-foot buffer.

Per MMC 22E.010.220(3)(a) and 22E.010.220(3)(b), stream buffers shall be measured from the ordinary high water mark as defined in the field, or, if that cannot be determined, from the top of the bank. In braided channels and alluvial fans, the OHW mark or top of bank shall be determined so as to include the entire stream feature. As Edgecomb Creek enters Wetland AH at the far southern project extent, the channel begins to braid and contains several side channels. As such, the standard 150-foot Type F stream buffer projects from the OHW of the main stem and side channels of Edgecomb Creek.

1.1.3 Mitigation Sequencing

Per AMC 20.93.740, AMC 20.93.840, AMC 20.08.010, MMC 22E.010.110(1) and MMC 22E.010.230(1), all adverse impacts to stream and wetland functions and values shall be mitigated using the following sequence:

a) Avoiding the impact altogether by not taking a certain action or parts of actions;

The Applicant proposes industrial development on the subject property to include nine buildings, City and private roads, loading and parking areas, stormwater infrastructure, and other associated infrastructure and utilities. The proposed project has been carefully designed to avoid and minimize impacts to wetland and streams where feasible. Avoidance and minimization measures are targeted at higher functioning aquatic areas onsite, and the proposed site plan avoids impacts to meandering sections of Edgecomb Creek on the northeast and southeast corners of the site. One small Category IV wetland (Wetland AK) will also be preserved in the riparian corridor. Due to the central location of Edgecomb Creek, the scattered distribution of wetlands across the site, and the large spatial requirements of an industrial park, relocation of Edgecomb Creek and direct wetland impacts are unavoidable. The proposed impacts are necessary in order to achieve the project objectives, including the development of large industrial buildings, provision of stormwater detention facilities, and maintenance of traffic conductivity on public and private roads across the large site. The Cities of Arlington and Marysville have long recognized the public need to relocate and restore Edgecomb Creek to avoid the long-term effects of retaining the existing degraded stream amidst an industrially zoned area. Relocating Edgecomb Creek beneficially allows for restoration of the existing degraded and ditched salmonid habitat within the urban landscape.

Overall, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet), fill and realignment of Tributary X (1,167 linear feet), and total fill of 3.569 acres of federally jurisdictional wetlands (plus 0.707 acres of additional fill of the non-jurisdictional 51st Avenue East Ditch which is being treated as a wetland at the local and state levels) for a total of 4.275 acres of direct wetland impacts. In addition, the proposed project will

require 0.595 acre of indirect impacts to Wetland AH. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic connection to offsite side channels, resulting in 496 linear feet of direct impacts to these offsite side channels. Onsite ditches will be filled or piped.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

The proposed project has been carefully designed to minimize impacts on the onsite critical areas. The proposed relocation is primarily limited to the stream segments that were historically ditched and avoids impacts to the more naturally formed meandering stream reaches at the northern and southern ends of the project area. Project impacts to a large Category II riverine wetland (Wetland AH) will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide necessary stormwater detention. Wetland AH is one of two existing Category II wetlands onsite and currently provides high levels of water quality functions and moderate levels of hydrologic and habitat functions. Wetland AH is relatively unique among the onsite wetlands due to several Cowardin classes, hydroperiods, and special habitat features. The proposed impact minimization is intended to provide as much protection to this riverine wetland and associated habitat as feasible. Water quality and hydrology impacts from the development will be minimized through the use of stormwater infrastructure that will consist of enhanced water quality treatment, detention ponds, and dispersion into the proposed riparian corridor. Temporary impacts to the stream and fish during relocation will be minimized through water quality monitoring and fish exclusion and protection following plans provided under separate covers. Appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures will be implemented for the duration of project activities to minimize potential construction impacts to the stream and remaining onsite and offsite wetlands.

c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

Compensatory mitigation for the unavoidable and direct stream and wetland impacts will be rectified through onsite, in-kind stream restoration and wetland creation/re-establishment actions. The 51st Avenue East Ditch is being treated as a wetland for local and state permitting purposes, and compensatory mitigation will be provided for the proposed fill of this ditch in addition to the other wetland and stream impacts. Non-compensatory riparian and wetland enhancement and coordination of two culvert replacements with the BNSF Railroad is also proposed to improve existing riparian and wetland functions and improve fish passage through the site.

d) Reducing or eliminating the impact over time by preservation and maintenance operations;

The proposed riparian mitigation corridor will be protected through placement in a separate protective tract as required under AMC 20.93.830 and MMC 22E.010.350(2). The location and limitations associated with this protection will be shown on the face of the deed applicable to the property and shall be recorded with Snohomish County's recording department. Critical areas signage will be installed around the riparian mitigation corridor. Maintenance and monitoring actions will be provided as outlined in Chapter 2 of this report.

e) Compensating for the impact by replacing or providing substitute resources or environments;

See response to criteria (c) above. Compensatory mitigation for the unavoidable and direct stream and wetland impacts will be rectified through onsite, in-kind stream and wetland creation. Onsite wetland creation and enhancement will be provided according to the mitigation ratios established by AMC 20.93.840(d) and MMC 22E.010.120(3). [A minimum of 8.769 acres of wetland re-establishment/creation is required to compensate for the 4.275 acres of necessary wetland fill and 0.595 acre of indirect wetland impacts. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. 0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021). 4.748 acres of upland buffer area will be established within the riparian corridor and protected by the 75-foot perimeter buffer. Any excess wetland mitigation credits or "excess buffer creation" areas are proposed for use by the Applicant as advanced mitigation for any future wetland and/or buffer impact proposal(s).]

f) Monitoring the impact and taking appropriate corrective measures.

The riparian mitigation corridor will be monitored for a period of 10 years. Monitoring and contingency plans are provided in Chapter 2 of this report.

1.1.4 Wetland Mitigation Requirements

City of Arlington

Per AMC 20.93.840(a), unavoidable wetland impacts shall be compensated in order to avoid significant environmental impacts. In order of preference, compensation may be provided by: 1) onsite wetlands restoration/improvement, 2) onsite wetlands creation, 3) onsite wetlands buffer restoration, and 4) offsite wetlands protection. Due to the scattered distribution of wetlands and large spatial requirements of the proposed industrial park, complete fill of most onsite wetlands (including all wetlands within the City of Arlington jurisdiction) is unavoidable. Onsite compensatory wetland creation and enhancement will be provided according to the mitigation ratios established by AMC 20.93.840(d) and AMC Table 20.93-6. The mitigation site as a whole (within the Cities of Arlington and Marysville) is expected to create wetland credits in excess of local mitigation ratios; the additional wetland mitigation areas may be used as advance mitigation for future projects (SVC, 2021b). The proposed protective buffers for the wetland mitigation areas will be provided by the 215-foot-wide riparian mitigation corridor within the City of Arlington or as established in the development agreement.

City of Marysville

MMC 22E.010.120(1) provides the following standards regarding the location and timing of wetland mitigation:

a) Restoration, creation, or enhancement actions should be undertaken on or adjacent to the site, or where restoration or enhancement of a former wetland is proposed, within the same watershed. Replacement in-kind of the impacted wetland is preferred for creation, restoration, or enhancement actions. The city may accept or recommend restoration, creation, or enhancement which is off-site and/or out-of-kind, if the applicant can demonstrate that on-site or in-kind restoration, creation, or enhancement is infeasible due to constraints such as

parcel size or wetland type or that a wetland of a different type or location is justified based on regional needs or functions;

Onsite, in-kind, permittee-responsible compensatory wetland creation will be provided according to the mitigation ratios established by MMC 22E.010.120(3).

b) Whether occurring on-site or off-site, the mitigation project shall occur near an adequate water supply with a hydrologic connection to the wetland to ensure a successful wetlands development or restoration;

The proposed wetland creation actions will occur within the riparian restoration corridor. Created wetlands will be located adjacent to the realigned Edgecomb Creek and excavated down to tie into groundwater levels as necessary to provide adequate hydrology. Wetland enhancement actions will occur within existing wetlands within the restoration corridor.

c) Any agreed-upon proposal shall be completed before initiation of other permitted activities, unless a phased or concurrent schedule has been approved by the community development department;

Timing of mitigation activities will occur according to the standards and conditions of the development agreement. Construction of the mitigation site is currently anticipated to commence the summer of 2021, once appropriate authorizations are obtained.

d) Wetland acreage replacement ratios shall be as specified in subsection (3) of this section.

The proposed compensatory wetland mitigation actions will occur according to the mitigation ratios established by MMC 22E.010.120(3).

Additionally, MMC 22E.010.120(2) states that proposals which include compensatory mitigation shall demonstrate the following:

a) All feasible and reasonable measures will be taken to reduce impacts and losses to the original wetland;

The proposed project reduces impacts to onsite wetlands by minimizing impacts to the large Category II Wetland AH. Wetland AH provides high levels of water quality and hydrologic functions and moderate levels of habitat functions. Proposed habitat enhancement will improve habitat functions within the wetland by reducing non-native, invasive species cover and increasing native tree and shrub cover. One small Category IV wetland (Wetland AK) will also be avoided. The proposed project will minimize water quality and hydrology impacts to these wetlands through the use of enhanced stormwater treatment, detention ponds, and dispersion of the treated and attenuated runoff into the riparian corridor. Additional reduction of wetland impacts and losses is not feasible due to the scattered wetland distribution across the site, the large spatial footprint required for an industrial park, and required frontage improvements.

b) No overall net loss will occur in wetland functions, values and acreage; and

Wetland creation in the restored riparian corridor is proposed according to according to the mitigation ratios established by MMC 22E.010.120(3), and no net loss in wetland functions, values, or acreage will occur.

c) The restored, created or enhanced wetland will be as persistent and sustainable as the wetland it replaces.

The created wetlands will be located within the restored riparian corridor with hydrology provided by the realigned Edgecomb Creek, runoff, and precipitation. The existing wetlands are primarily located in agricultural fields and along the ditched Edgecomb Creek. The proposed wetland creation area is anticipated to contain forest, scrub-shrub, and emergent vegetation and be protected by a separate tract or easement from future development. Given the proposed hydrology sources and native plantings, the created wetlands will be as persistent and sustainable as the impacted wetlands.

1.1.5 Stream Mitigation Requirements

City of Arlington

AMC 20.93.740(a) describes required mitigation for activities not allowed per AMC 20.93.720 (Streams, Creeks, Rivers, Lakes, and Other Surface Waters – Allowed Activities). The proposed project requires the relocation of Edgecomb Creek and Tributary X in order to develop the regional industrial park. Additional impacts to offsite side channels connected to Edgecomb Creek on tax parcel number 31052700200900 will occur as a result of the proposed fill of the existing Edgecomb Creek channel. Edgecomb Creek and Tributary X will be realigned according to the standards of the Development Agreement with the City of Arlington.

City of Marysville Mitigation Requirements

Per MMC 22E.010.230(3)(b) alteration of Type F streams may be permitted provided that the applicant mitigates adverse impacts consistent with the performance standards and other requirements of the chapter and provided that no net loss will occur in stream functions and fish habitat. Per MMC 22E.010.230(3)(c) relocation of a stream may only occur when it is part of an approved mitigation or rehabilitation plan and will result in equal or better habitat and water quality and will not diminish flow capacity of the stream. The proposed project requires the relocation of Edgecomb Creek in order to achieve traffic connectivity across the site on public and private roads, provide utility connections, and accommodate the large spatial footprint required by industrial buildings and associated infrastructure. The re-aligned main-stem stream channel and created side-channel habitat will provide mitigation at a minimum of 1:1 for the fill of the existing Edgecomb Creek stream channel, and no reduction in flow capacity is anticipated based on the proposed channel design. The proposed Edgecomb Creek will be restored to a meandering stream channel through a riparian corridor of native vegetation and provide significantly improved stream functions and fish wildlife habitat.

1.2 State and Federal Considerations

1.2.1 Federal Requirements

WSDOE regulates surface waters of the state under RCW 90.48 and WAC 173-201A for potential impacts to water quality. WAC-173-201A-020 provides definitions of surface waters of the state and wetlands.

Per WAC 173-201A-020, surface waters of the state are defined as:

"includes lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses within the jurisdiction of the state of Washington."

Per WAC 173-201A-020, wetlands are defined as:

"wetlands means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. 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. (Water bodies not included in the definition of wetlands as well as those mentioned in the definition are still waters of the state.)"

All identified onsite wetlands (including the 51st Avenue East Ditch), Edgecomb Creek, and Tributary X are likely to be regulated as waters of the state of Washington under the RCW 90.48 and WAC 173-201A. Ditch U acts as a feeder ditch to the 51st Avenue East Ditch, indirectly contributing surface water runoff to a downgradient tributary (Edgecomb Creek). As such, Ditch U is likely to be regulated as a waters of the state as a non-wetland water. The 152nd Street Ditches are artificially and intentionally created ditches that convey only ephemeral runoff that appears to primarily infiltrate. These ditches are not likely regulated as waters of the state. An Administrative Order (AO) will be sought from WSDOE for the proposed impacts to the waters of the state (e.g., Ditch U and the 51st Avenue East Ditch) that are not considered federally jurisdictional.

1.2.2 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 was the second step in reviewing and revising the definition of 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 became effective June 22, 2020.

The Navigable Waters Protection Rule effectively replaced the "Definition of Waters of the United States – Recodification of Pre-Existing Rules" rule published on October 22, 2019 (repealing the Clean Water Rule) and the 2008 joint guidance memorandum from USACE and EPA. The following describes potential regulatory classifications for the onsite stream, wetlands, and ditches under the Navigable Waters Protection Rule. Of note, the proposed project is assuming USACE jurisdiction over Edgecomb Creek and all onsite wetlands in order to support an expedited permitting process. Due to the proposed fill of the existing stream channel and onsite wetlands, the proposed project will require an Individual Section 404 Permit from the USACE. No direct impacts are proposed to the offsite wetlands or ditches; thus, potential regulatory classification for these offsite features is not described in this report.

Under the final Navigable Waters Protection Rule, 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.

The Navigable Waters Protection Rule specifies that WOTUS do not include: a) groundwater, including groundwater drained through subsurface drainage systems; b) ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools; c) diffuse stormwater runoff and directional sheet flow over upland; d) ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations; e) prior converted cropland; f) artificially irrigated areas that would revert to upland if artificial irrigation ceases; g) artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters; h) water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel; i) stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff; j) groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and k) waste treatment systems.

Under the Navigable Waters Protection Rule, Edgecomb Creek is likely regulated through category 2 of WOTUS because it is a perennial, natural tributary within a stream network that eventually drains into Puget Sound, a traditionally navigable water. It will be assumed that Tributary X is regulated to expedite the overall permitting process. The onsite ditches (Ditches U and X; 51st Avenue East Ditch, and the two 152nd Street Ditches) are artificially excavated ditches constructed for agricultural or roadside drainage purposes; these ditches are not constructed within tributaries nor do they relocate a tributary. USACE has determined that the 51st Avenue East Ditch is not a WOTUS because it is an excluded non-waters of the U.S. per 33 CFR Part 328.3(b) (USACE, 2020 and USACE, 2021). Similarly, the onsite stormwater ponds are artificial features that have been excavated for the purposes of collecting stormwater runoff and are likely non-jurisdictional by USACE through category i above of waters that are not considered to be WOTUS.

Of the delineated wetlands, Wetlands E, F, G, H, I, L, Y, Z, AA, AB, AD, AH, AI, AJ, and AL abut or are adjacent and contribute surface water runoff to Edgecomb Creek and are likely regulated by USACE through category 3 above. The remaining onsite delineated wetlands (Wetlands A, B, C, D, J, K, M, N, Q, R, U, V, W, X, AC, AE, AF, AG, AK, and AM) do not abut Edgecomb Creek, are not located within a FEMA mapped floodplain, and are therefore potentially not regulated by USACE.

The Navigable Waters Protection Rule establishes that prior converted cropland is not considered WOTUS (category e above). Prior converted cropland means any area that, prior to December 23, 1985, was drained or otherwise manipulated for the purpose, or having the effect, of making production of an agricultural product possible. USACE and the EPA will recognize designations of prior converted cropland made by the Secretary of Agriculture. All of the onsite wetlands, except for Wetland AH, are located within active agricultural fields and may be eligible for prior converted cropland status, although no prior converted cropland determination has been made for these wetlands according to documents received from local public records requests for wetland documentation on the subject property.

Due to the proposed fill of the jurisdictional Edgecomb Creek and other wetlands under the Navigable Waters Protection Rule, the proposed project presumes the need for an Individual Permit application with USACE. While several onsite wetlands are potentially not regulated as WOTUS and most of the onsite wetlands may be eligible for prior converted cropland status under the Navigable Waters Protection Rule (excluding Wetland AH), the proposed project is assuming USACE jurisdiction over all onsite wetlands in order to support a streamlined and expedited permitting process, though an approved jurisdictional determination will be sought for Ditch U and the remainder of the 51st Avenue East Ditch. If these ditches are confirmed to be non-jurisdictional waters, then an administrative order from WSDOE will be required for required impacts.

Chapter 2. Final Mitigation Plan

The proposed mitigation actions for the project attempt to strike a balance between achieving project goals as well as a positive result in terms of ecological lift. In general, joint USACE and EPA rules have been established that require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or ILF's wherever most ecologically feasible (USACE & EPA, 2008). The proposed wetland and stream impacts and mitigation actions attempt to closely adhere to these rules and to the local critical areas regulations specified in AMC Chapter 20.93 and MMC Chapter 22E.010 and the Applicant's development agreements (currently not finalized) while also utilizing the best available science (Granger et al., 2005; Hruby et al., 2009; Sheldon et al., 2005; and WSDOE, 2006). In addition to the proposed compensation for onsite wetland loss, the mitigation actions may result in additional wetland mitigation credits that may be used as advanced mitigation for future wetland loss within the watershed (SVC, 2021b). This chapter presents the overall mitigation details for the proposed Cascade Business Park project.

2.1 Purpose and Need

The purpose of the proposed project is to develop a regionally significant industrial park that will provide industrial building space within the Cascade Industrial Center, a Manufacturing and Industrial Center as designated by the Puget Sound Regional Council and located in the Cities of Arlington and Marysville. A more robust purpose and need is included in SVC's Clean Water Action Section 404(b)1 alternatives analysis (2020).

2.2 Description of Impacts

In order to accommodate the purpose and need for the industrial site development, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet; 147,522 square feet), fill and realignment of Tributary X (1,167 linear feet; 18,074 square feet), and fill of wetlands located west of the proposed mitigation corridor (4.275 acres). In addition, the proposed project will require 0.595 acre of indirect impacts to Wetland AH. The majority of onsite wetlands to be filled consist of low and moderate functioning Category IV and Category III wetlands; two Category II wetlands will be directly impacted. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic connection to offsite side channels, resulting in 496 linear feet of direct impacts.

2.2.1 Impact Avoidance and Minimization

The project was carefully designed in attempts to minimize impacts to wetlands and waterbodies to the greatest extent feasible. The proposed project preserves one small Category IV wetland within the proposed riparian mitigation corridor. To preserve existing higher functioning wetland areas onsite to the greatest extent feasible, project impacts to Wetland AH will be minimized. Wetland AH currently contains a meandering and braided section of Edgecomb Creek and provides high levels of water quality and a moderate level of habitat and hydrologic function. The wetland is relatively unique among the onsite wetlands due to several Cowardin classes, hydroperiods, and special habitat features. Project impacts to Wetland AH will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide

necessary stormwater detention. The proposed project will also preserve a meandering section of Edgecomb Creek that passes through an alluvial fan on the northeast corner of the site.

Dewatering activities associated with the relocation and fill of Edgecomb Creek may impact fish and other aquatic species present in the channel at the time of dewatering; disturbance and mortality of individuals is likely to occur. Stream relocation activities will occur during low stream flow conditions and during the regulatory in-water work window to minimize impacts to fish. Fish exclusion, capture, and relocation actions will be used to temporarily block fish access to impacted areas and relocate fish out of the impacted areas during the dewatering process. Depending on flow conditions at the time of dewatering, the existing stream channel will be divided into at least two sections for dewatering to allow for effective fish capture and relocation efforts. The fish protection efforts will be completed using a combination of electro-fishing and netting to capture fish and relocate them to non-impacted areas of Edgecomb Creek. A *Fish Exclusion and Protection* Plan has been prepared by SVC under separate cover to avoid and minimize impacts to fish.

Temporary turbidity increases within the existing and new stream channels may result from site clearing and grading activities and are likely to occur during the rewatering of the new stream channel. The new channel will be rewatered in at least two sections to reduce the channel length that is exposed to rewatering at a given time. WAC 173-201A-200(1)(e) makes allowances for a temporary area of mixing during and immediately after in-water construction activities subject to the constrains of WAC 173-201A-400(4) and (6). For waters less than or equal to 10 cubic feet per second flow at the time of construction, the point of compliance shall be 100 feet downstream of the action. Water quality monitoring will be completed to evaluate compliance during rewatering, and fish exclusion nets will remain in place until suspended sediment levels match background levels. The proposed fish exclusion and sediment controls are anticipated to lead to an avoidance or significant reduction in direct fish exposure to elevated suspended sediments. A *Water Quality Monitoring Plan* will be provided to WSDOE under separate cover to outline and document these details.

2.2.2 Wetland Impacts

A summary of impacted wetlands is provided in Table 1, and a wetland function impact analysis is outlined below.

Table 1. Direct Wetland Impact Summary

Wetland	HGM[1]	Cowardin Class[2]	WSDOE Rating[3]	Direct Impact Area (sf)	Direct Impact Area (acre)
A	Depressional	PEMA	IV	1,369	0.031
B	Depressional	PEMA	IV	4,859	0.112
C	Depressional	PEMA	IV	4,841	0.111
D	Depressional	PEMA	IV	3,537	0.081
E	Riverine	PEMA	III	775	0.018
F	Riverine	PEMA	III	386	0.009
G	Riverine	PEMA	III	987	0.023

H	Riverine	PFO/SS/EMAC	II	6,279	0.144
I	Riverine	PSSA	III	377	0.009
J	Depressional	PEMA	IV	334	0.008
K	Depressional	PEMA	IV	16,836	0.387
L	Depressional	PEMA	IV	15,756	0.362
M	Depressional	PEMA	IV	1,969	0.045
N	Depressional	PEMA	IV	8,133	0.187
P	Depressional	PEMA	IV	550	0.013
Q	Depressional	PEMA	IV	2,522	0.058
R	Depressional	PEMA	IV	1,773	0.041
U	Depressional	PEMA	IV	4,909	0.113
V	Depressional	PEMA	III	5,945	0.136
W	Depressional	PEMA	IV	5,874	0.135
X	Depressional	PEMA	IV	4,492	0.103
Y	Riverine	PSSC	III	662	0.015
Z	Riverine	PEMA	III	483	0.011
AA	Riverine	PEMA	III	574	0.013
AB	Riverine	PEMA	III	1,166	0.027
AC	Depressional	PEMA	IV	4,866	0.112
AD	Riverine	PEMA	III	2,462	0.057
AE	Depressional	PEMA	IV	11,346	0.260
AF	Depressional	PEMA	IV	615	0.014
AG	Depressional	PEMA	IV	285	0.007
AH	Riverine	PFO/SS./EMBC	II	25,910	0.595
AI	Riverine	PEMAB	III	3,873	0.089
AJ	Riverine	PEMA	III	2,471	0.057
AL	Depressional	PEMA	IV	11,835	0.272
AM	Depressional	PEMA	IV	3,021	0.069
51st Avenue East Ditch - North	Depressional	PEMC	III	17,099	0.393
51st Avenue East Ditch - South	Depressional	PEMC	III	13,670	0.314
			Total Wetland Fill	**186,214**	**4.275**

Notes:

1. Brinson, M. M. (1993).
2. WSDOE rating according to Washington State wetland rating system for Western Washington – Revised (Hruby, 2014).
3. Cowardin et al. (1979) or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent; Modifier for Water Regime: A = Temporarily Flooded; B = Seasonally Saturated; C = Seasonally Flooded.

Table 2. Indirect Wetland Impact Summary

Wetland	HGM[1]	Cowardin Class[2]	WSDOE Rating[3]	Indirect Impact Area (sf)	Indirect Impact Area (acre)
AH	Riverine	PFO/SS./EMBC	II	25,910	0.595
Total Wetland Indirect Impacts				**25,910**	**0.595**

- **Water Quality:** The wetlands to be impacted consist of 22 depressional wetlands and 13 riverine wetlands along the existing ditched Edgecomb Creek. The depressional wetlands provide low levels of water quality functions. While the depressional wetlands generally lack outlets and the agricultural surrounding land use generates pollutants, the wetlands only temporarily hold surface waters, and there is limited retention to trap pollutants. In addition, the depressional wetlands are generally located within actively managed agricultural fields with limited cover of persistent, ungrazed/unmowed vegetation to trap sediments and filter pollution. The riverine wetlands generally provide high levels of water quality functions. While the level of retention is relatively low (depressions within the wetlands generally cover less than ½ of the wetland area), shrubs and herbaceous plants cover the majority of the wetland area and provide sediment capture and pollutant filtration. The opportunity for these riverine wetlands to provide water quality improvements is high due to their urban locations and a substantial agricultural presence in the contributing basins. The proposed impacts to wetland water quality functions will be offset by the onsite creation of riverine wetlands that will provide increased retention and filtration functions. In addition, the proposed project stormwater system will disperse treated stormwater into buffer areas, further improving water quality. With the proposed onsite, in-kind wetland creation and proposed stormwater infrastructure, the project will result in a net increase in water quality functions for the Snohomish watershed.

- **Hydrologic:** Hydroperiods within the depressional wetlands are generally temporarily flooded, and hydrology is provided by direct precipitation, surface sheet flow, and a seasonally high groundwater table. The depressional wetlands provide low levels of hydrologic functions. Any ponding that occurs within the wetlands is extremely shallow, and the wetlands are also extremely small relative to the size of the contributing basin (less than 1% the size of the contributing basin). The riverine wetlands provide moderate levels of hydrologic functions. While the wetlands are relatively narrow relative to the adjacent stream (Edgecomb Creek), at least 2/3 of the wetland areas are covered by emergent vegetation that can slow water velocities and reduce erosion. In addition, the surrounding urbanizing watershed likely supports increased runoff flows within the stream. The proposed impacts to wetland hydrologic functions will be offset by the onsite creation of riverine wetlands along a created floodplain that will slow water flows and detain and infiltrate flood flows. In addition, the proposed project stormwater system includes detention and dispersion to attenuate runoff into the mitigation corridor. As such, the proposed onsite, in-kind wetland creation and proposed stormwater infrastructure will result in a net increase in hydrologic functions for the Snohomish watershed.

- **Habitat:** Onsite habitat has been degraded due to decades of agricultural use on the subject property. The wetlands to be impacted consist of wetlands within actively managed agricultural fields and wetlands adjacent to Edgecomb Creek. The agricultural wetlands generally provide low levels of habitat functions. Some of these wetlands are dominated by native emergent vegetation, while others are sparsely vegetated and surrounded by fields. These wetlands generally exhibit minimal habitat diversity and structure. Wetlands adjacent to Edgecomb Creek provide low to moderate levels of habitat functions. These wetlands are also generally dominated by emergent vegetation. Special habitat features include undercut banks/overhanging vegetation and stable, steep banks that provide denning areas for beaver or muskrat. The riverine Wetlands AH and H provides moderate levels of habitat diversity and structure with three Cowardin classes and special habitat features that include large, downed woody debris, undercut banks/overhanging vegetation, and stable, steep banks. The surrounding landscape has been significantly altered by residential, commercial, and agricultural land uses, and there is extremely limited landscape connectivity to nearby undisturbed habitat. The proposed impacts to wetland habitat functions will be offset by the onsite creation of wetlands adjacent to Edgecomb Creek within a large riparian corridor, which will provide foraging, nesting, and rearing opportunities for a variety of aquatic species and greatly improved habitat suitability and complexity for a variety of terrestrial fauna. The proposed compensatory mitigation activities will establish new wetlands that provide habitat diversity, structural complexity, and special habitat features that are generally absent from the existing wetlands, resulting in a net-gain in wetland habitat functions onsite. Due to the low-functioning habitat conditions, the proposed wetland fill will result in limited habitat removal, and additional wetland habitat functions will be replaced and increased via the proposed onsite, in-kind mitigation actions, which aim to increase species diversity and habitat complexity.

2.2.3 Stream Impacts

The onsite Edgecomb Creek channel has been ditched for decades and provides relatively low quality habitat due to the lack of channel complexity, in-stream habitat structures, floodplain connectivity and riparian cover. The stream sections to be permanently filled consist of north-to-south and east-to-west channels; existing habitat conditions within these channels are described in Table 3. The proposed stream relocation will result in the permanent loss of existing habitat in both Edgecomb Creek and Tributary X. Offsite side channels are currently connected to Edgecomb Creek; the proposed fill of Edgecomb Creek will lead to functional loss of these channels. The Applicant intends to directly fill the offsite side channels in the future to align a public roadway through the proposed industrial development as desired by the Cities of Arlington and Marysville. While direct fill of the offsite side channels is not included in the proposed project action, the compensatory mitigation actions described below will offset the direct loss of side channel functions that will result from the proposed project.

Table 3. Summary of Existing Stream Habitat Conditions.

Habitat Parameter	Existing Conditions
Habitat Accessibility	Degraded – Fish access within the project area is impeded by several partial fish passage barrier culverts located beneath the BNSF railroad, within the agricultural fields, and at the 152nd Street Northeast crossing.
Riparian Buffer	Degraded – Streambanks are lined with narrow strip of vegetation dominated by non-native, invasive Himalayan blackberry and reed canarygrass. Agricultural fields extend up to stream bank along most of the channel. Stream shading is limited to individual clusters of red alder and willows. The greatest degree of stream shading is provided by the offsite habitat enhancement site on tax parcel number 31052700200900. Red alder and salmonberry provide overhanging vegetation along approximately 660 linear feet of stream.
Channel Morphology	Minimally complex – Linear excavated channels connected by 90-degree turns lead to sections of stream with cross-gradient, stagnant flows. The excavated streambanks are almost vertical, and pool and riffle formations within the linear excavated channels are limited to north-south sections of the stream. Approximately 225 linear feet of meandering stream with pools and riffles are located in the far northeast corner of the site.
Off-Channel Habitat and Flood Refugia	Present with low habitat quality – Off-channel habitat on the subject property consists of the linear Tributary X. Tributary X is connected to an offsite artificial drainage system that provides marginal off-channel habitat. Tributary X and the offsite artificial drainage system lack riparian cover and habitat diversity. While groundwater likely supplies hydrology (at least to the onsite Tributary X) and Tributary X also receives backflows from Edgecomb Creek, these features were constructed to convey stormwater runoff and as an outlet for drain tile in the agricultural fields. Untreated runoff flows likely impact water quality within the off-channel habitat due to higher temperatures and pollutant conveyance. Seasonal flows and depressions within this off-channel habitat present a risk of fish stranding during summer months. The offsite side channels on tax parcel number 31052700200900 were likely designed to provide flood refugia as voluntary habitat enhancement (SVC, 2021a). The degree of hydrologic connectivity between the offsite habitat enhancement and the mainstem has likely increased due to beaver activity along this section of stream. Wetland AH contains side channels of Edgecomb Creek that provide off-channel habitat and flood refugia.
Substrate Composition	Sand and silt – The existing substrates limit salmonid spawning opportunities. Sorted gravels are present along the approximately 225 linear feet of meandering stream located in the far northeast corner of the site.
Large Woody Debris (LWD)	Absent - Generally absent from the highly modified and degraded linear stream channel which extends through maintained agricultural fields.

Small Woody Debris	Low presence – Small woody debris is limited by the lack of riparian cover. Some small woody debris is present, particularly at locations of existing beaver dams. Individual clusters of alders and willows provide limited small woody debris at point locations along the stream.
Peak and Base Flows	Summer base flows are low, and a large section of stream downgradient of beaver dams was observed to be dry during the summer of 2020.
Floodplain Capacity and Wetland Connectivity	Limited - Floodplain capacity is extremely limited by the manmade, linear channels. Linear, agricultural feeder ditches provide limited flood storage capacity with poor habitat conditions for fish. Several small, low-functioning riverine wetlands with low species diversity are located along the existing stream. Some floodplain capacity is present in the offsite habitat enhancement site on tax parcel number 31052700200900.
Water Quality	Degraded – Onsite water quality is degraded by a minimally functioning riparian buffer separating the stream from active agricultural fields. Previous water quality monitoring on Edgecomb Creek by WSDOE indicates high water temperatures and low dissolved oxygen in the stream.

2.3 Mitigation Strategy

Compensatory mitigation actions are intended to compensate for lost wetland and stream functions and values by providing an overall improvement in the quality of water quality, hydrologic, and habitat functions according to the needs of the site, local sub-basin, and overall Snohomish River watershed. To offset proposed impacts to Edgecomb Creek, the project proposes to realign Edgecomb Creek within a restored riparian corridor adjacent to the west side of the BNSF railroad. The riparian corridor will be up to 315 feet wide and is designed to contain 16,494 linear feet of restored mainstem Edgecomb Creek channel and side channels, 2,094 linear feet of Tributary X re-alignment, and a minimum of 8.769 acres of wetland re-establishment/creation to offset the impacts of the proposed project. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. 0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021). Any excess wetland mitigation credits are proposed for use by the Applicant as advanced mitigation for any future wetland impact proposal(s) (SVC, 2021b). Compensatory wetland creation areas will be protected by a minimum of a 75-foot perimeter buffer within the riparian mitigation corridor. The proposed pedestrian trail will be located upland of the 75-foot perimeter buffer for compensatory wetland creation areas; stormwater dispersion devices may be located within the 75-foot perimeter buffer. The proposed mitigation corridor will achieve an additional 1.982 acres of non-compensatory wetland creation areas and 0.594 acre of non-compensatory wetland enhancement areas that have less than 75 feet of protective buffer width. In addition to providing a functional lift over the existing agricultural buffer conditions onsite, the proposed upland plantings will also support the restoration of riparian habitat in the Cities of Arlington and Marysville. The proposed riparian corridor will be approximately 1.75 miles long and will encompass approximately 58% of the length of Edgecomb Creek mapped by Snohomish County. 4.748 acres of "excess buffer" creation is proposed for use by the Applicant as

advanced mitigation for any future wetland and/or buffer impact proposal(s). In addition, the Applicant proposes to enhance the remaining Wetland AH buffer as a non-compensatory mitigation action by planting the existing degraded buffer with native trees and shrubs.

The re-aligned main-stem stream channel and created side-channel habitat will provide mitigation that exceeds 1:1 for the impacts to the existing Edgecomb Creek stream channel and side-channel habitat. Tributary X will also be realigned, lengthened, and reconnected to the realigned Edgecomb Creek. Compensatory wetland re-establishment and creation will occur within the riparian corridor, meeting local, state, and federal mitigation requirements for direct wetland impacts. As a non-compensatory mitigation measure, the Applicant proposes to replace two partial fish barrier culverts underneath the BNSF railroad with upgraded crossing designs to allow fish access and convey Edgecomb Creek beneath the railroad. The partial fish barrier culvert adjacent to the northern end of the subject property will be replaced with a bridge or box culvert up to 16 feet wide. The partial fish barrier culvert adjacent to the southern end of the subject property will be replaced with a bridge span up to approximately 20 feet wide. The final crossing designs and any associated stream re-alignment work will be coordinated with BNSF, the Project Engineer, Tulalip Tribes, and the Washington Department of Fish and Wildlife (WDFW).

These combined restoration actions will provide a net gain in function and improved protection to the wetlands and streams from the proposed development. Refer to Appendix A for a detailed planting plan.

The mitigation actions include the following:

- Realign and restore the onsite Edgecomb Creek with connected side-channels (16,694 linear feet; 177,018 square feet);
- Add substrate to restored Edgecomb Creek and side channels;
- Add large woody debris to restored Edgecomb Creek and side channels;
- Create wetlands along Edgecomb Creek (minimum 8.769 acres of compensatory wetland creation area);
- Realign Tributary X (2,094 linear feet; 9,566 square feet);
- Enhance Wetland AH with native plantings (2.296 square feet of potential compensatory wetland enhancement);
- Provide non-compensatory wetland creation and enhancement areas (up to 86,354 square feet of wetland creation and 25,910 square feet of wetland enhancement);
- Add large woody debris to preserved Edgecomb Creek side channels in Wetland AH;
- Replant all impacted areas targeted for mitigation with native trees, shrubs, and groundcovers listed in Appendix A, or substitutes approved by the responsible Project Scientist, to help retain soils, filter stormwater, and increase biodiversity;
- An approved native seed mix will be used to seed the disturbed mitigation areas after planting to reduce short-term erosion potential;
- Maintain and control invasive plants annually, at a minimum, or more frequently if necessary. Maintenance to reduce the growth and spread of invasive plants is not restricted to chemical applications but may include hand removal, if warranted;
- Provide dry-season irrigation as necessary to ensure native plant survival;

- Install critical area signage along the outer boundary of the mitigation corridor facing the proposed development;
- Direct exterior lights away from the wetland and stream areas wherever possible; and
- Place all activities that generate excessive noise (e.g., generators and air conditioning equipment) away from the wetland and stream areas where feasible.

2.3.1 Wetland Mitigation Strategy

The proposed onsite mitigation actions are intended to allow the fill of onsite wetlands (Wetlands A-P, Q, R, U-Z, AA-AG, AI, and AJ) while maintaining and improving existing wetland functions via the creation and enhancement of higher-functioning wetland and buffer areas. Proposed wetland creation actions generally include treatment and removal of invasive vegetation, planting with native trees and shrubs, and an establishment of an herbaceous understory to allow the establishment of wetland area, retention of water and sediments, and improvements in water quality and habitat protection functions provided by the wetlands.

All wetland creation areas will occur on a created flood terrace along the restored Edgecomb Creek; the terrace is expected to exhibit hydrologic connectivity and soil conditions conducive to wetland creation. A minimum of 8.769 acres of existing upland area will be carefully excavated and converted to riverine wetlands on the new flood terrace. All compensatory wetland creation areas will be protected by a minimum of a 75-foot-wide perimeter buffer. The compensatory wetland creation areas are anticipated to be Category II or III wetlands with moderate levels of habitat functions that will provide substantial lift in wetland functions onsite. All compensatory wetland creation areas will be protected by a minimum of a 75-foot-wide perimeter buffer. SVC has coordinated extensively with USACE and WSDOE regarding the required perimeter buffer for the compensatory wetland creation areas. USACE and WSDOE indicated during a phone conversation with SVC on April 5, 2021 that 75-foot-wide perimeter buffers for compensatory wetland creation areas would be appropriate for the proposed mitigation site based on draft joint wetland mitigation guidance from the agencies (WSDOE, USACE, and EPA, 2020). Per Table 6C-3 of the draft joint mitigation guidance, Category I, II, or III wetlands with moderate levels of habitat functions should receive 150-foot buffer for high land use intensity, 110-foot buffers for moderate land use intensity, and 75-foot buffers for low land use intensity. While the proposed land use is high, the proposed project will implement several mitigation measures to lower the impact of the proposed development, including establishment of non-compensatory wetland creation and enhancement areas, stormwater dispersion devices that will support onsite stormwater management and hydrology within the riparian corridor, and the media filter drain to enhancement treatment of existing runoff from the BNSF railroad. During the April 5, 2021 phone conversation, USACE and WSDOE indicated that these mitigation measures will reduce the impact of the proposed development such that it is equivalent to a low land use intensity. While SVC believes that a smaller base buffer width should be applicable for the compensatory wetland creation areas based on the intention of the mitigation site to primarily compensate for the loss of primarily Category III and IV wetlands with low habitat scores, the Applicant is willing to accept a 75-foot perimeter buffer for compensatory wetland creation areas to expedite the project permitting. Tables 4 and 5 below provide a compensatory wetland mitigation summary.

Table 4. Compensatory Wetland Mitigation Summary for Direct Wetland Impacts.

Wetland	Cowardin	WSDOE	Impact (acre)	Compensation

	Class[1]	Rating[2]		Creation/Re-Establishment Ratio[3]	Area (acre)
A	PEMA	IV	0.031	1.5:1	0.047
B	PEMA	IV	0.112	1.5:1	0.167
C	PEMA	IV	0.111	1.5:1	0.167
D	PEMA	IV	0.081	1.5:1	0.122
E	PEMA	III	0.018	2:1	0.036
F	PEMA	III	0.009	2:1	0.018
G	PEMA	III	0.023	2:1	0.045
H	PFO/SS/EMAC	II	0.144	3:1	0.432
I	PSSA	III	0.009	2:1	0.017
J	PEMA	IV	0.008	1.5:1	0.012
K	PEMA	IV	0.387	1.5:1	0.580
L	PEMA	IV	0.362	1.5:1	0.543
M	PEMA	IV	0.045	1.5:1	0.068
N	PEMA	IV	0.187	1.5:1	0.280
P	PEMA	IV	0.013	1.5:1	0.019
Q	PEMA	IV	0.058	1.5:1	0.087
R	PEMA	IV	0.041	1.5:1	0.061
U	PEMA	IV	0.113	1.5:1	0.169
V	PEMA	III	0.136	2:1	0.273
W	PEMA	IV	0.135	1.5:1	0.202
X	PEMA	IV	0.103	1.5:1	0.155
Y	PSSC	III	0.015	2:1	0.030
Z	PEMA	III	0.011	2:1	0.022
AA	PEMA	III	0.013	2:1	0.026
AB	PEMA	III	0.027	2:1	0.054
AC	PEMA	IV	0.112	1.5:1	0.168
AD	PEMA	III	0.057	2:1	0.113
AE	PEMA	IV	0.260	1.5:1	0.391
AF	PEMA	IV	0.014	1.5:1	0.021
AG	PEMA	IV	0.007	1.5:1	0.010
AH	PFO/SS/EMBC	II	0.443	3:1	1.328
AI	PEMAB	III	0.089	2:1	0.178

AJ	PEMA	III	0.057	2:1	0.113
AL	PEMA	IV	0.272	1.5:1	0.408
AM	PEMA	IV	0.069	1.5:1	0.104
51st Avenue East Ditch - North[4]	PEMC	III	0.393	2:1	0.785
51st Avenue East Ditch – South[5]	PEMC	III	0.314	2:1	0.628
		Total	**4.275**	**--**	**7.877 acres**

1. Cowardin et al. (1979) or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent; Modifier for Water Regime: A = Temporarily Flooded; B = Seasonally Saturated; C = Seasonally Flooded.
2. WSDOE rating according to Washington State wetland rating system for Western Washington (Hruby, 2014).
3. Ratios outlined in AMC 20.93.840 and MMC 22E.010.120(3).
4. Non-jurisdictional federally.
5. Likely non-jurisdictional federally.

Table 5. Compensatory Wetland Mitigation Summary for Indirect Wetland Impacts.

Wetland	Cowardin Class[1]	WSDOE Rating[2]	Impact (acre)	Compensation	
				Creation/Re-Establishment Ratio[3]	Area (acre)
AH	PFO/SS./EMBC	II	0.595	1.5:1	0.892
		Total	**0.595**	**--**	**0.892 acre**

The wetland creation and enhancement areas will meet local, state, and federal mitigation ratio requirements. The mitigation plan proposes an increase in vertical and horizontal canopy structure by planting a variety of native tree, shrub, and groundcover species appropriately located to match existing species wetland indicator statuses, targeted hydroperiods, and local topography. The mitigation areas are anticipated to provide greater functions when compared to the existing degraded conditions of the onsite farmed wetlands ditched stream, and buffers proposed to be impacted. The wetland creation areas will be excavated to provide necessary depressions to hold sufficient hydrology to generate wetland conditions. The wetland creation areas will be excavated to the existing groundwater table where possible. Hydrology will be provided by the realigned Edgecomb Creek, groundwater, and precipitation (consistent with the existing wetlands on the subject property). Stormwater from the site will be treated to meet enhanced water quality treatment standards and pass through detention ponds for flow control prior to being dispersed into the riparian corridor.

Through careful design and utilization of best available science, the proposed mitigation plan has a high probability of success and persistence. The newly created wetland areas will be installed in the same environment that provides adequate conditions for the existing wetlands. By following the site preparation specifications outlined herein (e.g., excavation and plantings) the wetland creation areas will be able to maintain wetland hydrology during the growing season in most years to match the existing functional hydrologic regimes of the wetlands. The proposed native species have been carefully selected to ensure the plants take root and thrive in the newly created wetland environments: selection criteria included indicator status and those species that are currently present in existing onsite wetland areas. As the existing wetlands have low species richness and are degraded by the presence of invasive species, the mitigation actions will include a selection of native trees, shrubs, and

groundcover suitable for the site conditions that will result in increased habitat functions by providing greater habitat suitability for a wide range of fauna. Woody debris placement will provide additional habitat.

2.3.2 Stream Mitigation Strategy

The proposed stream restoration will provide several improvements in stream ecological functions over the existing degraded stream channel. The majority of the onsite channel consists of excavated linear ditches in agricultural fields that lack substantial native riparian trees and shrubs, meanders, cobbles or sorting, riffle or pool structures, large woody debris, or floodplain connectivity. The restored stream channel will consist of a meandering channel connected to side channels and wetland habitats within a riparian corridor containing native forest, shrub, and emergent plant communities. Side channels will have different degrees of hydrological connectivity to Edgecomb Creek. Flow-through side channels will provide off-channel habitat throughout much of the year, while dendrite side channels will provide seasonal off-channel habitat. In addition, the mainstem and side channels will be enhanced with large woody debris, small woody debris, streambed gravels, and pool and riffle creations. Fish accessibility to the site and upstream reaches of Edgecomb Creek will be improved by the non-compensatory replacement of two culverts that currently act as partial fish passage barriers beneath the BNSF Railroad. Once established, riparian habitat corridor will provide immediate and long-term benefits for salmonids and other fish through native plantings that will provide streambank stability, stream shading, stormwater filtration, and wood recruitment; a complex channel system with natural channel sinuosity, pool and riffle structures, and side channels that will provide spawning, rearing and foraging opportunities; and connectivity to wetland and floodplain habitats that will provide additional water quality improvements, hydrologic regulation, and flood refugia benefits. The proposed riparian corridor will be located adjacent to the BNSF Railroad ROW; the nearest point of the relocated stream will be approximately 100 feet away from the railroad tracks that run down the center of the ROW. The existing vegetation in the railroad ROW and the proposed riparian plantings will therefore provide full dispersion treatment of any runoff from the railroad tracks that flows towards the relocated stream. To provide further water quality treatment, a media filter drain will be installed between the railroad ROW and stream, along the eastern boundary of the proposed riparian corridor (Appendix C). Table 6 below summarizes the stream habitat parameters targeted for restoration.

Table 6. Stream Habitat Parameters Targeted for Restoration.

Habitat Parameter	Proposed Conditions
Habitat Accessibility	Accessible onsite stream – The non-compensatory replacement of two culverts beneath the BNSF railroad and installation of a new culvert beneath 152nd Street Northeast will provide improved fish passage to the site and upstream areas. In addition, existing farm culverts that act as partial fish passage barriers will be removed.
Riparian Buffer	Native buffer establishment and restoration – The restored stream and riparian buffers will be located in an up to 315-foot-wide restoration/mitigation corridor. The riparian buffer will be planted with a diverse assemblage of native trees, shrubs, and groundcover to establish a mosaic of habitats. Once established, the riparian buffer will provide maximum stream shading to help cool water temperatures.

Channel Morphology	Meandering stream – The channel will be realigned to follow the general north to south gradient change, eliminating the existing cross-gradient flows that currently exist within east-west channels. The stream channel will be widened and meanders will be incorporated to mimic natural conditions to the maximum extent feasible while maintaining positive flow. The meandering, north-south flowing stream will provide channel complexity and support pool and riffle development.
Off-Channel Habitat and Flood Refugia	Connected off-channel habitat – Side channels will be created with varying degrees of branching and hydrological connectivity to the stream to improve habitat diversity. Side channel hydrology will be maintained by groundwater connections and the realigned stream. The groundwater connections would support cooler water temperatures within the side channel habitat. In addition, the side channels morphology and hydrology connections will be designed to avoid fish standing. Tributary X will be realigned and continue to provide off-channel habitat.
Substrate Composition	Well-graded – The stream restoration will include installation of a well-graded mix of cobbles, gravels, sand, and silt to the stream substrate. The substrate addition will increase habitat diversity for benthic macro-invertebrates (salmonid prey) and spawning habitat.
Large Woody Debris (LWD)	Prevalent along the entire onsite reach – LWD will be added throughout length of realigned stream and within side channels to restore in-stream habitat complexity and natural geomorphic processes such as pool formation, flow complexity, bank roughness, hyporheic flow, shade cover, woody substrate, thermal refugia, and recruitment of wood and organic debris.
Small Woody Debris	Prevalent along the entire onsite reach – Riparian restoration will restore sources of small woody debris, supporting in-stream habitat complexity and food webs. Additional small woody debris will be added to the restored stream system to provide immediate improvements in organic matter supply and habitat for small mammals, birds, and macroinvertebrates.
Peak and Base Flows	Potential minor alterations – No significant changes in hydrology are anticipated due to the proposed stormwater system and channel design, which will provide a minimum of the same flow capacity as the existing channel.
Floodplain Capacity and Wetland Connectivity	Wetlands and floodplains connected to stream channels – Wetlands will be created on floodplain benches adjacent to the mainstem and side channels. These wetlands will increase habitat complexity, provide water quality improvements, and regulate hydrology within the stream.
Water Quality	Minimization of stormwater impacts - The proposed onsite conversion of agricultural land to industrial development will alter potential pollutants conveyed by runoff. The proposed enhanced water quality treatment stormwater system will provide filtration of sediment, hydrocarbons, and metals that accumulate on roadways. The riparian buffer plantings will increase stream shading,

	decreasing water temperatures. The stream relocation will bring the stream nearer to the onsite railroad, which is a source of potential pollutants. At least 100 feet of vegetation and a media filter drain will separate the proposed stream channel from the railroad.

2.3.3 Native Vegetation and Enhancement Strategy

The proposed mitigation actions will improve ecological conditions and protection of the critical areas by providing additional functions according to the needs of the site and watershed and providing an overall improvement to wetland, stream, and buffer functions. The proposed native plant communities will be established according to location relative to the stream channels, anticipated hydroperiod within the wetland creation areas, and topographic position within the remaining riparian corridor buffer areas. Willows (*Salix* spp.) will dominate the banks of the main-stem stream channel and the flow-through side channels to provide bank stability and shading. Anticipated hydroperiods within the created wetlands include seasonally and permanently ponding. Forested and scrub-shrub communities will be established within seasonally ponded wetlands, and emergent communities will be established across permanently ponded wetlands. The upland buffer will be primarily forested with shrub communities adjacent to the proposed development and railroad. An "Airport Approach Wildlife Hazard Management Area" is located on the northern end of restoration corridor. To avoid the risk of trees entering airspace or obstructing pilot visibility, this area will be dominated by a shrub canopy. One powerline easement and one natural gas line easement cross the proposed riparian corridor. To avoid interference with the utilities and ensure adequate maintenance access to these easements, no trees will be planted in these easements. The Applicant will be responsible for replacing any vegetation removed for utility maintenance needs in these easements. The proposed native species have been carefully selected according to indicator status and local vegetation observations to ensure the plants take root and thrive in the newly created riparian corridor. Planting specifications and schedule are provided in Appendix A.

Wetland and riparian enhancement actions will be completed in Wetlands AH and within the riparian corridor adjacent to the non-impacted section of Edgecomb Creek on the northern portion of the project area. In addition, all remaining Wetland AH buffer areas will be enhanced as a non-compensatory mitigation measure. Wetland AH is currently degraded by dominant non-native, invasive Himalayan blackberry and reed canarygrass and lacks species diversity and overall habitat complexity. The riparian corridor adjacent to the non-disturbed section of Edgecomb Creek is similarly degraded by non-native, invasive Himalayan blackberry and contains minimal native species diversity. Wetland and riparian enhancement actions will consist of replacing non-native, invasive and low-complexity vegetation with native tree and shrub species to improve habitat functions. Willow species will be established along the non-impacted stream channel to provide bank stability and shading. Large woody debris will be added to the preserved Edgecomb Creek side channels within Wetland AH to provide cover within these off-channel habitats.

The proposed native vegetation strategy will support wetland and stream habitat, hydrologic, and water quality functions. The proposed plantings will restore native forest conditions throughout the majority of the upland buffer and create a variety of wetland habitats. The riparian corridor will provide structural and species diversity to provide browse, cover, and nesting for birds, mammals, and aquatic species. The native plantings will also provide shading and cooling functions for the wetlands and stream. With construction of the mitigation site, establishment of the protective riparian corridor,

and signage around the entire sensitive areas tracts, and implementation of the required monitoring and maintenance actions, the mitigation areas are projected to be highly functional, persistent, and successful.

2.4 Approach and Best Management Practices

The proposed onsite compensatory mitigation actions will provide increased wetland and stream protections by maintenance or improvement of wetland, stream, and buffer functions onsite. Planting or seeding should occur immediately after grading is complete to the extent practicable. TESC measures will be implemented that consists of high-visibility fencing (HVF) installed around existing wetland and stream areas proposed to be not impacted, silt fencing between the graded areas and buffers, plastic sheeting on stockpiled materials, and seeding of disturbed soils. These TESC measures should be installed prior to the start of development or mitigation actions and actively managed for the duration of the project.

All equipment staging and materials stockpiles will be kept out of the wetlands, streams and associated buffer areas, and the areas will need to be kept free of spills and/or hazardous materials. Construction materials along with all construction waste and debris will be effectively managed and stockpiled on paved surfaces and kept free of the wetland, stream, and buffer areas. Following completion of the development, the entire site will be cleaned and detail graded using hand tools wherever necessary, and TESC measures will be removed.

2.5 Mitigation Implementation

Compensatory mitigation actions will occur concurrently with the construction of the project. The proposed mitigation actions may occur in two phases to provide a reasonable construction schedule and timeline. During the first phase, the Edgecomb Creek stream channel, Tributary X channel, wetland creation areas, and riparian corridor will be excavated and graded. Minor portions of the corridor may remain ungraded during this first phase to ensure the separation of the proposed stream channel from the existing Edgecomb Creek channel. Following the initial excavation and grading, native plants will be installed to the extent feasible dependent on summer hydrology conditions; native seed mixes will also be spread across the riparian corridor as needed for erosion control. During the second phase, Edgecomb Creek and Tributary X will be realigned and the riparian corridor will be fully planted. Minor excavation and grading work will be necessary in order to provide the connections between the new and existing stream channels. Native plants are anticipated to be fully installed during the fall or early winter (September 1– December 31), following the realignment of Edgecomb Creek and Tributary X during the summer season.

Two pre-construction meetings are recommended to be held involving representatives from the Applicant, Project Manager or Contractor, the designated Project Scientist, and interested reviewing agencies (e.g., Cities of Arlington and Marysville, WSDOE, and USACE). The first pre-construction meeting should occur prior to commencement of mitigation actions, and the second meeting should occur onsite after construction staking has been placed by professional surveyors. The overall purpose of the first pre-construction meeting should be to discuss the primary intent of the wetland creation, stream relocation and regulatory requirements, identify points of contact, establish communication lines between the Project Scientist, Project Manager or Contractor, and landscaping personnel, review project scheduling, and address any questions or issues associated with the mitigation plan. The overall

purpose of the second pre-construction meeting should be to discuss project implementation, protection of onsite habitat, construction BMPs, and identify invasive species management actions.

Following the pre-construction meeting, TESC measures will be implemented according to the TESC plan prepared for the proposed project. TESC measures may consist of silt fencing where appropriate to protect sensitive areas, plastic sheeting on stockpiled materials, and seeding of disturbed soils which should be actively managed for the duration of the project. Equipment used will be typical for land clearing, grading, and excavation activities and will be kept in good working conditions and free of leaks. Equipment to be used will likely include excavators, backhoes, bulldozers, dump trucks, graders, et cetera. All clean fill material will be sourced from upland areas onsite or from approved suppliers and will be free of pollutants and hazardous materials.

The Project Scientist should be consulted throughout the pre-treatment and mitigation installation actions to ensure that all wetland creation, stream relocation, and other mitigation actions are conducted according to the intent of the mitigation plan, and that the LWD, hummocks, and native plantings are placed in a functional manner. The Project Scientist will also inspect and approve the planting stock and review the plans with the field superintendent to ensure clear understanding of the plan prior to installation of plant materials. The Project Scientist should assist the landscape contractor in making any final adjustments in the planting schedule as needed, in response to field conditions.

One post-construction inspection of all mitigation areas will be necessary to verify the installation conforms to the approved plan. This post-construction inspection effort should occur after completion of the stream relocation, wetland creation, wetland enhancement, and all associated planting and seeding actions. Post-construction review and verification of grading and planting actions may be conducted with interested reviewing agencies (e.g., Cities of Arlington and Marysville, WSDOE, and USACE). Following the post-construction inspection, the Project Scientist and Project Engineer will prepare an As-Built (Year 0) Report to be submitted within 90 days following the post-construction inspection. Any significant changes to the mitigation design should be coordinated with regulatory staff and presented in the As-Built Report

The riparian corridor creation will include the excavation of material to create the new Edgecomb Creek mainstem channel, side channels, wetland benches, and floodplain areas. Riparian corridor creation may be completed separately from clearing, grading, and wetland fill actions in the rest of the project area. Excavated material may be temporarily stored and then may be used to fill the existing stream channel. Any remaining excavated material will be removed from the site or used as needed for grading in the rest of the project area. The new stream channel will be entirely excavated prior to the stream relocation, with a berm left on the upstream and downstream ends to prevent the stream from immediately diverting into the new channel. Large woody debris and new substrates should be installed following channel excavation. Soil amendments from onsite peat material will be installed as needed throughout the riparian corridor. The onsite soil amendments may be sourced from scraped topsoil. Imported topsoil or soil amendments may be used at the discretion of the landscape contractor.

Dewatering and rewatering of the existing and new stream channels will be completed using temporary dams and bypass pipes. The stream relocation will be divided into at least two sections in order to minimize fish loss and turbidity impacts. Sediment control structures will be installed according to the TESC plan, and water quality monitoring will proceed according to the *Water Quality Monitoring Plan*, which will be provided under separate cover. The existing stream channel will be dewatered and

the new stream channel rewatered from the downstream end of the proposed impact length to the upstream end. Following the dewatering of each existing channel section, the dried channel section may be immediately filled. Prior to dewatering, nets will be installed at the upstream and downstream ends of the selected channel section, and fish capture and relocation efforts completed according to the *Fish Exclusion and Protection Plan* provided under separate cover. Water will be gradually reintroduced, with time allowed for sediments to settle before moving to the downstream phases of the stream.

During the post-construction inspections, the Project Scientist will identify and mark long-term monitoring plots and photographic stations in the field that represent typical conditions of the wetland creation, stream relocation, and other mitigation areas. The plots and stations should be surveyed or GPS located and included in the As-Built Report.

The intended project sequencing follows:

- Pre-construction conference(s) and regulatory notifications;
- Install TESC measures;
- Remove debris and invasive plant material from the wetland creation and other mitigation areas;
- Rough grade the stream relocation and wetland creation areas according to the approved grading plan;
- Rough grade inspection;
- Finish grade and prepare grounds for planting in all mitigation areas;
- Install LWD;
- Install streambed substrates;
- Plant and/or seed entire mitigation area for erosion control;
- Dewater existing stream channel and rewater new stream channel;
- Monitor site hydrology;
- Plant inspections;
- Install plant materials;
- Post-construction inspection and as-built survey; and
- Post-construction maintenance, monitoring, and annual reporting.

Plant installation may occur prior to re-watering actions, at the discretion of the Contractor and Project Scientist.

2.6 Goals, Objectives, and Performance Standards

The goals and objectives for the proposed onsite, in-kind mitigation actions are based on establishing and enhancing wetland areas to compensate for the loss of onsite wetlands and establishing and enhancing stream functions for the stream channel relocation actions. In addition to the proposed compensation for onsite wetland loss, the mitigation actions are proposed to result in additional compensatory wetland creation and enhancement areas that may be used as advanced mitigation for future wetland loss within the watershed (SVC, 2021b). Non-compensatory mitigation actions are proposed to provide additional ecological benefits at the mitigation site. These non-compensatory mitigation actions include the replacement of two undersized culverts beneath the BNSF rail line with upgraded culverts to improve fish passage, wetland creation areas that will have less than 75 feet of

protective buffer, and enhancement of the Wetland AH buffer. The compensatory mitigation actions are capable of establishing wetlands with superior water quality and hydrologic functions and providing a moderate to high level of habitat function for wetland-associated wildlife within the watershed. In addition, the stream relocation will significantly improve overall habitat conditions. The goals and objectives of the proposed mitigation actions are as follows:

Goal 1 – Compensate for the loss of the existing Edgecomb Creek channel by creating a meandering stream channel with associated side channels.

Objective 1.1 – Create a new stream channel and enhanced habitat components.

Performance Standard 1.1.1 – The new stream channel system will be created according to the final approved design and documented in the As-Built Report.

Performance Standard 1.1.2 – Habitat structures with large woody debris in the new stream channel system will be created according to the final approved design and documented in the As-Built Report.

Performance Standard 1.1.3 – A media filter drain will be installed along the eastern boundary of the mitigation site between the new stream channel and the railroad and documented in the As-Built Report.

Goal 2 – Compensate for the loss of 4.275 acres of wetlands and 0.595 acre of indirect wetland impacts, including the 51st Avenue East Ditch that is being treated as a wetland for local and state permitting processes, by creating a minimum of 8.769 acres of wetlands that provide a moderate to high level of water quality and habitat functions. Compensate for the 0.104 acre of direct impacts and 0.021 acre of indirect impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021) by creating a minimum of 0.228 acre of wetlands that provide a moderate to high level of water quality and habitat functions. Excess compensatory wetland creation areas may be used as advance mitigation according to an approved advance mitigation plan.

Objective 2.1 – Establish a minimum of 8.769 acres of wetland creation areas for the Cascade Business Park and 0.228 acre of wetland creation areas for the Cascade Commerce Center along the re-aligned Edgecomb Creek.

Performance Standard 2.1.1 – The wetland creation areas will measure at least 8.769 acres [Cascade Business Park] and 0.228 acre [Cascade Commerce Center] in size as demonstrated by wetland delineations in Year 5 and Year 10.

Objective 2.2 – Establish wetland hydrology through grading to establish depressions/benches that intersect shallow groundwater elevations similar to nearby wetlands and/or receive hydrologic influence from Edgecomb Creek.

Performance Standard 2.2.1 – The approximately 8.769 acres [Cascade Business Park] and 0.228 acre [Cascade Commerce Center] of wetland creation areas will have seasonally saturated soils (or greater hydroperiod) within 12 inches of the surface over all the wetland creation areas that persists for a minimum of 14 consecutive days during

the growing season in years with normal precipitation levels over the monitoring period.

Objective 2.3 – Establish forested and scrub-shrub wetland habitat with diverse horizontal and vertical vegetation structure and species richness to provide habitat for wetland-associated wildlife.

Performance Standard 2.3.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland creation areas.

Performance Standard 2.3.2 – Native woody vegetation in the wetland creation areas will provide, at least 25 percent total cover by Year 3, at least 30 percent total cover by Year 5, at least 50 percent total cover by Year 7, and 75 percent total cover by Year 10.

Performance Standard 2.3.3 – In all monitoring years, the wetland creation areas will have at least 2 species of native trees and 5 species of native shrubs.

Objective 2.4 – Establish emergent wetland habitat to provide habitat for wetland-associated wildlife.

Performance Standard 2.4.1 – Native emergent species will provide at least 20 percent total cover of the emergent wetland habitat by Year 2, at least 30 percent total cover by Year 3, at least 50 percent total cover by Year 5, at least 65 percent total cover for Years 7 and 10. Permanently ponded wetland areas that lack vegetation will be excluded from the area used to determine percent cover.

Objective 2.5 – Effectively control and/or eliminate non-native invasive species from the wetland creation areas.

Performance Standard 2.5.1 – Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Goal 3 – Enhance 2.296 acres of existing Wetlands AH and AK to improve habitat functions. Excess compensatory wetland enhancement areas may be used as advance mitigation according to an approved advance mitigation plan.

Objective 3.1 – Establish native plant cover within the enhancement areas to create diverse horizontal and vertical vegetation structure and additional wildlife habitat.

Performance Standard 3.1.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland enhancement areas.

Performance Standard 3.1.2 – Native woody species will provide at least 20 percent total cover of the wetland enhancement areas by Year 2, at least 30 percent total cover by Year 3, and at least 50 percent total cover for Years 5-10.

Performance Standard 3.1.3 – At least 3 native shrub and/or tree species will be present in the enhancement areas in all monitoring years.

Objective 2 – Effectively control non-native invasive species within the wetland enhancement areas.

Performance Standard 3.2.1 – Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

Performance Standard 3.2.2 – Total reed canary grass cover will be reduced compared to baseline conditions established during Year 0 (As-Built): 15 percent reduction in total cover by Year 5, and 30 percent reduction in total cover by Year 10.

Goal 4 – Establish of upland/buffer for the newly realigned Edgecomb Creek to provide protection for the stream and wetlands. 4.748 acres of upland/buffer protected by the 75-foot compensatory mitigation site perimeter buffer may be used as advanced mitigation according to an approved advanced mitigation plan.

Objective 1 – Establish native plant cover within the targeted upland/buffer areas to create diverse horizontal and vertical vegetation structure and additional wildlife habitat.

Performance Standard 4.1.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland upland/buffer areas.

Performance Standard 4.1.2 – Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.

Performance Standard 4.1.3 – In all monitoring years, the upland/buffer area will have at least 3 species of native trees and 5 species of native shrubs.

Objective 2 – Effectively control and/or eliminate non-native invasive species from the upland/buffer areas.

Performance Standard 4.2.1 – Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Goal 5 – Protect the riparian corridor.

Objective 5.1 – Identify the riparian corridor as a mitigation site.

Performance Standard 5.1.1 – Critical areas signs will be installed along the boundary of the mitigation site every 100 feet according to the final approved plans. Critical areas signs must be present during all monitoring years.

For all native species survival, coverage or species richness performance standards, replacement of dead or dying plants is allowed during all monitoring years. Native volunteer plants may be included for coverage or species richness performance standards.

2.6.1 Non-Compensatory Mitigation Monitoring

The Applicant proposes several non-compensatory mitigation actions to improve stream and wetland functions in the riparian corridor. Informal monitoring of these non-compensatory mitigation actions is proposed to document the resulting improvement in ecological functions. The monitoring goals for the non-compensatory mitigation are as follows:

BNSF Culvert Replacement: The Applicant proposes non-compensatory improvement of stream flow conditions, fish passage conditions, and habitat accessibility for the restored Edgecomb Creek channel and upstream areas by the replacement of existing partial fish passage barrier culverts beneath the BNSF railroad.

- The replacement culverts or bridges will meet be installed according to the final design provided by BNSF and Project Engineers.
- Stream processes, including open unobstructed conveyance, will be readily observed and functional in all monitoring years.

Wetland Creation: The Applicant proposes non-compensatory wetland creation areas that will provide buffer functionality to compensatory wetland creation and enhancement areas.

- Native vegetation in the wetland creation areas will provide, at least 20 percent total cover by Year 3, at least 25 percent total cover by Year 5, at least 50 percent total cover by Year 7, and 65 percent total cover by Year 10.
- The wetland creation areas will have at least 3 species of native trees and/or shrubs during all monitoring years.
- Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Wetland Enhancement: The Applicant proposes non-compensatory wetland enhancement areas that will provide buffer functionality to compensatory wetland creation and enhancement areas.

- Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.
- At least 2 native shrub and/or tree species will be present in the wetland enhancement areas in all monitoring years.
- Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

Wetland AH Buffer Enhancement: The Applicant also proposes non-compensatory enhancement of the Wetland AH buffer to restore the existing degraded buffer.

- Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.
- In all monitoring years, the upland/buffer area will have at least 2 species of native trees and/or shrub species.
- Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

2.7 Plant Materials and Installation

2.7.1 Plant Materials

All plant materials to be used for the mitigation actions will be nursery grown stock from a reputable, local source. Live stakes may be used as specified in the planting plan provided in Appendix A. Only native species are to be used; no hybrids or cultivars will be allowed. Plant material provided will be typical of their species or variety; if not cuttings they will exhibit normal, densely developed branches and vigorous, fibrous root systems. Plants will be sound, healthy, vigorous plants free from defects, and all forms of disease and infestation.

Seed mixture used for hand or hydroseeding shall contain fresh, clean, and new crop seed mixed by an approved method. The mixture is specified in the plan set.

All plant material shall be inspected by the qualified Project Scientist upon delivery. Plant material not conforming to the specifications below will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site.

2.7.2 Plant Scheduling, Species, Size, and Spacing

Plant installation should occur as close to conclusion of the proposed grading activities as possible to limit erosion and limit the temporal loss of function provided by the critical areas and associated buffers. All planting should occur between September 1 and May 1 to ensure plants do not dry out after installation, or temporary irrigation measures may be necessary. All planting will be installed according to the procedures detailed in the following subsections and as outlined on the site plans in Appendix A.

2.7.3 Quality Control for Planting Plan

All plant material shall be inspected by the Project Scientist upon delivery. Plant material not conforming to the specifications above will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site. Under no circumstances shall container stock be handled by their trunks, stems, or tops.

The landscape contractor shall provide the Project Scientist with documentation of plant material that includes the supplying nursery contact information, plant species, plant quantities, and plant sizes.

2.7.4 Product Handling, Delivery, and Storage

All seed should be delivered in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. This material should be stored in a manner to prevent wetting and deterioration. All precautions customary in good trade practice shall be taken in preparing plants for moving. Workmanship that fails to meet industry standards will be rejected. Plants will be packed, transported, and handled with care to ensure protection against injury and from drying out. If plants cannot be planted immediately upon delivery they should be protected with soil, wet peat moss, or in a manner acceptable to the Project Scientist. Plants not installed immediately upon delivery shall be secured on the site to prevent theft or tampering. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Plants transported on open vehicles should be secured with a protective covering to prevent windburn.

2.7.5 Preparation and Installation of Plant Materials

The landscape contractor shall verify the location of all elements of the mitigation plan with the responsible Project Scientist prior to installation. The responsible Project Scientist reserves the right to adjust the locations of landscape elements during the installation period as appropriate.

The plant pits should accommodate the entire root system of the plants. Please refer to planting detail in Appendix A. Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water plants thoroughly midway through backfilling. Water pits again upon completion of backfilling. No filling should occur around trunks or stems. Do not use frozen or muddy mixtures for backfilling. Coir rings or peat moss may be used around each installed plant to provide moisture retention and support weed management.

2.7.6 Temporary Irrigation Specifications

While the native species selected for the mitigation actions are hardy and typically thrive in northwest conditions and the proposed actions are planned in areas with sufficient hydroperiods for the species selected, some individual plants might perish due to dry conditions. Therefore, irrigation or regular watering may be provided as necessary for the duration of the first two growing seasons, up to two times per week while the native plantings become established, particularly in the upland buffer area. If used, irrigation will be discontinued after two growing seasons. Frequency and amount of irrigation will be dependent upon climatic conditions and may require more or less frequent watering than two times per week.

2.7.7 Invasive Plant Control

Invasive species to be controlled include Himalayan blackberry and all listed noxious weeds that may potentially be present within targeted mitigation areas; such non-native invasive species will require an effective control strategy. To ensure non-native invasive species do not expand following the mitigation actions, it is recommended that non-native invasive plants within the mitigation corridor are pretreated with a root-killing herbicide approved for use in aquatic sites (i.e. Rodeo) a minimum of two weeks prior to being cleared and grubbed from the mitigation area. A second application is strongly recommended. The pre-treatment with herbicide should occur prior to all planned mitigation actions, and spot treatment of surviving non-native invasive vegetation should be performed again each fall prior to senescence for a minimum of three years.

2.8 Maintenance & Monitoring Plan

The Applicant is committed to compliance with the proposed mitigation plan and overall success of the project. As such, the Applicant will continue to maintain the project, keeping the site free from introduced non-native invasive vegetation, trash, and yard waste. Depending on the success of the mitigation site, maintenance frequency may be decreased or increased at the discretion of the responsible Project Scientist.

The mitigation actions will require continued monitoring and maintenance to ensure the mitigation actions are successful. Therefore, the mitigation site will be monitored for a period of 10 years with formal inspections by a qualified Project Scientist. Monitoring events will be scheduled at the time of construction, 30 days after planting, twice during Years 1 and 2, and on an annual basis for Years 3, 5, 7, and 10. Delineation of compensatory wetland creation areas by a qualified Wetland Scientist will

also be conducted in Years 5 and 10 to ensure the success of the compensatory actions. Informal monitoring events will also be performed in Years 4, 6, 8, and 9 as needed.

Monitoring of compensatory mitigation areas will consist of survivorship and percent cover measurements at permanent monitoring stations, walk-through surveys to identify invasive species presence, and dead or dying restoration plantings, photographs taken at fixed photo points, wildlife observations, and general qualitative habitat and wetland function observations. The permanent monitoring stations will be established such that the mitigation site is representatively sampled for upland/buffer areas, wetland creation areas, and wetland enhancement areas. Circular sample plots, approximately 30 feet in diameter (706 square feet), will be centered at each monitoring station. The sample plots will be located within the specified wetland or upland/buffer areas and terminate at the observed wetland or upland/buffer boundary. The circular sample plots will cover approximately 1 percent of the mitigation site. Mean survivorship and percent cover measurements from the sample plots will be used to estimate survivorship and percent cover across the mitigation site.

To determine survivorship, individual native tree and shrub locations within the relevant circular sampling plots will be marked following plant installation. These installed native trees and shrubs will then be recorded as dead or alive during Year 1 monitoring. To determine percent cover and species richness, each species of tree or shrub within the approximately 30-foot-diameter circular sampling plots will be recorded. Willow species may be recorded by genus if species is unable to be determined at the time of the monitoring visit. Overall estimates of total cover by trees and shrubs will be made for native and invasive species. Percent cover of each prevalent genus or species that contributes greater than 5 percent total cover will be estimated, and non-prevalent species that provide less than 5 percent total cover may be recorded as such. Herbaceous vegetation will be sampled from a 10-foot diameter (78.5 square feet), established at the same location as the center of each tree and shrub sample plot. Herbaceous vegetation within the sampling plot will be recorded to at least the genus level, and overall estimates of total cover will be made for native and non-native invasive vegetation. Percent cover of each prevalent genus or species that contributes greater than 5 percent total cover will be estimated, and non-prevalent species that provide less than 5 percent total cover may be recorded as such. A list of observed tree, shrub, and herbaceous genera or species, respective estimates of total cover, and wetland indicator status will be included within each monitoring report. For all native species survival, coverage or species richness estimates, replacement of dead or dying plants is allowed during all monitoring years. Native volunteer plants may be included in coverage or species richness estimates.

2.9 Reporting

Following the creation of the mitigation areas, the responsible Project Scientist will prepare an As-Built (Year 0) Report and will be submitted to the Cities of Arlington and Marysville, USACE, and WSDOE within 90 days following the post-construction monitoring event. Following each formal monitoring event, a monitoring report detailing the current ecological status of the mitigation actions, measurement of performance standards, and management recommendations will be prepared and submitted to the Cities of Arlington and Marysville, USACE, and WSDOE by December 31st of each formal monitoring year to ensure full compliance with the mitigation plan, performance standards, and regulatory conditions of approval.

2.10 Contingency Plan and Long-Term Management Plan

If monitoring results indicate that performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the site fail to meet the success criteria, a contingency plan will be developed and implemented with approval from the Cities of Arlington and Marysville and the USACE. Such plans are adaptive and should be prepared on a case-by-case basis to reflect the failed mitigation characteristics. Contingency plans can include additional plant installation, erosion control, and plant substitutions including type, size, and location. In addition, in compliance with 33 CFR 332.7(d)(2) and to ensure long-term success of the mitigation site, the landowner will be responsible for implementing long-term maintenance; informal site inspections will occur periodically. The contingency measures outlined below can also be utilized in perpetuity to maintain the wetland, stream, and buffers associated with the proposed mitigation site.

This project proposes 10 years of monitoring for the wetland creation and stream channel relocation actions in compliance with the goals and performance standards outlined in Section 2.6 of this report. However, USACE may request additional years of monitoring and formal reporting if the site has not met the goals and performance standards by Year 10. In compliance with 33 CFR 332.7(d)(2), the mitigation areas on the project site will be maintained in perpetuity by the landowner. No additional formal reporting beyond the Year 10 As-Built is proposed at this time.

The proposed project includes a public pedestrian trail that is partially located within the riparian corridor. Public excursions into the upland/buffer, wetland creation and enhancement, or stream areas may result in detrimental footpaths, trash, wildlife disturbance, or plant damage. Should detrimental effects be observed from human uses of the mitigation site, the Applicant will implement contingency measures to deter the detrimental uses from continuing. Examples of deterrence may include planting of additional thorny vegetation, planting replacement plants, or placement of logs across pedestrian footpaths.

Beaver dams are currently located along Edgecomb Creek on the subject property, and beaver use of the proposed realigned Edgecomb Creek is anticipated. Beaver management actions may be required to ensure that the proposed riparian corridor meets mitigation performance standards throughout the 10-year monitoring period or that flooding associated with beaver dams does not pose a hazard to the proposed development, adjacent public roadways, or the BNSF Railroad. The effects of beavers on the proposed riparian corridor will be assessed during formal and informal monitoring visits. Qualitative observations will focus on beaver activities such as ponding and plant girdling or felling that affect the survival and composition of plantings in the riparian corridor. Examples of beaver management actions include beaver trapping by a qualified specialist, modifications of beaver dams, or removal of beaver dams. Beaver trapping by a qualified specialist may be permitted without an HPA. If beaver management actions requiring beaver dam removal or modification or other in-water work are necessary, these actions will be performed subject to the conditions of an approved HPA.

Additional contingency/maintenance activities may include, but are not limited to:

1. Using plugs instead of seed for emergent vegetation coverage where seeded material does not become well established;
2. Replacing plants lost to vandalism, drought, or disease, as necessary;
3. Replacing any plant species with a 20 percent or greater mortality rate after 2 growing seasons with the same species or native species of similar form and function;
4. Irrigating the mitigation areas only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water;
5. Reseeding and/or repair of wetland and buffer areas as necessary if erosion or sedimentation occurs;
6. Spot treat non-native invasive plant species, and
7. Removing all trash or undesirable debris from all mitigation areas as necessary.

2.11 Critical Areas Easement

Per AMC 20.93.290 and MMC 22E.010.350(2) long-term protection of the mitigation site shall be provided by placement in a separate tract in which development is prohibited or by execution of an easement dedicated to the Cities of Arlington and Marysville, a conservation organization, land trust, or similarly preserved through a permanent protective mechanism acceptable to the city. The location and limitations associated with the mitigation area shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the Snohomish County recording department.

In addition, signage will be provided around the wetland mitigation and associated buffer areas as required per AMC 20.93.290(a) and MMC 22E.010.370. A temporary fence along the construction limits will prevent encroachment into the critical area during construction, which will be replaced by critical areas signage after completion of the project.

2.12 Financial Assurances

Per AMC 20.93.390(5) and MMC 22E.010.140(2)(e), performance security is required to assure that all actions approved under this mitigation plan are satisfactorily completed in accordance with the mitigation plan, performance standards, and regulatory conditions of approval. The Applicant will provide financial assurances according to the conditions of approved development agreements with the Cities.

Chapter 3. Closure

The findings and conclusions documented in this report have been prepared for specific application for the Cascade Business Park project. These findings and conclusions 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. The conclusions and recommendations presented in this assessment 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 assessment may need to be revised wholly or in part in the future.

Wetland and stream status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland and 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 stream 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 streams 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 stream delineations for a period of five 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 stream delineations. 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 4. References

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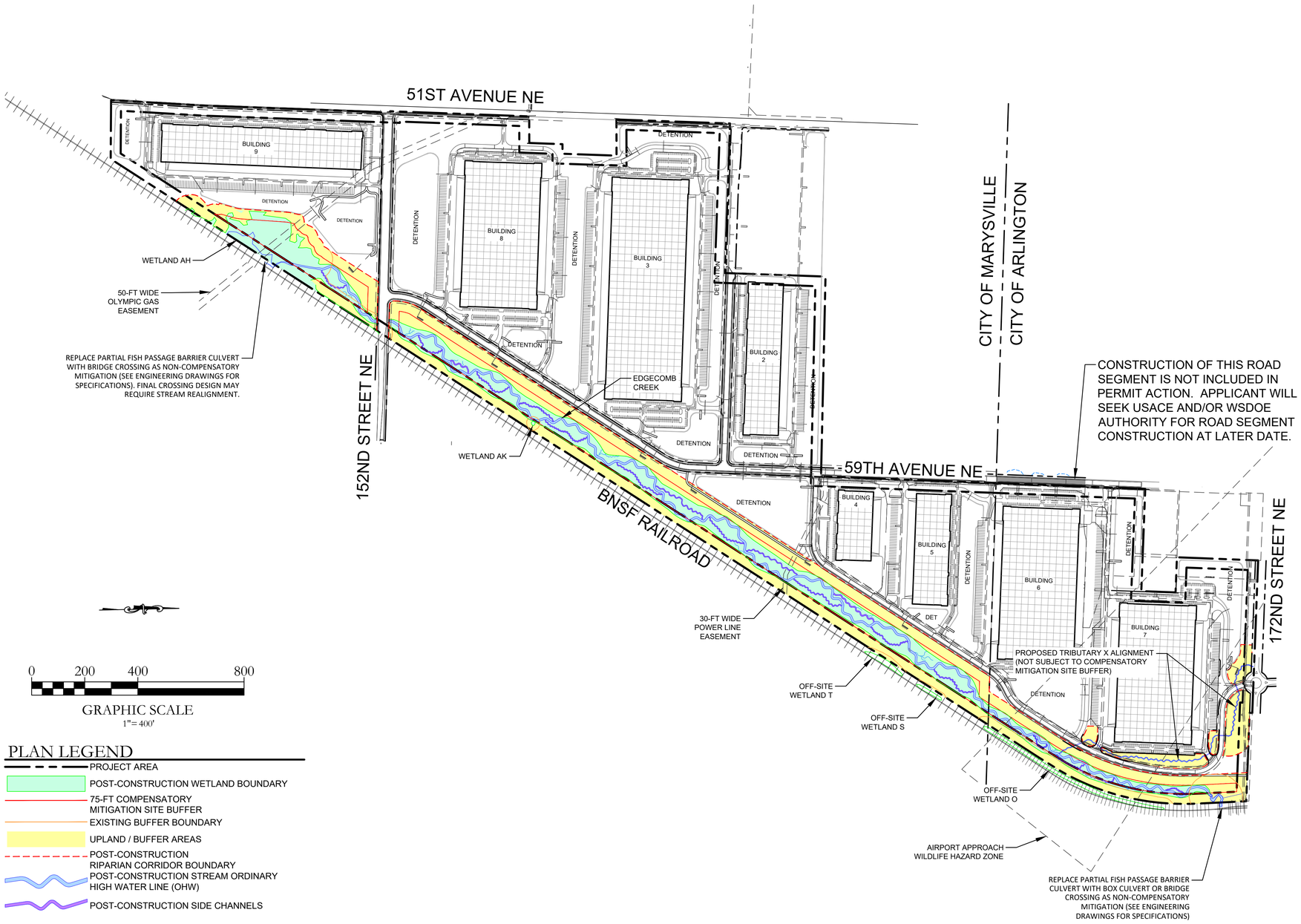
Appendix A – Final Mitigation Plan Exhibits



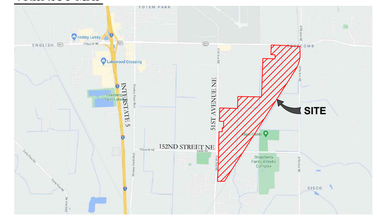
0 200 400 800

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

- PROJECT AREA
- POST-CONSTRUCTION WETLAND BOUNDARY
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- UPLAND / BUFFER AREAS
- POST-CONSTRUCTION RIPARIAN CORRIDOR BOUNDARY
- POST-CONSTRUCTION STREAM ORDINARY HIGH WATER LINE (OHW)
- POST-CONSTRUCTION SIDE CHANNELS

VICINITY MAP



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 11/4/2020)

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RIVERSIDE, MISSOURI 6415

SITE ADDRESS/PARCEL #

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15223 & 16015 51ST AVENUE NORTHEAST
5415 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

SNOHOMISH COUNTY TAX PARCELS:
31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, 31053400300300
SNOHOMISH COUNTY TAX PARCELS (NOT ASSESSED): 31052700100900, 31053400200100, 31053400200900, 31053400201300

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SHEET INDEX

SOURCES:

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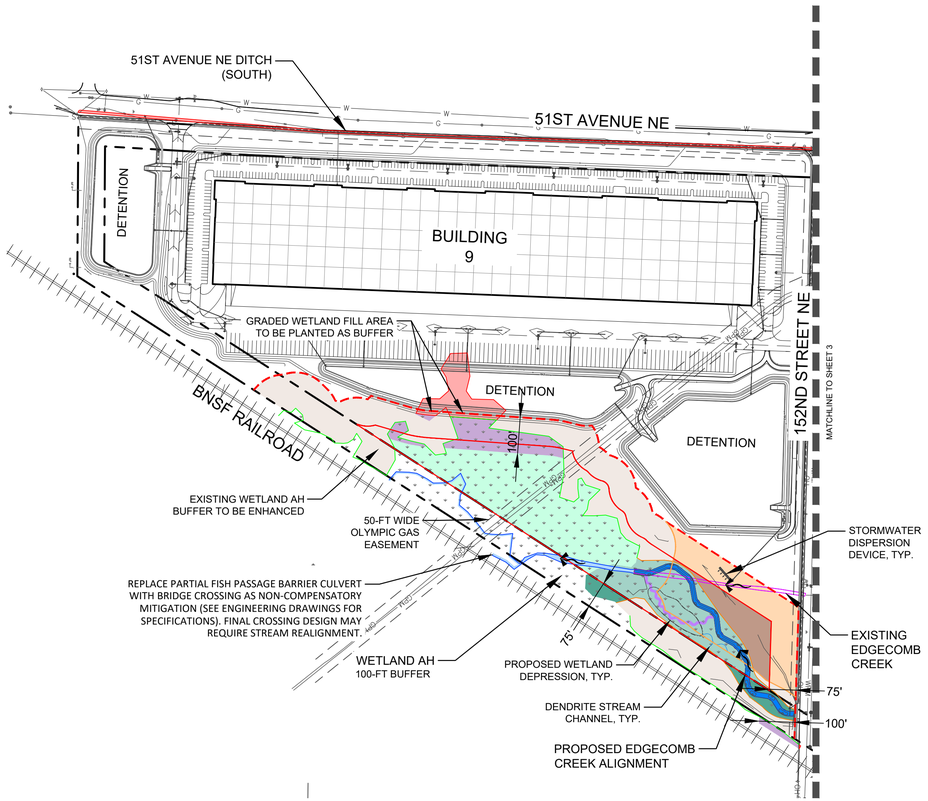
CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 1

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Business Park\Graphics & Maps\CADD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-05) 75-ft buffers - reverse.dwg
Plotted: May 26, 2021



IMPACTS & MITIGATION PLAN - VIEWPORT 1

0 200 400 800

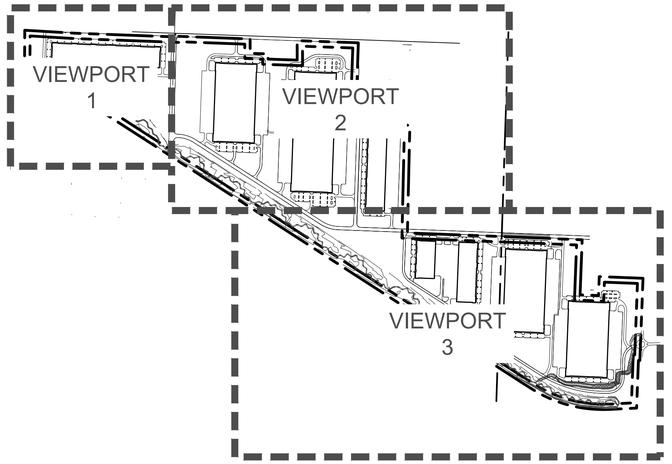
GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

WETLAND FILL	
WETLAND A	1,369 SF
WETLAND B	4,859 SF
WETLAND C	4,841 SF
WETLAND D	3,537 SF
WETLAND E	775 SF
WETLAND F	386 SF
WETLAND G	987 SF
WETLAND H	6,279 SF
WETLAND I	377 SF
WETLAND J	334 SF
WETLAND K	16,836 SF
WETLAND L	15,756 SF
WETLAND M	1,969 SF
WETLAND N	8,133 SF
WETLAND P	550 SF
WETLAND Q	2,522 SF
WETLAND R	1,773 SF
WETLAND U	4,909 SF
WETLAND V	5,945 SF
WETLAND W	5,874 SF
WETLAND X	4,492 SF
WETLAND Y	662 SF
WETLAND Z	483 SF
WETLAND AA	574 SF
WETLAND AB	1,166 SF
WETLAND AC	4,866 SF
WETLAND AD	2,462 SF
WETLAND AE	11,346 SF
WETLAND AF	615 SF
WETLAND AG	285 SF
WETLAND AH	19,283 SF
WETLAND AI	3,873 SF
WETLAND AJ	2,471 SF
WETLAND AL	11,835 SF
WETLAND AM	3,021 SF
51ST AVE E DITCH - NORTH TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	17,099 SF
51ST AVE E DITCH - SOUTH TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	13,670 SF
TOTAL WETLAND FILL:	186,214 SF
INDIRECT WETLAND IMPACTS	25,910 SF
STREAM FILL	
EDGECOMB CREEK	10,165 LF (147,522 SF)
TRIBUTARY X	1,167 LF (18,074 SF)
TOTAL STREAM FILL:	11,332 LF (165,596 SF)
EDGCOMB CREEK SIDE CHANNEL DIRECT IMPACTS AVERAGE 12-FT WIDTH	496 LF (5,952 SF)
TOTAL STREAM IMPACTS:	11,828 LF (171,548 SF)
DITCH U FILL LIKELY NON-JURISDICTIONAL FEDERALLY	1,223 LF (4,891 SF)



IMPACTS & MITIGATION KEY

SCALE: 1"=1000'

MITIGATION LEGEND

WETLANDS	
COMPENSATORY WETLAND ENHANCEMENT WETLANDS AH & AK	100,043 SF
NON-COMPENSATORY WETLAND ENHANCEMENT WETLAND AH	25,910 SF
COMPENSATORY WETLAND CREATION EDGECOMB CREEK CORRIDOR	637,990 SF
NON-COMPENSATORY WETLAND CREATION 152ND STREET NE CORRIDOR	86,354 SF

NOTE: WETLAND MITIGATION AREA TO COMPENSATE FOR THE PROPOSED PROJECT'S DIRECT & INDIRECT IMPACTS. EXCESS COMPENSATORY MITIGATION & EXCESS BUFFER CREATION AREAS MAY BE UTILIZED AS ADVANCED MITIGATION UNDER SEPARATE PROJECT APPLICATION(S). THE ADVANCED MITIGATION PLAN IS UNDER REVIEW BY WSDOE BUT HAS NOT YET BEEN APPROVED.

BUFFERS

BUFFER CREATION	1,125,696 SF
EXCESS BUFFER CREATION	206,856 SF

STREAMS

EDGECOMB CREEK REALIGNMENT	9,533 LF (134,295 SF)
TRIBUTARY X REALIGNMENT	2,094 LF (9,566 SF)
EDGECOMB CREEK SIDE CHANNEL CREATION	6,961 LF (42,723 SF)
TOTAL STREAM CREATION:	18,588 LF (186,584SF)

SOURCES: LDC

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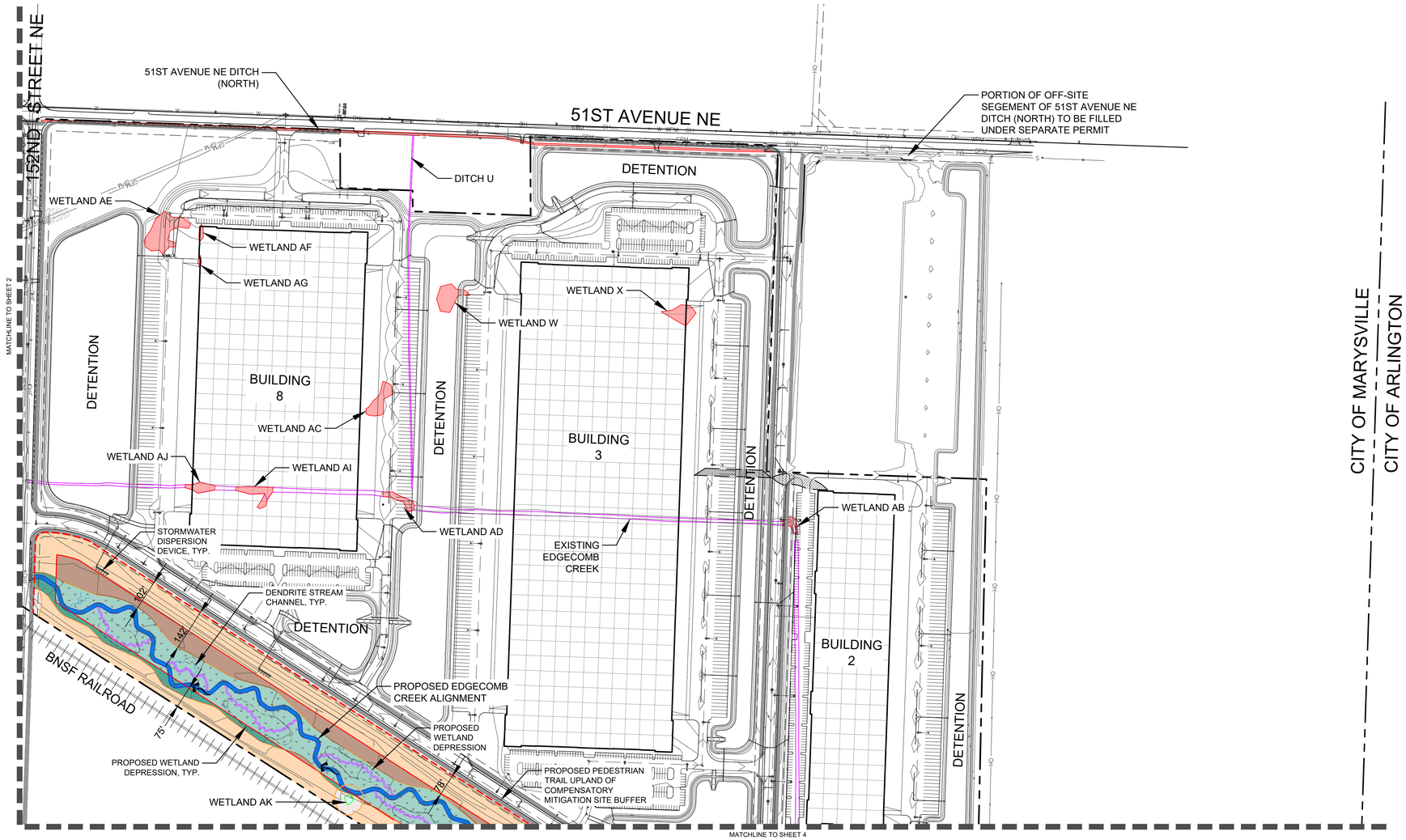

IMPACTS & MITIGATION PLAN - VIEWPORT 2

0 200 400 800

GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

- WETLAND FILL
- STREAM FILL
- EDGECOMB CREEK SIDE CHANNEL DIRECT IMPACTS

MITIGATION LEGEND

WETLANDS
- COMPENSATORY WETLAND ENHANCEMENT
- COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND ENHANCEMENT

BUFFERS
- BUFFER CREATION
- EXCESS BUFFER CREATION

STREAM CREATION
- EDGECOMB CREEK & TRIBUTARY X
- EDGECOMB CREEK SIDE CHANNELS

SOURCES:

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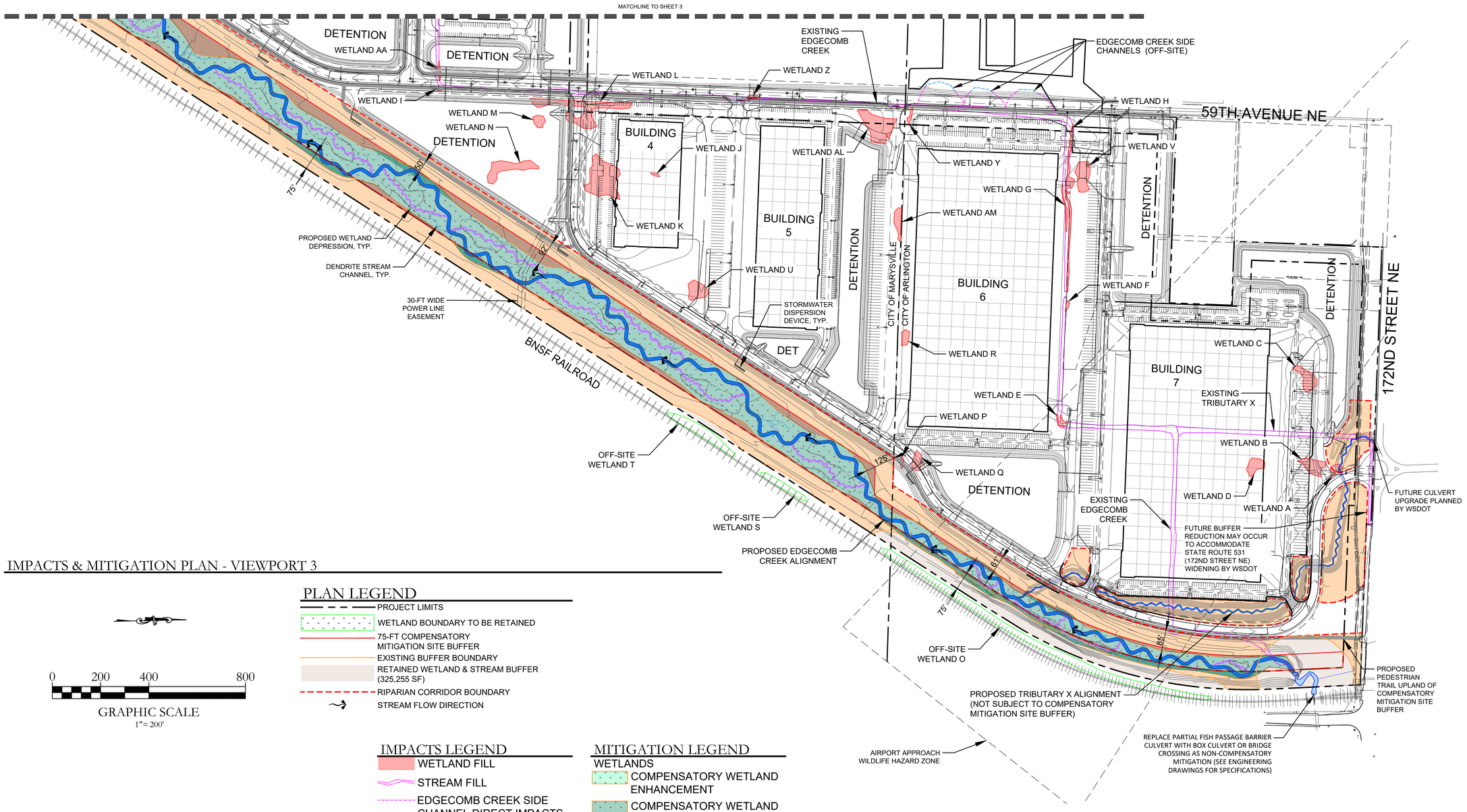

IMPACTS & MITIGATION PLAN - VIEWPORT 3

0 200 400 800

GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

- WETLAND FILL
- STREAM FILL
- EDGECOMB CREEK SIDE CHANNEL DIRECT IMPACTS

MITIGATION LEGEND

WETLANDS
- COMPENSATORY WETLAND ENHANCEMENT
- COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND ENHANCEMENT

BUFFERS
- BUFFER CREATION
- EXCESS BUFFER CREATION

STREAM CREATION
- EDGECOMB CREEK & TRIBUTARY X
- EDGECOMB CREEK SIDE CHANNELS

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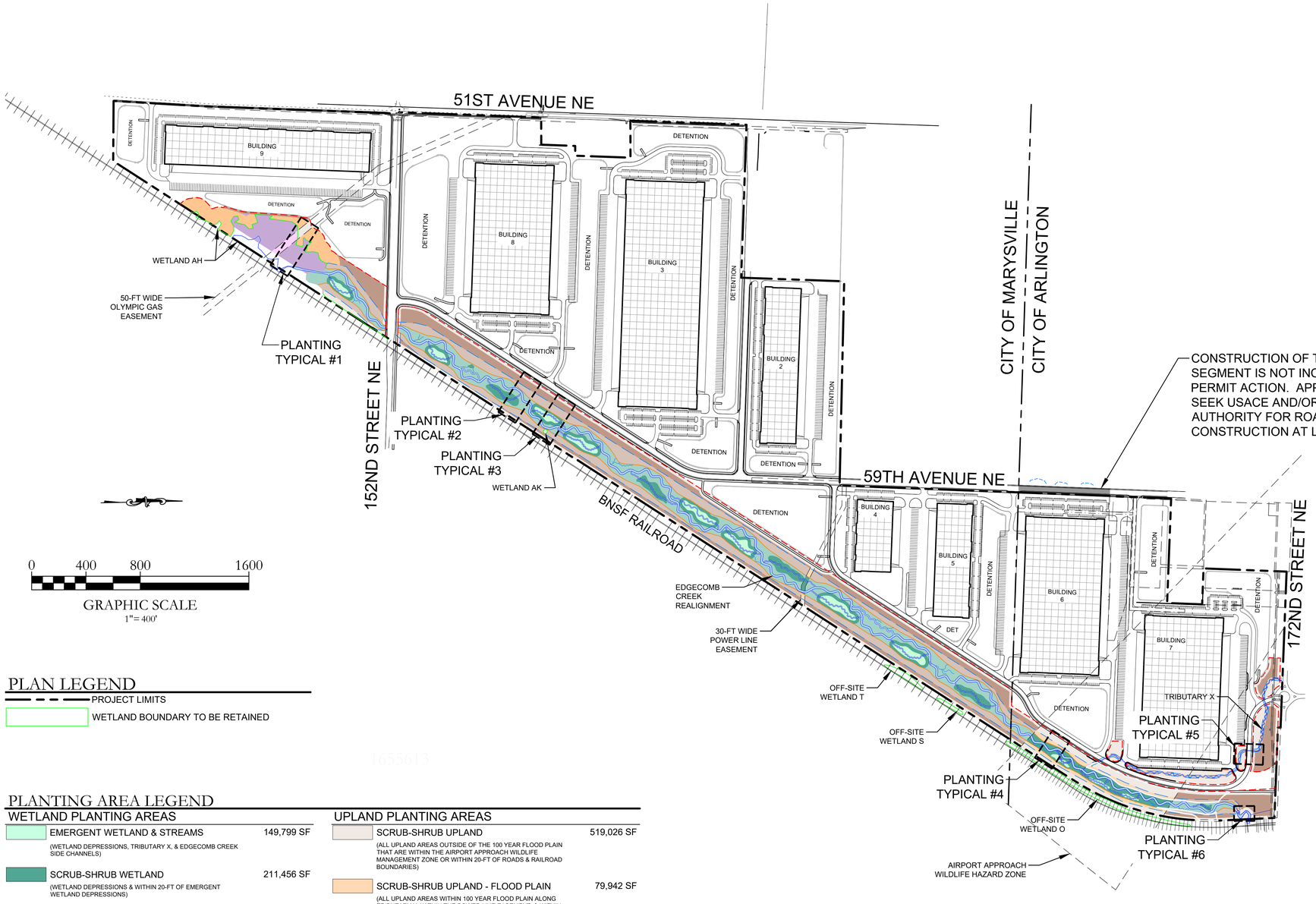

0 400 800 1600

GRAPHIC SCALE
1"= 400'

PLAN LEGEND

PROJECT LIMITS

WETLAND BOUNDARY TO BE RETAINED

16556135

PLANTING AREA LEGEND

WETLAND PLANTING AREAS

	EMERGENT WETLAND & STREAMS (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)	149,799 SF
	SCRUB-SHRUB WETLAND (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)	211,456 SF
	FORESTED/SCRUB-SHRUB WETLAND (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE	446,567 SF
	SCRUB-SHRUB WETLAND ENHANCEMENT WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT	10,762 SF
	FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT WETLAND AH ENHANCEMENT	113,214 SF
	TOTAL WETLAND PLANTINGS:	931,798 SF

UPLAND PLANTING AREAS

	SCRUB-SHRUB UPLAND (ALL UPLAND AREAS OUTSIDE OF THE 100 YEAR FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)	519,026 SF
	SCRUB-SHRUB UPLAND - FLOOD PLAIN (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)	79,942 SF
	FORESTED UPLAND (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN; OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)	454,621 SF
	FORESTED UPLAND ENHANCMENT-WETLAND AH BUFFER (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)	110,624 SF
	FORESTED UPLAND - FLOOD PLAIN (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN;	493,594 SF
	TOTAL UPLAND PLANTINGS:	1,657,807 SF
	TOTAL PLANTED AREAS:	2,589,605 SF (59.45 AC)

NOTE:
APPLICANT WILL RESTORE ANY VEGETATION DISTURBED FOR MAINTENANCE IN POWER LINE AND NATURAL GAS LINE EASEMENTS.

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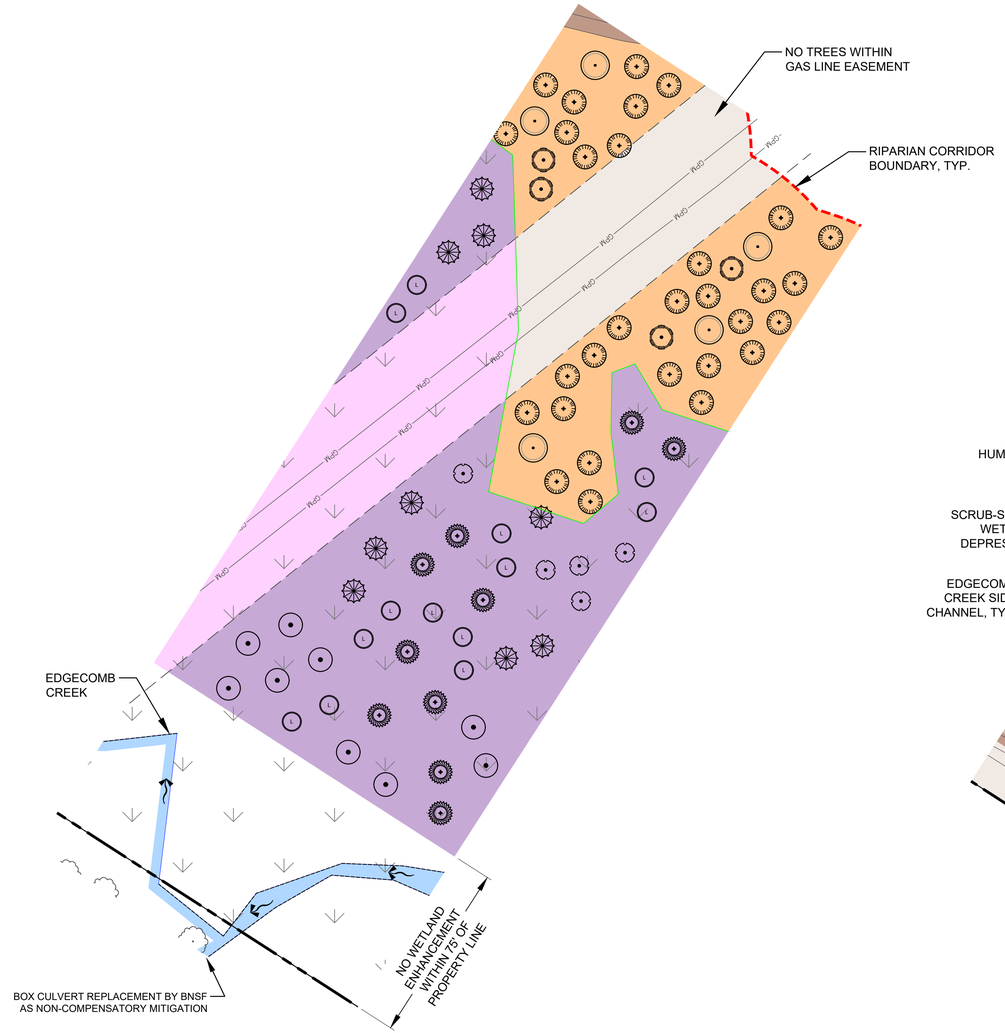
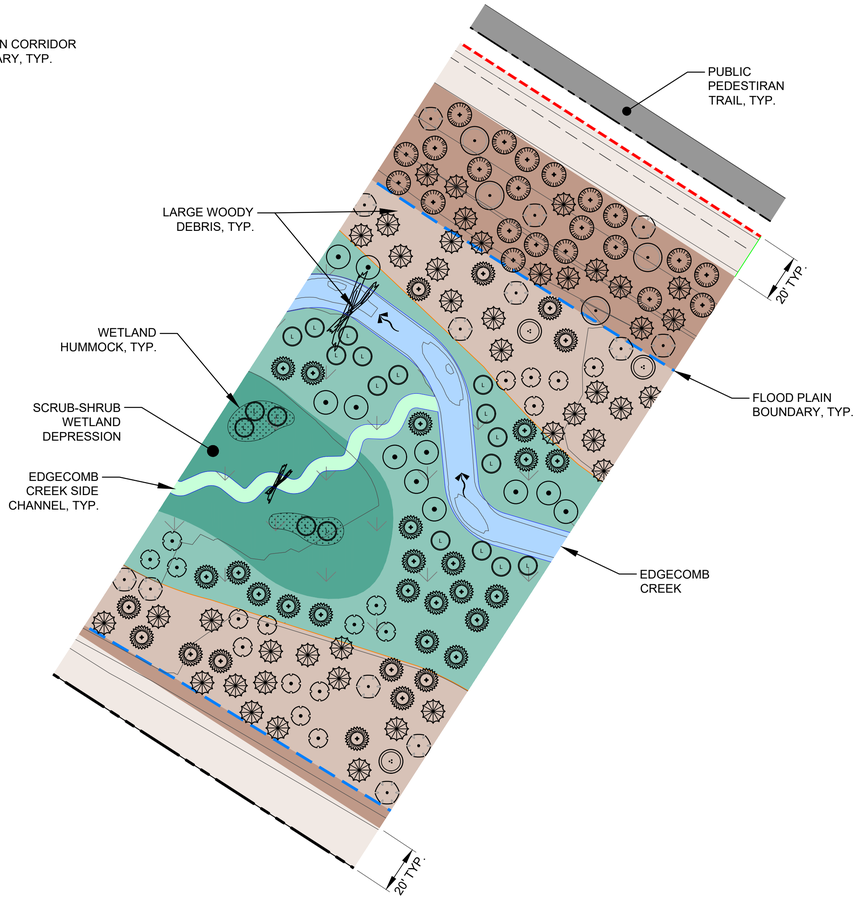


PLANTING TYPICAL #1 - WETLAND AH ENHANCEMENT *

* ONLY LARGE TREES AND LIVE STAKES TO BE PLANTED WITHIN WETLAND ENHANCEMENT AREAS



PLANTING TYPICAL #2 - WETLAND CORRIDOR WITH SCRUB-SHRUB DEPRESSION

SCALE: 1"=20'

0 30 60 120

GRAPHIC SCALE
1"= 30'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- FLOOD PLAIN BOUNDARY

NOTES:
1. SEE 100% DESIGN PLAN SET: EDGECOMB CREEK RESTORATION (SWCA, 2021) FOR PROPOSED HABITAT STRUCTURES.
2. NATIVE PLANTS TO BE INSTALLED FOLLOWING RIPARIAN CORRIDOR EXCAVATION AND GRADING TO THE EXTENT FEASIBLE DEPENDENT ON SUMMER HYDROLOGY CONDITIONS; NATIVE SEED MIXES WILL ALSO BE SPREAD ACROSS THE RIPARIAN CORRIDOR AS NEEDED FOR EROSION CONTROL. NATIVE PLANTS TO BE FULLY INSTALLED DURING FALL PLANTING SEASON.

PLANTING AREA LEGEND

WETLAND PLANTING AREAS

- EMERGENT WETLAND & STREAMS
  (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)
- SCRUB-SHRUB WETLAND
  (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)
- FORESTED/SCRUB-SHRUB WETLAND
  (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT
- FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT

UPLAND PLANTING AREAS

- SCRUB-SHRUB UPLAND
  (ALL UPLAND AREAS OUTSIDE OF THE FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)
- SCRUB-SHRUB UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- FORESTED UPLAND
  (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN; OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE; NO TREES PLANTED WITHIN POWER LINE EASEMENT)
- FORESTED UPLAND ENHANCMENT-WETLAND AH BUFFER
  (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)
- FORESTED UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN)

PLANT LIST

TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
ACER MACROPHYLLUM	BIG LEAF MAPLE
FRANGULA PURSHIANA	CASCARA
MALUS FUSCA	PACIFIC CRABAPPLE
PICEA SITCHENSIS	SITKA SPRUCE
POPULUS BALSAMIFERA	BLACK COTTONWOOD
PRUNUS EMARGINATA	BITTER CHERRY
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
SALIX LUCIDA	PACIFIC WILLOW
THUJA PLICATA	WESTERN REDCEDAR

SOURCES:
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SHEET: 6

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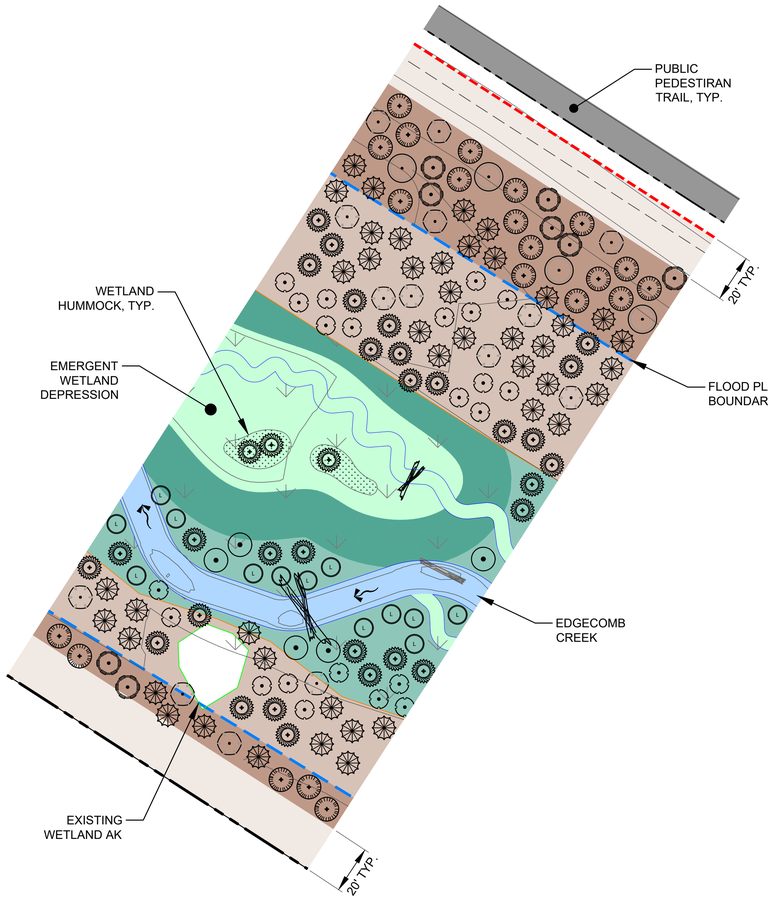
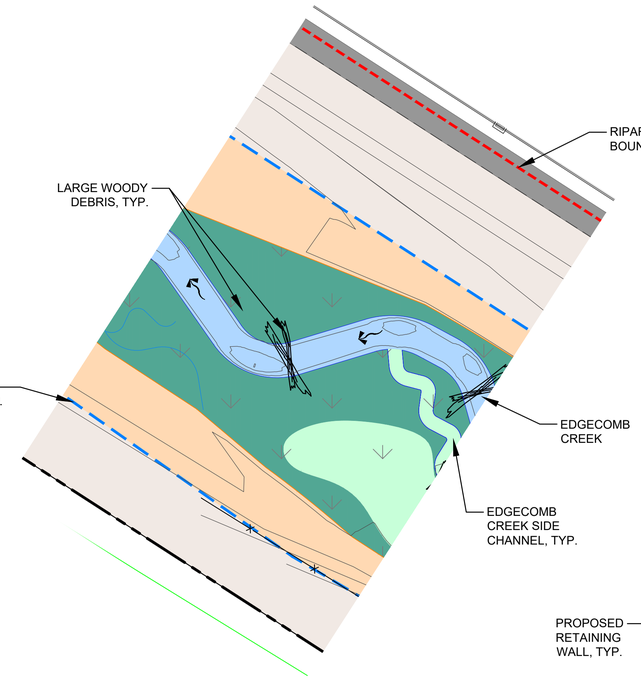
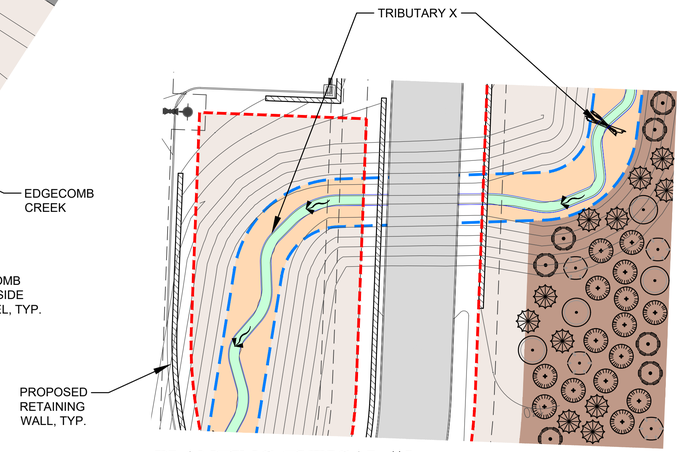


PLANTING TYPICAL #3 -
WETLAND CORRIDOR WITH EMERGENT DEPRESSION



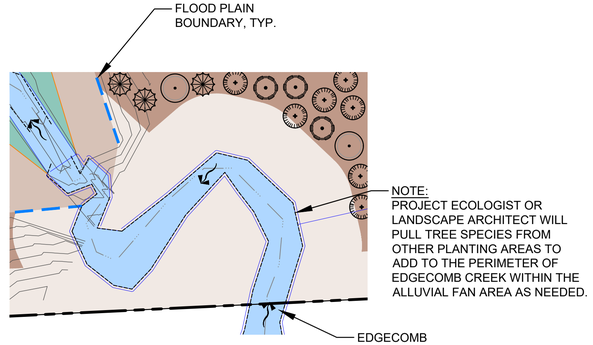
PLANTING TYPICAL #4 -
AIRPORT APPROACH

SCALE: 1"=20'



PLANTING TYPICAL #5 -
TRIBUTARY X CORRIDOR

SCALE: 1"=20'



PLANTING TYPICAL #6 -
EDGECOMB CREEK ALLUVIAL FAN

0 30 60 120

GRAPHIC SCALE
1"= 30'

PLAN LEGEND
- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- FLOOD PLAIN BOUNDARY

NOTES:
1. SEE 100% DESIGN PLAN SET: EDGECOMB CREEK RESTORATION (SWCA, 2021) FOR PROPOSED HABITAT STRUCTURES.
2. NATIVE PLANTS TO BE INSTALLED FOLLOWING RIPARIAN CORRIDOR EXCAVATION AND GRADING TO THE EXTENT FEASIBLE DEPENDENT ON SUMMER HYDROLOGY CONDITIONS; NATIVE SEED MIXES WILL ALSO BE SPREAD ACROSS THE RIPARIAN CORRIDOR AS NEEDED FOR EROSION CONTROL. NATIVE PLANTS TO BE FULLY INSTALLED DURING FALL PLANTING SEASON.

PLANT LIST
TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
ACER MACROPHYLLUM	BIG LEAF MAPLE
FRANGULA PURSHIANA	CASCARA
MALUS FUSCA	PACIFIC CRABAPPLE
PICEA SITCHENSIS	SITKA SPRUCE
POPULUS BALSAMIFERA	BLACK COTTONWOOD
PRUNUS EMARGINATA	BITTER CHERRY
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
SALIX LUCIDA	PACIFIC WILLOW
THUJA PLICATA	WESTERN REDCEDAR

PLANTING AREA LEGEND
WETLAND PLANTING AREAS
- EMERGENT WETLAND & STREAMS
  (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)
- SCRUB-SHRUB WETLAND
  (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)
- FORESTED/SCRUB-SHRUB WETLAND
  (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT
- FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT

UPLAND PLANTING AREAS
- SCRUB-SHRUB UPLAND
  (ALL UPLAND AREAS OUTSIDE OF THE FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)
- SCRUB-SHRUB UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- FORESTED UPLAND
  (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN, OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE; NO TREES PLANTED WITHIN POWER LINE EASEMENT)
- FORESTED UPLAND ENHANCEMENT- WETLAND AH BUFFER
  (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)
- FORESTED UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN)

SOURCES:
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TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 7

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-04-20) 75-ft buffers.dwg
Plotted April 21, 2021

PLANT SCHEDULE

Type 1 - Emergent Wetland & Streams
Type 2 - Scrub-Shrub Wetland
Type 3 - Forested/Scrub-Shrub Wetland
Type 4 - Scrub-Shrub Wetland Enhancement
Type 5 - Forested/Scrub-Shrub Wetland Enhancement
Type 6 - Scrub-Shrub Upland
Type 7 - Scrub-Shrub Upland - Flood Plain
Type 8 - Forested Upland
Type 9 - Forested Upland Enhancement - Wetland AH Buffer
Type 10 - Forested Upland - Flood Plain

Area (SF):	149,799	211,456	446,567	10,762	113,214	519,026	79,942	454,621	110,624	493,594		**2,589,605**
Cov'g %	100	100	100	50	50	100	100	100	50	100		
Tree %	0	0	34	0	34	0	0	50	50	50		
Shrub %	0	100	66	100	66	100	100	50	50	50		

Plant Name			Quantity													
Scientific	Common	Plant Status	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	TOTAL	Spacing	Size	Condition	Planting Area
Trees																	
Acer macrophyllum	Bigleaf Maple	FACU	-	-	-	-	-	-	-	400	40	-	**440**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Frangula purshiana	Cascara	FAC	-	-	-	-	-	-	-	250	-	500	**750**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Malus fusca	Pacific crabapple	FACW	-	-	250	-	25	-	-	-	-	500	**775**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Wet - in wetland**
Picea stichensis	Sitka sprace	FAC	-	-	400	-	50	-	-	-	-	800	**1250**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist - on hummock**
Populus balsamifera	Black cottonwood	FAC	-	-	350	-	40	-	-	-	-	-	**390**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist/Wet - on hummock**
Prunus emarginata	Bitter cherry	FACU	-	-	-	-	-	-	-	400	30	-	**430**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Pseudotsuga menziesii	Douglas fir	FACU	-	-	-	-	-	-	-	925	250	-	**1175**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Salix lucida	Pacific willow	FACW	-	-	750	-	67	-	-	-	-	-	**817**	**10 ft**	**3 - 4 ft**	**Stakes**	**Wet**
Thuja plicata	Western red cedar	FAC	-	-	-	-	40	-	-	650	-	1050	**1740**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist - on hummock**
		Total	0	0	1750	0	222	0	0	2625	320	2850	**7767**				
Shrubs																	
Acer circinatum	Vine maple	FAC	-	-	-	-	-	-	-	1400	100	500	**2000**	**10 ft**	**2 - 4 ft**	**2 gal.**	**Dry/Moist**
Amelanchier alnifolia	Serviceberry	FACU	-	-	-	-	-	1000	-	500	50	-	**1550**	**8 ft**	**2 - 4 ft**	**2 gal.**	**Dry**
Cornus sericea	Red-twig dogwood	FACW	-	1500	3000	100	275	-	-	-	-	1800	**6675**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Moist/Wet**
Corylus cornuta californica	Western hazlenut	FACU	-	-	-	-	-	1000	-	500	25	-	**1525**	**10 ft**	**2 - 4 ft**	**2 gal.**	**Moist**
Crataegus douglasii	Douglas hawthorn	FAC	-	1000	1000	-	-	-	200	-	-	-	**2200**	**5 ft**	**2 - 4 ft**	**2 gal.**	**Moist**
Gaultheria shallon	Salal	FACU	-	-	-	-	-	6000	-	2800	300	1000	**10100**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Mahonia nervosa	Low Oregon grape	FACU	-	-	-	-	-	-	-	1500	200	-	**1700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry/Moist**
Oemleria cerasiformis	Indian plum	FACU	-	-	-	-	-	3000	-	1500	200	-	**4700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Physocarpus capitatus	Pacific ninebark	FACW	-	500	500	-	-	1500	400	-	-	-	**2900**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Ribes divaricatum	Wax currant	FAC	-	350	-	-	-	-	-	-	-	400	**750**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Rosa gymnocarpa	Bald hip rose	FACU	-	-	-	-	-	-	-	950	100	-	**1050**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry/Moist**
Rosa nutkana	Nootka rose	FAC	-	-	-	-	-	2975	400	-	-	-	**3375**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Rosa pisocarpa	Clustered wild rose	FAC	-	500	515	-	-	-	-	-	-	1000	**2015**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Wet**
Rubus parviflorus	Thimbleberry	FACU	-	-	-	-	-	3500	-	-	200	-	**3700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist**
Rubus spectabilis	Salmonberry	FAC	-	1120	1000	150	150	-	340	-	-	1000	**3760**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist**
Salix hookeriana	Dune willow	FAC	-	-	-	-	-	-	1175	-	-	-	**1175**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Dry/Moist**
Salix scouleriana	Scouler's willow	FAC	-	2400	3300	-	650	-	1175	-	-	2850	**10375**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Dry/Moist**
Salix sitchensis	Sitka willow	FACW	-	2400	3300	-	650	-	-	-	-	2850	**9200**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Moist/Wet**
Sambucus racemosa	Red elderberry	FACU	-	-	-	-	-	2000	-	400	100	-	**2500**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Spirea douglasii	Douglas Spirea/Hardhack	FACW	-	-	1000	-	-	-	-	-	-	-	**1000**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Symphoricarpos albus	Snowberry	FACU	-	-	-	-	-	3000	-	950	-	-	**3950**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
		Total	0	9770	13615	250	1725	23975	3690	10500	1275	11400	**76200**				

Native Wetland Grass Seed Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Glyceria occidentalis	Western mannagrass	OBL												40
Beckmannia syzigachne	American sloughgrass	OBL												30
Hordeum brachyantherum	Meadow barley	FACW												20
Alopecurus aequalis	Shortawn foxtail	OBL												10
			50	100	205	-	-	-	-	-	-	-	**355**	

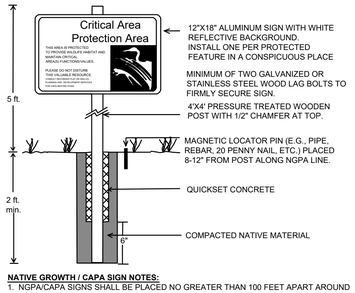
Moist Soil Sedge & Rush Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Carex unilateralis	One-sided sedge	FACW												70
Carix densa	Dense sedge	OBL												12
Juncus effusus	Common rush	FACW												5
Juncus tenuis	Slender rush	FACW												5
Juncus bufonius	Toad rush	FAC												5
Carex stipata	Awl fruited sedge	OBL												2
Carex olmsptd	Slough sedge	OBL												1
			20	-	-	-	-	-	40	-	-	230	**290**	

Native Upland Grass Seed Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Elymus glaucus	Blue wildrye	FACU												30
Bromus carinatus	California brome	FACU												25
Hordeum brachyantherum	Meadow barley	FACW												10
Festuca roemeri	Roemer's fescue	FACU												10
Deschampsia elongata	Slender hairgrass	FACW												10
Agrostis exarata	Spike bentgrass	FACW												5
Deschampsia cespitosa	Tufted hairgrass	FACW												5
Festuca rubra rubra	Red fescue	FACU												5
			-	-	-	-	-	230	-	225	-	-	**455**	

1 - Scientific names and species identification taken from *Flora of the Pacific Northwest, 2nd Edition (Hitchcock and Cronquist, Ed. by Giblin, Ledger, Zika, and Olmstead, 2018).*
2 - Over-sized container plants are suitable for replacement pending Wetland Scientist approval.
3 - Native plant species may be substituted or added with Wetland Scientist approval.
4 - All disturbed and bare soil areas in the buffer to be seeded with a native grass seed mix.
5 - Plant quantities are ESTIMATED ONLY. Actual plant quantities will be documented in the As-Built Report

NATIVE GROWTH / CAPA - TYPE 1 SIGN

NOT TO SCALE



NATIVE GROWTH / CAPA SIGN NOTES:

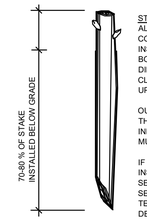
1. NGPA/CAPA SIGNS SHALL BE PLACED NO GREATER THAN 100 FEET APART AROUND THE PERIMETER OF THE NATIVE GROWTH CRITICAL AREA PROTECTION AREA FACING THE PROPOSED DEVELOPMENT, 152ND AVENUE NORTHEAST, AND 172ND AVENUE NORTHEAST. WHERE THE PEDESTRIAN TRAIL INTRUDES INTO THE RIPARIAN CORRIDOR, THE SIGNS SHALL BE PLACED ON THE WATERWARD SIDE OF THE TRAIL.
2. SIGN PLACEMENT SHALL BE SUBJECT TO THE APPROVAL OF CITY STAFF. ALTERNATIVE SIGN DESIGNS MAY NE SUBMITTED TO CITY STAFF FOR APPROVAL.
3. ALL SIGNS MUST BE SECURE AND PERMANENT.

LIVE STAKE PLANTING DETAIL

NOT TO SCALE

NOTES:

1. LIVE STAKES TO BE 1 TO 2 INCH DIAMETER 24 TO 32 INCHES LENGTH.
2. USE 1/2 INCH DIAMETER REBAR OR ROCK BAR TO MAKE PILOT HOLE.
3. INSTALL LIVE STAKES TAPER END DOWN WITH BUDS POINTED UP.
4. MINIMUM TWO BUDS ABOVE GRADE.
5. SET LIVE STAKES WITH DEAD-BLOW HAMMER.
6. WATER IMMEDIATELY AFTER INSTALLATION.



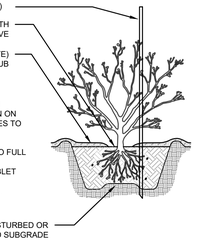
STORAGE OF LIVE STAKES
ALL WOODY PLANT CUTTINGS COLLECTED MORE THAN 12 HR PRIOR TO INSTALLATION, MUST BE CAREFULLY BOUND, SECURED, AND STORED OUT OF DIRECT SUNLIGHT AND SUBMERGED IN CLEAN FRESH WATER FOR A PERIOD OF UP TO TWO WEEKS.

OUTDOOR TEMPERATURES MUST BE LESS THAN 50 DEGREES F AND TEMPERATURE INDOORS AND IN STORAGE CONTAINERS MUST BE BETWEEN 34 AND 50 DEGREES F.

IF THE LIVE STAKES CANNOT BE INSTALLED DURING THE DORMANT SEASON, CUT DURING THE DORMANT SEASON AND HOLD IN COLD STORAGE AT TEMPERATURES BETWEEN 33 AND 39 DEGREES F FOR UP TO 2 MONTHS.

TREE AND SHRUB PLANTING DETAIL (TYPICAL)

NOT TO SCALE

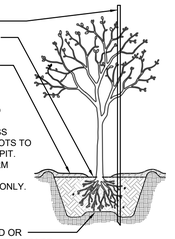


NOTES:

1. PLANT TREES & SHRUBS OF THE SAME SPECIES IN GROUPS OF 3 to 9 AS APPROPRIATE, OR AS SHOWN ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES TO ACHIEVE A NATURAL-LOOKING LAYOUT.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

TREE PLANTING DETAIL

NOT TO SCALE



NOTES:

1. PLANT TREES AS INDICATED ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

PERFORMANCE STANDARDS

GOAL 1 - COMPENSATE FOR THE LOSS OF THE EXISTING EDGECOMB CREEK CHANNEL BY CREATING A MEANDERING STREAM CHANNEL WITH ASSOCIATED SIDE CHANNELS.

OBJECTIVE 1.1 - CREATE A NEW STREAM CHANNEL AND ENHANCED HABITAT COMPONENTS.

PERFORMANCE STANDARD 1.1.1 - THE NEW STREAM CHANNEL SYSTEM WILL BE CREATED ACCORDING TO THE FINAL APPROVED DESIGN AND DOCUMENTED IN THE AS-BUILT REPORT.

PERFORMANCE STANDARD 1.1.2 - HABITAT STRUCTURES WITH LARGE WOODY DEBRIS IN THE NEW STREAM CHANNEL SYSTEM WILL BE CREATED ACCORDING TO THE FINAL APPROVED DESIGN AND DOCUMENTED IN THE AS-BUILT REPORT.

PERFORMANCE STANDARD 1.1.3 - A MEDIA FILTER DRAIN WILL BE INSTALLED ALONG THE EASTERN BOUNDARY OF THE MITIGATION SITE BETWEEN THE NEW STREAM CHANNEL AND THE RAILROAD AND DOCUMENTED IN THE AS-BUILT REPORT.

GOAL 2 - COMPENSATE FOR THE LOSS OF 4.275 ACRES OF WETLANDS AND 0.595 ACRE OF INDIRECT WETLAND IMPACTS, INCLUDING THE 51ST AVENUE EAST DITCH THAT IS BEING TREATED AS A WETLAND FOR LOCAL AND STATE PERMITTING PROCESSES, BY CREATING A MINIMUM OF 8.769 ACRES OF WETLANDS THAT PROVIDE A MODERATE TO HIGH LEVEL OF WATER QUALITY AND HABITAT FUNCTIONS. COMPENSATE FOR THE 0.104 ACRE OF DIRECT IMPACTS AND 0.021 ACRE OF INDIRECT IMPACTS TO THE 51ST AVENUE EAST DITCH RESULTING FROM THE CASCADE COMMERCE CENTER PROJECT THAT HAS BEEN APPROVED UNDER A SEPARATE PERMIT APPLICATION (SVC, 2020D AND WSDOE, 2021) BY CREATING A MINIMUM OF 0.228 ACRE OF WETLANDS THAT PROVIDE A MODERATE TO HIGH LEVEL OF WATER QUALITY AND HABITAT FUNCTIONS. EXCESS COMPENSATORY WETLAND CREATION AREAS MAY BE USED AS ADVANCE MITIGATION ACCORDING TO AN APPROVED ADVANCE MITIGATION PLAN.

OBJECTIVE 2.1 - ESTABLISH A MINIMUM OF 8.769 ACRES OF WETLAND CREATION AREAS FOR THE CASCADE BUSINESS PARK AND 0.228 ACRE OF WETLAND CREATION AREAS FOR THE CASCADE COMMERCE CENTER ALONG THE RE-ALIGNED EDGECOMB CREEK.

PERFORMANCE STANDARD 2.1.1 - THE WETLAND CREATION AREAS WILL MEASURE AT LEAST 8.769 ACRES [CASCADE BUSINESS PARK] AND 0.228 ACRE [CASCADE COMMERCE CENTER] IN SIZE AS DEMONSTRATED BY WETLAND DELINEATIONS IN YEAR 5 AND YEAR 10.

OBJECTIVE 2.2 - ESTABLISH WETLAND HYDROLOGY THROUGH GRADING TO ESTABLISH DEPRESSIONS/BENCHES THAT INTERSECT SHALLOW GROUNDWATER ELEVATIONS SIMILAR TO NEARBY WETLANDS AND/OR RECEIVE HYDROLOGIC INFLUENCE FROM EDGECOMB CREEK.

PERFORMANCE STANDARD 2.2.1 - THE APPROXIMATELY 8.769 ACRES [CASCADE BUSINESS PARK] AND 0.228 ACRE [CASCADE COMMERCE CENTER] OF WETLAND CREATION AREAS WILL HAVE SEASONALLY SATURATED SOILS (OR GREATER HYDROPERIOD) WITHIN 12 INCHES OF THE SURFACE OVER ALL THE WETLAND CREATION AREAS THAT PERSISTS FOR A MINIMUM OF 14 CONSECUTIVE DAYS DURING THE GROWING SEASON IN YEARS WITH NORMAL PRECIPITATION LEVELS OVER THE MONITORING PERIOD.

OBJECTIVE 2.3 - ESTABLISH FORESTED AND SCRUB-SHRUB WETLAND HABITAT WITH DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND SPECIES RICHNESS TO PROVIDE HABITAT FOR WETLAND-ASSOCIATED WILDLIFE.

PERFORMANCE STANDARD 2.3.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND CREATION AREAS.

PERFORMANCE STANDARD 2.3.2 - NATIVE WOODY VEGETATION IN THE WETLAND CREATION AREAS WILL PROVIDE, AT LEAST 25 PERCENT TOTAL COVER BY YEAR 3, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 50 PERCENT TOTAL COVER BY YEAR 7, AND 75 PERCENT TOTAL COVER BY YEAR 10.

PERFORMANCE STANDARD 2.3.3 - IN ALL MONITORING YEARS, THE WETLAND CREATION AREAS WILL HAVE AT LEAST 2 SPECIES OF NATIVE TREES AND 5 SPECIES OF NATIVE SHRUBS.

OBJECTIVE 2.4 - ESTABLISH EMERGENT WETLAND HABITAT TO PROVIDE HABITAT FOR WETLAND-ASSOCIATED WILDLIFE.

PERFORMANCE STANDARD 2.4.1 - NATIVE EMERGENT SPECIES WILL PROVIDE AT LEAST 20 PERCENT TOTAL COVER OF THE EMERGENT WETLAND HABITAT BY YEAR 2, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 3, AT LEAST 50 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 65 PERCENT TOTAL COVER FOR YEARS 7 AND 10. PERMANENTLY PONDED WETLAND AREAS THAT LACK VEGETATION WILL BE EXCLUDED FROM THE AREA USED TO DETERMINE PERCENT COVER.

OBJECTIVE 2.5 - EFFECTIVELY CONTROL AND/OR ELIMINATE NON-NATIVE INVASIVE SPECIES FROM THE WETLAND CREATION AREAS.

PERFORMANCE STANDARD 2.5.1 - NON-NATIVE INVASIVE PLANTS WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

GOAL 3 - ENHANCE 3.648 ACRES OF EXISTING WETLANDS AH AND AK TO IMPROVE HABITAT FUNCTIONS. EXCESS COMPENSATORY WETLAND ENHANCEMENT AREAS MAY BE USED AS ADVANCE MITIGATION ACCORDING TO AN APPROVED ADVANCE MITIGATION PLAN.

OBJECTIVE 3.1 - ESTABLISH NATIVE PLANT COVER WITHIN THE ENHANCEMENT AREAS TO CREATE DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND ADDITIONAL WILDLIFE HABITAT.

PERFORMANCE STANDARD 3.1.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND ENHANCEMENT AREAS.

PERFORMANCE STANDARD 3.1.2 - NATIVE WOODY SPECIES WILL PROVIDE AT LEAST 20 PERCENT TOTAL COVER OF THE WETLAND ENHANCEMENT AREAS BY YEAR 2, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 3, AND AT LEAST 50 PERCENT TOTAL COVER FOR YEARS 5-10.

PERFORMANCE STANDARD 3.1.3 - AT LEAST 3 NATIVE SHRUB AND/OR TREE SPECIES WILL BE PRESENT IN THE ENHANCEMENT AREAS IN ALL MONITORING YEARS.

OBJECTIVE 2 - EFFECTIVELY CONTROL NON-NATIVE INVASIVE SPECIES WITHIN THE WETLAND ENHANCEMENT AREAS.

PERFORMANCE STANDARD 3.2.1 - NON-NATIVE INVASIVE PLANTS (EXCLUDING REED CANARY GRASS) WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

PERFORMANCE STANDARD 3.2.2 - TOTAL REED CANARY GRASS COVER WILL BE REDUCED COMPARED TO BASELINE CONDITIONS ESTABLISHED DURING YEAR 0 (AS-BUILT): 15 PERCENT REDUCTION IN TOTAL COVER BY YEAR 5, AND 30 PERCENT REDUCTION IN TOTAL COVER BY YEAR 10.

GOAL 4 - ESTABLISH OF UPLAND/BUFFER FOR THE NEWLY REALIGNED EDGECOMB CREEK TO PROVIDE PROTECTION FOR THE STREAM AND WETLANDS.

OBJECTIVE 1 - ESTABLISH NATIVE PLANT COVER WITHIN THE TARGETED UPLAND/BUFFER AREAS TO CREATE DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND ADDITIONAL WILDLIFE HABITAT.

PERFORMANCE STANDARD 4.1.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND UPLAND/BUFFER AREAS.

PERFORMANCE STANDARD 4.1.2 - NATIVE TREE AND SHRUB SPECIES WILL PROVIDE AT LEAST 15 PERCENT TOTAL COVER OF THE UPLAND/BUFFER AREAS BY YEAR 3, AT LEAST 25 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 35 PERCENT TOTAL COVER FOR YEAR 7, AND 50 PERCENT TOTAL COVER FOR YEAR 10.

PERFORMANCE STANDARD 4.1.3 - IN ALL MONITORING YEARS, THE UPLAND/BUFFER AREA WILL HAVE AT LEAST 3 SPECIES OF NATIVE TREES AND 5 SPECIES OF NATIVE SHRUBS.

OBJECTIVE 2 - EFFECTIVELY CONTROL AND/OR ELIMINATE NON-NATIVE INVASIVE SPECIES FROM THE UPLAND/BUFFER AREAS.

PERFORMANCE STANDARD 4.2.1 - NON-NATIVE INVASIVE PLANTS WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

GOAL 5 - PROTECT THE RIPARIAN CORRIDOR.

OBJECTIVE 5.1 - IDENTIFY THE RIPARIAN CORRIDOR AS A MITIGATION SITE.

PERFORMANCE STANDARD 5.1.1 - CRITICAL AREAS SIGNS WILL BE INSTALLED ALONG THE BOUNDARY OF THE MITIGATION SITE EVERY 100 FEET ACCORDING TO THE FINAL APPROVED PLANS. CRITICAL AREAS SIGNS MUST BE PRESENT DURING ALL MONITORING YEARS.

FOR ALL NATIVE SPECIES SURVIVAL, COVERAGE OR SPECIES RICHNESS PERFORMANCE STANDARDS, REPLACEMENT OF DEAD OR DYING PLANTS IS ALLOWED DURING ALL MONITORING YEARS. NATIVE VOLUNTEER PLANTS MAY BE INCLUDED IN COVERAGE OR SPECIES RICHNESS ESTIMATES.

SOURCES:

LDC | Surveying Engineering Planning
Kent
1851 Central Pl S, #101
Kent, WA 98030
Woodinville
20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869 www.LDCcorp.com F 425.482.2893

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 HARBORVIEW DRIVE, SUITE D P. 253.514.8952
GIG HARBOR, WASHINGTON 98335 F. 253.514.8954
WWW.SOUNDVIEWCONSULTANTS.COM

CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 8

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-04-20) 70-ft buffers.dwg
Plotted April 22, 2021

Appendix B – BNSF Railroad and Edgecomb Creek Stormwater Mitigation (LDC, 2021)

LDC Surveying Engineering Planning

February 22, 2021

Soundview Consultants
Attn: Mr. Matt DeCaro

RE: CASCADE INDUSTRIAL CENTER
BNSF RAILROAD AND EDGECOMB CREEK STORMWATER MITIGATION
LDC PROJECT # 20-133B

Dear Mr. DeCaro:

At your request LDC has analyzed the stormwater mitigation between the BNSF railroad and the proposed relocated Edgecomb Creek. We investigated options to address runoff from the railroad as it discharges toward Edgecomb Creek.

The BNSF railroad right of way is adjacent to the eastern extents of the Cascade Industrial Center development. The relocation of Edgecomb Creek is also being proposed along the eastern extents of the development. The railroad tracks are located generally in the center of a 100-foot-wide Right-of-Way. The tracks are elevated above the surrounding properties by about 2 to 5 feet. The railroad grade slopes to the east on the east side of the tracks and to the west on the west side of the tracks, toward the development property. It has been discussed that there are concerns that the railroad runoff will be untreated and discharge directly into the relocated creek.

Two factors of runoff are considered when analyzing stormwater. First is the runoff rate in storm events up to the peak 100-year event. Second is the water quality of the runoff from a contributing surface.

Peak Runoff:
The railroad is virtually permeable, as it is generally constructed of railroad ballast rocks, timber ties and iron tracks. We do not anticipate any increase in the current runoff rates. The current condition of the railroad right-of-way between the tracks and the west right-of-way line is vegetated with native vegetation, it can be considered pasture. The railroad right-of-way is owned and maintained by BNSF and no changes to the surface are proposed within this area. The distance between the tracks and the right-of-way line is approximately 45 to 50-feet. The slope of the ground is flat at about 1 to 2%. The stormwater runoff from the tracks can be characterized as fully dispersed sheet flow.

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Edgecomb creek is proposed to meander within the buffer zone established within the development and in its meandering, gets as close to the eastern property line (west railroad ROW) as about 47-feet. The buffer zone of the creek is proposed to be planted with native plantings and amended soils.

Adding the 45 to 50-foot distance from the tracks to the ROW line and the distance from the property line to the creek edge, equals approximately 100-feet at its closest point, and much further as the creek meanders away from the property line to the west. This is considered Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the SWMMWW.

Water Quality:

Currently the railroad right-of-way sheet flows toward the development property and there is no evidence of concentrated flows or scouring of any nature to generate sediment. We do not anticipate any sediment laden runoff from the railroad in this Full Dispersion condition.

We do not know specifically what pollutable material the railroad generates, and we can assume that if anything drops from the train cars, that it would infiltrate through the ballast. The treated timbers would also likely infiltrate through the ballast.

In a worst-case scenario, it can be assumed that there may be grease, oil, diesel fuel, blowoff material from train car cargo, and chemical treatment from the railroad timbers (creosote, et. al.) that may runoff from the railroad tracks to the surrounding properties. In this unlikely event we are proposing to treat the runoff from the railroad right-of-way with a Media Filter Drain.

Although 100-feet of fully dispersed flow path is a WSDOE approved stormwater treatment BMP, there are additional concerns of operational pollutants discharging from the railroad to Edgecomb Creek. An additional water quality treatment BMP would mitigate those water quality concerns.

A Media Filter Drain is a WSDOT and WSDOE approved and implemented water quality treatment system to filter polluted stormwater from highway runoff (see attached WSDOT BMP Specification RT.07). The Media Filter Drain (MFD) mix consists of a mixture of crushed rock, dolomite, gypsum, and perlite. The crushed rock provides the support matrix of the medium; the dolomite and gypsum add alkalinity and ion exchange capacity to promote the precipitation and exchange of heavy metals; and the perlite improves moisture retention to promote the formation of biomass within the MFD mix. The combination of physical filtering, precipitation, ion exchange, and biofiltration enhances the water treatment capacity of the mix. The proposal is to install a Media Filter Drain – Type 3 along the eastern property line the extent of the railroad adjacent to the creek corridor.

The Full Dispersion sheet flow stormwater from the railroad will pass through the native vegetation within the railroad right-of-way, to the Media Filter Drain where residual pollutants will be treated, and then the cleansed water will pass through the newly planted creek buffer zone prior to discharging to the relocated Edgecomb Creek.

Alternative Analysis:

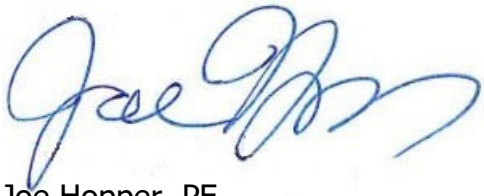
We have investigated other methods of WSDOE approved water quality treatment BMPs for this site. All are either maintenance intensive or will be physically constrained based on the flat grade and high seasonal groundwater elevation on site. For example, collecting the runoff in a swale or pipe system would require the stormwater to then be routed through a water quality facility (eg. pond, vault, cartridge filter, etc), be treated within that device and then be discharged and dispersed. These types of facilities require significant vertical elevation change from inlet to outlet, which is not available between the property line and the proposed creek location. It has also been determined that the site has a particularly high seasonal groundwater elevation across the site of approximately 12 to 18-inches below existing grade. This high groundwater condition also precludes excavation lower than that to install water quality facilities. These types of facilities also require more regular maintenance. Bioswales require constant mowing. Ponds and/or vaults requires continual sediment removal. A media filter cartridge system requires regular replacement of cartridges and filtration media. The concept behind the above listed types of treatment facilities is to collect and treat the stormwater and then discharge it downstream. The discharge in this concept requires reducing the runoff flow concentration through a flow dispersal device, such as a level spreader or dispersal trench, to prevent erosion and scouring. The dispersal device also requires continual maintenance and inspection. Collecting an already dispersed flow, treating, and thus concentrating it, and then re-dispersing it is counterproductive to the current site conditions.

Conclusion:

The current site condition of stormwater sheet flow from the railroad toward the property and relocated creek already accomplishes flow dispersal to mitigate flow concentration, erosion, scouring and water quality treatment. The Media Filter Drain will enhance water quality treatment and maintain the sheet flow characteristics of the site. Maintenance of Media Filter Drains is similar to routine roadside management to remove noxious weeds as necessary and otherwise functions with minimal maintenance required. A railroad corridor is very similar to a highway, and the Media Filter drain application is appropriate for the current site conditions.

Please feel free to contact me with any questions or comments.

Sincerely,
LDC, INC.



Joe Hopper, PE
Senior Project Manager

RT.07 – Media Filter Drain

Media Filter Drain Along SR 167 in King County

Description: Linear flow-through stormwater runoff treatment device along highway side slopes and medians. Also has end-of-pipe configurations.

Geometry Limitations

Contributing Flow Path	≤ 150'
Embankment Slope	2%-25%

BMP Function

- ☑ LID
- ☐ Flow Control
- ☑ Runoff Treatment
  - ☐ Oil Control
  - ☑ Phosphorus*
  - ☑ TSS - Basic
  - ☑ Dissolved Metals - Enhanced

Effective Life (Years)

➲ 25

Capital Cost	M & O Cost
➲ Low	➲ Low to Moderate

Additional Constraints/Requirements

- ☐ 4-5 Infiltration Design Criteria
- ☐ Setback
- ☑ Landscaping/Planting
- ☐ Wetland Planting and Plant Establishment
- ☐ Inlet and Outlet Spacing
- ☐ Overflow
- ☐ Multidisciplinary Team
- ☐ WSDOT Pavement Engineer Approval
- ☑ Soil Amendments/Compost
- ☐ Energy Dissipater/Level Spreader
- ☐ 5-4.3.3 Facility Liners
- ☑ 5-4.3.7 Signing
- ☐ Fencing
- ☐ Presettling/Pretreatment
- ☑ Underdrain (Where Permitted)
- ☑ Soil Preparation

TMDL/303(d) – Considerations[1]

Avoid	Preferred
☐	☐ Fecal Coliform
☑	☐ Phosphorus (w/ compost blanket)*
☐	☐ Nitrogen
☐	☐ Temperature
☐	☑ Dissolved Metals
☐	☑ Total Suspended Solids/Turbidity
☐	☐ Dissolved Oxygen
☐	☐ pH
☐	☐ Oil/Grease
☐	☐ PAHs
☐	☐ Pesticides

1. See Table 3-1 and Section 2-4.2 for additional guidance.

Maintenance Requirements

- ☐ Access Roads or Pullouts
- ☐ Vactor Truck Access
- ☑ Mowing
- ☐ Valve Access
- ☐ Specialized Equipment
- ☐ Specialized Training

Further Requirements: See Sections 5-3.7.1 and 5.5. Also, see Table 5-21.

*if a compost blanket is not used over the media filter drain then this BMP is approved for phosphorous control.

Introduction

General Description

The *media filter drain* (MFD), previously referred to as the *ecology embankment*, is a linear flow-through stormwater runoff treatment device that can be sited along highway side slopes (conventional design) and medians (dual media filter drains), borrow ditches, or other linear depressions. Cut-slope applications may also be considered. The PEO can use the MFD where available right of way is limited, sheet flow from the highway surface is feasible, and lateral gradients are generally less than 25% (4H:1V). The PEO can also use the MFD in an end-of-pipe application where surface runoff is collected and conveyed to a location where flows can be redispersed to the MFD. The MFD has a General Use Level Designation (GULD) for basic, enhanced, and phosphorus treatment (MFD without the 3-inch medium compost blanket). Updates/changes to the use-level designation and any design changes will be posted in the *Post Publication Updates* section of the HRM Resource Web Page.

MFD configurations are separated into seven typical installations. MFD Type 1 though Type 5 have the option of placing a 3-inch medium compost layer with grass over the MFD mix area. If the 3-inch compost layer with grass is used on the MFD mix area, the BMP does not qualify for phosphorous treatment. MFD Types 1 through 7 are shown in Figures 5-23 through 5-29. The different MFD types are briefly described below:

- MFD Type 1 – Sheet flow application with underdrain.
- MFD Type 2 – Sheet flow applications; flows are from both sides of the median.
- MFD Type 3 – Sheet flow application without underdrain; drains to slope.
- MFD Type 4* – End-of-pipe application, redispersed to MFD with underdrain.
- MFD Type 5* – End-of-pipe application, redispersed to MFD without underdrain.
- MFD Type 6* – End-of-pipe application that is downstream of a detention BMP, redispersed to MFD with underdrain. MFD Type 6 doesn't have the no-vegetation zone or grass strip because of the sediment storage in the upstream detention BMP. MFD Type 6 must have a 3-inch medium compost blanket with grass over MFD mix area. MFD Type 6 must have 8-inch-diameter compost socks, spaced at a minimum of 4-foot intervals, along the bottom of the MFD media mix.
- MFD Type 7* – Same as Type 6, except MFD doesn't have an underdrain; it drains to the adjacent side slope.

*See Section 5-4.3.5 for redispersal design guidelines using a slotted pipe or perforated pipe in a flow dispersal trench.

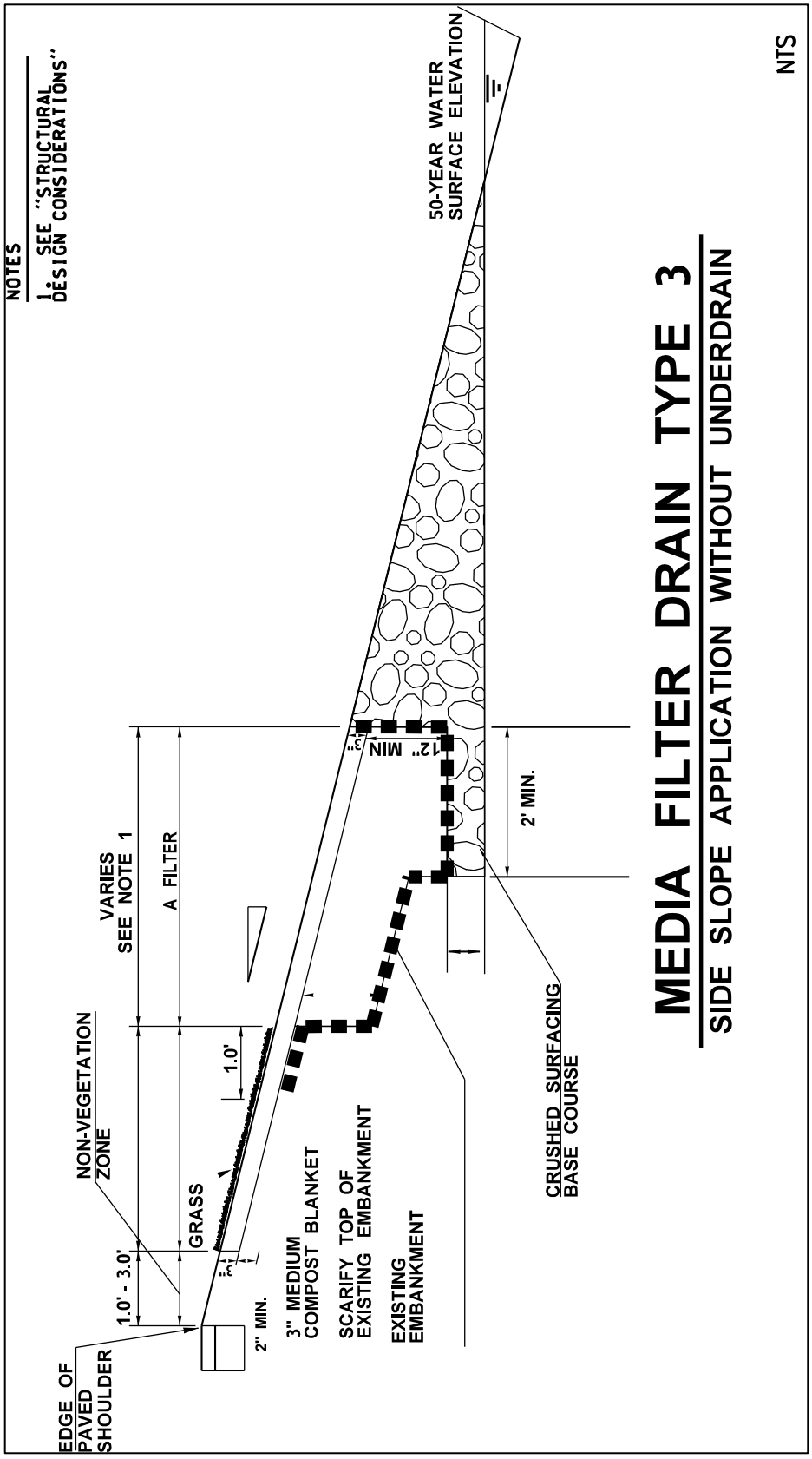


Figure 5-25 Media filter drain Type 3: Side slope application without underdrain.

Functional Description

The MFD removes suspended solids, phosphorus (MFD without 3-inch medium compost blanket), and metals from highway runoff through physical straining, ion exchange, carbonate precipitation, and biofiltration.

Stormwater runoff is conveyed to the MFD via sheet flow or is redispersed to a vegetation-free gravel zone (MFD Type 1 – Type 5) to ensure dispersion and provide some pollutant trapping. Next, a grass strip provides pretreatment, further enhancing filtration and extending the life of the system. The runoff is then filtered through a bed of porous, alkalinity-generating granular medium—the media filter drain mix. Treated water drains away from the MFD mix bed into a downstream conveyance system. Geotextile lines the underside of the MFD mix bed and the underdrain pipe and trench (if applicable).

The underdrain trench is an option for hydraulic conveyance of treated stormwater to a desired location, such as a downstream flow control facility, discharge point, or stormwater outfall. The trench's perforated underdrain pipe is a protective measure to ensure free flow through the MFD mix. It may be possible to omit the underdrain pipe if it can be demonstrated that the pipe is not necessary to maintain free flow through the MFD mix and underdrain trench.

It is critical to note that water should sheet flow across or be redispersed to the MFD. To ensure sediment accumulation does not restrict sheet flow, edge of pavement installations should include a 1-inch drop between the pavement surface and nonvegetation zone where there is no guardrail or include a 1-inch drop where there is guardrail. Note that MFD Types 4 through Type 7 include a 3-inch drop between the flow spreader and the MFD mix bed to ensure sheet flow continues over time.

Applications, Limitations, and LID Feasibility

Applications

- Provides basic, phosphorus (MFD without 3-inch medium compost blanket on MFD mix area), and enhanced water quality treatment.
- MFD Type 1 and Type 3 – Ideal along highway side slopes, when adjacent to wetlands, and in narrow right of way locations.
- Dual MFD for Highway Medians (MFD Type 2) – Prime locations for the MFD Type 2 are in highway medians, roadside drainage or borrow ditches, or other linear depressions. It is especially critical for water to sheet flow across the MFD Type 2. Channelized flows or ditch flows running down the middle of the MFD Type 2 (continuous off-site inflow) should be minimized.
- MFD Type 4 and Type 5 – Ideal where stormwater needs to be or already is captured and conveyed to a discharge location that can accommodate this BMP. These options provide maximum flexibility for placement where sheet flow off the edge of pavement is not feasible. Catch basins and pipes are used to convey stormwater to the MFD Type 4 and Type 5.

- MFD Type 6 and Type 7 – Ideal where stormwater needs to be collected and conveyed for both runoff treatment and flow control. The MFD is downstream of the detention BMP.

Limitations

- Ensure lateral MFD side slopes adjacent to the roadway pavement (MFD Type 1 – Type 3) are less than 4H:1V. As side slopes approach 3H:1V, without design modifications, sloughing may become a problem due to friction limitations between the separation geotextile and underlying soils.
- Where the MFD is built away from the roadway (MFD Type 4 – Type 7), ensure the lateral MFD side slope is less than 8H:1V.
- Ensure longitudinal MFD slopes are no steeper than 5%.
- Ensure the longest flow path from the contributing area delivering sheet flow to the MFD (Type 1 – Type 3) does not exceed 150 feet.
- Do not construct in wetlands and wetland buffers.
- Shallow groundwater – Determine seasonal high groundwater table levels at the project site to ensure the MFD mix bed and the underdrain (if applicable) will not become saturated by shallow groundwater. The hydraulic and runoff treatment performance of the MFD may be compromised due to backwater effects and lack of sufficient hydraulic gradient due to shallow groundwater or pooling at the discharge location.
- Unstable slopes – In areas where slope stability may be problematic, consult a geotechnical engineer.
- Narrow roadway shoulders – In areas where there is a narrow roadway shoulder (width less than 10 feet), consider placing the MFD farther down the embankment slope. This will reduce the amount of rutting in the MFD and decrease overall maintenance repairs. Also, consider using a MFD Type 5 or Type 6.
- Ensure the upstream conveyance system to a MFD Type 4 – Type 7 has adequate hydraulic head to push flows through the redispersal structure and not create upstream flooding problems.

LID Feasibility

The following criteria describe conditions that make MFDs infeasible to meet the LID requirement. Additional general LID feasibility criteria that apply to all other LID type BMPs can be found in Section 4-5.2, along with the site suitability criteria for infiltration design in Section 4-5.1. The project may still use the MFD to meet the runoff treatment requirement (Minimum Requirement 5). Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions, must be documented using the LID feasibility checklist, and should be included in the project's Hydraulic Report, along with any applicable written recommendations from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):

- Where the site cannot be reasonably designed to locate a MFD on lateral slopes less than 25% (MFD Type 1 – Type 3) or 12.5% (MFD Type 4 – Type 7).

Design Flow Elements

Flows to Be Treated

Design MFDs to treat the runoff treatment flow rate discussed in Section 3-2.5 under Minimum Requirement 5. Hydrologic methods are presented in Sections 4-3 and 4-4.

Structural Design Considerations

Geometry

Components

- **No-Vegetation Zone** – The no-vegetation zone (vegetation-free zone) is a shallow gravel zone located directly adjacent to the highway pavement. The no-vegetation zone is a crucial element in a properly functioning MFD or other BMPs that use sheet flow to convey runoff from the highway surface to the BMP. The no-vegetation zone functions as a level spreader to promote sheet flow and a deposition area for coarse sediments. Make sure the no-vegetation zone is between 1 foot and 3 feet wide. Depth will be a function of how the roadway section is built from subgrade to finish grade; the resultant cross section will typically be triangular to trapezoidal. Within these bounds, width varies depending on WSDOT maintenance spraying practices. Contact the area maintenance office for this information.
- **Grass Strip** – The width of the grass strip is dependent on the availability of space within the highway side slope and MFD type. The grass strip is required on MFD Type 1 – Type 5. The minimum grass strip width is 3 feet, but wider grass strips are recommended if the additional space is available. At a minimum, the existing embankment will be scarified 2 inches and covered with a 3-inch blanket of medium compost and seeded. Consider adding aggregate to the soil mix to help minimize rutting problems from errant vehicles. The soil mix should ensure grass growth for the design life of the MFD.
- **Media Filter Drain Mix Bed** – The MFD mix is a mixture of crushed rock (sized by screening), dolomite, gypsum, and perlite. The crushed rock provides the support matrix of the medium; the dolomite and gypsum add alkalinity and ion exchange capacity to promote the precipitation and exchange of heavy metals; and the perlite improves moisture retention to promote the formation of biomass within the MFD mix. The combination of physical filtering, precipitation, ion exchange, and biofiltration enhances the water treatment capacity of the mix. The MFD mix has an estimated initial filtration rate of 50 inches per hour and a long-term filtration rate of 28 inches per hour due to siltation. With an additional safety factor, the rate used to size the length of the MFD should be 10 inches per hour. Internal 8-inch-diameter medium compost socks are required along the bottom of the MFD Type 6 and Type 7 installations at even 4-foot spacings. Make sure there is a minimum of one row of compost socks for each MFD Type 6 or Type 7 installation.

- **3-Inch Medium Compost Blanket and Grass** – Place a 3-inch medium compost blanket with grass over the media filter drain bed area to reduce noxious weeds and unwanted vegetation. Do not use this compost blanket in phosphorous-sensitive areas or phosphorous total maximum daily load (TMDL) areas. If this option is used, the MFD will not be considered as a phosphorous treatment BMP. Do not use MFD Type 6 and Type 7 in phosphorous-sensitive areas since the 3-inch compost blanket is required.
- **Conveyance System Below Media Filter Drain Mix** – The gravel underdrain trench (MFD Type 1, Type 4, and Type 6) provides hydraulic conveyance when treated runoff needs to be conveyed to a desired location such as a downstream flow control facility, discharge point, or stormwater outfall. In Group C and D soils, an underdrain pipe helps ensure free flow of the treated runoff through the MFD mix bed. In some Group A and B soils, an underdrain pipe may not be necessary if most water percolates into subsoil from the underdrain trench. Evaluate the need for underdrain pipe in all cases. The PEO may eliminate the gravel underdrain trench if flows can be conveyed laterally to an adjacent ditch or onto a fill slope that is properly vegetated to protect against erosion (MFD Type 3 and Type 5). Keep the MFD mix free draining up to the 50-year storm event water surface elevation represented in the downstream ditch.

Length (perpendicular to the direction of flow)

- The length of the MFD (Type 1 – Type 3) is the same as the length of the contributing pavement.
- The length of the MFD (Type 4 – Type 7) depends on the sizing procedures. (See the Design Method section below.)

Cross Section

- The surface of the MFD (Type 1 – Type 3) should have a lateral slope less than 4H:1V (<25%). On steeper terrain, it may be possible to construct terraces to create a 4H:1V slope, or other engineering may be employed to ensure slope stability up to 3H:1V.
- The surface of the MFD (Type 4 – Type 7) should have a lateral slope less than 8H:1V (<12.5%).

Tributary Area

- For MFD (Type 1 – Type 3), the resultant slope from the contributing drainage area should be less than or equal to 9.4%, calculated using Equation 29[10] in Section 5-4.2.2.

Materials

The MFD mix consists of the amendments listed in Table 5-7. Mixing and transportation must occur in a manner that ensures the materials are thoroughly mixed prior to placement and that separation does not occur during transportation or construction operations.

[10] "Eastern Washington Steep Slope Research for Management of Highway Stormwater," WARD 77.1, Research Report, May 2011.

These materials should be used in accordance with the following *Standard Specifications*:

- Gravel Backfill for Drains – 9-03.12(4)
- Underdrain Pipe – 7-01.3(2)
- Construction Geotextile for Underground Drainage, Moderate survivability, drainage class A, nonwoven – 9-33.1
- Crushed Surfacing Base Course (CSBC) – 9-03.9(3)

If the MFD is configured to allow the treated flows to drain laterally into a ditch (see Figure 5-25, MFD Type 3 and Figure 5-27, MFD Type 5), the crushed surfacing base course below the MFD should conform to Standard Specification 9-03.9(3).

Design Method

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 1 – Type 3

The width of the MFD mix bed is determined by the amount of contributing pavement routed to the embankment. The surface area of the MFD mix bed needs to be sufficiently large to fully infiltrate and filter the runoff treatment design flow rate using the long-term filtration rate of the MFD mix. For design purposes, incorporate a 50% safety factor into the long-term MFD mix filtration rate to accommodate variations in slope, resulting in a design filtration rate of 10 inches per hour. The MFD mix bed should have a bottom width of at least 2 feet in contact with the conveyance system below the MFD mix.

The MFD mix bed should be a minimum of 12 inches deep, including the section on top of the underdrain trench.

For runoff treatment, base the sizing of the MFD mix bed on the requirement that the runoff treatment flow rate from the pavement area, $Q_{Highway}$, cannot exceed the long-term infiltration capacity of the MFD, $Q_{Infiltration}$:

$$Q_{Highway} \leq Q_{Infiltration} \quad \text{(E-17)}$$

For western Washington, $Q_{Highway}$ is the flow rate at or below which 91% of the runoff volume for the developed TDA will be treated, based on a 15-minute time step (see Section 4-3.1.1), and can be determined using the water quality data feature in MGSFlood. For eastern Washington, $Q_{Highway}$ is the peak flow rate predicted for the 6-month, short-duration storm under post-developed conditions for each TDA (see Appendix 4C), and can be determined by selecting the short-duration storm option in StormShed.

Base the long-term infiltration capacity of the MFD on the following equation:

$$\frac{LTIR \times L \times W}{C \times SF} = Q_{Infiltration} \quad \text{(E-18)}$$

where: *LTIR* = Long-term infiltration rate of the media filter drain mix (use 10 inches per hour for design) (in/hr)
L = Length of media filter drain (parallel to roadway) (ft)
W = Width of the media filter drain mix bed (ft)
C = Conversion factor of 43200 ((in/hr)/(ft/sec))
SF = Safety Factor (equal to 1.0, unless unusually heavy sediment loading is expected)

Assuming that the length of the MFD is the same as the length of the contributing pavement, solve for the width of the media filter drain:

$$W \geq \frac{Q_{Highway} \times C \times SF}{LTIR \times L} \quad \text{(E-19)}$$

Western Washington project applications of this design procedure have shown that, in almost every case, the calculated widths of the MFD Type 1 and Type 3 do not exceed 1.0 foot. Therefore, Table 5-6 was developed to simplify the design steps; use it to establish an appropriate width.

Table 5-6 Western Washington design widths for media filter drains (Type 1 and Type 3).

Pavement width that contributes runoff to the media filter drain	Minimum media filter drain width*
≤ 20 feet	2 feet
≥ 20 and ≤ 35 feet	3 feet
> 35 feet	4 feet

*Width does not include the required 1- to 3-foot gravel vegetation-free zone or the 3-foot grass strip width (see Figure 5-23).

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 4 and Type 5

The length (perpendicular to the direction of flow) and width (parallel to the direction of flow) of the MFD mix bed (Type 4 and Type 5) is determined by many factors. The design procedure is outlined below:

1. Determine the total tributary pervious and impervious area (ft^2) and flow rate (cfs) that will be sent to the MFD.
2. For MFD Type 4 and Type 5, divide the tributary area determined in Step 1 above by the "pavement area to MFD media area" ratio of 19.5. This determines the area of MFD needed, and applies to on-line and off-line Type 4 and Type 5 MFDs.

3. From Section 5-4.3.5, choose Option F (slotted flow dispersal pipe) or Option G (perforated pipe in a gravel-backfilled trench with notched grade board) as the redispersal/flow spreader structure type to be used upstream of the MFD. For on-line Type 4 and Type 5 MFDs, the number of flow spreaders and the flow spreader mounding analysis (Option F) is based on the full 100-year rate from the tributary area coming to the MFD. For off-line Type 4 and Type 5 MFDs, the number of flow spreaders and the flow spreader mounding analysis (Option F) is based on the water quality storm flow rate.
4. Determine the length (perpendicular to the direction of flow) and width (parallel to the direction of flow) of the MFD mix bed by the following:
   a. The flow spreader length shall be between 50 feet and 200 feet. The number of flow spreaders and their lengths are calculated based on the criteria in Step 3 above.
   b. The width of the MFD mix bed = (flow spreader length)/5 for flow spreader lengths of 50 feet to 100 feet.
   c. The width of the MFD mix bed = 20 feet for flow spreader lengths of 101 feet to 200 feet.
   d. Check to make sure the total area of MFD mix bed(s) calculated in (4) is greater than or equal to the area determined in (2) above.

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 6 and Type 7

MFD Type 6 and Type 7 are designed as on-line BMPs only. The design procedure is outlined below:

1. From Section 5-4.3.5, choose Option F (slotted flow dispersal pipe) or Option G (perforated pipe in a gravel-backfilled trench with notched grade board) as the redispersal/flow spreader structure type to be used upstream of the MFD. The number of flow spreaders and the flow spreader mounding analysis (if using Option F) shall be based on the 100-year release rate from the detention BMP (MGSFlood, 15-minute time steps). Determine the length of each flow spreader.
2. Determine the MFD mix bed area (L x W) using the long-term infiltration capacity of the MFD based on Equation 18, with the following clarifications:

$$\frac{LTIR \times L \times W}{C \times SF} = Q_{2year} \quad \text{(E-20)}$$

where: *LTIR* = Long-term infiltration rate of the media filter drain mix (use 10 inches per hour for design) (in/hr)
L = Length of media filter drain (parallel to spreader) (ft)
W = Width of the media filter drain mix bed (ft) measured parallel to the flow
C = Conversion factor of 43200 ((in/hr)/(ft/sec))
SF = Safety Factor (equal to 2.0)
Q_{2year} = 2-year release rate (15-minute time steps) from the detention facility

3. The number of flow spreaders and length of each flow spreader was determined in Step 1. The length of the flow spreader(s) is equal to the length of the MFD. The width of the MFD follows the same ratios stated in Steps 4b and 4c of the MFD Type 4 and Type 5 design. Determine the total MFD mix bed length (L) and width (W). Check to make sure the calculated MFD mix bed area (L x W) is greater than or equal to the MFD mix bed area calculated in Step 2.

Underdrain Design

Underdrain pipe can provide a protective measure to ensure free flow through the MFD mix and is sized similar to storm drains. For MFD underdrain sizing, an additional step is required to determine the flow rate that can reach the underdrain pipe. This is done by comparing the contributing basin flow rate to the infiltration flow rate through the MFD mix and then using the smaller of the two to size the underdrain. The analysis described below considers the flow rate per foot of MFD, which allows the PEO the flexibility of incrementally increasing the underdrain diameter where long lengths of underdrain are required. When underdrain pipe connects to a storm drain system, place the invert of the underdrain pipe above the 25-year water surface elevation in the storm drain to prevent backflow into the underdrain system.

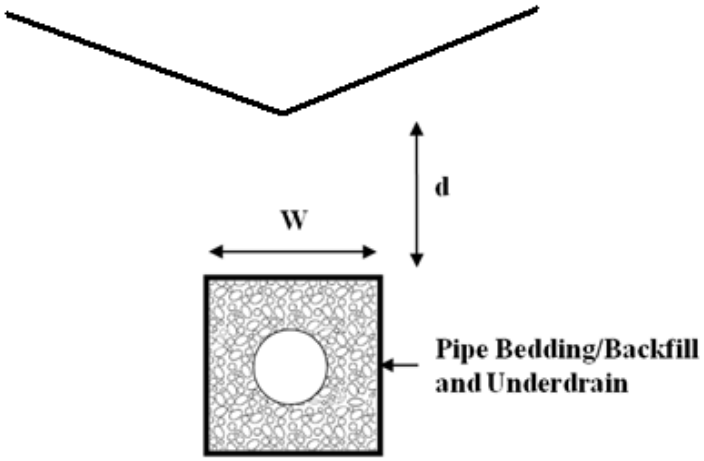


Figure 5-30 Media filter drain underdrain installation.

The following describes the procedure for sizing underdrains in a MFD Type 1, 2, 4, and 6.

1. Calculate the flow rate per foot from the contributing basin to the MFD. The design storm event used to determine the flow rate should be relevant to the purpose of the underdrain. For example, if the MFD Type 1 installation is in western Washington and the underdrain will be used to convey treated runoff to a detention BMP, size the underdrain for the 50-year storm event. (See the *Hydraulics Manual*, Figure 2-2.1, for conveyance flow rate determination.)

$$\frac{Q_{highway}}{ft} = \frac{Q_{highway}}{L_{MFD}} \quad \text{(E-21)}$$

where: $\frac{Q_{highway}}{ft}$ = contributing flow rate per foot (cfs/ft)
L_{MFD} = length of MFD contributing runoff to the underdrain (ft)

2. Calculate the MFD flow rate of runoff per foot given an infiltration rate of 10 in/hr through the MFD mix.

$$Q_{\frac{MFD}{ft}} = \frac{f \times W \times 1ft}{ft} \times \frac{1ft}{12in} \times \frac{1hr}{3600sec} \quad \text{(E-22)}$$

where: $Q_{\frac{MFD}{ft}}$ = flow rate of runoff through MFD mix layer (cfs/ft)
W = width of underdrain trench (ft) – see Standard Plan B-55.20-02; the minimum width is 2 ft
f = infiltration rate though the MFD mix (in/hr) = 10 in/hr

3. Size the underdrain pipe to convey the runoff that can reach the underdrain trench. This is taken to be the smaller of the contributing basin flow rate or the flow rate through the MFD mix layer.

$$Q_{\frac{UD}{ft}} = smaller \left\{ Q_{\frac{highway}{ft}} \; or \; Q_{\frac{MFD}{ft}} \right\} \quad \text{(E-23)}$$

where: $Q_{\frac{UD}{ft}}$ = underdrain design flow rate per foot (cfs/ft)

4. Determine the underdrain design flow rate using the length of the MFD and a factor of safety of 1.2.

$$Q_{UD} = 1.2 \times Q_{\frac{UD}{ft}} \times W \times L_{MFD} \quad \text{(E-24)}$$

where: Q_{UD} = estimated flow rate to the underdrain (cfs)
W = width of the underdrain trench (ft) – see Standard Plan B-55.20-02; the minimum width is 2 ft
L_{MFD} = length of MFD contributing runoff to the underdrain (ft)

5. Given the underdrain design flow rate, determine the underdrain diameter. Round pipe diameters to the nearest standard pipe size and have a minimum diameter of 6 inches. For diameters that exceed 12 inches, contact either the RHE or HQ Hydraulics Section.

$$D = 16\left(\frac{Q_{UD} \times n}{s^{0.5}}\right)^{\frac{3}{8}} \quad \text{(E-25)}$$

where: D = underdrain pipe diameter (inches)
n = Manning's coefficient
s = slope of pipe (ft/ft)

Table 5-7 Media filter drain mix.

Amendment	Quantity
Mineral aggregate shall meet all requirements for the WSDOT Standard Specifications 9-03.4 Aggregate for Bituminous Surface Treatment - Crushed screenings 3/8-inch to No.4 with the exception of: The fracture requirement shall be at least two fractured faces and will apply to material retained on the U.S. No. 4 sieve in accordance with FOP for AASHTO T 335.	3 cubic yards
Perlite: ▪ WSDOT Standard Specifications 9-14.4(9) Horticultural grade	1 cubic yard per 3 cubic yards of mineral aggregate
Dolomite: ▪ WSDOT Standard Specifications 9-14.4(5) Agricultural grade	40 pounds per cubic yard of perlite
Gypsum: ▪ WSDOT Standard Specifications 9-14.4(6) Agricultural grade	12 pounds per cubic yard of perlite

Site Design Elements

Landscaping (Planting Considerations) and Plant Establishment

Landscape the grass strip the same as the vegetated filter strips (see BMP RT.02) unless otherwise specified in the special provisions for the project's construction documents.

Construction Criteria

Keep effective erosion and sediment control measures in place until grass strip is established. Do not allow vehicles or traffic on the MFD, to minimize rutting and maintenance repairs.

Operations and Maintenance

Maintenance will consist of routine roadside management. While herbicides should not be applied directly over the MFD, it may be necessary to periodically control noxious weeds with herbicides in areas around the MFD as part of WSDOT's roadside management program. The use of pesticides may be prohibited if the MFD is in a critical aquifer recharge area for drinking water supplies. Check with the local area water purveyor or local health department. Areas of the MFD that show signs of physical damage will be replaced by local maintenance staff in consultation with the RHE.

Maintenance Access Roads (Access Requirements)

Refer to Section 5-3.7.1 for maintenance access road requirements and other general maintenance considerations.

Signage

Refer to Section 5-5.3 for signing requirements. Additionally, if the MFD is in a critical aquifer recharge area for drinking water supplies, provide signage prohibiting the use of pesticides.

Appendix C – Qualifications

All determinations and supporting documentation, including this ***Final Mitigation Plan*** prepared for the ***Cascade Business Park*** project were prepared by, or under the direction of, Matt DeCaro of SVC. In addition, mitigation planning was provided by Ben Wright, and report preparation was completed by Laura Livingston and Kyla Caddey.

Matt DeCaro

Associate Principal
Professional Experience: 12 years

Matt DeCaro is an Associate Principal and Senior Scientist with a diverse background in environmental planning, wetland science, stream ecology, water quality, site remediation, NEPA compliance, and project management. He manages a wide range of industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use projects from their planning stages through entitlement and construction. His local expertise, diverse professional background, and positive relationships with regulatory personnel are integral components of his successful project outcomes.

Matt earned a Bachelor of Science degree with a focus in Environmental Science from the Evergreen State College in Olympia, Washington, with additional graduate-level coursework and research in aquatic restoration and salmonid ecology. Matt has received 40-hour wetland delineation training (*Western Mountains, Valleys, & Coast and Arid West Regional Supplements*) and regularly performs wetland, stream, and shoreline delineations. Matt has been formally trained in the use of the *2014 Washington State Wetland Rating System* and *Determination of Ordinary High Water Mark* by WSDOE, and he is a Pierce County Qualified Wetland Specialist and Wildlife Biologist. He has attended USFWS survey workshops for multiple threatened and endangered species, and he is a Senior Author of WSDOT Biological Assessments. Matt holds 40-hour HAZWOPER training and has managed Phase I Environmental Site Assessments, subsurface investigations, and contaminant remediation projects throughout the Pacific Northwest. His diverse experience also includes NEPA compliance for federal permitting projects; noxious weed abatement; army ant research in the Costa Rican tropical rainforest; spotted owl surveys on federal and private lands; and salmonid spawning and migration surveys.

Ben Wright

Environmental Scientist
Professional Experience: 18 years

Ben Wright is an Environmental Scientist with a varied background in lake ecology, stream ecology, fisheries biology, water quality and climate science. Ben has 13 years of experience at the federal level providing technical assistance for both the development of infrastructure projects and management of aquatic resources. He has experience developing biological assessments, water quality monitoring plans, and fisheries management plans. Ben has an additional 10 years of experience working on long-term ecological monitoring programs related to lakes, streams, water quality and climate.

Ben earned a Bachelor of Science degree in Genetics and Cell Biology with an emphasis in aquatic ecology from Washington State University and has a graduate certificate in Fisheries Management from Oregon State University. Ben's expertise includes endangered species monitoring, assessments

and permitting, and NEPA documentation across disciplines gained during his work on federal highway projects. Ben also has experience in fish population assessments, utilizing genetic analysis, spawning escapement and movement studies. Ben has 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, How to Conduct a Forage Fish Survey and Puget Sound Costal Processes, Shoreline Modifications and Beach Restoration.

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.

Attachment J – Final Mitigation Plan (June 1, 2021)

FINAL MITIGATION PLAN

CASCADE BUSINESS PARK (NWS-2020-571)

JUNE 2021

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

FINAL MITIGATION PLAN
CASCADE BUSINESS PARK (NWS-2020-571)

JUNE 1, 2021

PROJECT LOCATION

6600 172ND STREET NORTHEAST
ARLINGTON, WASHINGTON 98223

15223 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

16015 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

5414 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

PREPARED FOR

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
RIVERSIDE, MISSOURI 64150

PREPARED BY

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98335
(253) 514-8952

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting NorthPoint Holdings, LLC (Applicant) with this mitigation plan for the Cascade Business Park project located on a 361.19-acre site in the Cities of Arlington and Marysville, Washington. The subject property consists of 14 tax parcels situated in the Northeast and Southwest ¼ of Section 27 and Northwest and Southwest ¼ of Section 34, Township 31 North, Range 5 East, W.M. (Snohomish County Tax Parcel Numbers 31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, and 31053400300300).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, and other fish and wildlife habitat on multiple dates in March, April, May, June, July, August, September, and October of 2020 and January, February, and March of 2021. SVC delineated a total of 41 wetlands (Wetlands A-Z, AA-AM), one stream (Edgecomb Creek), and one fish-bearing agricultural ditch (Tributary X) and estimated the boundaries of four additional agricultural or roadside ditches (51st Avenue East Ditch, two 152nd Street Ditches, and Ditch U) in the project area. The 51st Avenue East Ditch is also being treated as a wetland at the local and state levels. Refer to SVC's *Wetland and Fish and Wildlife Habitat Assessment Report* (2021) for additional information including a detailed description of onsite aquatic features.

The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. Frontage improvements along 51st Avenue Northeast will include widening the existing two-lane road to a three-lane road and half street improvements (multi-modal path, curb, and gutter). Frontage improvements and roadway upgrades along 152nd Street East include expansion of the existing two-lane road to include up to five lanes with a curb, sidewalk, multi-modal path, and gutter.

The project was carefully designed in attempts to minimize impacts to wetlands and waterbodies to the greatest extent feasible, and the project will avoid impacts to existing meandering sections of Edgecomb Creek on the northeast and southeast corners of the site and one smaller onsite wetland. Project impacts to a large Category II wetland (Wetland AH) will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide necessary stormwater detention. These avoidance and minimization measures are targeted towards the higher functioning aquatic areas onsite. However, complete avoidance of aquatic features is not possible due to the central location of the ditched Edgecomb Creek on the subject property, the scattered distribution of wetlands throughout the subject property, and the large spatial footprints required for industrial buildings and associated utilities and road infrastructure. In order to accommodate the purpose and need for the industrial site development, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet), fill and realignment of Tributary X (1,167 linear feet), and total fill of 3.569 acres of federally jurisdictional wetlands (plus 0.707 acre of additional fill of the federally non-jurisdictional 51st Avenue East Ditch, which is being treated as a wetland at the local and state levels) for a total of 4.275 acres of direct wetland impacts. In addition, the proposed project will require 0.595 acre of indirect impacts to Wetland AH. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic

connection to offsite side channels on tax parcel number 31052700200900, resulting in 496 linear feet of direct impacts to these offsite side channels. The Applicant intends to directly fill the offsite side channels to align a public roadway through the proposed industrial development as desired by the Cities of Arlington and Marysville. While direct fill of the offsite side channels is not included in the proposed project action, the compensatory mitigation actions described below will offset the direct loss of side channel functions that will result from the proposed project. Onsite ditches will be filled or piped.

The compensatory mitigation actions outlined herein are intended to compensate for lost wetland and stream functions and values by providing an overall improvement in water quality, hydrologic, and habitat functions according to the needs of the site, local sub-basin, and overall Snohomish River watershed. To offset the necessary impacts to Edgecomb Creek, the project proposes to realign Edgecomb Creek within a restored riparian corridor on the eastern portion of the project area. The riparian corridor will be 215 feet wide in the City of Arlington and up to 315 feet wide in the City of Marysville, and a pedestrian trail extending from 172nd Street Northeast to 152nd Street Northeast will be partially located through the riparian corridor. Edgecomb Creek will be realigned through a restored stream channel that meanders through the riparian corridor; additional side channels will be created and connected to the mainstem stream channel to provide off-channel habitat and flood refugia for fish. Suitable streambed substrates will be added the new channels, and stream functions will be further enhanced by small and large woody debris placement within channels and in the flood terrace. Riparian functions will be restored by diverse native plantings to create forested, scrub-shrub, and emergent habitats. A box culvert will be added beneath 152nd Street Northeast to convey the re-aligned stream channel. A media filter drain will be installed along the eastern boundary of the riparian corridor between the re-aligned stream and the offsite BNSF railroad to the east of the riparian corridor to provide water quality treatment in addition to full dispersion treatment of pollutants from the railroad. The re-aligned main-stem stream channel and created side-channel habitat (16,494 linear feet) will provide mitigation that exceeds a 1:1 mitigation ratio for the fill of the existing Edgecomb Creek stream channel and the associated direct impacts to the offsite side channels. Tributary X will also be re-aligned, lengthened, and reconnected to the re-aligned Edgecomb Creek (2,094 linear feet). Impacts to Tributary X, including installation of several culverts along the new Tributary X alignment, will be mitigated for within the riparian corridor and through the lengthened Tributary X channel itself. A 100% stream design set and basis of design will be provided under separate cover.

Compensatory wetland re-establishment and creation will occur within the riparian corridor, meeting local, state, and federal mitigation ratios for direct wetland impacts. A minimum of 8.769 acres of wetland re-establishment/creation is required to compensate for the 4.275 acres of necessary wetland fill and 0.595 acre of indirect wetland impacts. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. [0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021).] Any excess wetland mitigation credits are proposed for use by the Applicant as advanced mitigation for any future wetland impact proposal(s) in accordance with a draft advance mitigation plan that has been submitted to the USACE under separate cover (SVC, 2021b). Compensatory wetland creation areas will be protected by a minimum of a 75-foot perimeter buffer fully contained within the riparian mitigation corridor.

SVC has coordinated extensively with USACE and WSDOE regarding the required protective buffer width for compensatory wetland creation areas. USACE and WSDOE stated during a phone conversation with SVC on April 5, 2021 that a 75-foot-wide perimeter buffer would be required for the compensatory wetland creation areas. While SVC has contended that a smaller buffer width should be applicable for the compensatory wetland creation areas based on the intention of the mitigation site to primarily compensate for the loss of primarily Category III and IV wetlands with low habitat scores, the Applicant is willing to accept a 75-foot perimeter buffer for compensatory wetland creation areas to expedite the project permitting. The proposed pedestrian trail will be located upland of the 75-foot perimeter buffer for compensatory wetland creation areas; stormwater dispersion devices may be located within the 75-foot perimeter buffer. Upland areas within the riparian corridor will be fully planted with native trees and shrubs. In addition to providing a functional lift over the existing agricultural buffer conditions onsite, the proposed upland plantings will also support the restoration of riparian habitat in the Cities of Arlington and Marysville. The proposed riparian corridor will be approximately 1.75 miles long and will encompass approximately 58% of the length of Edgecomb Creek mapped by Snohomish County. Upstream and downstream of the project area, Edgecomb Creek passes through varying intensities of residential development with varying degrees of surrounding vegetative cover. Given the existing agricultural conditions onsite, the length of the proposed protective riparian corridor, and the surrounding land uses, the restoration of riparian habitat will provide significant ecological benefit and protection within this urbanizing environment. During the same April 5, 2021 phone call with USACE and WSDOE, these regulatory agencies indicated that the upland buffer areas waterward of the 75-foot perimeter buffer for the compensatory mitigation site would generate mitigation credit. The 4.748 acres of "excess buffer creation" are therefore proposed for use by the Applicant as advanced mitigation for any future wetland and/or buffer impact proposal(s).

Non-compensatory mitigation measures are proposed to increase ecological functions of the stream, wetlands, and buffers within the riparian corridor. The proposed mitigation corridor will achieve an additional 1.982 acres of non-compensatory wetland creation areas and 0.594 acre of non-compensatory wetland enhancement areas that have less than 75 feet of protective buffer width and therefore will serve as buffers for the proposed compensatory wetland creation and enhancement areas. The Applicant also proposes to voluntarily enhance the remaining Wetland AH buffer by planting the existing degraded buffer with native trees and shrubs. As an additional non-compensatory mitigation measure, the Applicant proposes to replace two partial fish barrier culverts underneath the BNSF railroad with upgraded crossing designs to allow fish access and convey Edgecomb Creek beneath the railroad. The partial fish barrier culvert adjacent to the northern end of the subject property will be replaced with a bridge or box culvert up to 16 feet wide. The partial fish barrier culvert adjacent to the southern end of the subject property will be replaced with a bridge span up to approximately 20 feet wide. The final crossing designs and any associated stream re-alignment work will be coordinated with BNSF, the Project Engineer, Tulalip Tribes, and the Washington Department of Fish and Wildlife (WDFW).

The table below identifies the wetlands and other waters identified during the site investigations and summarizes the expected regulatory status.

Wetland / Waterbody	Size/Length Onsite	Local Jurisdiction Location	Category/ Type[1]	Regulated under Section 404 of the CWA[2]
A	1,369 SF	Arlington	IV	Assumed[3]
B	4,859 SF	Arlington	IV	Assumed[3]
C	4,841 SF	Arlington	IV	Assumed[3]
D	3,537 SF	Arlington	IV	Assumed[3]
E	775 SF	Arlington	III	Likely
F	386 SF	Arlington	III	Likely
G	987 SF	Arlington	III	Likely
H	6,279 SF	Arlington	II	Likely
I	377 SF	Marysville	III	Likely
J	334 SF	Marysville	IV	Assumed[3]
K	16,836 SF	Marysville	IV	Assumed[3]
L	15,756 SF	Marysville	IV	Likely
M	1,969 SF	Marysville	IV	Assumed[3]
N	8,133 SF	Marysville	IV	Assumed[3]
Offsite O	N/A	Arlington/ Marysville	III	Assumed[3]
P	550 SF	Arlington	IV	Assumed[3]
Q	2,522 SF	Arlington	IV	Assumed[3]
R	1,773 SF	Arlington	IV	Assumed[3]
Offsite S	N/A	Marysville	IV	Assumed[3]
Offsite T	N/A	Marysville	IV	Assumed[3]
U	4,909 SF	Marysville	IV	Assumed[3]
V	5,945 SF	Arlington	III	Assumed[3]
W	258 SF	Marysville	IV	Assumed[3]
X	4,492 SF	Marysville	IV	Assumed[3]
Y	662 SF	Arlington	III	Likely
Z	483 SF	Marysville	III	Likely

AA	574 SF	Marysville	III	Likely
AB	1,166 SF	Marysville	III	Likely
AC	4,866 SF	Marysville	IV	Assumed[3]
AD	2,462 SF	Marysville	III	Likely
AE	11,346 SF	Marysville	IV	Assumed[3]
AF	615 SF	Marysville	IV	Assumed[3]
AG	285 SF	Marysville	IV	Assumed[3]
AH	180,709 SF	Marysville	II	Likely
AI	3,873 SF	Marysville	III	Likely
AJ	2,471 SF	Marysville	III	Likely
AK	696 SF	Marysville	IV	Assumed[3]
Edgecomb Creek	10,723 LF	Arlington/ Marysville	F-ESA / F	Likely
51st Avenue East Ditch	44,087 LF	Marysville	N/A (non-typed)[5]	Non-Jurisdictional[6]
Ditch U	1,223 LF	Marysville	N/A (non-typed)	Non-Jurisdictional[6]
Tributary X	1,167 LF	Arlington	F-ESA	Assumed[3]
152nd Street Ditches	~0.33 mile	Marysville	N/A (non-typed)	Unlikely

Notes:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per MMC 22E.010.060.1 and AMC 20.93.800.a. DNR Water Typing system per MMC 22E.010.060.1. and AMC 20.93.700.
2. Per 2020 Navigable Waters Protection Rule.
3. Potentially non-jurisdictional federally; however, regulation under Section 404 of the CWA assumed in order to expedite permitting process.
4. Does not include approximately 732 linear feet of ditch located on Parcels 31052700300600, 31052700301000, and 31053400201400, outside of the project area but affected by frontage improvement requirements along 51st Avenue Northeast.
5. The 51st Avenue East Ditch, which is non-jurisdictional federally, is being treated as a Category III wetland to expedite the local and state permitting processes.
6. USACE has determined the 51st Avenue East Ditch and Ditch U to be non-jurisdictional under the Navigable Waters Protection Rule (USACE, 2020 and USACE, 2021).

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Tables

Appendices

Chapter 1. Regulatory Considerations

The site assessments in 2020 and 2021 identified a total of 40 potentially regulated wetlands (Wetlands A-Z and AA-AM), one stream (Edgecomb Creek), one fish-bearing ditch (Tributary X), one non-wetland agricultural ditch (Ditch U) that is likely considered a Water of the State, and one roadside ditch (51st Avenue East Ditch) that will be treated as a wetland for local and state permitting purposes. No other potentially regulated wetlands, waterbodies, or other fish and wildlife habitat were identified in the project area.

The proposed project area is located within both the City of Arlington and the City of Marysville. A total of 13 delineated wetlands (Wetlands A-H, P-R, V and Y) are located entirely in the City of Arlington jurisdiction, and 25 delineated wetlands (Wetlands I-N, S-U, W, X, Z, and AA-AM) are located entirely in the City of Marysville jurisdiction. One delineated wetland (Wetland O) is located on the jurisdictional boundary between the two cities. Tributary X is located in the City of Arlington, and the onsite 51st Avenue East Ditch is located in the City of Marysville. Edgecomb Creek is located in both the City of Arlington and the City of Marysville.

The City of Arlington has approved a development agreement with the Applicant, and the Applicant is currently negotiating a development agreement with the City of Marysville. The proposed mitigation actions specified herein have generally been designed according to the standards and conditions of the development agreements.

1.1 Local Regulations

1.1.1 Wetland Buffers

City of Arlington

Arlington Municipal Code (AMC) 20.93.800(a) has adopted the 2014 *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). Under the 2014 wetland rating system, Category IV wetlands are those that generally provide low levels of function and score less than 16 points. Category IV wetlands are often heavily disturbed and are wetlands that should be replaceable. Category III wetlands are those that generally provide moderate levels of function and score between 16 and 19 points. Category III wetlands have generally been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands. Category III wetlands can often be adequately replaced with a well-planned mitigation project. Category II wetlands provide high levels of some functions and score between 20 and 22 points. Category II wetlands are difficult, though not impossible, to replace. AMC 20.93.830 identifies standard buffers for wetlands based on habitat score assuming the implementation of all minimization measures listed in AMC Table 20.93-5. Category II, III, and IV wetlands were identified during the site investigations:

- Category II wetland with habitat score of 6 (Wetland H)
- Category III wetlands with habitat score of 5 (Wetland G and Wetland V)
- Category III wetlands with habitat score of 4 (Wetlands E, F, Offsite Wetland O, and Y)
- Category IV wetlands with habitat scores of 4 or less (Wetlands A-D and P-R)

The standard buffer for a Category IV wetland is 40 feet; a Category III wetland with a habitat score less than 5 points is 60 feet; a Category III wetland with habitat score of 5 is 105 feet; and a Category II wetland with a habitat score of 6 or 7 points is 165 feet. Per AMC 20.93.340, a 15-foot building setback is required from the edge of any critical area buffer.

City of Marysville

Marysville Municipal Code (MMC) 22E.010.060.1 has also adopted the 2014 wetland rating system. The following Category II, III and IV wetlands were delineated during the site investigations:

- Category II wetland with a habitat score of 6 (Wetland AH)
- Category III wetland with habitat score of 4 (Wetlands AA, AB, AI, AJ, I, and Z and Offsite Wetland O)
- Category IV wetlands with habitat score of 4 or less (Wetlands AC, AE-AG, AK-AM, J-N, U, W, and X and Offsite Wetlands U, S and T)

Although the 51st Avenue East Ditch is an artificially and intentionally created drainage feature, WSDOE believes that the ditch meets of the definition of a wetland under the Revised Code of Washington (RCW) 36.70A.030 and RCW 90.48. WSDOE has concluded the roadside ditch was likely constructed from a wetland in the early 1900s (email correspondence between Soundview Consultants and Neil Molstad, WSDOE, 10/28/2020). The Applicant has indicated their disagreement with WSDOE's determination; however, the Applicant has decided to accept the positive wetland determination for the Cascade Business Park project. The 51st Avenue East Ditch is being treated as a Category III wetland and subject to a standard 75-foot buffer per MMC 22E.010.100(4).

Per MMC 22E.010.380, a 15-foot building and structure setback is required from the edge of critical area buffers.

1.1.2 Stream Buffers

City of Arlington

Per AMC 20.93.700, the City of Arlington has adopted the state water classification system specified in WAC 222-16-030. Per AMC 20.93.700(b), a Type F water includes segments of natural waters that are not classified as Type S (shoreline) and have a substantial fish, wildlife, or human use. Per AMC 20.93.700(a)(2), Type F-ESA water is a water that meets the criteria of a Type F stream and has been identified as having presumed use by ESA-listed fish species. Edgecomb Creek is likely considered a Type F-ESA water due to modeled Chinook and steelhead presence identified by the WDFW SalmonScape inventory. While Tributary X is an artificially created feature, this ditch is likely considered a Type F-ESA water due to the provision of off-channel habitat for salmonids. Per AMC Table 20.93-3, the standard buffer for a Type F-ESA water is 150 feet. Per AMC 20.93.440(a)(1) this 150-foot buffer shall consist of a 100-foot designated native growth protection easement in which no human activity is allowed (unless specified by AMC 20.93.430) and a 50-foot management zone in which vegetation may be managed for public health and safety reasons.

City of Marysville

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(1)(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(1)(a), Type F streams are subject to a standard 150-foot buffer.

Per MMC 22E.010.220(3)(a) and 22E.010.220(3)(b), stream buffers shall be measured from the ordinary high water mark as defined in the field, or, if that cannot be determined, from the top of the bank. In braided channels and alluvial fans, the OHW mark or top of bank shall be determined so as to include the entire stream feature. As Edgecomb Creek enters Wetland AH at the far southern project extent, the channel begins to braid and contains several side channels. As such, the standard 150-foot Type F stream buffer projects from the OHW of the main stem and side channels of Edgecomb Creek.

1.1.3 Mitigation Sequencing

Per AMC 20.93.740, AMC 20.93.840, AMC 20.08.010, MMC 22E.010.110(1) and MMC 22E.010.230(1), all adverse impacts to stream and wetland functions and values shall be mitigated using the following sequence:

a) Avoiding the impact altogether by not taking a certain action or parts of actions;

The Applicant proposes industrial development on the subject property to include nine buildings, City and private roads, loading and parking areas, stormwater infrastructure, and other associated infrastructure and utilities. The proposed project has been carefully designed to avoid and minimize impacts to wetland and streams where feasible. Avoidance and minimization measures are targeted at higher functioning aquatic areas onsite, and the proposed site plan avoids impacts to meandering sections of Edgecomb Creek on the northeast and southeast corners of the site. One small Category IV wetland (Wetland AK) will also be preserved in the riparian corridor. Due to the central location of Edgecomb Creek, the scattered distribution of wetlands across the site, and the large spatial requirements of an industrial park, relocation of Edgecomb Creek and direct wetland impacts are unavoidable. The proposed impacts are necessary in order to achieve the project objectives, including the development of large industrial buildings, provision of stormwater detention facilities, and maintenance of traffic conductivity on public and private roads across the large site. The Cities of Arlington and Marysville have long recognized the public need to relocate and restore Edgecomb Creek to avoid the long-term effects of retaining the existing degraded stream amidst an industrially zoned area. Relocating Edgecomb Creek beneficially allows for restoration of the existing degraded and ditched salmonid habitat within the urban landscape.

Overall, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet), fill and realignment of Tributary X (1,167 linear feet), and total fill of 3.569 acres of federally jurisdictional wetlands (plus 0.707 acres of additional fill of the non-jurisdictional 51st Avenue East Ditch which is being treated as a wetland at the local and state levels) for a total of 4.275 acres of direct wetland impacts. In addition, the proposed project will

require 0.595 acre of indirect impacts to Wetland AH. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic connection to offsite side channels, resulting in 496 linear feet of direct impacts to these offsite side channels. Onsite ditches will be filled or piped.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

The proposed project has been carefully designed to minimize impacts on the onsite critical areas. The proposed relocation is primarily limited to the stream segments that were historically ditched and avoids impacts to the more naturally formed meandering stream reaches at the northern and southern ends of the project area. Project impacts to a large Category II riverine wetland (Wetland AH) will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide necessary stormwater detention. Wetland AH is one of two existing Category II wetlands onsite and currently provides high levels of water quality functions and moderate levels of hydrologic and habitat functions. Wetland AH is relatively unique among the onsite wetlands due to several Cowardin classes, hydroperiods, and special habitat features. The proposed impact minimization is intended to provide as much protection to this riverine wetland and associated habitat as feasible. Water quality and hydrology impacts from the development will be minimized through the use of stormwater infrastructure that will consist of enhanced water quality treatment, detention ponds, and dispersion into the proposed riparian corridor. Temporary impacts to the stream and fish during relocation will be minimized through water quality monitoring and fish exclusion and protection following plans provided under separate covers. Appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures will be implemented for the duration of project activities to minimize potential construction impacts to the stream and remaining onsite and offsite wetlands.

c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

Compensatory mitigation for the unavoidable and direct stream and wetland impacts will be rectified through onsite, in-kind stream restoration and wetland creation/re-establishment actions. The 51st Avenue East Ditch is being treated as a wetland for local and state permitting purposes, and compensatory mitigation will be provided for the proposed fill of this ditch in addition to the other wetland and stream impacts. Non-compensatory riparian and wetland enhancement and coordination of two culvert replacements with the BNSF Railroad is also proposed to improve existing riparian and wetland functions and improve fish passage through the site.

d) Reducing or eliminating the impact over time by preservation and maintenance operations;

The proposed riparian mitigation corridor will be protected through placement in a separate protective tract as required under AMC 20.93.830 and MMC 22E.010.350(2). The location and limitations associated with this protection will be shown on the face of the deed applicable to the property and shall be recorded with Snohomish County's recording department. Critical areas signage will be installed around the riparian mitigation corridor. Maintenance and monitoring actions will be provided as outlined in Chapter 2 of this report.

e) Compensating for the impact by replacing or providing substitute resources or environments;

See response to criteria (c) above. Compensatory mitigation for the unavoidable and direct stream and wetland impacts will be rectified through onsite, in-kind stream and wetland creation. Onsite wetland creation and enhancement will be provided according to the mitigation ratios established by AMC 20.93.840(d) and MMC 22E.010.120(3). [A minimum of 8.769 acres of wetland re-establishment/creation is required to compensate for the 4.275 acres of necessary wetland fill and 0.595 acre of indirect wetland impacts. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. 0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021). 4.748 acres of upland buffer area will be established within the riparian corridor and protected by the 75-foot perimeter buffer. Any excess wetland mitigation credits or "excess buffer creation" areas are proposed for use by the Applicant as advanced mitigation for any future wetland and/or buffer impact proposal(s).]

f) Monitoring the impact and taking appropriate corrective measures.

The riparian mitigation corridor will be monitored for a period of 10 years. Monitoring and contingency plans are provided in Chapter 2 of this report.

1.1.4 Wetland Mitigation Requirements

City of Arlington

Per AMC 20.93.840(a), unavoidable wetland impacts shall be compensated in order to avoid significant environmental impacts. In order of preference, compensation may be provided by: 1) onsite wetlands restoration/improvement, 2) onsite wetlands creation, 3) onsite wetlands buffer restoration, and 4) offsite wetlands protection. Due to the scattered distribution of wetlands and large spatial requirements of the proposed industrial park, complete fill of most onsite wetlands (including all wetlands within the City of Arlington jurisdiction) is unavoidable. Onsite compensatory wetland creation and enhancement will be provided according to the mitigation ratios established by AMC 20.93.840(d) and AMC Table 20.93-6. The mitigation site as a whole (within the Cities of Arlington and Marysville) is expected to create wetland credits in excess of local mitigation ratios; the additional wetland mitigation areas may be used as advance mitigation for future projects (SVC, 2021b). The proposed protective buffers for the wetland mitigation areas will be provided by the 215-foot-wide riparian mitigation corridor within the City of Arlington or as established in the development agreement.

City of Marysville

MMC 22E.010.120(1) provides the following standards regarding the location and timing of wetland mitigation:

a) Restoration, creation, or enhancement actions should be undertaken on or adjacent to the site, or where restoration or enhancement of a former wetland is proposed, within the same watershed. Replacement in-kind of the impacted wetland is preferred for creation, restoration, or enhancement actions. The city may accept or recommend restoration, creation, or enhancement which is off-site and/or out-of-kind, if the applicant can demonstrate that on-site or in-kind restoration, creation, or enhancement is infeasible due to constraints such as

parcel size or wetland type or that a wetland of a different type or location is justified based on regional needs or functions;

Onsite, in-kind, permittee-responsible compensatory wetland creation will be provided according to the mitigation ratios established by MMC 22E.010.120(3).

b) Whether occurring on-site or off-site, the mitigation project shall occur near an adequate water supply with a hydrologic connection to the wetland to ensure a successful wetlands development or restoration;

The proposed wetland creation actions will occur within the riparian restoration corridor. Created wetlands will be located adjacent to the realigned Edgecomb Creek and excavated down to tie into groundwater levels as necessary to provide adequate hydrology. Wetland enhancement actions will occur within existing wetlands within the restoration corridor.

c) Any agreed-upon proposal shall be completed before initiation of other permitted activities, unless a phased or concurrent schedule has been approved by the community development department;

Timing of mitigation activities will occur according to the standards and conditions of the development agreement. Construction of the mitigation site is currently anticipated to commence the summer of 2021, once appropriate authorizations are obtained.

d) Wetland acreage replacement ratios shall be as specified in subsection (3) of this section.

The proposed compensatory wetland mitigation actions will occur according to the mitigation ratios established by MMC 22E.010.120(3).

Additionally, MMC 22E.010.120(2) states that proposals which include compensatory mitigation shall demonstrate the following:

a) All feasible and reasonable measures will be taken to reduce impacts and losses to the original wetland;

The proposed project reduces impacts to onsite wetlands by minimizing impacts to the large Category II Wetland AH. Wetland AH provides high levels of water quality and hydrologic functions and moderate levels of habitat functions. Proposed habitat enhancement will improve habitat functions within the wetland by reducing non-native, invasive species cover and increasing native tree and shrub cover. One small Category IV wetland (Wetland AK) will also be avoided. The proposed project will minimize water quality and hydrology impacts to these wetlands through the use of enhanced stormwater treatment, detention ponds, and dispersion of the treated and attenuated runoff into the riparian corridor. Additional reduction of wetland impacts and losses is not feasible due to the scattered wetland distribution across the site, the large spatial footprint required for an industrial park, and required frontage improvements.

b) No overall net loss will occur in wetland functions, values and acreage; and

Wetland creation in the restored riparian corridor is proposed according to according to the mitigation ratios established by MMC 22E.010.120(3), and no net loss in wetland functions, values, or acreage will occur.

c) The restored, created or enhanced wetland will be as persistent and sustainable as the wetland it replaces.

The created wetlands will be located within the restored riparian corridor with hydrology provided by the realigned Edgecomb Creek, runoff, and precipitation. The existing wetlands are primarily located in agricultural fields and along the ditched Edgecomb Creek. The proposed wetland creation area is anticipated to contain forest, scrub-shrub, and emergent vegetation and be protected by a separate tract or easement from future development. Given the proposed hydrology sources and native plantings, the created wetlands will be as persistent and sustainable as the impacted wetlands.

1.1.5 Stream Mitigation Requirements

City of Arlington

AMC 20.93.740(a) describes required mitigation for activities not allowed per AMC 20.93.720 (Streams, Creeks, Rivers, Lakes, and Other Surface Waters – Allowed Activities). The proposed project requires the relocation of Edgecomb Creek and Tributary X in order to develop the regional industrial park. Additional impacts to offsite side channels connected to Edgecomb Creek on tax parcel number 31052700200900 will occur as a result of the proposed fill of the existing Edgecomb Creek channel. Edgecomb Creek and Tributary X will be realigned according to the standards of the Development Agreement with the City of Arlington.

City of Marysville Mitigation Requirements

Per MMC 22E.010.230(3)(b) alteration of Type F streams may be permitted provided that the applicant mitigates adverse impacts consistent with the performance standards and other requirements of the chapter and provided that no net loss will occur in stream functions and fish habitat. Per MMC 22E.010.230(3)(c) relocation of a stream may only occur when it is part of an approved mitigation or rehabilitation plan and will result in equal or better habitat and water quality and will not diminish flow capacity of the stream. The proposed project requires the relocation of Edgecomb Creek in order to achieve traffic connectivity across the site on public and private roads, provide utility connections, and accommodate the large spatial footprint required by industrial buildings and associated infrastructure. The re-aligned main-stem stream channel and created side-channel habitat will provide mitigation at a minimum of 1:1 for the fill of the existing Edgecomb Creek stream channel, and no reduction in flow capacity is anticipated based on the proposed channel design. The proposed Edgecomb Creek will be restored to a meandering stream channel through a riparian corridor of native vegetation and provide significantly improved stream functions and fish wildlife habitat.

1.2 State and Federal Considerations

1.2.1 Federal Requirements

WSDOE regulates surface waters of the state under RCW 90.48 and WAC 173-201A for potential impacts to water quality. WAC-173-201A-020 provides definitions of surface waters of the state and wetlands.

Per WAC 173-201A-020, surface waters of the state are defined as:

"includes lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses within the jurisdiction of the state of Washington."

Per WAC 173-201A-020, wetlands are defined as:

"wetlands means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. 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. (Water bodies not included in the definition of wetlands as well as those mentioned in the definition are still waters of the state.)"

All identified onsite wetlands (including the 51st Avenue East Ditch), Edgecomb Creek, and Tributary X are likely to be regulated as waters of the state of Washington under the RCW 90.48 and WAC 173-201A. Ditch U acts as a feeder ditch to the 51st Avenue East Ditch, indirectly contributing surface water runoff to a downgradient tributary (Edgecomb Creek). As such, Ditch U is likely to be regulated as a waters of the state as a non-wetland water. The 152nd Street Ditches are artificially and intentionally created ditches that convey only ephemeral runoff that appears to primarily infiltrate. These ditches are not likely regulated as waters of the state. An Administrative Order (AO) will be sought from WSDOE for the proposed impacts to the waters of the state (e.g., Ditch U and the 51st Avenue East Ditch) that are not considered federally jurisdictional.

1.2.2 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 was the second step in reviewing and revising the definition of 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 became effective June 22, 2020.

The Navigable Waters Protection Rule effectively replaced the "Definition of Waters of the United States – Recodification of Pre-Existing Rules" rule published on October 22, 2019 (repealing the Clean Water Rule) and the 2008 joint guidance memorandum from USACE and EPA. The following describes potential regulatory classifications for the onsite stream, wetlands, and ditches under the Navigable Waters Protection Rule. Of note, the proposed project is assuming USACE jurisdiction over Edgecomb Creek and all onsite wetlands in order to support an expedited permitting process. Due to the proposed fill of the existing stream channel and onsite wetlands, the proposed project will require an Individual Section 404 Permit from the USACE. No direct impacts are proposed to the offsite wetlands or ditches; thus, potential regulatory classification for these offsite features is not described in this report.

Under the final Navigable Waters Protection Rule, 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.

The Navigable Waters Protection Rule specifies that WOTUS do not include: a) groundwater, including groundwater drained through subsurface drainage systems; b) ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools; c) diffuse stormwater runoff and directional sheet flow over upland; d) ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations; e) prior converted cropland; f) artificially irrigated areas that would revert to upland if artificial irrigation ceases; g) artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters; h) water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel; i) stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff; j) groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and k) waste treatment systems.

Under the Navigable Waters Protection Rule, Edgecomb Creek is likely regulated through category 2 of WOTUS because it is a perennial, natural tributary within a stream network that eventually drains into Puget Sound, a traditionally navigable water. It will be assumed that Tributary X is regulated to expedite the overall permitting process. The onsite ditches (Ditches U and X; 51st Avenue East Ditch, and the two 152nd Street Ditches) are artificially excavated ditches constructed for agricultural or roadside drainage purposes; these ditches are not constructed within tributaries nor do they relocate a tributary. USACE has determined that the 51st Avenue East Ditch is not a WOTUS because it is an excluded non-waters of the U.S. per 33 CFR Part 328.3(b) (USACE, 2020 and USACE, 2021). Similarly, the onsite stormwater ponds are artificial features that have been excavated for the purposes of collecting stormwater runoff and are likely non-jurisdictional by USACE through category i above of waters that are not considered to be WOTUS.

Of the delineated wetlands, Wetlands E, F, G, H, I, L, Y, Z, AA, AB, AD, AH, AI, AJ, and AL abut or are adjacent and contribute surface water runoff to Edgecomb Creek and are likely regulated by USACE through category 3 above. The remaining onsite delineated wetlands (Wetlands A, B, C, D, J, K, M, N, Q, R, U, V, W, X, AC, AE, AF, AG, AK, and AM) do not abut Edgecomb Creek, are not located within a FEMA mapped floodplain, and are therefore potentially not regulated by USACE.

The Navigable Waters Protection Rule establishes that prior converted cropland is not considered WOTUS (category e above). Prior converted cropland means any area that, prior to December 23, 1985, was drained or otherwise manipulated for the purpose, or having the effect, of making production of an agricultural product possible. USACE and the EPA will recognize designations of prior converted cropland made by the Secretary of Agriculture. All of the onsite wetlands, except for Wetland AH, are located within active agricultural fields and may be eligible for prior converted cropland status, although no prior converted cropland determination has been made for these wetlands according to documents received from local public records requests for wetland documentation on the subject property.

Due to the proposed fill of the jurisdictional Edgecomb Creek and other wetlands under the Navigable Waters Protection Rule, the proposed project presumes the need for an Individual Permit application with USACE. While several onsite wetlands are potentially not regulated as WOTUS and most of the onsite wetlands may be eligible for prior converted cropland status under the Navigable Waters Protection Rule (excluding Wetland AH), the proposed project is assuming USACE jurisdiction over all onsite wetlands in order to support a streamlined and expedited permitting process, though an approved jurisdictional determination will be sought for Ditch U and the remainder of the 51st Avenue East Ditch. If these ditches are confirmed to be non-jurisdictional waters, then an administrative order from WSDOE will be required for required impacts.

Chapter 2. Final Mitigation Plan

The proposed mitigation actions for the project attempt to strike a balance between achieving project goals as well as a positive result in terms of ecological lift. In general, joint USACE and EPA rules have been established that require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or ILF's wherever most ecologically feasible (USACE & EPA, 2008). The proposed wetland and stream impacts and mitigation actions attempt to closely adhere to these rules and to the local critical areas regulations specified in AMC Chapter 20.93 and MMC Chapter 22E.010 and the Applicant's development agreements (currently not finalized) while also utilizing the best available science (Granger et al., 2005; Hruby et al., 2009; Sheldon et al., 2005; and WSDOE, 2006). In addition to the proposed compensation for onsite wetland loss, the mitigation actions may result in additional wetland mitigation credits that may be used as advanced mitigation for future wetland loss within the watershed (SVC, 2021b). This chapter presents the overall mitigation details for the proposed Cascade Business Park project.

2.1 Purpose and Need

The purpose of the proposed project is to develop a regionally significant industrial park that will provide industrial building space within the Cascade Industrial Center, a Manufacturing and Industrial Center as designated by the Puget Sound Regional Council and located in the Cities of Arlington and Marysville. A more robust purpose and need is included in SVC's Clean Water Action Section 404(b)1 alternatives analysis (2020).

2.2 Description of Impacts

In order to accommodate the purpose and need for the industrial site development, the project requires the necessary and unavoidable fill, realignment, and restoration of Edgecomb Creek (10,165 linear feet; 147,522 square feet), fill and realignment of Tributary X (1,167 linear feet; 18,074 square feet), and fill of wetlands located west of the proposed mitigation corridor (4.275 acres). In addition, the proposed project will require 0.595 acre of indirect impacts to Wetland AH. The majority of onsite wetlands to be filled consist of low and moderate functioning Category IV and Category III wetlands; two Category II wetlands will be directly impacted. The proposed fill of Edgecomb Creek will sever the stream's existing hydrologic connection to offsite side channels, resulting in 496 linear feet of direct impacts.

2.2.1 Impact Avoidance and Minimization

The project was carefully designed in attempts to minimize impacts to wetlands and waterbodies to the greatest extent feasible. The proposed project preserves one small Category IV wetland within the proposed riparian mitigation corridor. To preserve existing higher functioning wetland areas onsite to the greatest extent feasible, project impacts to Wetland AH will be minimized. Wetland AH currently contains a meandering and braided section of Edgecomb Creek and provides high levels of water quality and a moderate level of habitat and hydrologic function. The wetland is relatively unique among the onsite wetlands due to several Cowardin classes, hydroperiods, and special habitat features. Project impacts to Wetland AH will be minimized by the selection of an adjacent single-loaded industrial building (as opposed to double-loaded) and use of all available upland areas to provide

necessary stormwater detention. The proposed project will also preserve a meandering section of Edgecomb Creek that passes through an alluvial fan on the northeast corner of the site.

Dewatering activities associated with the relocation and fill of Edgecomb Creek may impact fish and other aquatic species present in the channel at the time of dewatering; disturbance and mortality of individuals is likely to occur. Stream relocation activities will occur during low stream flow conditions and during the regulatory in-water work window to minimize impacts to fish. Fish exclusion, capture, and relocation actions will be used to temporarily block fish access to impacted areas and relocate fish out of the impacted areas during the dewatering process. Depending on flow conditions at the time of dewatering, the existing stream channel will be divided into at least two sections for dewatering to allow for effective fish capture and relocation efforts. The fish protection efforts will be completed using a combination of electro-fishing and netting to capture fish and relocate them to non-impacted areas of Edgecomb Creek. A *Fish Exclusion and Protection* Plan has been prepared by SVC under separate cover to avoid and minimize impacts to fish.

Temporary turbidity increases within the existing and new stream channels may result from site clearing and grading activities and are likely to occur during the rewatering of the new stream channel. The new channel will be rewatered in at least two sections to reduce the channel length that is exposed to rewatering at a given time. WAC 173-201A-200(1)(e) makes allowances for a temporary area of mixing during and immediately after in-water construction activities subject to the constrains of WAC 173-201A-400(4) and (6). For waters less than or equal to 10 cubic feet per second flow at the time of construction, the point of compliance shall be 100 feet downstream of the action. Water quality monitoring will be completed to evaluate compliance during rewatering, and fish exclusion nets will remain in place until suspended sediment levels match background levels. The proposed fish exclusion and sediment controls are anticipated to lead to an avoidance or significant reduction in direct fish exposure to elevated suspended sediments. A *Water Quality Monitoring Plan* will be provided to WSDOE under separate cover to outline and document these details.

2.2.2 Wetland Impacts

A summary of impacted wetlands is provided in Table 1, and a wetland function impact analysis is outlined below.

Table 1. Direct Wetland Impact Summary

Wetland	HGM[1]	Cowardin Class[2]	WSDOE Rating[3]	Direct Impact Area (sf)	Direct Impact Area (acre)
A	Depressional	PEMA	IV	1,369	0.031
B	Depressional	PEMA	IV	4,859	0.112
C	Depressional	PEMA	IV	4,841	0.111
D	Depressional	PEMA	IV	3,537	0.081
E	Riverine	PEMA	III	775	0.018
F	Riverine	PEMA	III	386	0.009
G	Riverine	PEMA	III	987	0.023

H	Riverine	PFO/SS/EMAC	II	6,279	0.144
I	Riverine	PSSA	III	377	0.009
J	Depressional	PEMA	IV	334	0.008
K	Depressional	PEMA	IV	16,836	0.387
L	Depressional	PEMA	IV	15,756	0.362
M	Depressional	PEMA	IV	1,969	0.045
N	Depressional	PEMA	IV	8,133	0.187
P	Depressional	PEMA	IV	550	0.013
Q	Depressional	PEMA	IV	2,522	0.058
R	Depressional	PEMA	IV	1,773	0.041
U	Depressional	PEMA	IV	4,909	0.113
V	Depressional	PEMA	III	5,945	0.136
W	Depressional	PEMA	IV	5,874	0.135
X	Depressional	PEMA	IV	4,492	0.103
Y	Riverine	PSSC	III	662	0.015
Z	Riverine	PEMA	III	483	0.011
AA	Riverine	PEMA	III	574	0.013
AB	Riverine	PEMA	III	1,166	0.027
AC	Depressional	PEMA	IV	4,866	0.112
AD	Riverine	PEMA	III	2,462	0.057
AE	Depressional	PEMA	IV	11,346	0.260
AF	Depressional	PEMA	IV	615	0.014
AG	Depressional	PEMA	IV	285	0.007
AH	Riverine	PFO/SS./EMBC	II	25,910	0.595
AI	Riverine	PEMAB	III	3,873	0.089
AJ	Riverine	PEMA	III	2,471	0.057
AL	Depressional	PEMA	IV	11,835	0.272
AM	Depressional	PEMA	IV	3,021	0.069
51st Avenue East Ditch - North	Depressional	PEMC	III	17,099	0.393
51st Avenue East Ditch - South	Depressional	PEMC	III	13,670	0.314
			Total Wetland Fill	**186,214**	**4.275**

Notes:

1. Brinson, M. M. (1993).
2. WSDOE rating according to Washington State wetland rating system for Western Washington – Revised (Hruby, 2014).
3. Cowardin et al. (1979) or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent; Modifier for Water Regime: A = Temporarily Flooded; B = Seasonally Saturated; C = Seasonally Flooded.

Table 2. Indirect Wetland Impact Summary

Wetland	HGM[1]	Cowardin Class[2]	WSDOE Rating[3]	Indirect Impact Area (sf)	Indirect Impact Area (acre)
AH	Riverine	PFO/SS./EMBC	II	25,910	0.595
Total Wetland Indirect Impacts				**25,910**	**0.595**

- **Water Quality:** The wetlands to be impacted consist of 22 depressional wetlands and 13 riverine wetlands along the existing ditched Edgecomb Creek. The depressional wetlands provide low levels of water quality functions. While the depressional wetlands generally lack outlets and the agricultural surrounding land use generates pollutants, the wetlands only temporarily hold surface waters, and there is limited retention to trap pollutants. In addition, the depressional wetlands are generally located within actively managed agricultural fields with limited cover of persistent, ungrazed/unmowed vegetation to trap sediments and filter pollution. The riverine wetlands generally provide high levels of water quality functions. While the level of retention is relatively low (depressions within the wetlands generally cover less than ½ of the wetland area), shrubs and herbaceous plants cover the majority of the wetland area and provide sediment capture and pollutant filtration. The opportunity for these riverine wetlands to provide water quality improvements is high due to their urban locations and a substantial agricultural presence in the contributing basins. The proposed impacts to wetland water quality functions will be offset by the onsite creation of riverine wetlands that will provide increased retention and filtration functions. In addition, the proposed project stormwater system will disperse treated stormwater into buffer areas, further improving water quality. With the proposed onsite, in-kind wetland creation and proposed stormwater infrastructure, the project will result in a net increase in water quality functions for the Snohomish watershed.

- **Hydrologic:** Hydroperiods within the depressional wetlands are generally temporarily flooded, and hydrology is provided by direct precipitation, surface sheet flow, and a seasonally high groundwater table. The depressional wetlands provide low levels of hydrologic functions. Any ponding that occurs within the wetlands is extremely shallow, and the wetlands are also extremely small relative to the size of the contributing basin (less than 1% the size of the contributing basin). The riverine wetlands provide moderate levels of hydrologic functions. While the wetlands are relatively narrow relative to the adjacent stream (Edgecomb Creek), at least 2/3 of the wetland areas are covered by emergent vegetation that can slow water velocities and reduce erosion. In addition, the surrounding urbanizing watershed likely supports increased runoff flows within the stream. The proposed impacts to wetland hydrologic functions will be offset by the onsite creation of riverine wetlands along a created floodplain that will slow water flows and detain and infiltrate flood flows. In addition, the proposed project stormwater system includes detention and dispersion to attenuate runoff into the mitigation corridor. As such, the proposed onsite, in-kind wetland creation and proposed stormwater infrastructure will result in a net increase in hydrologic functions for the Snohomish watershed.

- **Habitat:** Onsite habitat has been degraded due to decades of agricultural use on the subject property. The wetlands to be impacted consist of wetlands within actively managed agricultural fields and wetlands adjacent to Edgecomb Creek. The agricultural wetlands generally provide low levels of habitat functions. Some of these wetlands are dominated by native emergent vegetation, while others are sparsely vegetated and surrounded by fields. These wetlands generally exhibit minimal habitat diversity and structure. Wetlands adjacent to Edgecomb Creek provide low to moderate levels of habitat functions. These wetlands are also generally dominated by emergent vegetation. Special habitat features include undercut banks/overhanging vegetation and stable, steep banks that provide denning areas for beaver or muskrat. The riverine Wetlands AH and H provides moderate levels of habitat diversity and structure with three Cowardin classes and special habitat features that include large, downed woody debris, undercut banks/overhanging vegetation, and stable, steep banks. The surrounding landscape has been significantly altered by residential, commercial, and agricultural land uses, and there is extremely limited landscape connectivity to nearby undisturbed habitat. The proposed impacts to wetland habitat functions will be offset by the onsite creation of wetlands adjacent to Edgecomb Creek within a large riparian corridor, which will provide foraging, nesting, and rearing opportunities for a variety of aquatic species and greatly improved habitat suitability and complexity for a variety of terrestrial fauna. The proposed compensatory mitigation activities will establish new wetlands that provide habitat diversity, structural complexity, and special habitat features that are generally absent from the existing wetlands, resulting in a net-gain in wetland habitat functions onsite. Due to the low-functioning habitat conditions, the proposed wetland fill will result in limited habitat removal, and additional wetland habitat functions will be replaced and increased via the proposed onsite, in-kind mitigation actions, which aim to increase species diversity and habitat complexity.

2.2.3 Stream Impacts

The onsite Edgecomb Creek channel has been ditched for decades and provides relatively low quality habitat due to the lack of channel complexity, in-stream habitat structures, floodplain connectivity and riparian cover. The stream sections to be permanently filled consist of north-to-south and east-to-west channels; existing habitat conditions within these channels are described in Table 3. The proposed stream relocation will result in the permanent loss of existing habitat in both Edgecomb Creek and Tributary X. Offsite side channels are currently connected to Edgecomb Creek; the proposed fill of Edgecomb Creek will lead to functional loss of these channels. The Applicant intends to directly fill the offsite side channels in the future to align a public roadway through the proposed industrial development as desired by the Cities of Arlington and Marysville. While direct fill of the offsite side channels is not included in the proposed project action, the compensatory mitigation actions described below will offset the direct loss of side channel functions that will result from the proposed project.

Table 3. Summary of Existing Stream Habitat Conditions.

Habitat Parameter	Existing Conditions
Habitat Accessibility	Degraded – Fish access within the project area is impeded by several partial fish passage barrier culverts located beneath the BNSF railroad, within the agricultural fields, and at the 152nd Street Northeast crossing.
Riparian Buffer	Degraded – Streambanks are lined with narrow strip of vegetation dominated by non-native, invasive Himalayan blackberry and reed canarygrass. Agricultural fields extend up to stream bank along most of the channel. Stream shading is limited to individual clusters of red alder and willows. The greatest degree of stream shading is provided by the offsite habitat enhancement site on tax parcel number 31052700200900. Red alder and salmonberry provide overhanging vegetation along approximately 660 linear feet of stream.
Channel Morphology	Minimally complex – Linear excavated channels connected by 90-degree turns lead to sections of stream with cross-gradient, stagnant flows. The excavated streambanks are almost vertical, and pool and riffle formations within the linear excavated channels are limited to north-south sections of the stream. Approximately 225 linear feet of meandering stream with pools and riffles are located in the far northeast corner of the site.
Off-Channel Habitat and Flood Refugia	Present with low habitat quality – Off-channel habitat on the subject property consists of the linear Tributary X. Tributary X is connected to an offsite artificial drainage system that provides marginal off-channel habitat. Tributary X and the offsite artificial drainage system lack riparian cover and habitat diversity. While groundwater likely supplies hydrology (at least to the onsite Tributary X) and Tributary X also receives backflows from Edgecomb Creek, these features were constructed to convey stormwater runoff and as an outlet for drain tile in the agricultural fields. Untreated runoff flows likely impact water quality within the off-channel habitat due to higher temperatures and pollutant conveyance. Seasonal flows and depressions within this off-channel habitat present a risk of fish stranding during summer months. The offsite side channels on tax parcel number 31052700200900 were likely designed to provide flood refugia as voluntary habitat enhancement (SVC, 2021a). The degree of hydrologic connectivity between the offsite habitat enhancement and the mainstem has likely increased due to beaver activity along this section of stream. Wetland AH contains side channels of Edgecomb Creek that provide off-channel habitat and flood refugia.
Substrate Composition	Sand and silt – The existing substrates limit salmonid spawning opportunities. Sorted gravels are present along the approximately 225 linear feet of meandering stream located in the far northeast corner of the site.
Large Woody Debris (LWD)	Absent - Generally absent from the highly modified and degraded linear stream channel which extends through maintained agricultural fields.

Small Woody Debris	Low presence – Small woody debris is limited by the lack of riparian cover. Some small woody debris is present, particularly at locations of existing beaver dams. Individual clusters of alders and willows provide limited small woody debris at point locations along the stream.
Peak and Base Flows	Summer base flows are low, and a large section of stream downgradient of beaver dams was observed to be dry during the summer of 2020.
Floodplain Capacity and Wetland Connectivity	Limited - Floodplain capacity is extremely limited by the manmade, linear channels. Linear, agricultural feeder ditches provide limited flood storage capacity with poor habitat conditions for fish. Several small, low-functioning riverine wetlands with low species diversity are located along the existing stream. Some floodplain capacity is present in the offsite habitat enhancement site on tax parcel number 31052700200900.
Water Quality	Degraded – Onsite water quality is degraded by a minimally functioning riparian buffer separating the stream from active agricultural fields. Previous water quality monitoring on Edgecomb Creek by WSDOE indicates high water temperatures and low dissolved oxygen in the stream.

2.3 Mitigation Strategy

Compensatory mitigation actions are intended to compensate for lost wetland and stream functions and values by providing an overall improvement in the quality of water quality, hydrologic, and habitat functions according to the needs of the site, local sub-basin, and overall Snohomish River watershed. To offset proposed impacts to Edgecomb Creek, the project proposes to realign Edgecomb Creek within a restored riparian corridor adjacent to the west side of the BNSF railroad. The riparian corridor will be up to 315 feet wide and is designed to contain 16,494 linear feet of restored mainstem Edgecomb Creek channel and side channels, 2,094 linear feet of Tributary X re-alignment, and a minimum of 8.769 acres of wetland re-establishment/creation to offset the impacts of the proposed project. The proposed mitigation corridor design has the potential to achieve a total of 14.646 acres of compensatory wetland creation and 2.296 acres of compensatory wetland enhancement. 0.228 acre of this compensatory wetland creation area will be used to provide mitigation for offsite impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021). Any excess wetland mitigation credits are proposed for use by the Applicant as advanced mitigation for any future wetland impact proposal(s) (SVC, 2021b). Compensatory wetland creation areas will be protected by a minimum of a 75-foot perimeter buffer within the riparian mitigation corridor. The proposed pedestrian trail will be located upland of the 75-foot perimeter buffer for compensatory wetland creation areas; stormwater dispersion devices may be located within the 75-foot perimeter buffer. The proposed mitigation corridor will achieve an additional 1.982 acres of non-compensatory wetland creation areas and 0.594 acre of non-compensatory wetland enhancement areas that have less than 75 feet of protective buffer width. In addition to providing a functional lift over the existing agricultural buffer conditions onsite, the proposed upland plantings will also support the restoration of riparian habitat in the Cities of Arlington and Marysville. The proposed riparian corridor will be approximately 1.75 miles long and will encompass approximately 58% of the length of Edgecomb Creek mapped by Snohomish County. 4.748 acres of "excess buffer" creation is proposed for use by the Applicant as

advanced mitigation for any future wetland and/or buffer impact proposal(s). In addition, the Applicant proposes to enhance the remaining Wetland AH buffer as a non-compensatory mitigation action by planting the existing degraded buffer with native trees and shrubs.

The re-aligned main-stem stream channel and created side-channel habitat will provide mitigation that exceeds 1:1 for the impacts to the existing Edgecomb Creek stream channel and side-channel habitat. Tributary X will also be realigned, lengthened, and reconnected to the realigned Edgecomb Creek. Compensatory wetland re-establishment and creation will occur within the riparian corridor, meeting local, state, and federal mitigation requirements for direct wetland impacts. As a non-compensatory mitigation measure, the Applicant proposes to replace two partial fish barrier culverts underneath the BNSF railroad with upgraded crossing designs to allow fish access and convey Edgecomb Creek beneath the railroad. The partial fish barrier culvert adjacent to the northern end of the subject property will be replaced with a bridge or box culvert up to 16 feet wide. The partial fish barrier culvert adjacent to the southern end of the subject property will be replaced with a bridge span up to approximately 20 feet wide. The final crossing designs and any associated stream re-alignment work will be coordinated with BNSF, the Project Engineer, Tulalip Tribes, and the Washington Department of Fish and Wildlife (WDFW).

These combined restoration actions will provide a net gain in function and improved protection to the wetlands and streams from the proposed development. Refer to Appendix A for a detailed planting plan.

The mitigation actions include the following:

- Realign and restore the onsite Edgecomb Creek with connected side-channels (16,694 linear feet; 177,018 square feet);
- Add substrate to restored Edgecomb Creek and side channels;
- Add large woody debris to restored Edgecomb Creek and side channels;
- Create wetlands along Edgecomb Creek (minimum 8.769 acres of compensatory wetland creation area);
- Realign Tributary X (2,094 linear feet; 9,566 square feet);
- Enhance Wetland AH with native plantings (2.296 square feet of potential compensatory wetland enhancement);
- Provide non-compensatory wetland creation and enhancement areas (up to 86,354 square feet of wetland creation and 25,910 square feet of wetland enhancement);
- Add large woody debris to preserved Edgecomb Creek side channels in Wetland AH;
- Replant all impacted areas targeted for mitigation with native trees, shrubs, and groundcovers listed in Appendix A, or substitutes approved by the responsible Project Scientist, to help retain soils, filter stormwater, and increase biodiversity;
- An approved native seed mix will be used to seed the disturbed mitigation areas after planting to reduce short-term erosion potential;
- Maintain and control invasive plants annually, at a minimum, or more frequently if necessary. Maintenance to reduce the growth and spread of invasive plants is not restricted to chemical applications but may include hand removal, if warranted;
- Provide dry-season irrigation as necessary to ensure native plant survival;

- Install critical area signage along the outer boundary of the mitigation corridor facing the proposed development;
- Direct exterior lights away from the wetland and stream areas wherever possible; and
- Place all activities that generate excessive noise (e.g., generators and air conditioning equipment) away from the wetland and stream areas where feasible.

2.3.1 Wetland Mitigation Strategy

The proposed onsite mitigation actions are intended to allow the fill of onsite wetlands (Wetlands A-P, Q, R, U-Z, AA-AG, AI, and AJ) while maintaining and improving existing wetland functions via the creation and enhancement of higher-functioning wetland and buffer areas. Proposed wetland creation actions generally include treatment and removal of invasive vegetation, planting with native trees and shrubs, and an establishment of an herbaceous understory to allow the establishment of wetland area, retention of water and sediments, and improvements in water quality and habitat protection functions provided by the wetlands.

All wetland creation areas will occur on a created flood terrace along the restored Edgecomb Creek; the terrace is expected to exhibit hydrologic connectivity and soil conditions conducive to wetland creation. A minimum of 8.769 acres of existing upland area will be carefully excavated and converted to riverine wetlands on the new flood terrace. All compensatory wetland creation areas will be protected by a minimum of a 75-foot-wide perimeter buffer. The compensatory wetland creation areas are anticipated to be Category II or III wetlands with moderate levels of habitat functions that will provide substantial lift in wetland functions onsite. All compensatory wetland creation areas will be protected by a minimum of a 75-foot-wide perimeter buffer. SVC has coordinated extensively with USACE and WSDOE regarding the required perimeter buffer for the compensatory wetland creation areas. USACE and WSDOE indicated during a phone conversation with SVC on April 5, 2021 that 75-foot-wide perimeter buffers for compensatory wetland creation areas would be appropriate for the proposed mitigation site based on draft joint wetland mitigation guidance from the agencies (WSDOE, USACE, and EPA, 2020). Per Table 6C-3 of the draft joint mitigation guidance, Category I, II, or III wetlands with moderate levels of habitat functions should receive 150-foot buffer for high land use intensity, 110-foot buffers for moderate land use intensity, and 75-foot buffers for low land use intensity. While the proposed land use is high, the proposed project will implement several mitigation measures to lower the impact of the proposed development, including establishment of non-compensatory wetland creation and enhancement areas, stormwater dispersion devices that will support onsite stormwater management and hydrology within the riparian corridor, and the media filter drain to enhancement treatment of existing runoff from the BNSF railroad. During the April 5, 2021 phone conversation, USACE and WSDOE indicated that these mitigation measures will reduce the impact of the proposed development such that it is equivalent to a low land use intensity. While SVC believes that a smaller base buffer width should be applicable for the compensatory wetland creation areas based on the intention of the mitigation site to primarily compensate for the loss of primarily Category III and IV wetlands with low habitat scores, the Applicant is willing to accept a 75-foot perimeter buffer for compensatory wetland creation areas to expedite the project permitting. Tables 4 and 5 below provide a compensatory wetland mitigation summary.

Table 4. Compensatory Wetland Mitigation Summary for Direct Wetland Impacts.

Wetland	Cowardin	WSDOE	Impact (acre)	Compensation

	Class[1]	Rating[2]		Creation/Re-Establishment Ratio[3]	Area (acre)
A	PEMA	IV	0.031	1.5:1	0.047
B	PEMA	IV	0.112	1.5:1	0.167
C	PEMA	IV	0.111	1.5:1	0.167
D	PEMA	IV	0.081	1.5:1	0.122
E	PEMA	III	0.018	2:1	0.036
F	PEMA	III	0.009	2:1	0.018
G	PEMA	III	0.023	2:1	0.045
H	PFO/SS/EMAC	II	0.144	3:1	0.432
I	PSSA	III	0.009	2:1	0.017
J	PEMA	IV	0.008	1.5:1	0.012
K	PEMA	IV	0.387	1.5:1	0.580
L	PEMA	IV	0.362	1.5:1	0.543
M	PEMA	IV	0.045	1.5:1	0.068
N	PEMA	IV	0.187	1.5:1	0.280
P	PEMA	IV	0.013	1.5:1	0.019
Q	PEMA	IV	0.058	1.5:1	0.087
R	PEMA	IV	0.041	1.5:1	0.061
U	PEMA	IV	0.113	1.5:1	0.169
V	PEMA	III	0.136	2:1	0.273
W	PEMA	IV	0.135	1.5:1	0.202
X	PEMA	IV	0.103	1.5:1	0.155
Y	PSSC	III	0.015	2:1	0.030
Z	PEMA	III	0.011	2:1	0.022
AA	PEMA	III	0.013	2:1	0.026
AB	PEMA	III	0.027	2:1	0.054
AC	PEMA	IV	0.112	1.5:1	0.168
AD	PEMA	III	0.057	2:1	0.113
AE	PEMA	IV	0.260	1.5:1	0.391
AF	PEMA	IV	0.014	1.5:1	0.021
AG	PEMA	IV	0.007	1.5:1	0.010
AH	PFO/SS/EMBC	II	0.443	3:1	1.328
AI	PEMAB	III	0.089	2:1	0.178

AJ	PEMA	III	0.057	2:1	0.113
AL	PEMA	IV	0.272	1.5:1	0.408
AM	PEMA	IV	0.069	1.5:1	0.104
51st Avenue East Ditch - North[4]	PEMC	III	0.393	2:1	0.785
51st Avenue East Ditch – South[5]	PEMC	III	0.314	2:1	0.628
		Total	**4.275**	**--**	**7.877 acres**

1. Cowardin et al. (1979) or NWI Class based on vegetation: PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent; Modifier for Water Regime: A = Temporarily Flooded; B = Seasonally Saturated; C = Seasonally Flooded.
2. WSDOE rating according to Washington State wetland rating system for Western Washington (Hruby, 2014).
3. Ratios outlined in AMC 20.93.840 and MMC 22E.010.120(3).
4. Non-jurisdictional federally.
5. Likely non-jurisdictional federally.

Table 5. Compensatory Wetland Mitigation Summary for Indirect Wetland Impacts.

Wetland	Cowardin Class[1]	WSDOE Rating[2]	Impact (acre)	Compensation	
				Creation/Re-Establishment Ratio[3]	Area (acre)
AH	PFO/SS./EMBC	II	0.595	1.5:1	0.892
		Total	**0.595**	**--**	**0.892 acre**

The wetland creation and enhancement areas will meet local, state, and federal mitigation ratio requirements. The mitigation plan proposes an increase in vertical and horizontal canopy structure by planting a variety of native tree, shrub, and groundcover species appropriately located to match existing species wetland indicator statuses, targeted hydroperiods, and local topography. The mitigation areas are anticipated to provide greater functions when compared to the existing degraded conditions of the onsite farmed wetlands ditched stream, and buffers proposed to be impacted. The wetland creation areas will be excavated to provide necessary depressions to hold sufficient hydrology to generate wetland conditions. The wetland creation areas will be excavated to the existing groundwater table where possible. Hydrology will be provided by the realigned Edgecomb Creek, groundwater, and precipitation (consistent with the existing wetlands on the subject property). Stormwater from the site will be treated to meet enhanced water quality treatment standards and pass through detention ponds for flow control prior to being dispersed into the riparian corridor.

Through careful design and utilization of best available science, the proposed mitigation plan has a high probability of success and persistence. The newly created wetland areas will be installed in the same environment that provides adequate conditions for the existing wetlands. By following the site preparation specifications outlined herein (e.g., excavation and plantings) the wetland creation areas will be able to maintain wetland hydrology during the growing season in most years to match the existing functional hydrologic regimes of the wetlands. The proposed native species have been carefully selected to ensure the plants take root and thrive in the newly created wetland environments: selection criteria included indicator status and those species that are currently present in existing onsite wetland areas. As the existing wetlands have low species richness and are degraded by the presence of invasive species, the mitigation actions will include a selection of native trees, shrubs, and

groundcover suitable for the site conditions that will result in increased habitat functions by providing greater habitat suitability for a wide range of fauna. Woody debris placement will provide additional habitat.

2.3.2 Stream Mitigation Strategy

The proposed stream restoration will provide several improvements in stream ecological functions over the existing degraded stream channel. The majority of the onsite channel consists of excavated linear ditches in agricultural fields that lack substantial native riparian trees and shrubs, meanders, cobbles or sorting, riffle or pool structures, large woody debris, or floodplain connectivity. The restored stream channel will consist of a meandering channel connected to side channels and wetland habitats within a riparian corridor containing native forest, shrub, and emergent plant communities. Side channels will have different degrees of hydrological connectivity to Edgecomb Creek. Flow-through side channels will provide off-channel habitat throughout much of the year, while dendrite side channels will provide seasonal off-channel habitat. In addition, the mainstem and side channels will be enhanced with large woody debris, small woody debris, streambed gravels, and pool and riffle creations. Fish accessibility to the site and upstream reaches of Edgecomb Creek will be improved by the non-compensatory replacement of two culverts that currently act as partial fish passage barriers beneath the BNSF Railroad. Once established, riparian habitat corridor will provide immediate and long-term benefits for salmonids and other fish through native plantings that will provide streambank stability, stream shading, stormwater filtration, and wood recruitment; a complex channel system with natural channel sinuosity, pool and riffle structures, and side channels that will provide spawning, rearing and foraging opportunities; and connectivity to wetland and floodplain habitats that will provide additional water quality improvements, hydrologic regulation, and flood refugia benefits. The proposed riparian corridor will be located adjacent to the BNSF Railroad ROW; the nearest point of the relocated stream will be approximately 100 feet away from the railroad tracks that run down the center of the ROW. The existing vegetation in the railroad ROW and the proposed riparian plantings will therefore provide full dispersion treatment of any runoff from the railroad tracks that flows towards the relocated stream. To provide further water quality treatment, a media filter drain will be installed between the railroad ROW and stream, along the eastern boundary of the proposed riparian corridor (Appendix C). Table 6 below summarizes the stream habitat parameters targeted for restoration.

Table 6. Stream Habitat Parameters Targeted for Restoration.

Habitat Parameter	Proposed Conditions
Habitat Accessibility	Accessible onsite stream – The non-compensatory replacement of two culverts beneath the BNSF railroad and installation of a new culvert beneath 152nd Street Northeast will provide improved fish passage to the site and upstream areas. In addition, existing farm culverts that act as partial fish passage barriers will be removed.
Riparian Buffer	Native buffer establishment and restoration – The restored stream and riparian buffers will be located in an up to 315-foot-wide restoration/mitigation corridor. The riparian buffer will be planted with a diverse assemblage of native trees, shrubs, and groundcover to establish a mosaic of habitats. Once established, the riparian buffer will provide maximum stream shading to help cool water temperatures.

Channel Morphology	Meandering stream – The channel will be realigned to follow the general north to south gradient change, eliminating the existing cross-gradient flows that currently exist within east-west channels. The stream channel will be widened and meanders will be incorporated to mimic natural conditions to the maximum extent feasible while maintaining positive flow. The meandering, north-south flowing stream will provide channel complexity and support pool and riffle development.
Off-Channel Habitat and Flood Refugia	Connected off-channel habitat – Side channels will be created with varying degrees of branching and hydrological connectivity to the stream to improve habitat diversity. Side channel hydrology will be maintained by groundwater connections and the realigned stream. The groundwater connections would support cooler water temperatures within the side channel habitat. In addition, the side channels morphology and hydrology connections will be designed to avoid fish standing. Tributary X will be realigned and continue to provide off-channel habitat.
Substrate Composition	Well-graded – The stream restoration will include installation of a well-graded mix of cobbles, gravels, sand, and silt to the stream substrate. The substrate addition will increase habitat diversity for benthic macro-invertebrates (salmonid prey) and spawning habitat.
Large Woody Debris (LWD)	Prevalent along the entire onsite reach – LWD will be added throughout length of realigned stream and within side channels to restore in-stream habitat complexity and natural geomorphic processes such as pool formation, flow complexity, bank roughness, hyporheic flow, shade cover, woody substrate, thermal refugia, and recruitment of wood and organic debris.
Small Woody Debris	Prevalent along the entire onsite reach – Riparian restoration will restore sources of small woody debris, supporting in-stream habitat complexity and food webs. Additional small woody debris will be added to the restored stream system to provide immediate improvements in organic matter supply and habitat for small mammals, birds, and macroinvertebrates.
Peak and Base Flows	Potential minor alterations – No significant changes in hydrology are anticipated due to the proposed stormwater system and channel design, which will provide a minimum of the same flow capacity as the existing channel.
Floodplain Capacity and Wetland Connectivity	Wetlands and floodplains connected to stream channels – Wetlands will be created on floodplain benches adjacent to the mainstem and side channels. These wetlands will increase habitat complexity, provide water quality improvements, and regulate hydrology within the stream.
Water Quality	Minimization of stormwater impacts - The proposed onsite conversion of agricultural land to industrial development will alter potential pollutants conveyed by runoff. The proposed enhanced water quality treatment stormwater system will provide filtration of sediment, hydrocarbons, and metals that accumulate on roadways. The riparian buffer plantings will increase stream shading,

	decreasing water temperatures. The stream relocation will bring the stream nearer to the onsite railroad, which is a source of potential pollutants. At least 100 feet of vegetation and a media filter drain will separate the proposed stream channel from the railroad.

2.3.3 Native Vegetation and Enhancement Strategy

The proposed mitigation actions will improve ecological conditions and protection of the critical areas by providing additional functions according to the needs of the site and watershed and providing an overall improvement to wetland, stream, and buffer functions. The proposed native plant communities will be established according to location relative to the stream channels, anticipated hydroperiod within the wetland creation areas, and topographic position within the remaining riparian corridor buffer areas. Willows (*Salix* spp.) will dominate the banks of the main-stem stream channel and the flow-through side channels to provide bank stability and shading. Anticipated hydroperiods within the created wetlands include seasonally and permanently ponding. Forested and scrub-shrub communities will be established within seasonally ponded wetlands, and emergent communities will be established across permanently ponded wetlands. The upland buffer will be primarily forested with shrub communities adjacent to the proposed development and railroad. An "Airport Approach Wildlife Hazard Management Area" is located on the northern end of restoration corridor. To avoid the risk of trees entering airspace or obstructing pilot visibility, this area will be dominated by a shrub canopy. One powerline easement and one natural gas line easement cross the proposed riparian corridor. To avoid interference with the utilities and ensure adequate maintenance access to these easements, no trees will be planted in these easements. The Applicant will be responsible for replacing any vegetation removed for utility maintenance needs in these easements. The proposed native species have been carefully selected according to indicator status and local vegetation observations to ensure the plants take root and thrive in the newly created riparian corridor. Planting specifications and schedule are provided in Appendix A.

Wetland and riparian enhancement actions will be completed in Wetlands AH and within the riparian corridor adjacent to the non-impacted section of Edgecomb Creek on the northern portion of the project area. In addition, all remaining Wetland AH buffer areas will be enhanced as a non-compensatory mitigation measure. Wetland AH is currently degraded by dominant non-native, invasive Himalayan blackberry and reed canarygrass and lacks species diversity and overall habitat complexity. The riparian corridor adjacent to the non-disturbed section of Edgecomb Creek is similarly degraded by non-native, invasive Himalayan blackberry and contains minimal native species diversity. Wetland and riparian enhancement actions will consist of replacing non-native, invasive and low-complexity vegetation with native tree and shrub species to improve habitat functions. Willow species will be established along the non-impacted stream channel to provide bank stability and shading. Large woody debris will be added to the preserved Edgecomb Creek side channels within Wetland AH to provide cover within these off-channel habitats.

The proposed native vegetation strategy will support wetland and stream habitat, hydrologic, and water quality functions. The proposed plantings will restore native forest conditions throughout the majority of the upland buffer and create a variety of wetland habitats. The riparian corridor will provide structural and species diversity to provide browse, cover, and nesting for birds, mammals, and aquatic species. The native plantings will also provide shading and cooling functions for the wetlands and stream. With construction of the mitigation site, establishment of the protective riparian corridor,

and signage around the entire sensitive areas tracts, and implementation of the required monitoring and maintenance actions, the mitigation areas are projected to be highly functional, persistent, and successful.

2.4 Approach and Best Management Practices

The proposed onsite compensatory mitigation actions will provide increased wetland and stream protections by maintenance or improvement of wetland, stream, and buffer functions onsite. Planting or seeding should occur immediately after grading is complete to the extent practicable. TESC measures will be implemented that consists of high-visibility fencing (HVF) installed around existing wetland and stream areas proposed to be not impacted, silt fencing between the graded areas and buffers, plastic sheeting on stockpiled materials, and seeding of disturbed soils. These TESC measures should be installed prior to the start of development or mitigation actions and actively managed for the duration of the project.

All equipment staging and materials stockpiles will be kept out of the wetlands, streams and associated buffer areas, and the areas will need to be kept free of spills and/or hazardous materials. Construction materials along with all construction waste and debris will be effectively managed and stockpiled on paved surfaces and kept free of the wetland, stream, and buffer areas. Following completion of the development, the entire site will be cleaned and detail graded using hand tools wherever necessary, and TESC measures will be removed.

2.5 Mitigation Implementation

Compensatory mitigation actions will occur concurrently with the construction of the project. The proposed mitigation actions may occur in two phases to provide a reasonable construction schedule and timeline. During the first phase, the Edgecomb Creek stream channel, Tributary X channel, wetland creation areas, and riparian corridor will be excavated and graded. Minor portions of the corridor may remain ungraded during this first phase to ensure the separation of the proposed stream channel from the existing Edgecomb Creek channel. Following the initial excavation and grading, native plants will be installed to the extent feasible dependent on summer hydrology conditions; native seed mixes will also be spread across the riparian corridor as needed for erosion control. During the second phase, Edgecomb Creek and Tributary X will be realigned and the riparian corridor will be fully planted. Minor excavation and grading work will be necessary in order to provide the connections between the new and existing stream channels. Native plants are anticipated to be fully installed during the fall or early winter (September 1– December 31), following the realignment of Edgecomb Creek and Tributary X during the summer season.

Two pre-construction meetings are recommended to be held involving representatives from the Applicant, Project Manager or Contractor, the designated Project Scientist, and interested reviewing agencies (e.g., Cities of Arlington and Marysville, WSDOE, and USACE). The first pre-construction meeting should occur prior to commencement of mitigation actions, and the second meeting should occur onsite after construction staking has been placed by professional surveyors. The overall purpose of the first pre-construction meeting should be to discuss the primary intent of the wetland creation, stream relocation and regulatory requirements, identify points of contact, establish communication lines between the Project Scientist, Project Manager or Contractor, and landscaping personnel, review project scheduling, and address any questions or issues associated with the mitigation plan. The overall

purpose of the second pre-construction meeting should be to discuss project implementation, protection of onsite habitat, construction BMPs, and identify invasive species management actions.

Following the pre-construction meeting, TESC measures will be implemented according to the TESC plan prepared for the proposed project. TESC measures may consist of silt fencing where appropriate to protect sensitive areas, plastic sheeting on stockpiled materials, and seeding of disturbed soils which should be actively managed for the duration of the project. Equipment used will be typical for land clearing, grading, and excavation activities and will be kept in good working conditions and free of leaks. Equipment to be used will likely include excavators, backhoes, bulldozers, dump trucks, graders, et cetera. All clean fill material will be sourced from upland areas onsite or from approved suppliers and will be free of pollutants and hazardous materials.

The Project Scientist should be consulted throughout the pre-treatment and mitigation installation actions to ensure that all wetland creation, stream relocation, and other mitigation actions are conducted according to the intent of the mitigation plan, and that the LWD, hummocks, and native plantings are placed in a functional manner. The Project Scientist will also inspect and approve the planting stock and review the plans with the field superintendent to ensure clear understanding of the plan prior to installation of plant materials. The Project Scientist should assist the landscape contractor in making any final adjustments in the planting schedule as needed, in response to field conditions.

One post-construction inspection of all mitigation areas will be necessary to verify the installation conforms to the approved plan. This post-construction inspection effort should occur after completion of the stream relocation, wetland creation, wetland enhancement, and all associated planting and seeding actions. Post-construction review and verification of grading and planting actions may be conducted with interested reviewing agencies (e.g., Cities of Arlington and Marysville, WSDOE, and USACE). Following the post-construction inspection, the Project Scientist and Project Engineer will prepare an As-Built (Year 0) Report to be submitted within 90 days following the post-construction inspection. Any significant changes to the mitigation design should be coordinated with regulatory staff and presented in the As-Built Report

The riparian corridor creation will include the excavation of material to create the new Edgecomb Creek mainstem channel, side channels, wetland benches, and floodplain areas. Riparian corridor creation may be completed separately from clearing, grading, and wetland fill actions in the rest of the project area. Excavated material may be temporarily stored and then may be used to fill the existing stream channel. Any remaining excavated material will be removed from the site or used as needed for grading in the rest of the project area. The new stream channel will be entirely excavated prior to the stream relocation, with a berm left on the upstream and downstream ends to prevent the stream from immediately diverting into the new channel. Large woody debris and new substrates should be installed following channel excavation. Soil amendments from onsite peat material will be installed as needed throughout the riparian corridor. The onsite soil amendments may be sourced from scraped topsoil. Imported topsoil or soil amendments may be used at the discretion of the landscape contractor.

Dewatering and rewatering of the existing and new stream channels will be completed using temporary dams and bypass pipes. The stream relocation will be divided into at least two sections in order to minimize fish loss and turbidity impacts. Sediment control structures will be installed according to the TESC plan, and water quality monitoring will proceed according to the *Water Quality Monitoring Plan*, which will be provided under separate cover. The existing stream channel will be dewatered and

the new stream channel rewatered from the downstream end of the proposed impact length to the upstream end. Following the dewatering of each existing channel section, the dried channel section may be immediately filled. Prior to dewatering, nets will be installed at the upstream and downstream ends of the selected channel section, and fish capture and relocation efforts completed according to the *Fish Exclusion and Protection Plan* provided under separate cover. Water will be gradually reintroduced, with time allowed for sediments to settle before moving to the downstream phases of the stream.

During the post-construction inspections, the Project Scientist will identify and mark long-term monitoring plots and photographic stations in the field that represent typical conditions of the wetland creation, stream relocation, and other mitigation areas. The plots and stations should be surveyed or GPS located and included in the As-Built Report.

The intended project sequencing follows:

- Pre-construction conference(s) and regulatory notifications;
- Install TESC measures;
- Remove debris and invasive plant material from the wetland creation and other mitigation areas;
- Rough grade the stream relocation and wetland creation areas according to the approved grading plan;
- Rough grade inspection;
- Finish grade and prepare grounds for planting in all mitigation areas;
- Install LWD;
- Install streambed substrates;
- Plant and/or seed entire mitigation area for erosion control;
- Dewater existing stream channel and rewater new stream channel;
- Monitor site hydrology;
- Plant inspections;
- Install plant materials;
- Post-construction inspection and as-built survey; and
- Post-construction maintenance, monitoring, and annual reporting.

Plant installation may occur prior to re-watering actions, at the discretion of the Contractor and Project Scientist.

2.6 Goals, Objectives, and Performance Standards

The goals and objectives for the proposed onsite, in-kind mitigation actions are based on establishing and enhancing wetland areas to compensate for the loss of onsite wetlands and establishing and enhancing stream functions for the stream channel relocation actions. In addition to the proposed compensation for onsite wetland loss, the mitigation actions are proposed to result in additional compensatory wetland creation and enhancement areas that may be used as advanced mitigation for future wetland loss within the watershed (SVC, 2021b). Non-compensatory mitigation actions are proposed to provide additional ecological benefits at the mitigation site. These non-compensatory mitigation actions include the replacement of two undersized culverts beneath the BNSF rail line with upgraded culverts to improve fish passage, wetland creation areas that will have less than 75 feet of

protective buffer, and enhancement of the Wetland AH buffer. The compensatory mitigation actions are capable of establishing wetlands with superior water quality and hydrologic functions and providing a moderate to high level of habitat function for wetland-associated wildlife within the watershed. In addition, the stream relocation will significantly improve overall habitat conditions. The goals and objectives of the proposed mitigation actions are as follows:

Goal 1 – Compensate for the loss of the existing Edgecomb Creek channel by creating a meandering stream channel with associated side channels.

Objective 1.1 – Create a new stream channel and enhanced habitat components.

Performance Standard 1.1.1 – The new stream channel system will be created according to the final approved design and documented in the As-Built Report.

Performance Standard 1.1.2 – Habitat structures with large woody debris in the new stream channel system will be created according to the final approved design and documented in the As-Built Report.

Performance Standard 1.1.3 – A media filter drain will be installed along the eastern boundary of the mitigation site between the new stream channel and the railroad and documented in the As-Built Report.

Goal 2 – Compensate for the loss of 4.275 acres of wetlands and 0.595 acre of indirect wetland impacts, including the 51st Avenue East Ditch that is being treated as a wetland for local and state permitting processes, by creating a minimum of 8.769 acres of wetlands that provide a moderate to high level of water quality and habitat functions. Compensate for the 0.104 acre of direct impacts and 0.021 acre of indirect impacts to the 51st Avenue East Ditch resulting from the Cascade Commerce Center project that has been approved under a separate permit application (SVC, 2020d and WSDOE, 2021) by creating a minimum of 0.228 acre of wetlands that provide a moderate to high level of water quality and habitat functions. Excess compensatory wetland creation areas may be used as advance mitigation according to an approved advance mitigation plan.

Objective 2.1 – Establish a minimum of 8.769 acres of wetland creation areas for the Cascade Business Park and 0.228 acre of wetland creation areas for the Cascade Commerce Center along the re-aligned Edgecomb Creek.

Performance Standard 2.1.1 – The wetland creation areas will measure at least 8.769 acres [Cascade Business Park] and 0.228 acre [Cascade Commerce Center] in size as demonstrated by wetland delineations in Year 5 and Year 10.

Objective 2.2 – Establish wetland hydrology through grading to establish depressions/benches that intersect shallow groundwater elevations similar to nearby wetlands and/or receive hydrologic influence from Edgecomb Creek.

Performance Standard 2.2.1 – The approximately 8.769 acres [Cascade Business Park] and 0.228 acre [Cascade Commerce Center] of wetland creation areas will have seasonally saturated soils (or greater hydroperiod) within 12 inches of the surface over all the wetland creation areas that persists for a minimum of 14 consecutive days during

the growing season in years with normal precipitation levels over the monitoring period.

Objective 2.3 – Establish forested and scrub-shrub wetland habitat with diverse horizontal and vertical vegetation structure and species richness to provide habitat for wetland-associated wildlife.

Performance Standard 2.3.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland creation areas.

Performance Standard 2.3.2 – Native woody vegetation in the wetland creation areas will provide, at least 25 percent total cover by Year 3, at least 30 percent total cover by Year 5, at least 50 percent total cover by Year 7, and 75 percent total cover by Year 10.

Performance Standard 2.3.3 – In all monitoring years, the wetland creation areas will have at least 2 species of native trees and 5 species of native shrubs.

Objective 2.4 – Establish emergent wetland habitat to provide habitat for wetland-associated wildlife.

Performance Standard 2.4.1 – Native emergent species will provide at least 20 percent total cover of the emergent wetland habitat by Year 2, at least 30 percent total cover by Year 3, at least 50 percent total cover by Year 5, at least 65 percent total cover for Years 7 and 10. Permanently ponded wetland areas that lack vegetation will be excluded from the area used to determine percent cover.

Objective 2.5 – Effectively control and/or eliminate non-native invasive species from the wetland creation areas.

Performance Standard 2.5.1 – Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Goal 3 – Enhance 2.296 acres of existing Wetlands AH and AK to improve habitat functions. Excess compensatory wetland enhancement areas may be used as advance mitigation according to an approved advance mitigation plan.

Objective 3.1 – Establish native plant cover within the enhancement areas to create diverse horizontal and vertical vegetation structure and additional wildlife habitat.

Performance Standard 3.1.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland enhancement areas.

Performance Standard 3.1.2 – Native woody species will provide at least 20 percent total cover of the wetland enhancement areas by Year 2, at least 30 percent total cover by Year 3, and at least 50 percent total cover for Years 5-10.

Performance Standard 3.1.3 – At least 3 native shrub and/or tree species will be present in the enhancement areas in all monitoring years.

Objective 2 – Effectively control non-native invasive species within the wetland enhancement areas.

Performance Standard 3.2.1 – Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

Performance Standard 3.2.2 – Total reed canary grass cover will be reduced compared to baseline conditions established during Year 0 (As-Built): 15 percent reduction in total cover by Year 5, and 30 percent reduction in total cover by Year 10.

Goal 4 – Establish of upland/buffer for the newly realigned Edgecomb Creek to provide protection for the stream and wetlands. 4.748 acres of upland/buffer protected by the 75-foot compensatory mitigation site perimeter buffer may be used as advanced mitigation according to an approved advanced mitigation plan.

Objective 1 – Establish native plant cover within the targeted upland/buffer areas to create diverse horizontal and vertical vegetation structure and additional wildlife habitat.

Performance Standard 4.1.1 – In Year 1, survival of installed woody vegetation will be at least 90 percent in the wetland upland/buffer areas.

Performance Standard 4.1.2 – Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.

Performance Standard 4.1.3 – In all monitoring years, the upland/buffer area will have at least 3 species of native trees and 5 species of native shrubs.

Objective 2 – Effectively control and/or eliminate non-native invasive species from the upland/buffer areas.

Performance Standard 4.2.1 – Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Goal 5 – Protect the riparian corridor.

Objective 5.1 – Identify the riparian corridor as a mitigation site.

Performance Standard 5.1.1 – Critical areas signs will be installed along the boundary of the mitigation site every 100 feet according to the final approved plans. Critical areas signs must be present during all monitoring years.

For all native species survival, coverage or species richness performance standards, replacement of dead or dying plants is allowed during all monitoring years. Native volunteer plants may be included for coverage or species richness performance standards.

2.6.1 Non-Compensatory Mitigation Monitoring

The Applicant proposes several non-compensatory mitigation actions to improve stream and wetland functions in the riparian corridor. Informal monitoring of these non-compensatory mitigation actions is proposed to document the resulting improvement in ecological functions. The monitoring goals for the non-compensatory mitigation are as follows:

BNSF Culvert Replacement: The Applicant proposes non-compensatory improvement of stream flow conditions, fish passage conditions, and habitat accessibility for the restored Edgecomb Creek channel and upstream areas by the replacement of existing partial fish passage barrier culverts beneath the BNSF railroad.

- The replacement culverts or bridges will meet be installed according to the final design provided by BNSF and Project Engineers.
- Stream processes, including open unobstructed conveyance, will be readily observed and functional in all monitoring years.

Wetland Creation: The Applicant proposes non-compensatory wetland creation areas that will provide buffer functionality to compensatory wetland creation and enhancement areas.

- Native vegetation in the wetland creation areas will provide, at least 20 percent total cover by Year 3, at least 25 percent total cover by Year 5, at least 50 percent total cover by Year 7, and 65 percent total cover by Year 10.
- The wetland creation areas will have at least 3 species of native trees and/or shrubs during all monitoring years.
- Non-native invasive plants will not make up more than 20 percent total cover in any growing season during all monitoring years.

Wetland Enhancement: The Applicant proposes non-compensatory wetland enhancement areas that will provide buffer functionality to compensatory wetland creation and enhancement areas.

- Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.
- At least 2 native shrub and/or tree species will be present in the wetland enhancement areas in all monitoring years.
- Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

Wetland AH Buffer Enhancement: The Applicant also proposes non-compensatory enhancement of the Wetland AH buffer to restore the existing degraded buffer.

- Native tree and shrub species will provide at least 15 percent total cover of the upland/buffer areas by Year 3, at least 25 percent total cover by Year 5, at least 35 percent total cover for Year 7, and 50 percent total cover for Year 10.
- In all monitoring years, the upland/buffer area will have at least 2 species of native trees and/or shrub species.
- Non-native invasive plants (excluding reed canary grass) will not make up more than 20 percent total cover in any growing season during all monitoring years.

2.7 Plant Materials and Installation

2.7.1 Plant Materials

All plant materials to be used for the mitigation actions will be nursery grown stock from a reputable, local source. Live stakes may be used as specified in the planting plan provided in Appendix A. Live stakes may be harvested onsite from vegetation to be removed for development. Only native species are to be used; no hybrids or cultivars will be allowed. Plant material provided will be typical of their species or variety; if not cuttings they will exhibit normal, densely developed branches and vigorous, fibrous root systems. Plants will be sound, healthy, vigorous plants free from defects, and all forms of disease and infestation.

Seed mixture used for hand or hydroseeding shall contain fresh, clean, and new crop seed mixed by an approved method. The mixture is specified in the plan set.

All plant material shall be inspected by the qualified Project Scientist upon delivery. Plant material not conforming to the specifications below will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site.

2.7.2 Plant Scheduling, Species, Size, and Spacing

Plant installation should occur as close to conclusion of the proposed grading activities as possible to limit erosion and limit the temporal loss of function provided by the critical areas and associated buffers. All planting should occur between September 1 and May 1 to ensure plants do not dry out after installation, or temporary irrigation measures may be necessary. All planting will be installed according to the procedures detailed in the following subsections and as outlined on the site plans in Appendix A.

2.7.3 Quality Control for Planting Plan

All plant material shall be inspected by the Project Scientist upon delivery. Plant material not conforming to the specifications above will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site. Under no circumstances shall container stock be handled by their trunks, stems, or tops.

The landscape contractor shall provide the Project Scientist with documentation of plant material that includes the supplying nursery contact information, plant species, plant quantities, and plant sizes.

2.7.4 Product Handling, Delivery, and Storage

All seed should be delivered in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. This material should be stored in a manner to prevent wetting and deterioration. All precautions customary in good trade practice shall be taken in preparing plants for moving. Workmanship that fails to meet industry standards will be rejected. Plants will be packed, transported, and handled with care to ensure protection against injury and from drying out. If plants cannot be planted immediately upon delivery they should be protected with soil, wet peat moss, or in a manner acceptable to the Project Scientist. Plants not installed immediately upon delivery shall be secured on the site to prevent theft or tampering. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Plants transported on open vehicles should be secured with a protective covering to prevent windburn.

2.7.5 Preparation and Installation of Plant Materials

The landscape contractor shall verify the location of all elements of the mitigation plan with the responsible Project Scientist prior to installation. The responsible Project Scientist reserves the right to adjust the locations of landscape elements during the installation period as appropriate.

The plant pits should accommodate the entire root system of the plants. Please refer to planting detail in Appendix A. Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water plants thoroughly midway through backfilling. Water pits again upon completion of backfilling. No filling should occur around trunks or stems. Do not use frozen or muddy mixtures for backfilling. Coir rings or peat moss may be used around each installed plant to provide moisture retention and support weed management.

2.7.6 Temporary Irrigation Specifications

While the native species selected for the mitigation actions are hardy and typically thrive in northwest conditions and the proposed actions are planned in areas with sufficient hydroperiods for the species selected, some individual plants might perish due to dry conditions. Therefore, irrigation or regular watering may be provided as necessary for the duration of the first two growing seasons, up to two times per week while the native plantings become established, particularly in the upland buffer area. If used, irrigation will be discontinued after two growing seasons. Frequency and amount of irrigation will be dependent upon climatic conditions and may require more or less frequent watering than two times per week.

2.7.7 Invasive Plant Control

Invasive species to be controlled include Himalayan blackberry and all listed noxious weeds that may potentially be present within targeted mitigation areas; such non-native invasive species will require an effective control strategy. To ensure non-native invasive species do not expand following the mitigation actions, it is recommended that non-native invasive plants within the mitigation corridor are pretreated with a root-killing herbicide approved for use in aquatic sites (i.e. Rodeo) a minimum of two weeks prior to being cleared and grubbed from the mitigation area. A second application is strongly recommended. The pre-treatment with herbicide should occur prior to all planned mitigation actions, and spot treatment of surviving non-native invasive vegetation should be performed again each fall prior to senescence for a minimum of three years.

2.8 Maintenance & Monitoring Plan

The Applicant is committed to compliance with the proposed mitigation plan and overall success of the project. As such, the Applicant will continue to maintain the project, keeping the site free from introduced non-native invasive vegetation, trash, and yard waste. Depending on the success of the mitigation site, maintenance frequency may be decreased or increased at the discretion of the responsible Project Scientist.

The mitigation actions will require continued monitoring and maintenance to ensure the mitigation actions are successful. Therefore, the mitigation site will be monitored for a period of 10 years with formal inspections by a qualified Project Scientist. Monitoring events will be scheduled at the time of construction, 30 days after planting, twice during Years 1 and 2, and on an annual basis for Years 3, 5, 7, and 10. Delineation of compensatory wetland creation areas by a qualified Wetland Scientist will

also be conducted in Years 5 and 10 to ensure the success of the compensatory actions. Informal monitoring events will also be performed in Years 4, 6, 8, and 9 as needed.

Monitoring of compensatory mitigation areas will consist of survivorship and percent cover measurements at permanent monitoring stations, walk-through surveys to identify invasive species presence, and dead or dying restoration plantings, photographs taken at fixed photo points, wildlife observations, and general qualitative habitat and wetland function observations. The permanent monitoring stations will be established such that the mitigation site is representatively sampled for upland/buffer areas, wetland creation areas, and wetland enhancement areas. Circular sample plots, approximately 30 feet in diameter (706 square feet), will be centered at each monitoring station. The sample plots will be located within the specified wetland or upland/buffer areas and terminate at the observed wetland or upland/buffer boundary. The circular sample plots will cover approximately 1 percent of the mitigation site. Mean survivorship and percent cover measurements from the sample plots will be used to estimate survivorship and percent cover across the mitigation site.

To determine survivorship, individual native tree and shrub locations within the relevant circular sampling plots will be marked following plant installation. These installed native trees and shrubs will then be recorded as dead or alive during Year 1 monitoring. To determine percent cover and species richness, each species of tree or shrub within the approximately 30-foot-diameter circular sampling plots will be recorded. Willow species may be recorded by genus if species is unable to be determined at the time of the monitoring visit. Overall estimates of total cover by trees and shrubs will be made for native and invasive species. Percent cover of each prevalent genus or species that contributes greater than 5 percent total cover will be estimated, and non-prevalent species that provide less than 5 percent total cover may be recorded as such. Herbaceous vegetation will be sampled from a 10-foot diameter (78.5 square feet), established at the same location as the center of each tree and shrub sample plot. Herbaceous vegetation within the sampling plot will be recorded to at least the genus level, and overall estimates of total cover will be made for native and non-native invasive vegetation. Percent cover of each prevalent genus or species that contributes greater than 5 percent total cover will be estimated, and non-prevalent species that provide less than 5 percent total cover may be recorded as such. A list of observed tree, shrub, and herbaceous genera or species, respective estimates of total cover, and wetland indicator status will be included within each monitoring report. For all native species survival, coverage or species richness estimates, replacement of dead or dying plants is allowed during all monitoring years. Native volunteer plants may be included in coverage or species richness estimates.

2.9 Reporting

Following the creation of the mitigation areas, the responsible Project Scientist will prepare an As-Built (Year 0) Report and will be submitted to the Cities of Arlington and Marysville, WDFW, USACE, and WSDOE within 90 days following the post-construction monitoring event. Following each formal monitoring event, a monitoring report detailing the current ecological status of the mitigation actions, measurement of performance standards, and management recommendations will be prepared and submitted to the Cities of Arlington and Marysville,WDFW, USACE, and WSDOE by December 31st of each formal monitoring year to ensure full compliance with the mitigation plan, performance standards, and regulatory conditions of approval.

2.10 Contingency Plan and Long-Term Management Plan

If monitoring results indicate that performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the site fail to meet the success criteria, a contingency plan will be developed and implemented with approval from the Cities of Arlington and Marysville and the USACE. Such plans are adaptive and should be prepared on a case-by-case basis to reflect the failed mitigation characteristics. Contingency plans can include additional plant installation, erosion control, and plant substitutions including type, size, and location. In addition, in compliance with 33 CFR 332.7(d)(2) and to ensure long-term success of the mitigation site, the landowner will be responsible for implementing long-term maintenance; informal site inspections will occur periodically. The contingency measures outlined below can also be utilized in perpetuity to maintain the wetland, stream, and buffers associated with the proposed mitigation site.

This project proposes 10 years of monitoring for the wetland creation and stream channel relocation actions in compliance with the goals and performance standards outlined in Section 2.6 of this report. However, USACE may request additional years of monitoring and formal reporting if the site has not met the goals and performance standards by Year 10. In compliance with 33 CFR 332.7(d)(2), the mitigation areas on the project site will be maintained in perpetuity by the landowner. No additional formal reporting beyond the Year 10 As-Built is proposed at this time.

The proposed project includes a public pedestrian trail that is partially located within the riparian corridor. Public excursions into the upland/buffer, wetland creation and enhancement, or stream areas may result in detrimental footpaths, trash, wildlife disturbance, or plant damage. Should detrimental effects be observed from human uses of the mitigation site, the Applicant will implement contingency measures to deter the detrimental uses from continuing. Examples of deterrence may include planting of additional thorny vegetation, planting replacement plants, or placement of logs across pedestrian footpaths.

Beaver dams are currently located along Edgecomb Creek on the subject property, and beaver use of the proposed realigned Edgecomb Creek is anticipated. Beaver management actions may be required to ensure that the proposed riparian corridor meets mitigation performance standards throughout the 10-year monitoring period or that flooding associated with beaver dams does not pose a hazard to the proposed development, adjacent public roadways, or the BNSF Railroad. The effects of beavers on the proposed riparian corridor will be assessed during formal and informal monitoring visits. Qualitative observations will focus on beaver activities such as ponding and plant girdling or felling that affect the survival and composition of plantings in the riparian corridor. Examples of beaver management actions include beaver trapping by a qualified specialist, modifications of beaver dams, or removal of beaver dams. Beaver trapping by a qualified specialist may be permitted without an HPA. If beaver management actions requiring beaver dam removal or modification or other in-water work are necessary, these actions will be performed subject to the conditions of an approved HPA.

Additional contingency/maintenance activities may include, but are not limited to:

1. Using plugs instead of seed for emergent vegetation coverage where seeded material does not become well established;
2. Replacing plants lost to vandalism, drought, or disease, as necessary;
3. Replacing any plant species with a 20 percent or greater mortality rate after 2 growing seasons with the same species or native species of similar form and function;
4. Irrigating the mitigation areas only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water;
5. Reseeding and/or repair of wetland and buffer areas as necessary if erosion or sedimentation occurs;
6. Spot treat non-native invasive plant species, and
7. Removing all trash or undesirable debris from all mitigation areas as necessary.

2.11 Critical Areas Easement

Per AMC 20.93.290 and MMC 22E.010.350(2) long-term protection of the mitigation site shall be provided by placement in a separate tract in which development is prohibited or by execution of an easement dedicated to the Cities of Arlington and Marysville, a conservation organization, land trust, or similarly preserved through a permanent protective mechanism acceptable to the city. The location and limitations associated with the mitigation area shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the Snohomish County recording department.

In addition, signage will be provided around the wetland mitigation and associated buffer areas as required per AMC 20.93.290(a) and MMC 22E.010.370. A temporary fence along the construction limits will prevent encroachment into the critical area during construction, which will be replaced by critical areas signage after completion of the project.

2.12 Financial Assurances

Per AMC 20.93.390(5) and MMC 22E.010.140(2)(e), performance security is required to assure that all actions approved under this mitigation plan are satisfactorily completed in accordance with the mitigation plan, performance standards, and regulatory conditions of approval. The Applicant will provide financial assurances according to the conditions of approved development agreements with the Cities.

Chapter 3. Closure

The findings and conclusions documented in this report have been prepared for specific application for the Cascade Business Park project. These findings and conclusions 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. The conclusions and recommendations presented in this assessment 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 assessment may need to be revised wholly or in part in the future.

Wetland and stream status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland and 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 stream 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 streams 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 stream delineations for a period of five 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 stream delineations. 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 4. References

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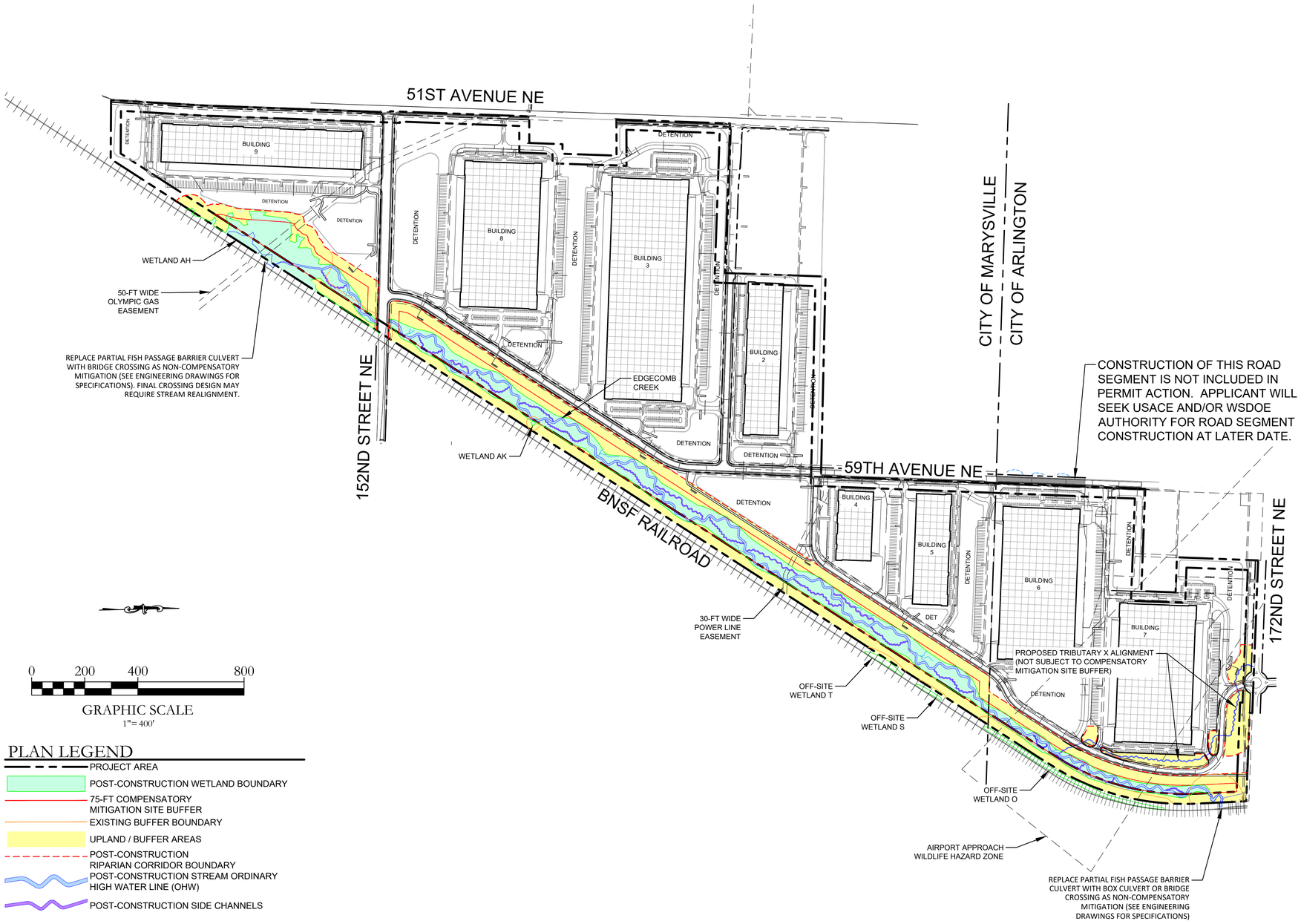
Appendix A – Final Mitigation Plan Exhibits



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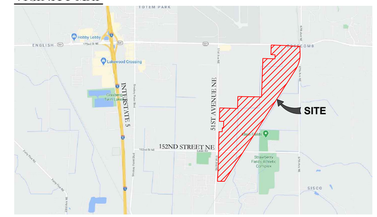
GRAPHIC SCALE
1"= 400'

PLAN LEGEND

- PROJECT AREA
- POST-CONSTRUCTION WETLAND BOUNDARY
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- UPLAND / BUFFER AREAS
- POST-CONSTRUCTION RIPARIAN CORRIDOR BOUNDARY
- POST-CONSTRUCTION STREAM ORDINARY HIGH WATER LINE (OHW)
- POST-CONSTRUCTION SIDE CHANNELS

VICINITY MAP



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 11/4/2020)

APPLICANT

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
RIVERSIDE, MISSOURI 6415

SITE ADDRESS/PARCEL #

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ARLINGTON, WASHINGTON 98223
15223 & 16015 51ST AVENUE NORTHEAST
5415 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

SNOHOMISH COUNTY TAX PARCELS:
31052700100100, 31052700100300, 31052700300200, 31052700300500, 31052700300700, 31052700300800, 31052700300900, 31052700400300, 31053400200300, 31053400200400, 31053400200500, 31053400200600, 31053400200700, 31053400300300
SNOHOMISH COUNTY TAX PARCELS (NOT ASSESSED): 31052700100900, 31053400200100, 31053400200900, 31053400201300

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SHEET INDEX

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CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 1

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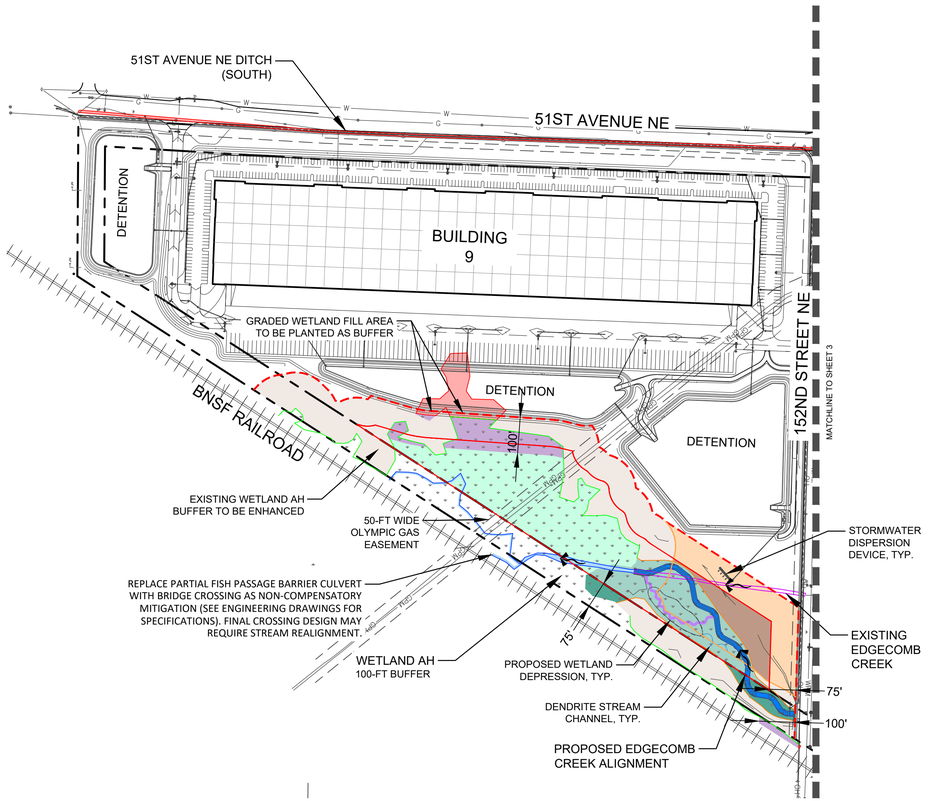
Plotted: May 26, 2021



IMPACTS & MITIGATION PLAN - VIEWPORT 1

0 200 400 800

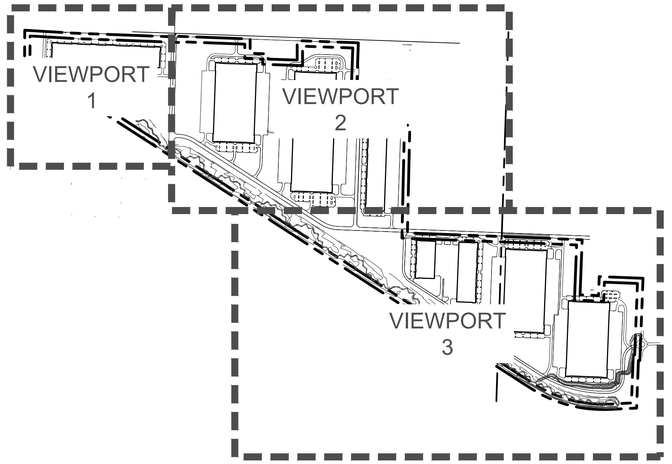
GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

WETLAND FILL	
WETLAND A	1,369 SF
WETLAND B	4,859 SF
WETLAND C	4,841 SF
WETLAND D	3,537 SF
WETLAND E	775 SF
WETLAND F	386 SF
WETLAND G	987 SF
WETLAND H	6,279 SF
WETLAND I	377 SF
WETLAND J	334 SF
WETLAND K	16,836 SF
WETLAND L	15,756 SF
WETLAND M	1,969 SF
WETLAND N	8,133 SF
WETLAND P	550 SF
WETLAND Q	2,522 SF
WETLAND R	1,773 SF
WETLAND U	4,909 SF
WETLAND V	5,945 SF
WETLAND W	5,874 SF
WETLAND X	4,492 SF
WETLAND Y	662 SF
WETLAND Z	483 SF
WETLAND AA	574 SF
WETLAND AB	1,166 SF
WETLAND AC	4,866 SF
WETLAND AD	2,462 SF
WETLAND AE	11,346 SF
WETLAND AF	615 SF
WETLAND AG	285 SF
WETLAND AH	19,283 SF
WETLAND AI	3,873 SF
WETLAND AJ	2,471 SF
WETLAND AL	11,835 SF
WETLAND AM	3,021 SF
51ST AVE E DITCH - NORTH TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	17,099 SF
51ST AVE E DITCH - SOUTH TREATED AS WETLAND BY CITY & STATE, NON-JURISDICTIONAL FEDERALLY	13,670 SF
TOTAL WETLAND FILL:	186,214 SF
INDIRECT WETLAND IMPACTS	25,910 SF
STREAM FILL	
EDGECOMB CREEK	10,165 LF (147,522 SF)
TRIBUTARY X	1,167 LF (18,074 SF)
TOTAL STREAM FILL:	11,332 LF (165,596 SF)
EDGCOMB CREEK SIDE CHANNEL DIRECT IMPACTS AVERAGE 12-FT WIDTH	496 LF (5,952 SF)
TOTAL STREAM IMPACTS:	11,828 LF (171,548 SF)
DITCH U FILL LIKELY NON-JURISDICTIONAL FEDERALLY	1,223 LF (4,891 SF)



IMPACTS & MITIGATION KEY

SCALE: 1"=1000'

MITIGATION LEGEND

WETLANDS	
COMPENSATORY WETLAND ENHANCEMENT WETLANDS AH & AK	100,043 SF
NON-COMPENSATORY WETLAND ENHANCEMENT WETLAND AH	25,910 SF
COMPENSATORY WETLAND CREATION EDGECOMB CREEK CORRIDOR	637,990 SF
NON-COMPENSATORY WETLAND CREATION 152ND STREET NE CORRIDOR	86,354 SF

NOTE: WETLAND MITIGATION AREA TO COMPENSATE FOR THE PROPOSED PROJECT'S DIRECT & INDIRECT IMPACTS. EXCESS COMPENSATORY MITIGATION & EXCESS BUFFER CREATION AREAS MAY BE UTILIZED AS ADVANCED MITIGATION UNDER SEPARATE PROJECT APPLICATION(S). THE ADVANCED MITIGATION PLAN IS UNDER REVIEW BY WSDOE BUT HAS NOT YET BEEN APPROVED.

BUFFERS

BUFFER CREATION	1,125,696 SF
EXCESS BUFFER CREATION	206,856 SF

STREAMS

EDGECOMB CREEK REALIGNMENT	9,533 LF (134,295 SF)
TRIBUTARY X REALIGNMENT	2,094 LF (9,566 SF)
EDGECOMB CREEK SIDE CHANNEL CREATION	6,961 LF (42,723 SF)
TOTAL STREAM CREATION:	18,588 LF (186,584SF)

SOURCES: LDC

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BY: MW
SCALE: AS SHOWN
SHEET: 2

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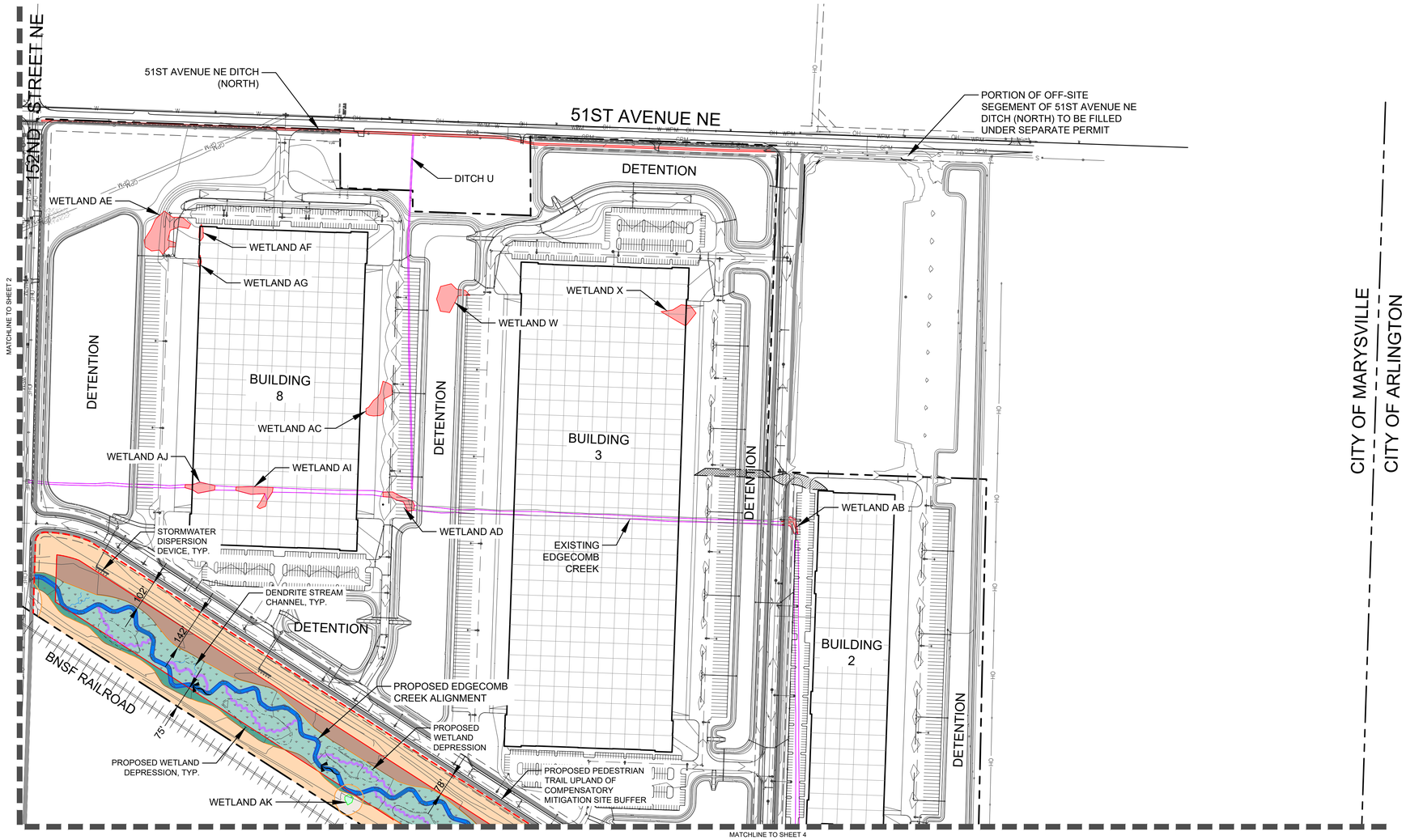

IMPACTS & MITIGATION PLAN - VIEWPORT 2

0 200 400 800

GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

- WETLAND FILL
- STREAM FILL
- EDGECOMB CREEK SIDE CHANNEL DIRECT IMPACTS

MITIGATION LEGEND

WETLANDS
- COMPENSATORY WETLAND ENHANCEMENT
- COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND ENHANCEMENT

BUFFERS
- BUFFER CREATION
- EXCESS BUFFER CREATION

STREAM CREATION
- EDGECOMB CREEK & TRIBUTARY X
- EDGECOMB CREEK SIDE CHANNELS

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BY: MW
SCALE: AS SHOWN
SHEET: 3

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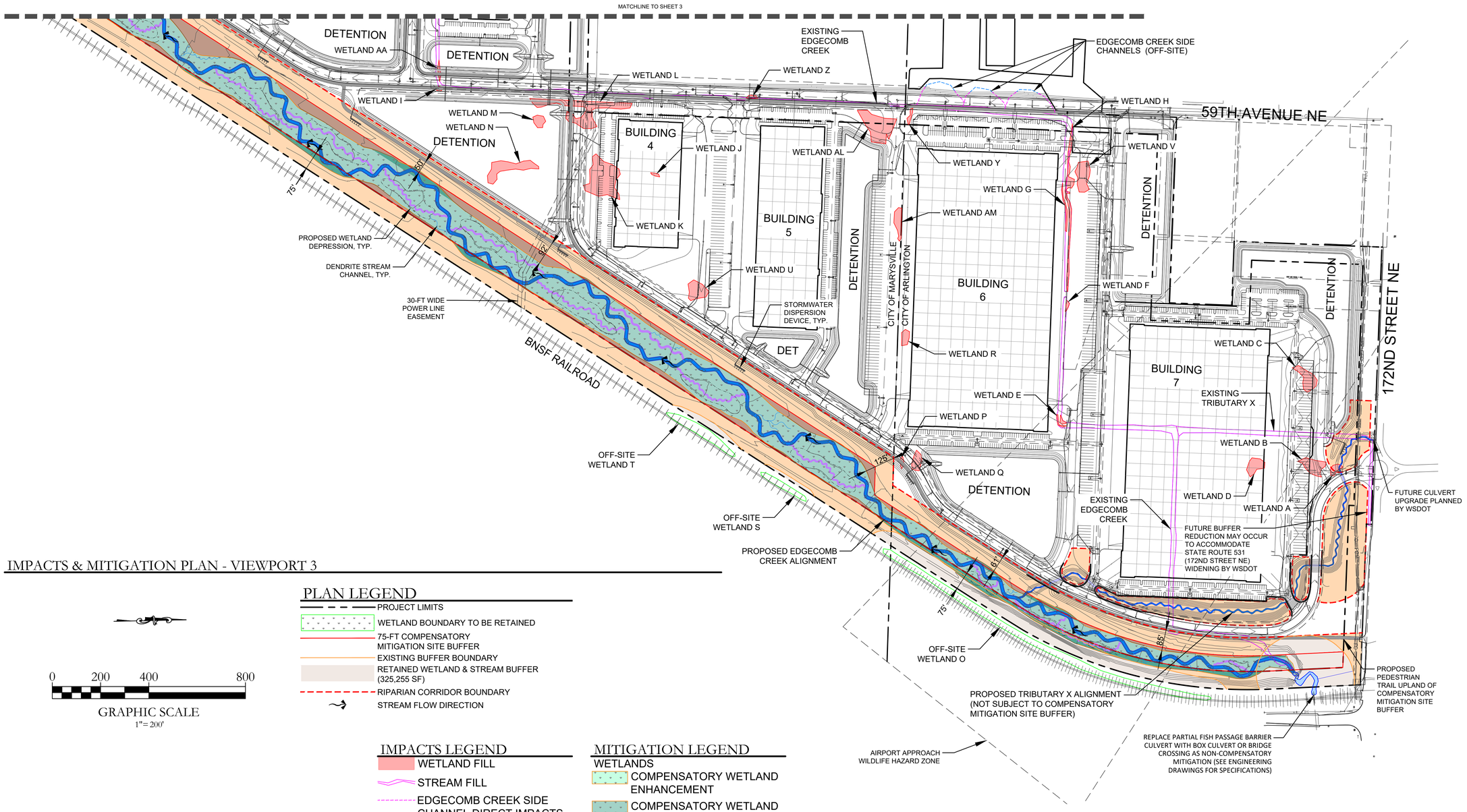

IMPACTS & MITIGATION PLAN - VIEWPORT 3

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GRAPHIC SCALE
1"= 200'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- 75-FT COMPENSATORY MITIGATION SITE BUFFER
- EXISTING BUFFER BOUNDARY
- RETAINED WETLAND & STREAM BUFFER (325,255 SF)
- RIPARIAN CORRIDOR BOUNDARY
- STREAM FLOW DIRECTION

IMPACTS LEGEND

- WETLAND FILL
- STREAM FILL
- EDGECOMB CREEK SIDE CHANNEL DIRECT IMPACTS

MITIGATION LEGEND

WETLANDS
- COMPENSATORY WETLAND ENHANCEMENT
- COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND CREATION
- NON-COMPENSATORY WETLAND ENHANCEMENT

BUFFERS
- BUFFER CREATION
- EXCESS BUFFER CREATION

STREAM CREATION
- EDGECOMB CREEK & TRIBUTARY X
- EDGECOMB CREEK SIDE CHANNELS

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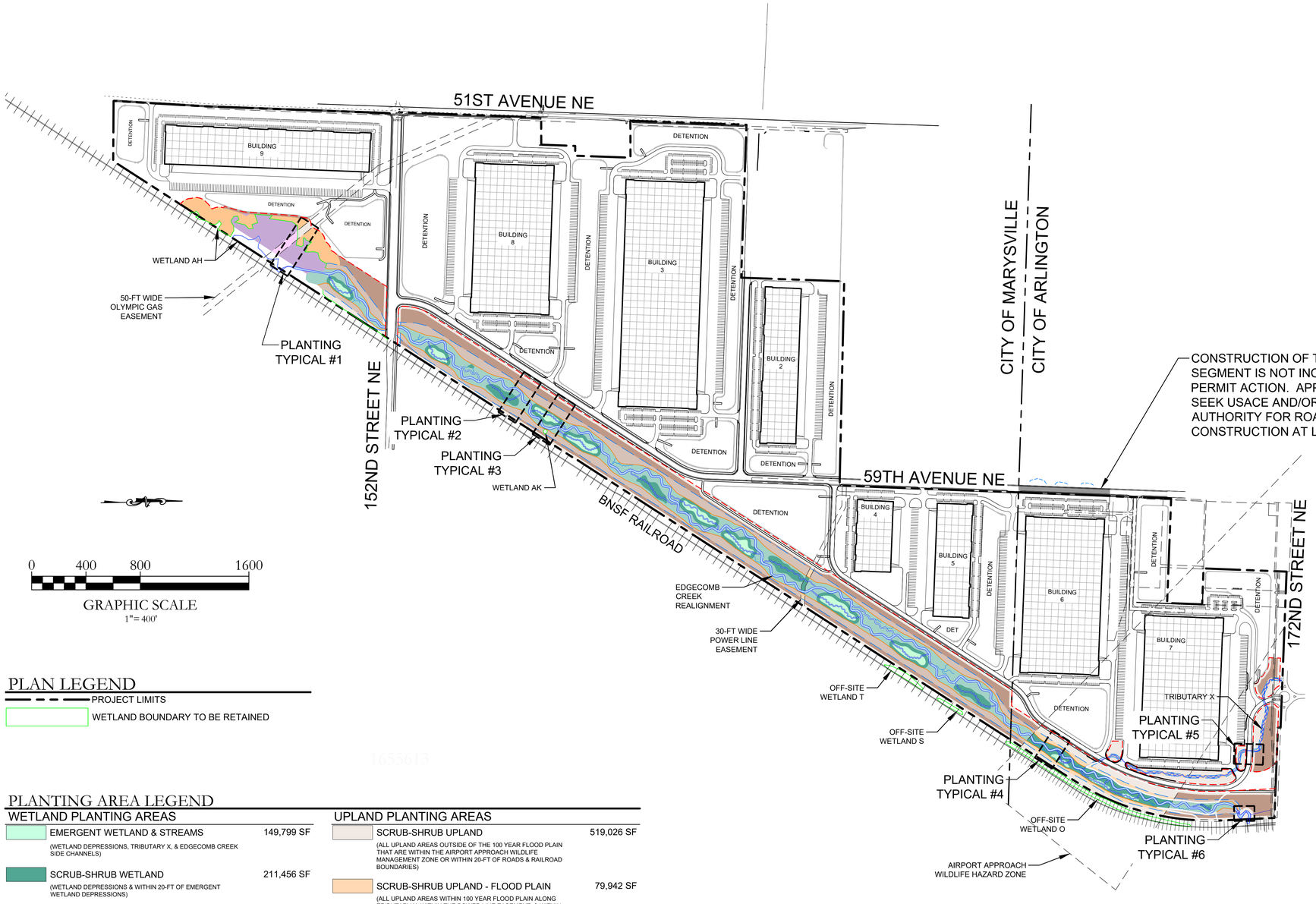

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GRAPHIC SCALE
1"= 400'

PLAN LEGEND

PROJECT LIMITS

WETLAND BOUNDARY TO BE RETAINED

16556135

PLANTING AREA LEGEND

WETLAND PLANTING AREAS

	EMERGENT WETLAND & STREAMS (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)	149,799 SF
	SCRUB-SHRUB WETLAND (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)	211,456 SF
	FORESTED/SCRUB-SHRUB WETLAND (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE	446,567 SF
	SCRUB-SHRUB WETLAND ENHANCEMENT WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT	10,762 SF
	FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT WETLAND AH ENHANCEMENT	113,214 SF
	TOTAL WETLAND PLANTINGS:	931,798 SF

UPLAND PLANTING AREAS

	SCRUB-SHRUB UPLAND (ALL UPLAND AREAS OUTSIDE OF THE 100 YEAR FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)	519,026 SF
	SCRUB-SHRUB UPLAND - FLOOD PLAIN (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)	79,942 SF
	FORESTED UPLAND (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN; OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)	454,621 SF
	FORESTED UPLAND ENHANCMENT-WETLAND AH BUFFER (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)	110,624 SF
	FORESTED UPLAND - FLOOD PLAIN (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN;	493,594 SF
	TOTAL UPLAND PLANTINGS:	1,657,807 SF
	TOTAL PLANTED AREAS:	2,589,605 SF (59.45 AC)

NOTE:
APPLICANT WILL RESTORE ANY VEGETATION DISTURBED FOR MAINTENANCE IN POWER LINE AND NATURAL GAS LINE EASEMENTS.

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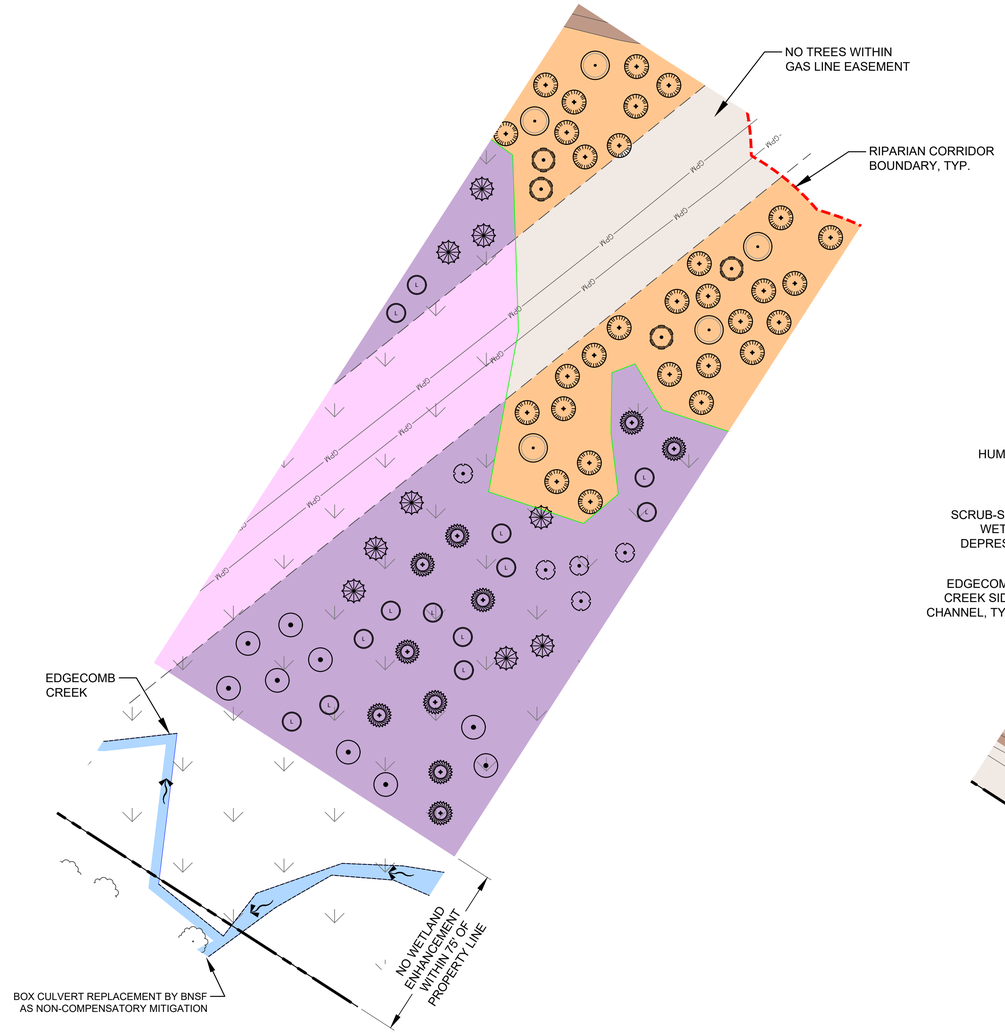
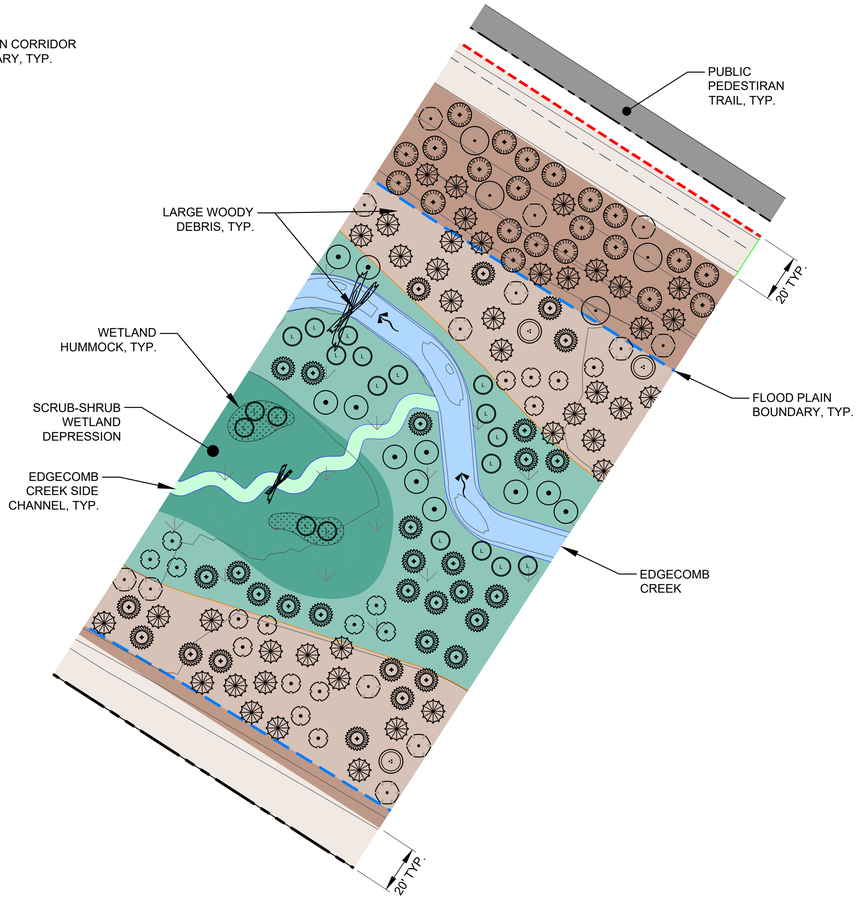


PLANTING TYPICAL #1 - WETLAND AH ENHANCEMENT *

* ONLY LARGE TREES AND LIVE STAKES TO BE PLANTED WITHIN WETLAND ENHANCEMENT AREAS



PLANTING TYPICAL #2 - WETLAND CORRIDOR WITH SCRUB-SHRUB DEPRESSION

SCALE: 1"=20'

0 30 60 120

GRAPHIC SCALE
1"= 30'

PLAN LEGEND

- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- FLOOD PLAIN BOUNDARY

NOTES:
1. SEE 100% DESIGN PLAN SET: EDGECOMB CREEK RESTORATION (SWCA, 2021) FOR PROPOSED HABITAT STRUCTURES.
2. NATIVE PLANTS TO BE INSTALLED FOLLOWING RIPARIAN CORRIDOR EXCAVATION AND GRADING TO THE EXTENT FEASIBLE DEPENDENT ON SUMMER HYDROLOGY CONDITIONS; NATIVE SEED MIXES WILL ALSO BE SPREAD ACROSS THE RIPARIAN CORRIDOR AS NEEDED FOR EROSION CONTROL. NATIVE PLANTS TO BE FULLY INSTALLED DURING FALL PLANTING SEASON.

PLANTING AREA LEGEND

WETLAND PLANTING AREAS

- EMERGENT WETLAND & STREAMS
  (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)
- SCRUB-SHRUB WETLAND
  (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)
- FORESTED/SCRUB-SHRUB WETLAND
  (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT
- FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT

UPLAND PLANTING AREAS

- SCRUB-SHRUB UPLAND
  (ALL UPLAND AREAS OUTSIDE OF THE FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)
- SCRUB-SHRUB UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- FORESTED UPLAND
  (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN; OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE; NO TREES PLANTED WITHIN POWER LINE EASEMENT)
- FORESTED UPLAND ENHANCMENT-WETLAND AH BUFFER
  (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)
- FORESTED UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN)

PLANT LIST

TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
ACER MACROPHYLLUM	BIG LEAF MAPLE
FRANGULA PURSHIANA	CASCARA
MALUS FUSCA	PACIFIC CRABAPPLE
PICEA SITCHENSIS	SITKA SPRUCE
POPULUS BALSAMIFERA	BLACK COTTONWOOD
PRUNUS EMARGINATA	BITTER CHERRY
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
SALIX LUCIDA	PACIFIC WILLOW
THUJA PLICATA	WESTERN REDCEDAR

SOURCES:
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BY: MW
SCALE: AS SHOWN
SHEET: 6

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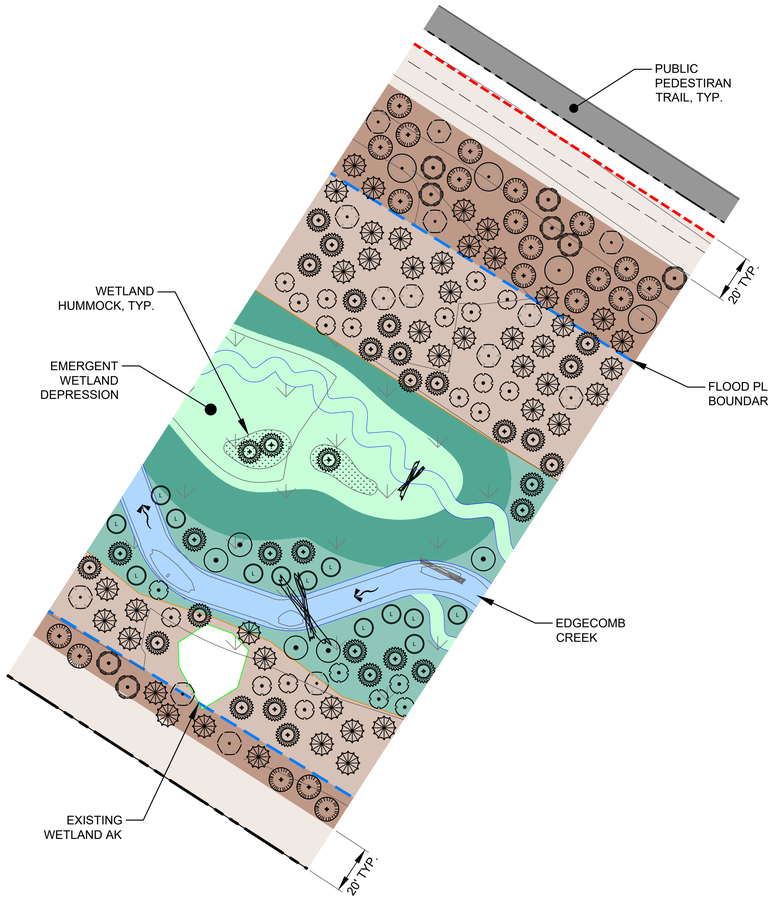
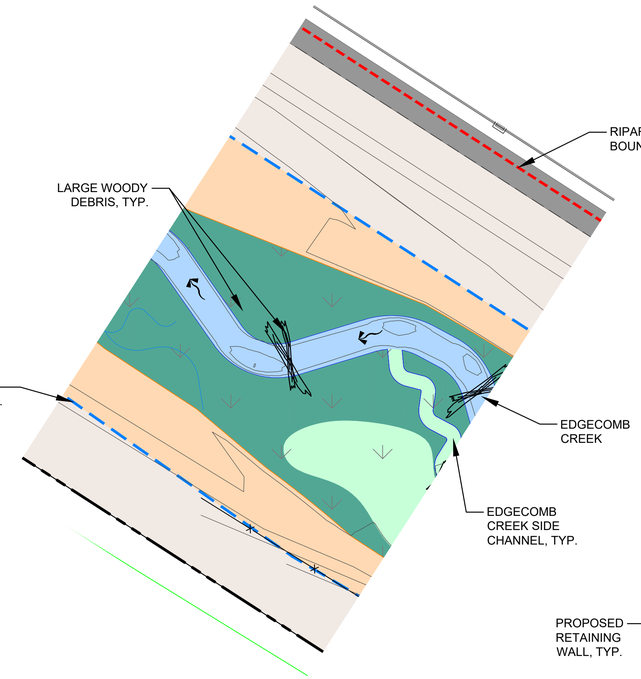
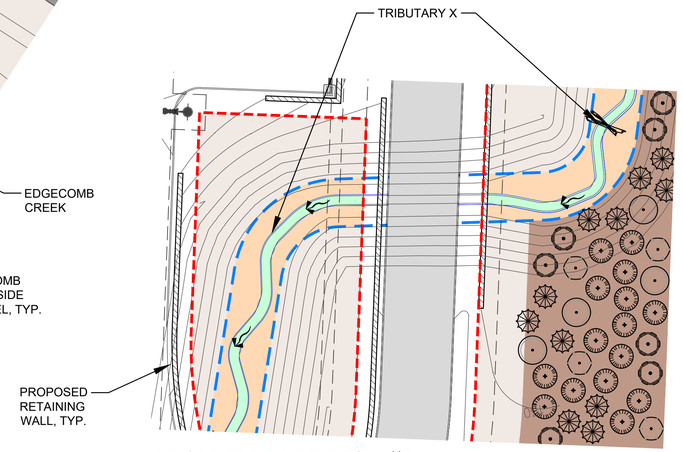


PLANTING TYPICAL #3 -
WETLAND CORRIDOR WITH EMERGENT DEPRESSION



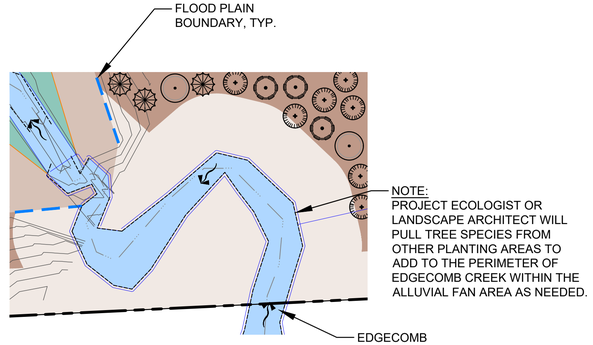
PLANTING TYPICAL #4 -
AIRPORT APPROACH

SCALE: 1"=20'



PLANTING TYPICAL #5 -
TRIBUTARY X CORRIDOR

SCALE: 1"=20'



PLANTING TYPICAL #6 -
EDGECOMB CREEK ALLUVIAL FAN

0 30 60 120

GRAPHIC SCALE
1"= 30'

PLAN LEGEND
- PROJECT LIMITS
- WETLAND BOUNDARY TO BE RETAINED
- FLOOD PLAIN BOUNDARY

NOTES:
1. SEE 100% DESIGN PLAN SET: EDGECOMB CREEK RESTORATION (SWCA, 2021) FOR PROPOSED HABITAT STRUCTURES.
2. NATIVE PLANTS TO BE INSTALLED FOLLOWING RIPARIAN CORRIDOR EXCAVATION AND GRADING TO THE EXTENT FEASIBLE DEPENDENT ON SUMMER HYDROLOGY CONDITIONS; NATIVE SEED MIXES WILL ALSO BE SPREAD ACROSS THE RIPARIAN CORRIDOR AS NEEDED FOR EROSION CONTROL. NATIVE PLANTS TO BE FULLY INSTALLED DURING FALL PLANTING SEASON.

PLANT LIST
TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
ACER MACROPHYLLUM	BIG LEAF MAPLE
FRANGULA PURSHIANA	CASCARA
MALUS FUSCA	PACIFIC CRABAPPLE
PICEA SITCHENSIS	SITKA SPRUCE
POPULUS BALSAMIFERA	BLACK COTTONWOOD
PRUNUS EMARGINATA	BITTER CHERRY
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
SALIX LUCIDA	PACIFIC WILLOW
THUJA PLICATA	WESTERN REDCEDAR

PLANTING AREA LEGEND
WETLAND PLANTING AREAS
- EMERGENT WETLAND & STREAMS
  (WETLAND DEPRESSIONS, TRIBUTARY X, & EDGECOMB CREEK SIDE CHANNELS)
- SCRUB-SHRUB WETLAND
  (WETLAND DEPRESSIONS & WITHIN 20-FT OF EMERGENT WETLAND DEPRESSIONS)
- FORESTED/SCRUB-SHRUB WETLAND
  (REMAINING WETLAND CORRIDOR AREAS OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT WITHIN NATURAL GAS EASEMENT
- FORESTED/SCRUB-SHRUB WETLAND ENHANCEMENT
  WETLAND AH ENHANCEMENT

UPLAND PLANTING AREAS
- SCRUB-SHRUB UPLAND
  (ALL UPLAND AREAS OUTSIDE OF THE FLOOD PLAIN THAT ARE WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE OR WITHIN 20-FT OF ROADS & RAILROAD BOUNDARIES)
- SCRUB-SHRUB UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN 100 YEAR FLOOD PLAIN ALONG TRIBUTARY X, WITHIN THE POWER LINE EASEMENT, & WITHIN THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE)
- FORESTED UPLAND
  (ALL UPLAND AREAS BETWEEN SCRUB-SHRUB UPLAND AREAS AND THE 100 YEAR FLOOD PLAIN, OUTSIDE OF THE AIRPORT APPROACH WILDLIFE MANAGEMENT ZONE; NO TREES PLANTED WITHIN POWER LINE EASEMENT)
- FORESTED UPLAND ENHANCEMENT- WETLAND AH BUFFER
  (WETLAND AH BUFFER ENHANCEMENT AREAS OUTSIDE OF GAS LINE EASEMENT)
- FORESTED UPLAND - FLOOD PLAIN
  (ALL UPLAND AREAS WITHIN THE 100 YEAR FLOOD PLAIN)

SOURCES:
LDC | Surveying Engineering Planning
Woodinville: 20210 142nd Avenue NE, Woodinville, WA 98072, T 425.806.1869
Kent: 1851 Central Pl S, #101, Kent, WA 98030, F 425.482.2893
www.LDCcorp.com

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 HARBORVIEW DRIVE, SUITE D
GIG HARBOR, WASHINGTON 98335
P. 253.514.8952
F. 253.514.8954
WWW.SOUNDVIEWCONSULTANTS.COM

CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 7

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-04-20) 75-ft buffers.dwg
Plotted April 21, 2021

PLANT SCHEDULE

Type 1 - Emergent Wetland & Streams
Type 2 - Scrub-Shrub Wetland
Type 3 - Forested/Scrub-Shrub Wetland
Type 4 - Scrub-Shrub Wetland Enhancement
Type 5 - Forested/Scrub-Shrub Wetland Enhancement
Type 6 - Scrub-Shrub Upland
Type 7 - Scrub-Shrub Upland - Flood Plain
Type 8 - Forested Upland
Type 9 - Forested Upland Enhancement - Wetland AH Buffer
Type 10 - Forested Upland - Flood Plain

Area (SF):	149,799	211,456	446,567	10,762	113,214	519,026	79,942	454,621	110,624	493,594		**2,589,605**
Cov'g %	100	100	100	50	50	100	100	100	50	100		
Tree %	0	0	34	0	34	0	0	50	50	50		
Shrub %	0	100	66	100	66	100	100	50	50	50		

Plant Name			Quantity													
Scientific	Common	Plant Status	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	TOTAL	Spacing	Size	Condition	Planting Area
Trees																	
Acer macrophyllum	Bigleaf Maple	FACU	-	-	-	-	-	-	-	400	40	-	**440**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Frangula purshiana	Cascara	FAC	-	-	-	-	-	-	-	250	-	500	**750**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Malus fusca	Pacific crabapple	FACW	-	-	250	-	25	-	-	-	-	500	**775**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Wet - in wetland**
Picea stichensis	Sitka sprace	FAC	-	-	400	-	50	-	-	-	-	800	**1250**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist - on hummock**
Populus balsamifera	Black cottonwood	FAC	-	-	350	-	40	-	-	-	-	-	**390**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist/Wet - on hummock**
Prunus emarginata	Bitter cherry	FACU	-	-	-	-	-	-	-	400	30	-	**430**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Pseudotsuga menziesii	Douglas fir	FACU	-	-	-	-	-	-	-	925	250	-	**1175**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Dry**
Salix lucida	Pacific willow	FACW	-	-	750	-	67	-	-	-	-	-	**817**	**10 ft**	**3 - 4 ft**	**Stakes**	**Wet**
Thuja plicata	Western red cedar	FAC	-	-	-	-	40	-	-	650	-	1050	**1740**	**10 ft**	**3 - 4 ft**	**2 gal.**	**Moist - on hummock**
		Total	0	0	1750	0	222	0	0	2625	320	2850	**7767**				
Shrubs																	
Acer circinatum	Vine maple	FAC	-	-	-	-	-	-	-	1400	100	500	**2000**	**10 ft**	**2 - 4 ft**	**2 gal.**	**Dry/Moist**
Amelanchier alnifolia	Serviceberry	FACU	-	-	-	-	-	1000	-	500	50	-	**1550**	**8 ft**	**2 - 4 ft**	**2 gal.**	**Dry**
Cornus sericea	Red-twig dogwood	FACW	-	1500	3000	100	275	-	-	-	-	1800	**6675**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Moist/Wet**
Corylus cornuta californica	Western hazlenut	FACU	-	-	-	-	-	1000	-	500	25	-	**1525**	**10 ft**	**2 - 4 ft**	**2 gal.**	**Moist**
Crataegus douglasii	Douglas hawthorn	FAC	-	1000	1000	-	-	-	200	-	-	-	**2200**	**5 ft**	**2 - 4 ft**	**2 gal.**	**Moist**
Gaultheria shallon	Salal	FACU	-	-	-	-	-	6000	-	2800	300	1000	**10100**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Mahonia nervosa	Low Oregon grape	FACU	-	-	-	-	-	-	-	1500	200	-	**1700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry/Moist**
Oemleria cerasiformis	Indian plum	FACU	-	-	-	-	-	3000	-	1500	200	-	**4700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Physocarpus capitatus	Pacific ninebark	FACW	-	500	500	-	-	1500	400	-	-	-	**2900**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Ribes divaricatum	Wax currant	FAC	-	350	-	-	-	-	-	-	-	400	**750**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Rosa gymnocarpa	Bald hip rose	FACU	-	-	-	-	-	-	-	950	100	-	**1050**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry/Moist**
Rosa nutkana	Nootka rose	FAC	-	-	-	-	-	2975	400	-	-	-	**3375**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Rosa pisocarpa	Clustered wild rose	FAC	-	500	515	-	-	-	-	-	-	1000	**2015**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Wet**
Rubus parviflorus	Thimbleberry	FACU	-	-	-	-	-	3500	-	-	200	-	**3700**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist**
Rubus spectabilis	Salmonberry	FAC	-	1120	1000	150	150	-	340	-	-	1000	**3760**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist**
Salix hookeriana	Dune willow	FAC	-	-	-	-	-	-	1175	-	-	-	**1175**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Dry/Moist**
Salix scouleriana	Scouler's willow	FAC	-	2400	3300	-	650	-	1175	-	-	2850	**10375**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Dry/Moist**
Salix sitchensis	Sitka willow	FACW	-	2400	3300	-	650	-	-	-	-	2850	**9200**	**2 - 5 ft**	**2 - 4 ft**	**Stakes**	**Moist/Wet**
Sambucus racemosa	Red elderberry	FACU	-	-	-	-	-	2000	-	400	100	-	**2500**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
Spirea douglasii	Douglas Spirea/Hardhack	FACW	-	-	1000	-	-	-	-	-	-	-	**1000**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Moist/Wet**
Symphoricarpos albus	Snowberry	FACU	-	-	-	-	-	3000	-	950	-	-	**3950**	**5 ft**	**2 - 4 ft**	**1 gal.**	**Dry**
		Total	0	9770	13615	250	1725	23975	3690	10500	1275	11400	**76200**				

Native Wetland Grass Seed Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Glyceria occidentalis	Western mannagrass	OBL												40
Beckmannia syzigachne	American sloughgrass	OBL												30
Hordeum brachyantherum	Meadow barley	FACW												20
Alopecurus aequalis	Shortawn foxtail	OBL												10
			50	100	205	-	-	-	-	-	-	-	**355**	

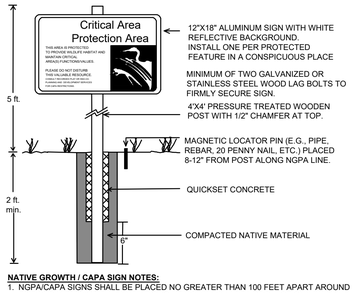
Moist Soil Sedge & Rush Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Carex unilateralis	One-sided sedge	FACW												70
Carix densa	Dense sedge	OBL												12
Juncus effusus	Common rush	FACW												5
Juncus tenuis	Slender rush	FACW												5
Juncus bufonius	Toad rush	FAC												5
Carex stipata	Awl fruited sedge	OBL												2
Carex olmsptd	Slough sedge	OBL												1
			20	-	-	-	-	-	40	-	-	230	**290**	

Native Upland Grass Seed Mix 20 lbs/acre			**Quantity (lbs)**											**% by wt.**
Elymus glaucus	Blue wildrye	FACU												30
Bromus carinatus	California brome	FACU												25
Hordeum brachyantherum	Meadow barley	FACW												10
Festuca roemeri	Roemer's fescue	FACU												10
Deschampsia elongata	Slender hairgrass	FACW												10
Agrostis exarata	Spike bentgrass	FACW												5
Deschampsia cespitosa	Tufted hairgrass	FACW												5
Festuca rubra rubra	Red fescue	FACU												5
			-	-	-	-	-	230	-	225	-	-	**455**	

1 - Scientific names and species identification taken from *Flora of the Pacific Northwest, 2nd Edition (Hitchcock and Cronquist, Ed. by Giblin, Ledger, Zika, and Olmstead, 2018).*
2 - Over-sized container plants are suitable for replacement pending Wetland Scientist approval.
3 - Native plant species may be substituted or added with Wetland Scientist approval.
4 - All disturbed and bare soil areas in the buffer to be seeded with a native grass seed mix.
5 - Plant quantities are ESTIMATED ONLY. Actual plant quantities will be documented in the As-Built Report

NATIVE GROWTH / CAPA - TYPE 1 SIGN

NOT TO SCALE



NATIVE GROWTH / CAPA SIGN NOTES:

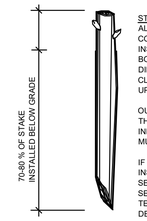
1. NGPA/CAPA SIGNS SHALL BE PLACED NO GREATER THAN 100 FEET APART AROUND THE PERIMETER OF THE NATIVE GROWTH CRITICAL AREA PROTECTION AREA FACING THE PROPOSED DEVELOPMENT, 152ND AVENUE NORTHEAST, AND 172ND AVENUE NORTHEAST. WHERE THE PEDESTRIAN TRAIL INTRUDES INTO THE RIPARIAN CORRIDOR, THE SIGNS SHALL BE PLACED ON THE WATERWARD SIDE OF THE TRAIL.
2. SIGN PLACEMENT SHALL BE SUBJECT TO THE APPROVAL OF CITY STAFF. ALTERNATIVE SIGN DESIGNS MAY NE SUBMITTED TO CITY STAFF FOR APPROVAL.
3. ALL SIGNS MUST BE SECURE AND PERMANENT.

LIVE STAKE PLANTING DETAIL

NOT TO SCALE

NOTES:

1. LIVE STAKES TO BE 1 TO 2 INCH DIAMETER 24 TO 32 INCHES LENGTH.
2. USE 1/2 INCH DIAMETER REBAR OR ROCK BAR TO MAKE PILOT HOLE.
3. INSTALL LIVE STAKES TAPER END DOWN WITH BUDS POINTED UP.
4. MINIMUM TWO BUDS ABOVE GRADE.
5. SET LIVE STAKES WITH DEAD-BLOW HAMMER.
6. WATER IMMEDIATELY AFTER INSTALLATION.



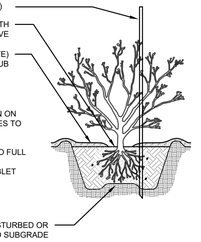
STORAGE OF LIVE STAKES
ALL WOODY PLANT CUTTINGS COLLECTED MORE THAN 12 HR PRIOR TO INSTALLATION, MUST BE CAREFULLY BOUND, SECURED, AND STORED OUT OF DIRECT SUNLIGHT AND SUBMERGED IN CLEAN FRESH WATER FOR A PERIOD OF UP TO TWO WEEKS.

OUTDOOR TEMPERATURES MUST BE LESS THAN 50 DEGREES F AND TEMPERATURE INDOORS AND IN STORAGE CONTAINERS MUST BE BETWEEN 34 AND 50 DEGREES F.

IF THE LIVE STAKES CANNOT BE INSTALLED DURING THE DORMANT SEASON, CUT DURING THE DORMANT SEASON AND HOLD IN COLD STORAGE AT TEMPERATURES BETWEEN 33 AND 39 DEGREES F FOR UP TO 2 MONTHS.

TREE AND SHRUB PLANTING DETAIL (TYPICAL)

NOT TO SCALE

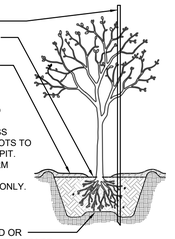


NOTES:

1. PLANT TREES & SHRUBS OF THE SAME SPECIES IN GROUPS OF 3 to 9 AS APPROPRIATE, OR AS SHOWN ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES TO ACHIEVE A NATURAL-LOOKING LAYOUT.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

TREE PLANTING DETAIL

NOT TO SCALE



NOTES:

1. PLANT TREES AS INDICATED ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

PERFORMANCE STANDARDS

GOAL 1 - COMPENSATE FOR THE LOSS OF THE EXISTING EDGECOMB CREEK CHANNEL BY CREATING A MEANDERING STREAM CHANNEL WITH ASSOCIATED SIDE CHANNELS.

OBJECTIVE 1.1 - CREATE A NEW STREAM CHANNEL AND ENHANCED HABITAT COMPONENTS.

PERFORMANCE STANDARD 1.1.1 - THE NEW STREAM CHANNEL SYSTEM WILL BE CREATED ACCORDING TO THE FINAL APPROVED DESIGN AND DOCUMENTED IN THE AS-BUILT REPORT.

PERFORMANCE STANDARD 1.1.2 - HABITAT STRUCTURES WITH LARGE WOODY DEBRIS IN THE NEW STREAM CHANNEL SYSTEM WILL BE CREATED ACCORDING TO THE FINAL APPROVED DESIGN AND DOCUMENTED IN THE AS-BUILT REPORT.

PERFORMANCE STANDARD 1.1.3 - A MEDIA FILTER DRAIN WILL BE INSTALLED ALONG THE EASTERN BOUNDARY OF THE MITIGATION SITE BETWEEN THE NEW STREAM CHANNEL AND THE RAILROAD AND DOCUMENTED IN THE AS-BUILT REPORT.

GOAL 2 - COMPENSATE FOR THE LOSS OF 4.275 ACRES OF WETLANDS AND 0.595 ACRE OF INDIRECT WETLAND IMPACTS, INCLUDING THE 51ST AVENUE EAST DITCH THAT IS BEING TREATED AS A WETLAND FOR LOCAL AND STATE PERMITTING PROCESSES, BY CREATING A MINIMUM OF 8.769 ACRES OF WETLANDS THAT PROVIDE A MODERATE TO HIGH LEVEL OF WATER QUALITY AND HABITAT FUNCTIONS. COMPENSATE FOR THE 0.104 ACRE OF DIRECT IMPACTS AND 0.021 ACRE OF INDIRECT IMPACTS TO THE 51ST AVENUE EAST DITCH RESULTING FROM THE CASCADE COMMERCE CENTER PROJECT THAT HAS BEEN APPROVED UNDER A SEPARATE PERMIT APPLICATION (SVC, 2020D AND WSDOE, 2021) BY CREATING A MINIMUM OF 0.228 ACRE OF WETLANDS THAT PROVIDE A MODERATE TO HIGH LEVEL OF WATER QUALITY AND HABITAT FUNCTIONS. EXCESS COMPENSATORY WETLAND CREATION AREAS MAY BE USED AS ADVANCE MITIGATION ACCORDING TO AN APPROVED ADVANCE MITIGATION PLAN.

OBJECTIVE 2.1 - ESTABLISH A MINIMUM OF 8.769 ACRES OF WETLAND CREATION AREAS FOR THE CASCADE BUSINESS PARK AND 0.228 ACRE OF WETLAND CREATION AREAS FOR THE CASCADE COMMERCE CENTER ALONG THE RE-ALIGNED EDGECOMB CREEK.

PERFORMANCE STANDARD 2.1.1 - THE WETLAND CREATION AREAS WILL MEASURE AT LEAST 8.769 ACRES [CASCADE BUSINESS PARK] AND 0.228 ACRE [CASCADE COMMERCE CENTER] IN SIZE AS DEMONSTRATED BY WETLAND DELINEATIONS IN YEAR 5 AND YEAR 10.

OBJECTIVE 2.2 - ESTABLISH WETLAND HYDROLOGY THROUGH GRADING TO ESTABLISH DEPRESSIONS/BENCHES THAT INTERSECT SHALLOW GROUNDWATER ELEVATIONS SIMILAR TO NEARBY WETLANDS AND/OR RECEIVE HYDROLOGIC INFLUENCE FROM EDGECOMB CREEK.

PERFORMANCE STANDARD 2.2.1 - THE APPROXIMATELY 8.769 ACRES [CASCADE BUSINESS PARK] AND 0.228 ACRE [CASCADE COMMERCE CENTER] OF WETLAND CREATION AREAS WILL HAVE SEASONALLY SATURATED SOILS (OR GREATER HYDROPERIOD) WITHIN 12 INCHES OF THE SURFACE OVER ALL THE WETLAND CREATION AREAS THAT PERSISTS FOR A MINIMUM OF 14 CONSECUTIVE DAYS DURING THE GROWING SEASON IN YEARS WITH NORMAL PRECIPITATION LEVELS OVER THE MONITORING PERIOD.

OBJECTIVE 2.3 - ESTABLISH FORESTED AND SCRUB-SHRUB WETLAND HABITAT WITH DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND SPECIES RICHNESS TO PROVIDE HABITAT FOR WETLAND-ASSOCIATED WILDLIFE.

PERFORMANCE STANDARD 2.3.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND CREATION AREAS.

PERFORMANCE STANDARD 2.3.2 - NATIVE WOODY VEGETATION IN THE WETLAND CREATION AREAS WILL PROVIDE, AT LEAST 25 PERCENT TOTAL COVER BY YEAR 3, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 50 PERCENT TOTAL COVER BY YEAR 7, AND 75 PERCENT TOTAL COVER BY YEAR 10.

PERFORMANCE STANDARD 2.3.3 - IN ALL MONITORING YEARS, THE WETLAND CREATION AREAS WILL HAVE AT LEAST 2 SPECIES OF NATIVE TREES AND 5 SPECIES OF NATIVE SHRUBS.

OBJECTIVE 2.4 - ESTABLISH EMERGENT WETLAND HABITAT TO PROVIDE HABITAT FOR WETLAND-ASSOCIATED WILDLIFE.

PERFORMANCE STANDARD 2.4.1 - NATIVE EMERGENT SPECIES WILL PROVIDE AT LEAST 20 PERCENT TOTAL COVER OF THE EMERGENT WETLAND HABITAT BY YEAR 2, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 3, AT LEAST 50 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 65 PERCENT TOTAL COVER FOR YEARS 7 AND 10. PERMANENTLY PONDED WETLAND AREAS THAT LACK VEGETATION WILL BE EXCLUDED FROM THE AREA USED TO DETERMINE PERCENT COVER.

OBJECTIVE 2.5 - EFFECTIVELY CONTROL AND/OR ELIMINATE NON-NATIVE INVASIVE SPECIES FROM THE WETLAND CREATION AREAS.

PERFORMANCE STANDARD 2.5.1 - NON-NATIVE INVASIVE PLANTS WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

GOAL 3 - ENHANCE 3.648 ACRES OF EXISTING WETLANDS AH AND AK TO IMPROVE HABITAT FUNCTIONS. EXCESS COMPENSATORY WETLAND ENHANCEMENT AREAS MAY BE USED AS ADVANCE MITIGATION ACCORDING TO AN APPROVED ADVANCE MITIGATION PLAN.

OBJECTIVE 3.1 - ESTABLISH NATIVE PLANT COVER WITHIN THE ENHANCEMENT AREAS TO CREATE DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND ADDITIONAL WILDLIFE HABITAT.

PERFORMANCE STANDARD 3.1.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND ENHANCEMENT AREAS.

PERFORMANCE STANDARD 3.1.2 - NATIVE WOODY SPECIES WILL PROVIDE AT LEAST 20 PERCENT TOTAL COVER OF THE WETLAND ENHANCEMENT AREAS BY YEAR 2, AT LEAST 30 PERCENT TOTAL COVER BY YEAR 3, AND AT LEAST 50 PERCENT TOTAL COVER FOR YEARS 5-10.

PERFORMANCE STANDARD 3.1.3 - AT LEAST 3 NATIVE SHRUB AND/OR TREE SPECIES WILL BE PRESENT IN THE ENHANCEMENT AREAS IN ALL MONITORING YEARS.

OBJECTIVE 2 - EFFECTIVELY CONTROL NON-NATIVE INVASIVE SPECIES WITHIN THE WETLAND ENHANCEMENT AREAS.

PERFORMANCE STANDARD 3.2.1 - NON-NATIVE INVASIVE PLANTS (EXCLUDING REED CANARY GRASS) WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

PERFORMANCE STANDARD 3.2.2 - TOTAL REED CANARY GRASS COVER WILL BE REDUCED COMPARED TO BASELINE CONDITIONS ESTABLISHED DURING YEAR 0 (AS-BUILT): 15 PERCENT REDUCTION IN TOTAL COVER BY YEAR 5, AND 30 PERCENT REDUCTION IN TOTAL COVER BY YEAR 10.

GOAL 4 - ESTABLISH OF UPLAND/BUFFER FOR THE NEWLY REALIGNED EDGECOMB CREEK TO PROVIDE PROTECTION FOR THE STREAM AND WETLANDS.

OBJECTIVE 1 - ESTABLISH NATIVE PLANT COVER WITHIN THE TARGETED UPLAND/BUFFER AREAS TO CREATE DIVERSE HORIZONTAL AND VERTICAL VEGETATION STRUCTURE AND ADDITIONAL WILDLIFE HABITAT.

PERFORMANCE STANDARD 4.1.1 - IN YEAR 1, SURVIVAL OF INSTALLED WOODY VEGETATION WILL BE AT LEAST 90 PERCENT IN THE WETLAND UPLAND/BUFFER AREAS.

PERFORMANCE STANDARD 4.1.2 - NATIVE TREE AND SHRUB SPECIES WILL PROVIDE AT LEAST 15 PERCENT TOTAL COVER OF THE UPLAND/BUFFER AREAS BY YEAR 3, AT LEAST 25 PERCENT TOTAL COVER BY YEAR 5, AT LEAST 35 PERCENT TOTAL COVER FOR YEAR 7, AND 50 PERCENT TOTAL COVER FOR YEAR 10.

PERFORMANCE STANDARD 4.1.3 - IN ALL MONITORING YEARS, THE UPLAND/BUFFER AREA WILL HAVE AT LEAST 3 SPECIES OF NATIVE TREES AND 5 SPECIES OF NATIVE SHRUBS.

OBJECTIVE 2 - EFFECTIVELY CONTROL AND/OR ELIMINATE NON-NATIVE INVASIVE SPECIES FROM THE UPLAND/BUFFER AREAS.

PERFORMANCE STANDARD 4.2.1 - NON-NATIVE INVASIVE PLANTS WILL NOT MAKE UP MORE THAN 20 PERCENT TOTAL COVER IN ANY GROWING SEASON DURING ALL MONITORING YEARS.

GOAL 5 - PROTECT THE RIPARIAN CORRIDOR.

OBJECTIVE 5.1 - IDENTIFY THE RIPARIAN CORRIDOR AS A MITIGATION SITE.

PERFORMANCE STANDARD 5.1.1 - CRITICAL AREAS SIGNS WILL BE INSTALLED ALONG THE BOUNDARY OF THE MITIGATION SITE EVERY 100 FEET ACCORDING TO THE FINAL APPROVED PLANS. CRITICAL AREAS SIGNS MUST BE PRESENT DURING ALL MONITORING YEARS.

FOR ALL NATIVE SPECIES SURVIVAL, COVERAGE OR SPECIES RICHNESS PERFORMANCE STANDARDS, REPLACEMENT OF DEAD OR DYING PLANTS IS ALLOWED DURING ALL MONITORING YEARS. NATIVE VOLUNTEER PLANTS MAY BE INCLUDED IN COVERAGE OR SPECIES RICHNESS ESTIMATES.

SOURCES:

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CASCADE BUSINESS PARK
THE NE & SE ¼ OF SECTION 27
NW & SW ¼ OF SECTION 34
TOWNSHIP 31N, RANGE 5E, W.M.

DATE: 5/26/2021
JOB: 1703.0004
BY: MW
SCALE: AS SHOWN
SHEET: 8

S:\CURRENT\1703 NorthPoint Holdings LLC\1703.0004 Cascade Logistics Park\Graphics & Maps\CAD\A - CURRENT SVC DRAWINGS\A - Current Base DWGs\1703.0004 (2021-04-20) 70-ft buffers.dwg
Plotted April 22, 2021

Appendix B – BNSF Railroad and Edgecomb Creek Stormwater Mitigation (LDC, 2021)

LDC Surveying Engineering Planning

February 22, 2021

Soundview Consultants
Attn: Mr. Matt DeCaro

RE: CASCADE INDUSTRIAL CENTER
BNSF RAILROAD AND EDGECOMB CREEK STORMWATER MITIGATION
LDC PROJECT # 20-133B

Dear Mr. DeCaro:

At your request LDC has analyzed the stormwater mitigation between the BNSF railroad and the proposed relocated Edgecomb Creek. We investigated options to address runoff from the railroad as it discharges toward Edgecomb Creek.

The BNSF railroad right of way is adjacent to the eastern extents of the Cascade Industrial Center development. The relocation of Edgecomb Creek is also being proposed along the eastern extents of the development. The railroad tracks are located generally in the center of a 100-foot-wide Right-of-Way. The tracks are elevated above the surrounding properties by about 2 to 5 feet. The railroad grade slopes to the east on the east side of the tracks and to the west on the west side of the tracks, toward the development property. It has been discussed that there are concerns that the railroad runoff will be untreated and discharge directly into the relocated creek.

Two factors of runoff are considered when analyzing stormwater. First is the runoff rate in storm events up to the peak 100-year event. Second is the water quality of the runoff from a contributing surface.

Peak Runoff:
The railroad is virtually permeable, as it is generally constructed of railroad ballast rocks, timber ties and iron tracks. We do not anticipate any increase in the current runoff rates. The current condition of the railroad right-of-way between the tracks and the west right-of-way line is vegetated with native vegetation, it can be considered pasture. The railroad right-of-way is owned and maintained by BNSF and no changes to the surface are proposed within this area. The distance between the tracks and the right-of-way line is approximately 45 to 50-feet. The slope of the ground is flat at about 1 to 2%. The stormwater runoff from the tracks can be characterized as fully dispersed sheet flow.

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Edgecomb creek is proposed to meander within the buffer zone established within the development and in its meandering, gets as close to the eastern property line (west railroad ROW) as about 47-feet. The buffer zone of the creek is proposed to be planted with native plantings and amended soils.

Adding the 45 to 50-foot distance from the tracks to the ROW line and the distance from the property line to the creek edge, equals approximately 100-feet at its closest point, and much further as the creek meanders away from the property line to the west. This is considered Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the SWMMWW.

Water Quality:

Currently the railroad right-of-way sheet flows toward the development property and there is no evidence of concentrated flows or scouring of any nature to generate sediment. We do not anticipate any sediment laden runoff from the railroad in this Full Dispersion condition.

We do not know specifically what pollutable material the railroad generates, and we can assume that if anything drops from the train cars, that it would infiltrate through the ballast. The treated timbers would also likely infiltrate through the ballast.

In a worst-case scenario, it can be assumed that there may be grease, oil, diesel fuel, blowoff material from train car cargo, and chemical treatment from the railroad timbers (creosote, et. al.) that may runoff from the railroad tracks to the surrounding properties. In this unlikely event we are proposing to treat the runoff from the railroad right-of-way with a Media Filter Drain.

Although 100-feet of fully dispersed flow path is a WSDOE approved stormwater treatment BMP, there are additional concerns of operational pollutants discharging from the railroad to Edgecomb Creek. An additional water quality treatment BMP would mitigate those water quality concerns.

A Media Filter Drain is a WSDOT and WSDOE approved and implemented water quality treatment system to filter polluted stormwater from highway runoff (see attached WSDOT BMP Specification RT.07). The Media Filter Drain (MFD) mix consists of a mixture of crushed rock, dolomite, gypsum, and perlite. The crushed rock provides the support matrix of the medium; the dolomite and gypsum add alkalinity and ion exchange capacity to promote the precipitation and exchange of heavy metals; and the perlite improves moisture retention to promote the formation of biomass within the MFD mix. The combination of physical filtering, precipitation, ion exchange, and biofiltration enhances the water treatment capacity of the mix. The proposal is to install a Media Filter Drain – Type 3 along the eastern property line the extent of the railroad adjacent to the creek corridor.

The Full Dispersion sheet flow stormwater from the railroad will pass through the native vegetation within the railroad right-of-way, to the Media Filter Drain where residual pollutants will be treated, and then the cleansed water will pass through the newly planted creek buffer zone prior to discharging to the relocated Edgecomb Creek.

Alternative Analysis:

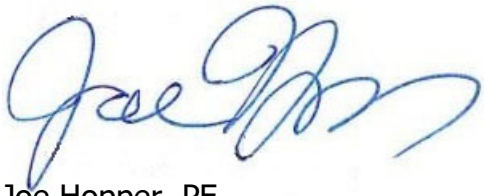
We have investigated other methods of WSDOE approved water quality treatment BMPs for this site. All are either maintenance intensive or will be physically constrained based on the flat grade and high seasonal groundwater elevation on site. For example, collecting the runoff in a swale or pipe system would require the stormwater to then be routed through a water quality facility (eg. pond, vault, cartridge filter, etc), be treated within that device and then be discharged and dispersed. These types of facilities require significant vertical elevation change from inlet to outlet, which is not available between the property line and the proposed creek location. It has also been determined that the site has a particularly high seasonal groundwater elevation across the site of approximately 12 to 18-inches below existing grade. This high groundwater condition also precludes excavation lower than that to install water quality facilities. These types of facilities also require more regular maintenance. Bioswales require constant mowing. Ponds and/or vaults requires continual sediment removal. A media filter cartridge system requires regular replacement of cartridges and filtration media. The concept behind the above listed types of treatment facilities is to collect and treat the stormwater and then discharge it downstream. The discharge in this concept requires reducing the runoff flow concentration through a flow dispersal device, such as a level spreader or dispersal trench, to prevent erosion and scouring. The dispersal device also requires continual maintenance and inspection. Collecting an already dispersed flow, treating, and thus concentrating it, and then re-dispersing it is counterproductive to the current site conditions.

Conclusion:

The current site condition of stormwater sheet flow from the railroad toward the property and relocated creek already accomplishes flow dispersal to mitigate flow concentration, erosion, scouring and water quality treatment. The Media Filter Drain will enhance water quality treatment and maintain the sheet flow characteristics of the site. Maintenance of Media Filter Drains is similar to routine roadside management to remove noxious weeds as necessary and otherwise functions with minimal maintenance required. A railroad corridor is very similar to a highway, and the Media Filter drain application is appropriate for the current site conditions.

Please feel free to contact me with any questions or comments.

Sincerely,
LDC, INC.



Joe Hopper, PE
Senior Project Manager

RT.07 – Media Filter Drain

Media Filter Drain Along SR 167 in King County

Description: Linear flow-through stormwater runoff treatment device along highway side slopes and medians. Also has end-of-pipe configurations.

Geometry Limitations

Contributing Flow Path	≤ 150'
Embankment Slope	2%-25%

BMP Function

- ☑ LID
- ☐ Flow Control
- ☑ Runoff Treatment
  - ☐ Oil Control
  - ☑ Phosphorus*
  - ☑ TSS - Basic
  - ☑ Dissolved Metals - Enhanced

Effective Life (Years)

➲ 25

Capital Cost	M & O Cost
➲ Low	➲ Low to Moderate

Additional Constraints/Requirements

- ☐ 4-5 Infiltration Design Criteria
- ☐ Setback
- ☑ Landscaping/Planting
- ☐ Wetland Planting and Plant Establishment
- ☐ Inlet and Outlet Spacing
- ☐ Overflow
- ☐ Multidisciplinary Team
- ☐ WSDOT Pavement Engineer Approval
- ☑ Soil Amendments/Compost
- ☐ Energy Dissipater/Level Spreader
- ☐ 5-4.3.3 Facility Liners
- ☑ 5-4.3.7 Signing
- ☐ Fencing
- ☐ Presettling/Pretreatment
- ☑ Underdrain (Where Permitted)
- ☑ Soil Preparation

TMDL/303(d) – Considerations[1]

Avoid	Preferred
☐	☐ Fecal Coliform
☑	☐ Phosphorus (w/ compost blanket)*
☐	☐ Nitrogen
☐	☐ Temperature
☐	☑ Dissolved Metals
☐	☑ Total Suspended Solids/Turbidity
☐	☐ Dissolved Oxygen
☐	☐ pH
☐	☐ Oil/Grease
☐	☐ PAHs
☐	☐ Pesticides

1. See Table 3-1 and Section 2-4.2 for additional guidance.

Maintenance Requirements

- ☐ Access Roads or Pullouts
- ☐ Vactor Truck Access
- ☑ Mowing
- ☐ Valve Access
- ☐ Specialized Equipment
- ☐ Specialized Training

Further Requirements: See Sections 5-3.7.1 and 5.5. Also, see Table 5-21.

*if a compost blanket is not used over the media filter drain then this BMP is approved for phosphorous control.

Introduction

General Description

The *media filter drain* (MFD), previously referred to as the *ecology embankment*, is a linear flow-through stormwater runoff treatment device that can be sited along highway side slopes (conventional design) and medians (dual media filter drains), borrow ditches, or other linear depressions. Cut-slope applications may also be considered. The PEO can use the MFD where available right of way is limited, sheet flow from the highway surface is feasible, and lateral gradients are generally less than 25% (4H:1V). The PEO can also use the MFD in an end-of-pipe application where surface runoff is collected and conveyed to a location where flows can be redispersed to the MFD. The MFD has a General Use Level Designation (GULD) for basic, enhanced, and phosphorus treatment (MFD without the 3-inch medium compost blanket). Updates/changes to the use-level designation and any design changes will be posted in the *Post Publication Updates* section of the HRM Resource Web Page.

MFD configurations are separated into seven typical installations. MFD Type 1 though Type 5 have the option of placing a 3-inch medium compost layer with grass over the MFD mix area. If the 3-inch compost layer with grass is used on the MFD mix area, the BMP does not qualify for phosphorous treatment. MFD Types 1 through 7 are shown in Figures 5-23 through 5-29. The different MFD types are briefly described below:

- MFD Type 1 – Sheet flow application with underdrain.
- MFD Type 2 – Sheet flow applications; flows are from both sides of the median.
- MFD Type 3 – Sheet flow application without underdrain; drains to slope.
- MFD Type 4* – End-of-pipe application, redispersed to MFD with underdrain.
- MFD Type 5* – End-of-pipe application, redispersed to MFD without underdrain.
- MFD Type 6* – End-of-pipe application that is downstream of a detention BMP, redispersed to MFD with underdrain. MFD Type 6 doesn't have the no-vegetation zone or grass strip because of the sediment storage in the upstream detention BMP. MFD Type 6 must have a 3-inch medium compost blanket with grass over MFD mix area. MFD Type 6 must have 8-inch-diameter compost socks, spaced at a minimum of 4-foot intervals, along the bottom of the MFD media mix.
- MFD Type 7* – Same as Type 6, except MFD doesn't have an underdrain; it drains to the adjacent side slope.

*See Section 5-4.3.5 for redispersal design guidelines using a slotted pipe or perforated pipe in a flow dispersal trench.

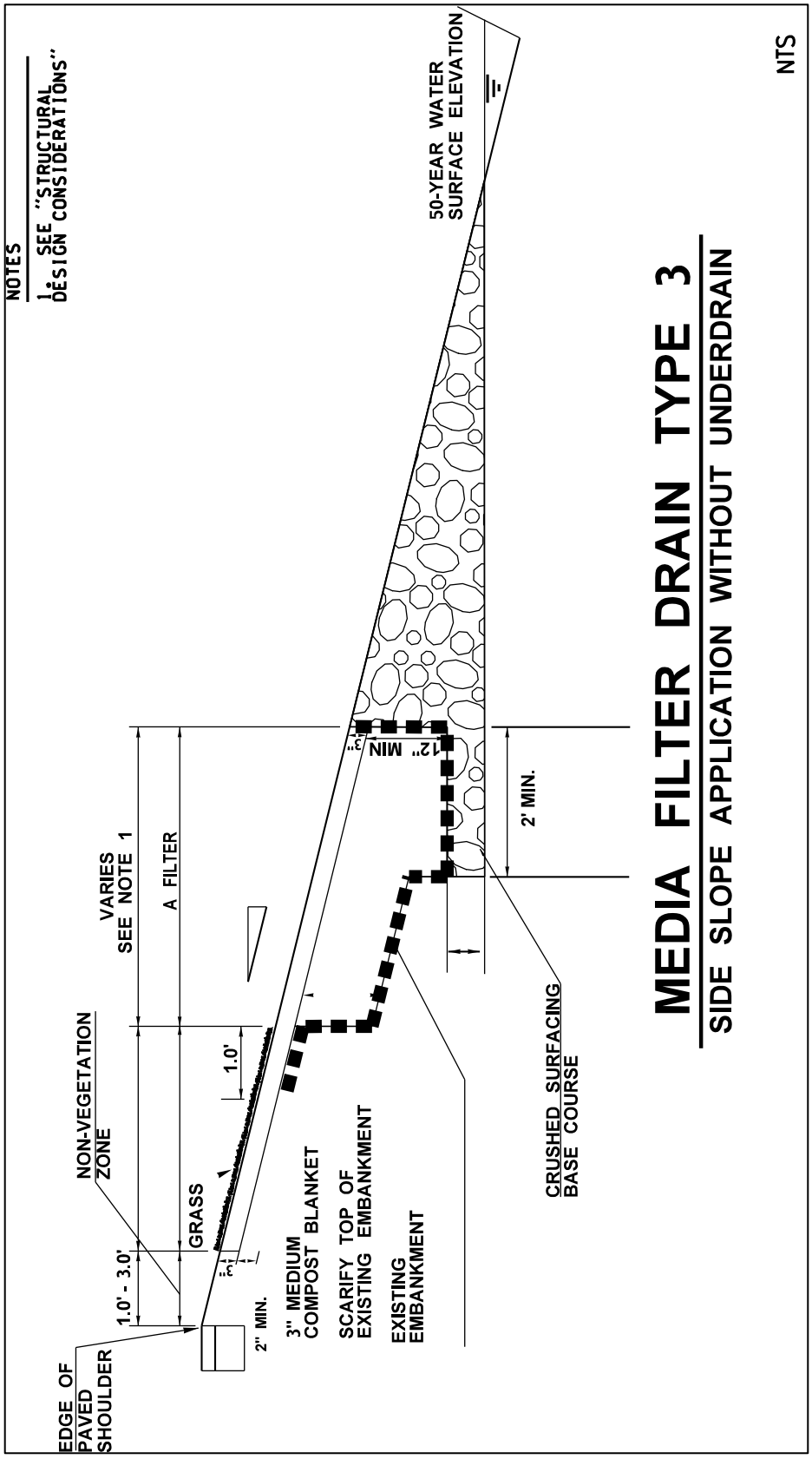


Figure 5-25 Media filter drain Type 3: Side slope application without underdrain.

Functional Description

The MFD removes suspended solids, phosphorus (MFD without 3-inch medium compost blanket), and metals from highway runoff through physical straining, ion exchange, carbonate precipitation, and biofiltration.

Stormwater runoff is conveyed to the MFD via sheet flow or is redispersed to a vegetation-free gravel zone (MFD Type 1 – Type 5) to ensure dispersion and provide some pollutant trapping. Next, a grass strip provides pretreatment, further enhancing filtration and extending the life of the system. The runoff is then filtered through a bed of porous, alkalinity-generating granular medium—the media filter drain mix. Treated water drains away from the MFD mix bed into a downstream conveyance system. Geotextile lines the underside of the MFD mix bed and the underdrain pipe and trench (if applicable).

The underdrain trench is an option for hydraulic conveyance of treated stormwater to a desired location, such as a downstream flow control facility, discharge point, or stormwater outfall. The trench's perforated underdrain pipe is a protective measure to ensure free flow through the MFD mix. It may be possible to omit the underdrain pipe if it can be demonstrated that the pipe is not necessary to maintain free flow through the MFD mix and underdrain trench.

It is critical to note that water should sheet flow across or be redispersed to the MFD. To ensure sediment accumulation does not restrict sheet flow, edge of pavement installations should include a 1-inch drop between the pavement surface and nonvegetation zone where there is no guardrail or include a 1-inch drop where there is guardrail. Note that MFD Types 4 through Type 7 include a 3-inch drop between the flow spreader and the MFD mix bed to ensure sheet flow continues over time.

Applications, Limitations, and LID Feasibility

Applications

- Provides basic, phosphorus (MFD without 3-inch medium compost blanket on MFD mix area), and enhanced water quality treatment.
- MFD Type 1 and Type 3 – Ideal along highway side slopes, when adjacent to wetlands, and in narrow right of way locations.
- Dual MFD for Highway Medians (MFD Type 2) – Prime locations for the MFD Type 2 are in highway medians, roadside drainage or borrow ditches, or other linear depressions. It is especially critical for water to sheet flow across the MFD Type 2. Channelized flows or ditch flows running down the middle of the MFD Type 2 (continuous off-site inflow) should be minimized.
- MFD Type 4 and Type 5 – Ideal where stormwater needs to be or already is captured and conveyed to a discharge location that can accommodate this BMP. These options provide maximum flexibility for placement where sheet flow off the edge of pavement is not feasible. Catch basins and pipes are used to convey stormwater to the MFD Type 4 and Type 5.

- MFD Type 6 and Type 7 – Ideal where stormwater needs to be collected and conveyed for both runoff treatment and flow control. The MFD is downstream of the detention BMP.

Limitations

- Ensure lateral MFD side slopes adjacent to the roadway pavement (MFD Type 1 – Type 3) are less than 4H:1V. As side slopes approach 3H:1V, without design modifications, sloughing may become a problem due to friction limitations between the separation geotextile and underlying soils.
- Where the MFD is built away from the roadway (MFD Type 4 – Type 7), ensure the lateral MFD side slope is less than 8H:1V.
- Ensure longitudinal MFD slopes are no steeper than 5%.
- Ensure the longest flow path from the contributing area delivering sheet flow to the MFD (Type 1 – Type 3) does not exceed 150 feet.
- Do not construct in wetlands and wetland buffers.
- Shallow groundwater – Determine seasonal high groundwater table levels at the project site to ensure the MFD mix bed and the underdrain (if applicable) will not become saturated by shallow groundwater. The hydraulic and runoff treatment performance of the MFD may be compromised due to backwater effects and lack of sufficient hydraulic gradient due to shallow groundwater or pooling at the discharge location.
- Unstable slopes – In areas where slope stability may be problematic, consult a geotechnical engineer.
- Narrow roadway shoulders – In areas where there is a narrow roadway shoulder (width less than 10 feet), consider placing the MFD farther down the embankment slope. This will reduce the amount of rutting in the MFD and decrease overall maintenance repairs. Also, consider using a MFD Type 5 or Type 6.
- Ensure the upstream conveyance system to a MFD Type 4 – Type 7 has adequate hydraulic head to push flows through the redispersal structure and not create upstream flooding problems.

LID Feasibility

The following criteria describe conditions that make MFDs infeasible to meet the LID requirement. Additional general LID feasibility criteria that apply to all other LID type BMPs can be found in Section 4-5.2, along with the site suitability criteria for infiltration design in Section 4-5.1. The project may still use the MFD to meet the runoff treatment requirement (Minimum Requirement 5). Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions, must be documented using the LID feasibility checklist, and should be included in the project's Hydraulic Report, along with any applicable written recommendations from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):

- Where the site cannot be reasonably designed to locate a MFD on lateral slopes less than 25% (MFD Type 1 – Type 3) or 12.5% (MFD Type 4 – Type 7).

Design Flow Elements

Flows to Be Treated

Design MFDs to treat the runoff treatment flow rate discussed in Section 3-2.5 under Minimum Requirement 5. Hydrologic methods are presented in Sections 4-3 and 4-4.

Structural Design Considerations

Geometry

Components

- **No-Vegetation Zone** – The no-vegetation zone (vegetation-free zone) is a shallow gravel zone located directly adjacent to the highway pavement. The no-vegetation zone is a crucial element in a properly functioning MFD or other BMPs that use sheet flow to convey runoff from the highway surface to the BMP. The no-vegetation zone functions as a level spreader to promote sheet flow and a deposition area for coarse sediments. Make sure the no-vegetation zone is between 1 foot and 3 feet wide. Depth will be a function of how the roadway section is built from subgrade to finish grade; the resultant cross section will typically be triangular to trapezoidal. Within these bounds, width varies depending on WSDOT maintenance spraying practices. Contact the area maintenance office for this information.
- **Grass Strip** – The width of the grass strip is dependent on the availability of space within the highway side slope and MFD type. The grass strip is required on MFD Type 1 – Type 5. The minimum grass strip width is 3 feet, but wider grass strips are recommended if the additional space is available. At a minimum, the existing embankment will be scarified 2 inches and covered with a 3-inch blanket of medium compost and seeded. Consider adding aggregate to the soil mix to help minimize rutting problems from errant vehicles. The soil mix should ensure grass growth for the design life of the MFD.
- **Media Filter Drain Mix Bed** – The MFD mix is a mixture of crushed rock (sized by screening), dolomite, gypsum, and perlite. The crushed rock provides the support matrix of the medium; the dolomite and gypsum add alkalinity and ion exchange capacity to promote the precipitation and exchange of heavy metals; and the perlite improves moisture retention to promote the formation of biomass within the MFD mix. The combination of physical filtering, precipitation, ion exchange, and biofiltration enhances the water treatment capacity of the mix. The MFD mix has an estimated initial filtration rate of 50 inches per hour and a long-term filtration rate of 28 inches per hour due to siltation. With an additional safety factor, the rate used to size the length of the MFD should be 10 inches per hour. Internal 8-inch-diameter medium compost socks are required along the bottom of the MFD Type 6 and Type 7 installations at even 4-foot spacings. Make sure there is a minimum of one row of compost socks for each MFD Type 6 or Type 7 installation.

- **3-Inch Medium Compost Blanket and Grass** – Place a 3-inch medium compost blanket with grass over the media filter drain bed area to reduce noxious weeds and unwanted vegetation. Do not use this compost blanket in phosphorous-sensitive areas or phosphorous total maximum daily load (TMDL) areas. If this option is used, the MFD will not be considered as a phosphorous treatment BMP. Do not use MFD Type 6 and Type 7 in phosphorous-sensitive areas since the 3-inch compost blanket is required.
- **Conveyance System Below Media Filter Drain Mix** – The gravel underdrain trench (MFD Type 1, Type 4, and Type 6) provides hydraulic conveyance when treated runoff needs to be conveyed to a desired location such as a downstream flow control facility, discharge point, or stormwater outfall. In Group C and D soils, an underdrain pipe helps ensure free flow of the treated runoff through the MFD mix bed. In some Group A and B soils, an underdrain pipe may not be necessary if most water percolates into subsoil from the underdrain trench. Evaluate the need for underdrain pipe in all cases. The PEO may eliminate the gravel underdrain trench if flows can be conveyed laterally to an adjacent ditch or onto a fill slope that is properly vegetated to protect against erosion (MFD Type 3 and Type 5). Keep the MFD mix free draining up to the 50-year storm event water surface elevation represented in the downstream ditch.

Length (perpendicular to the direction of flow)

- The length of the MFD (Type 1 – Type 3) is the same as the length of the contributing pavement.
- The length of the MFD (Type 4 – Type 7) depends on the sizing procedures. (See the Design Method section below.)

Cross Section

- The surface of the MFD (Type 1 – Type 3) should have a lateral slope less than 4H:1V (<25%). On steeper terrain, it may be possible to construct terraces to create a 4H:1V slope, or other engineering may be employed to ensure slope stability up to 3H:1V.
- The surface of the MFD (Type 4 – Type 7) should have a lateral slope less than 8H:1V (<12.5%).

Tributary Area

- For MFD (Type 1 – Type 3), the resultant slope from the contributing drainage area should be less than or equal to 9.4%, calculated using Equation 29[10] in Section 5-4.2.2.

Materials

The MFD mix consists of the amendments listed in Table 5-7. Mixing and transportation must occur in a manner that ensures the materials are thoroughly mixed prior to placement and that separation does not occur during transportation or construction operations.

[10] "Eastern Washington Steep Slope Research for Management of Highway Stormwater," WARD 77.1, Research Report, May 2011.

These materials should be used in accordance with the following *Standard Specifications*:

- Gravel Backfill for Drains – 9-03.12(4)
- Underdrain Pipe – 7-01.3(2)
- Construction Geotextile for Underground Drainage, Moderate survivability, drainage class A, nonwoven – 9-33.1
- Crushed Surfacing Base Course (CSBC) – 9-03.9(3)

If the MFD is configured to allow the treated flows to drain laterally into a ditch (see Figure 5-25, MFD Type 3 and Figure 5-27, MFD Type 5), the crushed surfacing base course below the MFD should conform to Standard Specification 9-03.9(3).

Design Method

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 1 – Type 3

The width of the MFD mix bed is determined by the amount of contributing pavement routed to the embankment. The surface area of the MFD mix bed needs to be sufficiently large to fully infiltrate and filter the runoff treatment design flow rate using the long-term filtration rate of the MFD mix. For design purposes, incorporate a 50% safety factor into the long-term MFD mix filtration rate to accommodate variations in slope, resulting in a design filtration rate of 10 inches per hour. The MFD mix bed should have a bottom width of at least 2 feet in contact with the conveyance system below the MFD mix.

The MFD mix bed should be a minimum of 12 inches deep, including the section on top of the underdrain trench.

For runoff treatment, base the sizing of the MFD mix bed on the requirement that the runoff treatment flow rate from the pavement area, $Q_{Highway}$, cannot exceed the long-term infiltration capacity of the MFD, $Q_{Infiltration}$:

$$Q_{Highway} \leq Q_{Infiltration} \quad \text{(E-17)}$$

For western Washington, $Q_{Highway}$ is the flow rate at or below which 91% of the runoff volume for the developed TDA will be treated, based on a 15-minute time step (see Section 4-3.1.1), and can be determined using the water quality data feature in MGSFlood. For eastern Washington, $Q_{Highway}$ is the peak flow rate predicted for the 6-month, short-duration storm under post-developed conditions for each TDA (see Appendix 4C), and can be determined by selecting the short-duration storm option in StormShed.

Base the long-term infiltration capacity of the MFD on the following equation:

$$\frac{LTIR \times L \times W}{C \times SF} = Q_{Infiltration} \quad \text{(E-18)}$$

where: *LTIR* = Long-term infiltration rate of the media filter drain mix (use 10 inches per hour for design) (in/hr)
L = Length of media filter drain (parallel to roadway) (ft)
W = Width of the media filter drain mix bed (ft)
C = Conversion factor of 43200 ((in/hr)/(ft/sec))
SF = Safety Factor (equal to 1.0, unless unusually heavy sediment loading is expected)

Assuming that the length of the MFD is the same as the length of the contributing pavement, solve for the width of the media filter drain:

$$W \geq \frac{Q_{Highway} \times C \times SF}{LTIR \times L} \quad \text{(E-19)}$$

Western Washington project applications of this design procedure have shown that, in almost every case, the calculated widths of the MFD Type 1 and Type 3 do not exceed 1.0 foot. Therefore, Table 5-6 was developed to simplify the design steps; use it to establish an appropriate width.

Table 5-6 Western Washington design widths for media filter drains (Type 1 and Type 3).

Pavement width that contributes runoff to the media filter drain	Minimum media filter drain width*
≤ 20 feet	2 feet
≥ 20 and ≤ 35 feet	3 feet
> 35 feet	4 feet

*Width does not include the required 1- to 3-foot gravel vegetation-free zone or the 3-foot grass strip width (see Figure 5-23).

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 4 and Type 5

The length (perpendicular to the direction of flow) and width (parallel to the direction of flow) of the MFD mix bed (Type 4 and Type 5) is determined by many factors. The design procedure is outlined below:

1. Determine the total tributary pervious and impervious area (ft^2) and flow rate (cfs) that will be sent to the MFD.
2. For MFD Type 4 and Type 5, divide the tributary area determined in Step 1 above by the "pavement area to MFD media area" ratio of 19.5. This determines the area of MFD needed, and applies to on-line and off-line Type 4 and Type 5 MFDs.

3. From Section 5-4.3.5, choose Option F (slotted flow dispersal pipe) or Option G (perforated pipe in a gravel-backfilled trench with notched grade board) as the redispersal/flow spreader structure type to be used upstream of the MFD. For on-line Type 4 and Type 5 MFDs, the number of flow spreaders and the flow spreader mounding analysis (Option F) is based on the full 100-year rate from the tributary area coming to the MFD. For off-line Type 4 and Type 5 MFDs, the number of flow spreaders and the flow spreader mounding analysis (Option F) is based on the water quality storm flow rate.
4. Determine the length (perpendicular to the direction of flow) and width (parallel to the direction of flow) of the MFD mix bed by the following:
   a. The flow spreader length shall be between 50 feet and 200 feet. The number of flow spreaders and their lengths are calculated based on the criteria in Step 3 above.
   b. The width of the MFD mix bed = (flow spreader length)/5 for flow spreader lengths of 50 feet to 100 feet.
   c. The width of the MFD mix bed = 20 feet for flow spreader lengths of 101 feet to 200 feet.
   d. Check to make sure the total area of MFD mix bed(s) calculated in (4) is greater than or equal to the area determined in (2) above.

Media Filter Drain Mix Bed Sizing Procedure for MFD Type 6 and Type 7

MFD Type 6 and Type 7 are designed as on-line BMPs only. The design procedure is outlined below:

1. From Section 5-4.3.5, choose Option F (slotted flow dispersal pipe) or Option G (perforated pipe in a gravel-backfilled trench with notched grade board) as the redispersal/flow spreader structure type to be used upstream of the MFD. The number of flow spreaders and the flow spreader mounding analysis (if using Option F) shall be based on the 100-year release rate from the detention BMP (MGSFlood, 15-minute time steps). Determine the length of each flow spreader.
2. Determine the MFD mix bed area (L x W) using the long-term infiltration capacity of the MFD based on Equation 18, with the following clarifications:

$$\frac{LTIR \times L \times W}{C \times SF} = Q_{2year} \quad \text{(E-20)}$$

where: *LTIR* = Long-term infiltration rate of the media filter drain mix (use 10 inches per hour for design) (in/hr)
L = Length of media filter drain (parallel to spreader) (ft)
W = Width of the media filter drain mix bed (ft) measured parallel to the flow
C = Conversion factor of 43200 ((in/hr)/(ft/sec))
SF = Safety Factor (equal to 2.0)
Q_{2year} = 2-year release rate (15-minute time steps) from the detention facility

3. The number of flow spreaders and length of each flow spreader was determined in Step 1. The length of the flow spreader(s) is equal to the length of the MFD. The width of the MFD follows the same ratios stated in Steps 4b and 4c of the MFD Type 4 and Type 5 design. Determine the total MFD mix bed length (L) and width (W). Check to make sure the calculated MFD mix bed area (L x W) is greater than or equal to the MFD mix bed area calculated in Step 2.

Underdrain Design

Underdrain pipe can provide a protective measure to ensure free flow through the MFD mix and is sized similar to storm drains. For MFD underdrain sizing, an additional step is required to determine the flow rate that can reach the underdrain pipe. This is done by comparing the contributing basin flow rate to the infiltration flow rate through the MFD mix and then using the smaller of the two to size the underdrain. The analysis described below considers the flow rate per foot of MFD, which allows the PEO the flexibility of incrementally increasing the underdrain diameter where long lengths of underdrain are required. When underdrain pipe connects to a storm drain system, place the invert of the underdrain pipe above the 25-year water surface elevation in the storm drain to prevent backflow into the underdrain system.

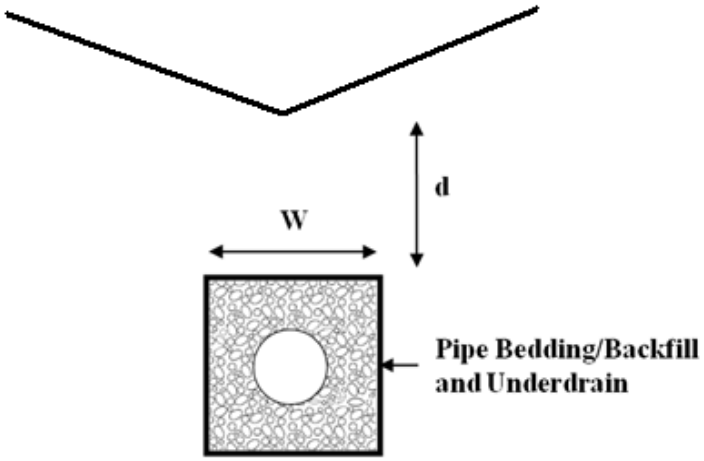


Figure 5-30 Media filter drain underdrain installation.

The following describes the procedure for sizing underdrains in a MFD Type 1, 2, 4, and 6.

1. Calculate the flow rate per foot from the contributing basin to the MFD. The design storm event used to determine the flow rate should be relevant to the purpose of the underdrain. For example, if the MFD Type 1 installation is in western Washington and the underdrain will be used to convey treated runoff to a detention BMP, size the underdrain for the 50-year storm event. (See the *Hydraulics Manual*, Figure 2-2.1, for conveyance flow rate determination.)

$$\frac{Q_{highway}}{ft} = \frac{Q_{highway}}{L_{MFD}} \quad \text{(E-21)}$$

where: $\frac{Q_{highway}}{ft}$ = contributing flow rate per foot (cfs/ft)
L_{MFD} = length of MFD contributing runoff to the underdrain (ft)

2. Calculate the MFD flow rate of runoff per foot given an infiltration rate of 10 in/hr through the MFD mix.

$$Q_{\frac{MFD}{ft}} = \frac{f \times W \times 1ft}{ft} \times \frac{1ft}{12in} \times \frac{1hr}{3600sec} \quad \text{(E-22)}$$

where: $Q_{\frac{MFD}{ft}}$ = flow rate of runoff through MFD mix layer (cfs/ft)
W = width of underdrain trench (ft) – see Standard Plan B-55.20-02; the minimum width is 2 ft
f = infiltration rate though the MFD mix (in/hr) = 10 in/hr

3. Size the underdrain pipe to convey the runoff that can reach the underdrain trench. This is taken to be the smaller of the contributing basin flow rate or the flow rate through the MFD mix layer.

$$Q_{\frac{UD}{ft}} = smaller \left\{ Q_{\frac{highway}{ft}} \; or \; Q_{\frac{MFD}{ft}} \right\} \quad \text{(E-23)}$$

where: $Q_{\frac{UD}{ft}}$ = underdrain design flow rate per foot (cfs/ft)

4. Determine the underdrain design flow rate using the length of the MFD and a factor of safety of 1.2.

$$Q_{UD} = 1.2 \times Q_{\frac{UD}{ft}} \times W \times L_{MFD} \quad \text{(E-24)}$$

where: Q_{UD} = estimated flow rate to the underdrain (cfs)
W = width of the underdrain trench (ft) – see Standard Plan B-55.20-02; the minimum width is 2 ft
L_{MFD} = length of MFD contributing runoff to the underdrain (ft)

5. Given the underdrain design flow rate, determine the underdrain diameter. Round pipe diameters to the nearest standard pipe size and have a minimum diameter of 6 inches. For diameters that exceed 12 inches, contact either the RHE or HQ Hydraulics Section.

$$D = 16\left(\frac{Q_{UD} \times n}{s^{0.5}}\right)^{\frac{3}{8}} \quad \text{(E-25)}$$

where: D = underdrain pipe diameter (inches)
n = Manning's coefficient
s = slope of pipe (ft/ft)

Table 5-7 Media filter drain mix.

Amendment	Quantity
Mineral aggregate shall meet all requirements for the WSDOT Standard Specifications 9-03.4 Aggregate for Bituminous Surface Treatment - Crushed screenings 3/8-inch to No.4 with the exception of: The fracture requirement shall be at least two fractured faces and will apply to material retained on the U.S. No. 4 sieve in accordance with FOP for AASHTO T 335.	3 cubic yards
Perlite: ▪ WSDOT Standard Specifications 9-14.4(9) Horticultural grade	1 cubic yard per 3 cubic yards of mineral aggregate
Dolomite: ▪ WSDOT Standard Specifications 9-14.4(5) Agricultural grade	40 pounds per cubic yard of perlite
Gypsum: ▪ WSDOT Standard Specifications 9-14.4(6) Agricultural grade	12 pounds per cubic yard of perlite

Site Design Elements

Landscaping (Planting Considerations) and Plant Establishment

Landscape the grass strip the same as the vegetated filter strips (see BMP RT.02) unless otherwise specified in the special provisions for the project's construction documents.

Construction Criteria

Keep effective erosion and sediment control measures in place until grass strip is established. Do not allow vehicles or traffic on the MFD, to minimize rutting and maintenance repairs.

Operations and Maintenance

Maintenance will consist of routine roadside management. While herbicides should not be applied directly over the MFD, it may be necessary to periodically control noxious weeds with herbicides in areas around the MFD as part of WSDOT's roadside management program. The use of pesticides may be prohibited if the MFD is in a critical aquifer recharge area for drinking water supplies. Check with the local area water purveyor or local health department. Areas of the MFD that show signs of physical damage will be replaced by local maintenance staff in consultation with the RHE.

Maintenance Access Roads (Access Requirements)

Refer to Section 5-3.7.1 for maintenance access road requirements and other general maintenance considerations.

Signage

Refer to Section 5-5.3 for signing requirements. Additionally, if the MFD is in a critical aquifer recharge area for drinking water supplies, provide signage prohibiting the use of pesticides.

Appendix C – Qualifications

All determinations and supporting documentation, including this ***Final Mitigation Plan*** prepared for the ***Cascade Business Park*** project were prepared by, or under the direction of, Matt DeCaro of SVC. In addition, mitigation planning was provided by Ben Wright, and report preparation was completed by Laura Livingston and Kyla Caddey.

Matt DeCaro

Associate Principal
Professional Experience: 12 years

Matt DeCaro is an Associate Principal and Senior Scientist with a diverse background in environmental planning, wetland science, stream ecology, water quality, site remediation, NEPA compliance, and project management. He manages a wide range of industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use projects from their planning stages through entitlement and construction. His local expertise, diverse professional background, and positive relationships with regulatory personnel are integral components of his successful project outcomes.

Matt earned a Bachelor of Science degree with a focus in Environmental Science from the Evergreen State College in Olympia, Washington, with additional graduate-level coursework and research in aquatic restoration and salmonid ecology. Matt has received 40-hour wetland delineation training (*Western Mountains, Valleys, & Coast and Arid West Regional Supplements*) and regularly performs wetland, stream, and shoreline delineations. Matt has been formally trained in the use of the *2014 Washington State Wetland Rating System* and *Determination of Ordinary High Water Mark* by WSDOE, and he is a Pierce County Qualified Wetland Specialist and Wildlife Biologist. He has attended USFWS survey workshops for multiple threatened and endangered species, and he is a Senior Author of WSDOT Biological Assessments. Matt holds 40-hour HAZWOPER training and has managed Phase I Environmental Site Assessments, subsurface investigations, and contaminant remediation projects throughout the Pacific Northwest. His diverse experience also includes NEPA compliance for federal permitting projects; noxious weed abatement; army ant research in the Costa Rican tropical rainforest; spotted owl surveys on federal and private lands; and salmonid spawning and migration surveys.

Ben Wright

Environmental Scientist
Professional Experience: 18 years

Ben Wright is an Environmental Scientist with a varied background in lake ecology, stream ecology, fisheries biology, water quality and climate science. Ben has 13 years of experience at the federal level providing technical assistance for both the development of infrastructure projects and management of aquatic resources. He has experience developing biological assessments, water quality monitoring plans, and fisheries management plans. Ben has an additional 10 years of experience working on long-term ecological monitoring programs related to lakes, streams, water quality and climate.

Ben earned a Bachelor of Science degree in Genetics and Cell Biology with an emphasis in aquatic ecology from Washington State University and has a graduate certificate in Fisheries Management from Oregon State University. Ben's expertise includes endangered species monitoring, assessments

and permitting, and NEPA documentation across disciplines gained during his work on federal highway projects. Ben also has experience in fish population assessments, utilizing genetic analysis, spawning escapement and movement studies. Ben has 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, How to Conduct a Forage Fish Survey and Puget Sound Costal Processes, Shoreline Modifications and Beach Restoration.

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.

Attachment K – Water Quality Monitoring Plan

WATER QUALITY MONITORING PLAN

CASCADE BUSINESS PARK (NWS-2020-571)

APRIL 2021

REVISED MAY 2021

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

WATER QUALITY MONITORING PLAN

CASCADE BUSINESS PARK (NWS-2020-571)

APRIL 26, 2021

REVISED MAY 27, 2021

PROJECT LOCATION
6600 172ND STREET NORTHEAST
ARLINGTON, WASHINGTON 98223

15223 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

16015 51ST AVENUE NORTHEAST
MARYSVILLE, WASHINGTON 98271

5414 152ND STREET EAST
MARYSVILLE, WASHINGTON 98271

PREPARED FOR

NORTHPOINT HOLDINGS, LLC
4825 NORTHWEST 41ST STREET, SUITE 500
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PREPARED BY

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Environmental Assessment
Planning + Land Use Solutions

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting NorthPoint Holdings LLC (Applicant) to provide a Water Quality Monitoring Plan (WQMP) for the Cascade Business Park project to ensure compliance with Washington state water quality monitoring standards under Washington Administrative Code (WAC) 173-201A-400, for planned work in or over surface waters of the state. The Cascade Business Park project is located on a 411.19-acre site located in the Cities of Arlington and Marysville, Washington. This WQMP includes a monitoring schedule that identifies the appropriate parameters to be monitored; sampling locations, frequency, and procedures; and reporting requirements. This WQMP is applicable to Edgecomb Creek, one fish-bearing ditch (Tributary X), and roadside or agricultural ditches (Ditch U and the 51st Avenue East Ditch) that are considered waters of the state. Tributary X is connected to Edgecomb Creek, and the 51st Avenue East Ditch and Ditch U are part of a separate drainage system on and adjacent to the subject property. The 51st Avenue East Ditch and Ditch U are seasonally flowing ditches; water quality monitoring of these ditches will be implemented in the event that there is surface water in these ditches during the planned work in and over the ditches. Visual monitoring of the ditches will continue throughout the proposed work to determine whether surface water is present in the ditches.

1.1 Objectives

This WQMP:

- Identifies state water quality standards to be used for work within and over waters of the state;
- Provides a summary of Best Management Practices (BMPs) to minimize the impact of in-water and over-water work;
- Provides a water quality monitoring and sampling plan to ensure compliance during in-water and over-water work; and
- Outlines contingency measures that will be utilized if water quality measures are not being met.

This WQMP is intended to be consistent with the project's Temporary Erosion and Sediment and Control (TESC) and Stormwater Pollution Prevention Plan (SWPPP); these documents are provided in their entirety under separate cover, though portions of the TESC Plan are included in Appendix C of this WQMP. As stated in Section 2.1.12 (Manage the Project) and Section 6.1.3 (Updating the SWPPP) of the SWPPP, the SWPPP may be modified routinely to reflect changing site conditions; if needed to minimize pollutant discharge; or due to a change in the design, construction, operation, or maintenance at the site. Similarly, the elements of this WQMP may also be revised if necessary due to changing site conditions. Any significant changes to monitoring must be approved by the Washington State Department of Ecology (WSDOE) prior to making the changes.

1.2 Project Description

The Applicant proposes to restore Edgecomb Creek and develop a regional industrial park to include multiple double-loaded and single-loaded buildings and associated infrastructure such as

parking, access roads, frontage improvements, utilities, and stormwater management facilities utilizing enhanced water quality treatment for runoff from all impervious surfaces. Overall, the project requires unavoidable direct impacts to more than 3 acres of wetlands, 10,165 linear feet of Edgecomb Creek, and 1,167 linear feet of Tributary X. Onsite agricultural and roadside ditches will also be filled, including Ditch U (1,223 linear feet of fill) and the 51st Avenue East Ditch (30,769 square feet). The 51st Avenue East Ditch is being treated as a wetland for local and state permitting purposes. The project proposes to realign Edgecomb Creek and create wetlands within a restored riparian corridor (up to 315 feet wide) on the eastern portion of the project area. Tributary X will also be re-aligned, lengthened, and reconnected to the re-aligned Edgecomb Creek. To facilitate public access to Edgecomb Creek, a public pedestrian trail will be developed through the riparian mitigation corridor. To improve fish access to and upstream of the restored riparian corridor, the Applicant will also coordinate with BNSF to replace two partial fish barrier culverts with box culverts or bridges designed to improve fish access and convey Edgecomb Creek beneath the railroad. A 21-foot 10-inch box culvert will also be added beneath 152nd Street Northeast to convey the re-aligned stream channel. Refer to SVC's *Final Mitigation Plan* (2021) for the Cascade Business Park for further details. The proposed culvert replacements under the BNSF railroad will be completed separately from the onsite ditch and stream fill and realignment; these culvert replacements will be addressed under a separate Water Quality Monitoring Plan if needed.

1.3 In-Water/Over-Water Activity Description

The scope of work for this WQMP consists of in-water and over-water work activities that may affect water quality within waters of the state. Edgecomb Creek, Tributary X, Ditch U, and the 51st Avenue East Ditch are all likely considered waters of the state. The proposed impacts to these aquatic areas consist of filling and realigning the fish-bearing Edgecomb Creek, filling and realigning the fish-bearing Tributary X, filling the untyped non-fish Ditch U, and filling the untyped non-fish 51st Avenue East Ditch for the proposed industrial park development. Ditch U is a lateral ditch connected to the 51st Avenue East Ditch. Prior to the proposed fill, temporary construction impacts include installation of temporary culverts and construction entrances as described below, clearing of existing vegetation along Edgecomb Creek and removal of existing farm culverts from Edgecomb Creek.

1.3.1 51st Avenue East Ditch and Ditch U Fill

Fill work within the ditches is expected to occur over the course of three to four weeks during Summer 2021 when the ditches are dry, though measures are provided in the event that construction actions are delayed and/or surface water is present. If surface water is present at the time of ditch fill, then temporary diversion dams/bypass pipes will be installed to dewater the construction area. The following activities will occur over and within the ditch channels using standard earthmoving and pipe installing equipment, such a track hoes and excavators.

The following activities will occur within 51st Avenue East Ditch and Ditch U channels. Water quality monitoring will be implemented during fill placement in the ditches if surface flow is present:

Work planned to occur at start of project construction:

- Installation of temporary culvert construction crossings across the 51st Avenue East Ditch for at least two existing residential crossing locations;

Work planned to occur during Summer 2021 when ditches are anticipated to be dry:

- Removal of vegetation and organic soils as needed from the 51st Avenue East Ditch with fill placement as needed;
- Installation of stormwater piping along the length of the 51st Avenue East Ditch;
- Removal of temporary culverts from 51st Avenue East Ditch; and
- Fill placement in onsite Ditch U and 51st Avenue East Ditch.

The proposed project may result in turbidity impacts to the 51st Avenue East Ditch. Potential turbidity triggers include the placement of fill within the ditches. No concrete or grout work is anticipated in the ditches. All proposed piping to be placed within the 51st Avenue East Ditch will be plastic.

The proposed fill within the ditches is planned to occur during the dry summer months to avoid water quality impacts. Water quality monitoring will be implemented during in-water work activities with the potential to deliver sediment or other contaminants, in the event that there is surface water flow in these ditches in the work area during the planned work in and over the ditches described above. Additional BMPs and TESC measures will be implemented throughout the project construction to minimize water quality impacts to 51st Avenue East Ditch downgradient of the project area (Appendix C; also refer to project TESC Plan and SWPPP under separate cover). The ditch will be filled from upgradient to downgradient with stormwater culverts placed concurrent with ditch fill. BMPs include installation of silt fencing along the ditch and a stormwater interceptor trench along the silt fence leading to a sediment trap pond.

Dewatering is not anticipated to be needed during the dry construction season (anticipated to be the end of June through the end of August). If dewatering is necessary due to surface water flow presence within the ditches with potential for delivery of contaminants through a surface water connection downgradient, then temporary coffer dams (sandbags or pre-cast concrete jersey barriers with plastic liner/cover) and bypass pumps and/or bypass culverts will be installed to dewater the in-water construction areas. Please see the TESC and SWPP under separate cover for additional details.

1.3.2 Edgecomb Creek and Tributary X Realignment

The Edgecomb Creek and Tributary X realignment area begins in the reach of Edgecomb Creek that enters the subject property in the northeast corner of Parcel 31052700100100 and ends in the reach of Edgecomb Creek that flows through a large wetland (Wetland AH) on the eastern portion of Parcel 31053400200700 at the southern, downstream portion of the site. The proposed in-water work (i.e. Edgecomb Creek and Tributary X realignment and fill of the remnant channels) will occur during the regulatory in-water work window of June 1 through October 31 to reduce potential impacts to protected fish species. Additional fish protection details are provided in SVC's *Fish Exclusion and Protection Plan,* which has been prepared under separate cover. With the exception of the upland plugs left in place to disconnect the realignment channels and created wetlands from the existing Tributary X and Edgecomb Creek channels, all excavation and grading work within the proposed Edgecomb Creek riparian corridor, including excavation of wetland creation areas, will be completed prior to dewatering and realignment actions. The excavation and grading work associated with the new stream channel and riparian corridor is anticipated to be completed during

the early summer (June of 2021). Native willow stakes and a seed mix will be installed/spread across the riparian corridor to stabilize the site for erosion purposes. The dewatering and rewatering of the existing and restored channels is anticipated to occur during September of 2021.

Construction of Edgecomb Creek and Tributary X Realignment Channels

Prior to dewatering, the proposed Edgecomb Creek and Tributary X realignment channels will be excavated during the late Spring and early Summer (May thru July) of 2021. The new Tributary X realignment channel will be constructed concurrently with the new Edgecomb Creek channel. Physical separation will be maintained between the new realignment channels and the existing channels through upland plugs, and no water quality monitoring is anticipated to be necessary during the construction of the new channels.

Proposed Tributary X channel:

- Excavate new channel. Channel will be disconnected from Tributary X on upgradient end and disconnected from Edgecomb Creek on downgradient end. The new ditch channel will remain disconnected from the existing Edgecomb Creek channel by existing upland plugs.
- Stake willows along ditch channel. Hydroseed proposed planting areas along ditch extent.

Proposed Edgecomb Creek channel:

- Excavate and grade new channel, wetlands, and riparian corridor. Upgradient and downgradient new channel ends will be left disconnected from existing Edgecomb Creek channel by existing upland plugs.
- Install culvert beneath 152nd Street Northeast.
- Place streambed substrates and large woody debris in new channel. Large woody debris will also be placed adjacent and over the new channel in floodplain areas. Peat will be spread throughout wetland creation areas.
- Place large woody debris adjacent and/or over the existing stream channel sections to be preserved (northern meandering stream section adjacent to BNSF railroad and Wetland AH).
- Stake willows along Edgecomb Creek mainstem and side channels as conditions allow. Hydroseed proposed planting areas throughout the riparian corridor.

Groundwater Management

Due to the depth of the proposed channel excavation, groundwater may be encountered during channel excavation. Groundwater monitoring has provided approximate summer and winter groundwater elevations across the site; maps of these elevations are provided in Appendix E (Terra, 2021). Groundwater management is proposed to minimize the amount of groundwater that may be encountered during excavation and avoid direct discharge of any encountered groundwater to Edgecomb Creek.

If groundwater is encountered, two minimization actions may be implemented. First, the amount of excavation can initially be limited to shallower and drier depths, allowing the water table to drop as the shallow excavation is completed along a significant length of the channel. The deeper excavation to final grade would then be completed after the water table drops. Second, groundwater

monitoring wells/test pits may be excavated along the length of the proposed channel. The groundwater monitoring wells/test pits would be used to target initial excavation efforts towards drier areas along the proposed channel length, allowing the water table to drop in areas with higher water levels. Both of these management actions are suitable to minimize the amount of groundwater that may be encountered during excavation, and either action may be implemented at the discretion of the project geo-technical engineer.

Depending on site conditions and project timing, groundwater encounters may be unavoidable. If groundwater is encountered above the planned excavation grade, then the water will be pumped out of wells adjacent to the channel grading site. From the wells, water will be directed into level spreaders and dispersed into the adjacent fields through the sediment settling pond and baker tank sediment removal system depicted in the TESC plan. This dispersion BMP is intended to avoid the direct discharge of construction water into Edgecomb Creek.

Dewatering and Realignment of Edgecomb Creek and Tributary X

The Edgecomb Creek and Tributary X dewatering and realignment will occur in sections along the existing Edgecomb Creek channel, progressively occurring from the downstream end of the impact area to the upstream end of the impact area. Water quality monitoring will be conducted during the entire dewatering and realignment of Edgecomb Creek and Tributary X. The proposed dewatering and realignment is anticipated to require up to 2 weeks dependent on length of the wetted channel at the time.

During the Summer of 2020, Edgecomb Creek was observed to be dry downgradient of beaver dams on parcel 31052700100100, and Tributary X was observed to be dry upgradient of the project site. No water is anticipated upgradient of the impact area in Tributary X during the realignment and rewatering. Therefore, no diversion point will be needed upgradient of the impact area on Tributary X, and dewatering of the lower portion of Tributary X is anticipated to occur as the connected section of Edgecomb Creek is dewatered.

Dewatering and realignment will start at the downstream end of the watered channel extent. Based on observations during the Summer of 2020, the middle channel sections of Edgecomb Creek (downgradient of the beaver dams on parcel 31052700100100) may be dry during dewatering and realignment. If surface water is present throughout the entire proposed impact length of Edgecomb Creek, a contingency plan will be implemented to install additional diversion points along the stream. Please see the attached Water Quality Monitoring Plan Map for approximate locations of diversion points.

Realignment of the existing Edgecomb Creek and Tributary X channels will follow this sequence:

- Isolate the downgradient connection between the existing Edgecomb Creek channel and the new Edgecomb Creek channel by blocking the existing channel with temporary diversion dams discharging to the existing channel below the restoration area;
- Excavate the existing upland plug separating the downgradient end of the new Edgecomb Creek channel from the existing channel and complete additional grading work for adjacent wetland and riparian corridor creation in this area;
- Realign the lower sections of Edgecomb Creek (see description below for detailed description of realignment);

- Isolate the upgradient connection between the existing Edgecomb Creek and the restored channel by blocking with temporary diversion dams;
- Excavate the existing upland plug separating the upgradient end of the new Edgecomb Creek from the existing channel and complete additional grading work for adjacent wetland and riparian corridor creation in this area;
- Complete excavation of new Tributary X channel by removing existing upland plug separating the new channel from the existing Tributary X channel and the existing Edgecomb Creek channel; and
- Fill existing Edgecomb Creek and Tributary X channels to include clay plugs in the entrances to the old channels. Fill may occur as channel sections are dewatered and fish recovery is complete.

Dewatering and rewatering of each stream section will generally follow this sequence:

- Isolate the reach using block nets above and below identified diversion/dewatering areas.
- Perform initial fish recovery;
- Isolate the stream section to be realigned by blocking the upstream ends of the section with a temporary diversion dam;
- Install a flexible diversion pipe and/or pump system to divert upstream flow and water in the isolated stream section from the existing Edgecomb Creek channel into the new stream channel;
- Complete fish recovery as water drains from the reach.
- As needed in the beaver dam area to aid in fish recovery install a secondary diversion pipe and pump system to divert water from the isolated stream section to the stream section upgradient of the temporary diversion dam to allow for the diversion of upstream flow and isolated stream water to the new stream channel through the same diversion pipe. This measure is to lower water levels to a wadable level in this area only;
- Fill existing Edgecomb Creek and Tributary X channels.

Native planting of the Edgecomb Creek riparian corridor and upland areas surrounding Tributary X will be completed following the dewatering and realignment of Edgecomb Creek and Tributary X. Planting is anticipated to be completed during the Fall (October) of 2021.

1.3.3 BNSF Culvert Replacements

To improve fish access to and upstream of the restored riparian corridor, the Applicant will also coordinate with BNSF to replace two partial fish barrier culverts with box culverts or bridges designed to improve fish access and improve conveyance of Edgecomb Creek beneath the railroad. Culvert replacement will generally follow this sequence:

- Excavate railroad bed;
- Install temporary diversion dams and bypass pipe to divert Edgecomb Creek flow around work area;
- Install culvert or bridge span;
- Perform channel re-grading as necessary;
- Remove temporary diversion dams and bypass pipe.

Due to the diversion of Edgecomb Creek flow around the work area and small project area footprint, impacts to water quality during the culvert replacement are being avoided and anticipated to be negligible, therefore no water quality monitoring is proposed at this time. However, as final site design for the BNSF crossings has not been completed at this time, if the final design changes and it is determined water quality monitoring is required, standards and BMPs for Edgecomb Creek relocation will be followed per Chapters 2 and 3 below.

1.4 Water Quality Standards for Surface Waters

This project is located in Water Resource Inventory Area (WRIA) 7 (Snohomish). In-water and over-water work has the potential to impact water quality within Edgecomb Creek and the 51st Avenue East Ditch. Tributary X drains to Edgecomb Creek, and Ditch U drains to the 51st Avenue East Ditch. WDFW deregulated the 51st Avenue East 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 in the 51st Avenue East Ditch downgradient of the project area. 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 confirmed the existence of this fish passage screen barrier; the fish screen barrier is located south of the subject property near Timberbrook Drive, near the mapped confluence of Edgecomb Creek and Olaf Strad Creek that forms the Middle Fork of Quilceda Creek. The 51st Avenue East Ditch is considered to be a Category III wetland by WSDOE as it was potentially excavated from a wetland in the early 1900s. There are currently no adjacent wetlands to the ditch. The proposed in-water work will occur during the regulatory fish in-water work window of June 1 through October 31 to minimize impacts to fish species.

WAC 173-201A-602 Table 602 lists use designations for specific fresh waters across the state. The fresh water with a designated use nearest to the Edgecomb Creek and the 51st Avenue East Ditch is the mouth of the Snohomish River, which is designated for salmonid spawning and rearing habitat. Per WAC 173-201A-602(1) fresh waters that are not assigned designated uses by Table 602 have their designated uses assigned in accordance with WAC 173-201A-600 and 173-201A-260(3), which generally describe the protection of waters for salmonid spawning, rearing, and migration, and the application of downstream water body criteria to upstream actions. The project will therefore comply with water quality monitoring standards established for salmonid spawning, rearing, and migration for potential impacts along the 51st Avenue East Ditch and Edgecomb Creek. It should be noted that background water quality in the 51st Avenue East Ditch has been documented to be out of compliance with pH standards for its designated use. SVC has sampled water quality in the ditch and repeatedly documented pH levels below 6.5, potentially related to non-point source pollution from adjacent agricultural practices. Similarly, Edgecomb Creek below the off-channel habitat on the Copart Property has been shown to have dissolved oxygen levels below 5.0 mg/L from late spring through the fall rains when wetted, as such salmonid presence during onsite in-water work in the stream downgradient of this location is unlikely despite designated use.

Turbidity standards per WAC 173-201A-200(1)(e):

- Turbidity shall not exceed 5 nephelometric turbidity units (NTUs) over the background turbidity when the background turbidity is 50 NTUs or less.
- Turbidity shall not exceed a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.
- The points of compliance for turbidity are illustrated in Appendix B and correspond to 100 feet downgradient of in-water or over-water activity, or in the case of groundwater discharge the infiltration site.

Edgecomb Creek and Tributary X pH standards per WAC 173-201A-200(1)(e):

- pH shall be within the range of 6.5 to 8.5 units.
- Construction activities shall not cause a pH variation within the above range greater than 0.5 pH units.
- The points of compliance correspond to immediately downgradient of the impact area (i.e. as close as possible to point of entry).

In addition to the numerical standards for turbidity and pH described above, the project will also comply with narrative water quality standards, which include the following:

- No visible petroleum sheen on water observed at the construction site.
- No distressed or dying fish observed at the construction site or immediately downstream that can be attributed to activities at the construction site.
- The points of compliance for oil and grease are all aquatic areas in the entire project area.

Points of compliance assume that flow will be under 10 cubic feet per second (cfs) at the time of construction in Edgecomb Creek and Tributary X.

Chapter 2. Best Management Practices

This chapter describes the best management practices (BMPs) that will be implemented during general site construction and the realignment of Edgecomb Creek and Tributary X to minimize impacts on water quality. BMPs will be fully described in the project TESC Plan and SWPPP.

2.1 General Protection Measures

The proposed project has been designed to minimize adverse impacts to the aquatic environment. The following BMPs will be implemented to avoid or minimize general site construction impacts on water quality in realigned (Edgecomb Creek and Tributary X) or preserved (51st Avenue East Ditch downgradient of site) waters of the state:

- Staging areas and material stockpiles will be located a minimum of 50 feet from realigned or preserved waters of the state to the extent practicable.
- Machinery and equipment used during construction shall be serviced, fueled, maintained, and parked on uplands a minimum of 50 feet, and where practical, 100 feet, from realigned or preserved waters of the state to prevent contamination to any surface water. Bypass and sump pumps will have to be located closer than 50 feet from waterbodies due to their operational constraints involving head pressure, intake length, and functionality. These pumps will all have dual containment tanks, automatic fluid pressure failure shut-offs, and be placed within separate containment pads. The sump pump will be moved outside the work area for refueling if necessary.
- No petroleum products, fresh concrete, lime, chemicals, or other toxic or deleterious materials shall be allowed to enter realigned or preserved waters of the state.
- Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working area shall not be discharged into realigned or preserved waters of the state. A separate, contained area, will be established for washing down vehicles and equipment that does not have any possibility of draining to realigned or preserved waters of the state.
- All construction debris, concrete waste material, excess sediment, and other solid waste shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.
- Appropriate BMPs shall be implemented to minimize track-out during construction.
- Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
- A written spill prevention, control, and countermeasures (SPCC) plan will be prepared for activities that include the use of heavy equipment. The SPCC describes measures to prevent or reduce impacts due to accidental leaks or spills, as well as all hazardous materials that will be used, their proper storage and handling, and the methods that will be used to monitor their use.
- The site's Construction Stormwater General Permit conditions, TESC Plan, and SWPPP (all prepared under separate cover) will be implemented for erosion and sediment control and for protection of water quality.

2.2 Overwater and In-water Specific Protection Measures

2.2.1 51st Avenue East Ditch and Ditch U Fill

The following BMPs will be implemented to avoid or minimize water quality impacts during the filling of 51st Avenue East Ditch and Ditch U.

- All equipment that will operate over or within waters of the state shall be free of external petroleum-based products. Accumulation of soils or debris shall be removed from the drive mechanisms and the undercarriage of equipment prior to use. Equipment shall be inspected daily for leaks, accumulation of grease, etc. Any identified problems shall be fixed before operating over or within waters of the state.
- An emergency spill kit will be available on-site during construction whenever work is being performed in or near the water. It will be stored in a location that facilitates its immediate deployment if needed.
- BMPs including, but not limited to, the following will be used to ensure no deleterious work materials or debris enter the water:
    - If necessary, in-water work conducted within the existing ditch channels will occur in sections isolated from upgradient flow by installation of temporary dams and bypass as depicted in Appendix C, as needed. Overwater work will be minimized.
    - In the event flow is present at the time of fill, ditch fill will proceed from upgradient to downgradient to minimize the potential for delivery of sediments to regulated water bodies.
    - Check dams will be placed within the ditch as needed to encourage the settling of suspended sediments before water exits this section of ditch.
    - Any materials dropped into the water that are not part of the work activities will be removed immediately by hand by the contractor as feasible.

2.2.2 Edgecomb Creek and Tributary X Realignment

The following BMPs will be implemented to avoid or minimize water quality impacts during the realignment of Edgecomb Creek and Tributary X.

- All equipment that will operate over or within waters of the state shall be free of external petroleum-based products. Accumulation of soils or debris shall be removed from the drive mechanisms and the undercarriage of equipment prior to use. Equipment shall be inspected daily for leaks, accumulation of grease, etc. Any identified problems shall be fixed before operating over or within waters of the state.
- An emergency spill kit will be available on-site during construction whenever work is being performed in or near the water. It will be stored in a location that facilitates its immediate deployment if needed.
- BMPs including, but not limited to, the following will be used to ensure no deleterious work materials or debris enter the water:
    - In-water work conducted within the existing stream and ditch channels will occur in sections isolated from upgradient flow by installation of temporary dams. Overwater work will be minimized.

- Silt fence and/or straw wattles will be installed along the newly constructed stream and ditch channels to minimize materials, sediment, and turbid water from entering the new stream and ditch.
- Coir log check dams will be placed within the newly constructed stream channel to encourage the settling of suspended sediments before water exits this section of stream channel as needed.
- Any materials dropped into the water that are not part of the work activities will be removed immediately by hand by the contractor as feasible.

Streamflow realignment will occur through the installation of temporary dams to isolate channel sections and a diversion pipe to convey flows to the new stream channel. All temporary diversion structures and dewatering activities will follow BMPs to avoid or minimize water quality impacts:

- The temporary dams to divert water around the work areas shall be in place prior to initiation of other work in the wetted perimeter of these areas.
- The temporary diversions shall be of sufficient size, constructed of non-erosive materials, and installed to divert the entire flow through the bypass or around the isolated work area for the duration of the project.
- The diversion system shall be designed and operated so as not to cause erosion in the restoration channel or on the bank of any waterbody in which the work is being conducted.
- Prior to relocating water flow to the work area, all bank protection measures shall be in place.
- Re-introduction of water into the isolated work area shall be done gradually, and at a rate not higher than the normal flow, in order to minimize the mobilization of sediments and fines.
- Dewatering of the existing channel and activating the new channel will be done in progressive stages to increase capture efficiency during fish removal and relocation efforts (described under separate *Fish Protection and Exclusion Plan*) and limit downgradient turbidity.
- Upon completion of the project, all material used for the temporary diversions shall be removed from the site.
- Turbid restoration site water (including turbid water generated from cleaning and maintenance activities) shall not be discharged directly into waters of the state if it is beyond the prescribed turbidity threshold described in section 1.4. This turbid water may be diverted to an upland area, such as the designed settling pond to allow the suspended sediments to settle out. The discharge from the upland areas shall meet water quality criteria at the point of discharge into surface waters and/or wetlands.
- Dewatering water that is not turbid may be discharged directly to surface waters and/or wetlands provided that: a) wastewater containing harmful material has not been in contact with the water to be discharged, and b) the water will meet all of the water quality standards at the point of discharge.
- Check dams will be placed according to the SWPP and TESC plan, within the newly constructed stream restoration channel as needed, to encourage settling of suspended sediments that are a byproduct of stream construction procedures or that are roiled during streamflow relocation.

Chapter 3. Water Quality Monitoring Plan

3.1 Monitoring Contacts

Qualified scientists or engineers from Terra Associates will be responsible for conducting or assigning the Section 401 Water Quality Certification water quality monitoring and for providing WSDOE with the necessary notifications and results of the water quality monitoring. Terra Associates may be contacted at (425) 821-7777 and will be acting as Certified Erosion and Sediment Control Lead during project construction.

3.2 Monitoring Schedule

The following table outlines the onsite monitoring parameters and schedule for all in-water work activities. Specific monitoring locations are identified in Appendix B.

Table 1. Monitoring Schedule for 51st Avenue East Ditch and Ditch U Work.

In-water Activity	Waterbody	Monitoring Point Locations	Frequency	Parameters	WQ Standard
All in-water work	51st Avenue East Ditch and Ditch U	Background point (upgradient of impact within 51st Avenue East Ditch); early warning monitoring point (50 feet downgradient of activity within 51st Avenue East Ditch); and compliance point (100 feet downgradient of activity within 51st Avenue East Ditch)	Twice daily (1 hour after work activities begin and 1 hour before work activities cease)[1]	Turbidity[1]	Within 5 NTUs of background[2]
All in-water work	51st Avenue East Ditch and Ditch U	Throughout entire project area	Continuously	Oil and grease	No sheen

[1] Visual monitoring of the water downgradient of the impact area will occur throughout the workday. If there is a visible change in water clarity, then turbidity samples will be taken to ensure compliance.

[2] Turbidity shall not exceed 5 NTUs over the background turbidity when the background turbidity 50 NTUs or less. Turbidity shall not exceed a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

Table 2. Monitoring Schedule for Edgecomb Creek and Tributary X Work.

In-water Activity	Waterbody	Monitoring Point Locations	Frequency	Parameters	WQ Standard
All in-water work	Edgecomb Creek	Background point (upgradient of impact within Edgecomb Creek); early warning monitoring point (at pH sampling location in Edgecomb Creek); and compliance point (100 feet downgradient of activity in Edgecomb Creek)	Twice Daily (1 hour after work activities begin and 1 hour before work activities cease)	Turbidity[1]	Within 5 NTU of background[2]
All in-water substrate addition	Edgecomb Creek	Background point (upgradient of impact within Edgecomb Creek); and immediately downgradient of impact (i.e. as close as possible to point of entry)	Twice Daily (1 hour after work activities begin and 1 hour before work activities cease)	pH	pH variation within < 0.5 units of background level
All in-water work	Edgecomb Creek	Throughout entire project area	Continuously	Oil and grease	No sheen

[1] Visual monitoring of the water downgradient of the impact area will occur throughout the workday. If there is a visible change in water clarity, then turbidity samples will be taken to ensure compliance.

[2] Turbidity shall not exceed 5 NTUs over the background turbidity when the background turbidity is 50 NTUs or less. Turbidity shall not exceed a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

During the rewatering of the new Edgecomb Creek, the entire length of the new channel will be treated as the impact area. Compliance samples for turbidity will be taken 100 feet downstream of the convergence between the new and existing channels. There is no area of mixing for pH and any samples need to be taken immediately downstream of the work.

3.3 Monitoring Duration

Grab samples and visual observations will be collected for as long as the in-water and over-water work is taking place. If the 51st Avenue East Ditch channel becomes dry within the project area or immediately downgradient of the project area, then the monitoring along this ditch will halt and only resume if flow or continuous surface water conditions resume within the ditch channel.

3.4 Contingency Measures

3.4.1 Water Quality Exceedances

If water quality exceedances are detected, then the background water quality parameter levels will be verified and the exceedance will be confirmed. Additional samples will be taken downgradient of the

impact area to determine the extent of the exceedance plume. WSDOE will be notified of the exceedance.

Once an exceedance of a water quality standard is confirmed, field personnel will stop in-water or over-water work, assess the source of the exceedance or impact, and evaluate corrective actions. When the source has been identified, field personnel will implement operation modifications or other supplemental control measures or BMPs to bring the water quality measurements back into compliance with the criteria. Water quality monitoring will proceed according to the contingency sampling schedule below. Work will only resume once water quality has returned below the compliance thresholds. Water quality monitoring during the modified work operations or supplemental control measures may proceed according to the continency sampling schedule below or the standard sampling schedule at the discretion of the qualified monitoring contacts.

Corrective actions for the proposed work in the 51st Avenue East Ditch and Ditch U include:

- Check other TESC measures and fix as needed;
- Halt or slow down work (excavation and fill), minimize work, or limit unnecessary equipment movement to control soil/sediment disturbance.

Corrective actions for the proposed work in Edgecomb Creek and Tributary X include:

- Halt or control flow rates of the rewatering of the new stream channel by halting or slowing the pumping of water from the existing channel to the new channel;
- Divert water from the new stream channel into a settling pond prior to release into the existing stream channel;
- Halt or slow down excavation and fill work in the stream and ditch channels;
- Check cofferdams for leaks, fix as needed;
- Check by-pass pipe inlet and outlet protection and fix as necessary to eliminate any erosion (as applicable)
- Check or add check dams along new channel length, fix or add additional check dams as needed;
- Check other TESC measures and fix as needed.

Once the corrective actions have been implemented, water quality monitoring will proceed according to the contingency sampling schedule below. Work will only resume after sampling confirms that water quality parameters have returned to levels that are within the compliance limits (Section 3.4.2 below).

If construction debris is observed in the waterway, the construction debris will be removed from the waterbody. If a sheen or oil is observed in the waterway, the contractor will immediately cease operations. Corrective actions will be implemented to make repairs to equipment, address the spill, or modify construction activities or BMPs, and WSDOE will be notified. Work may resume after visual sampling confirms that water quality parameters have returned to levels that are within the compliance limits (Section 3.4.2 below).

If distressed or dying fish are observed at the construction site or immediately downstream where the distress or mortality can be attributed to construction activities, work will stop immediately. WSDOE, WDFW, and other permitting agencies will be notified per regulatory approvals.

3.4.2 Contingency Water Quality Monitoring

If sample results confirm that water quality is out of compliance with water quality standards, the project will modify or stop the activity causing the problem and commence the contingency sampling requirements until standards are met for two consecutive sample periods. Once compliance with water quality standards is achieved, the project shall return to its standard sampling schedule.

Table 3. Contingency Monitoring Schedule for 51st Avenue East Ditch and Ditch U Work.

Parameter	Contingency Sampling Locations	Contingency Frequency	WQ Standard
Turbidity	Background point (upgradient of impact within 51st Avenue East Ditch) and compliance point (100 feet downgradient of activity within 51st Avenue East Ditch)	Every 1 hour during work activities for 1 day	Within 5 NTU of background[1]
Oil/Grease	Throughout entire project area	Continuous visual[2]	No Sheen

[1] Turbidity shall not exceed 5 NTUs over the background turbidity when the background turbidity is 50 NTUs or less. Turbidity shall not exceed a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

[2] Continuous visual monitoring must confirm no sheen or visible turbidity is present in the waterway for 30 minutes before work operations may resume.

Table 4. Contingency Monitoring Schedule for Edgecomb Creek and Tributary X Work.

Parameter	Contingency Sampling Locations	Contingency Frequency	WQ Standard
Turbidity	Background point and compliance point (100 feet downgradient of activity in Edgecomb Creek)	Every 1 hour during work activities for 1 day	Within 5 NTU of background[1]
pH	Background point and compliance point and immediately downgradient of impact (i.e. as close as possible to point of entry)	Every 1 hour during work activities for 1 day	pH variation within < 0.5 units of background level[3]
Oil/Grease	Throughout entire project area	Continuous visual[2]	No Sheen

[1] Turbidity shall not exceed 5 NTUs over the background turbidity when the background turbidity is less than 50 NTUs. Turbidity shall not exceed a 10 percent increase in turbidity when the background turbidity is more than 50 NTUs.

[2] Continuous visual monitoring must confirm no sheen or visible turbidity is present in the waterway for 30 minutes before work operations may resume.

3.5 Non-Compliance

If either visual or physical monitoring indicates that water quality standards have been exceeded, the required reporting will be initiated.

3.6 Sampling Protocol

3.6.1 Sampling Locations

Background sampling locations will be established upgradient from project activities on the 51st Avenue East Ditch and Edgecomb Creek. WAC 173-201A-200(1)(e)(i) allows various temporary mixing zone distances (100 to 300 feet) for turbidity standards depending on in-channel flow rates for flowing waters. Edgecomb Creek exhibits low summer flows under 10 cfs, and a portion of the streambed was observed to be dry during the Summer of 2020. The 51st Avenue East Ditch is a seasonally flowing ditch. The 100-foot temporary mixing zone distance was applied in selecting the compliance sampling location downstream of project in-water and over-water activities as flows are anticipated to be under 10 cubic feet per second (cfs) at the time of construction in Edgecomb Creek and Tributary X. Compliance samples for pH will be taken as close as possible to the impact area (i.e. point of fill or discharge).

During the rewatering of the new Edgecomb Creek, the entire length of the new channel will be treated as the impact area. Compliance samples for turbidity will be taken 100 feet downstream of the convergence between the new and existing channels. Compliance samples for pH will be taken at the convergence between the new and existing channels.

Sampling locations are provided in Appendix B for in-water and over-water work activities. Sampling locations have been given unique names or numbers, and clearly marked on the plan sheets.

3.6.2 Sampling Procedures

Background samples must be taken upstream of the area of influence and immediately prior to the downstream samples following the sampling schedule outlined in Section 3.2.

Water samples will be collected and analyzed for the appropriate parameters, per the Monitoring Schedule outlined in Section 3.2 above, following the equipment and sampling guidelines below:

1. *Turbidity will be monitored using a Hach 2100Q Turbidimeter or equivalent.*

A portable turbidity meter will be used in the field. A representative sample should accurately reflect the true condition of the water source from which the sample was taken. The following protocol will be used to ensure a representative sample is analyzed:

- Use a clean container to obtain a grab sample from the source;
- Collect sample with care to avoid disturbance of sediments and collecting surface contaminants, at a sample depth of 2 inches below the surface due to the shallow flows present in much of the reach;
- Gently but thoroughly mix the sample before pouring it into the small vial used to read the sample in the turbidimeter; and

- Without allowing the sample to settle, take turbidity reading according to turbidimeter manufacturer's instructions.

A calibration check of the turbidimeter using secondary standards will be carried out regularly (at least once per week). The instrument will be recalibrated using primary standards at least once every three months, or more when a calibration check indicates there is a problem. The manufacturer's calibration procedures will be followed.

2. *Visual turbidity monitoring will also be conducted for the duration of project activities.*

If there is a visible change in water clarity, then turbidity samples will be taken to ensure compliance.

3. *Oil and grease will be monitored continuously by visually observing for a visible sheen on the water's surface.*

4. *pH will be monitored using a pH meter that with a precision that allows readings down to 1/10 unit.*

3.7 Reporting

All water quality monitoring results (visual and physical) will be recorded on the monitoring form attached (Attachment A).

All sample results will be submitted to the WSDOE Permit Manager/Coordinator at fednotification@ecy.wa.gov (cc: to Neil.Molstad@ecy.wa.gov and Rebekah.Padgett@ecy.wa.gov) on a weekly basis via email.

If sample results or visual monitoring indicate an exceedance of water quality standards, notification shall be made within 24 hours to the WSDOE Permit Manager/Coordinator. Any oil/grease sheens or spills should be reported immediately to WSDOE's 24-Hour Spill Response Team at 1-800-258-5990 and within 24 hours to fednotification@ecy.wa.gov.

Chapter 4. References

Bails, Jamie. 2010. *Hydraulic Project Approval: Control Number 119699-1*. Washington Department of Fish and Wildlife. Mill Creek, Washington. February 22, 2010.

Brock, D. W. *Letter: Deregulation of 51st Avenue Watercourse: Tributary to Edgecomb Creek: Lat 48.126422/Long 122.16246 to Lat 48.148478/Long 122.161528: City of Marysville, WA: WRIA 05.0061*. Washington Department of Fish and Wildlife. Mill Creek, Washington. January 16, 2009.

Otak, Inc. 2009. *North Marysville Edgecomb Creek Relocation Feasibility Study*. July 15, 2009. Kirkland, Washington.

Soundview Consultants LLC. 201a. *Wetland and Fish and Wildlife Habitat Assessment Report: Cascade Business Park*. April 1, 2021. Gig Harbor, Washington.

Soundview Consultants LLC. 2021b. *Final Mitigation Plan: Cascade Business Park*. May 26, 2021. Gig Harbor, Washington.

Soundview Consultants LLC. 2021c. *Fish Exclusion and Protection Plan: Cascade Business Park*. April 23, 2021. Gig Harbor, Washington.

Appendix A — Water Quality Monitoring Report Form

WQ Tester _____ **Date** _____

Date of Last Calibration for Turbidity Meter_____ **Date of Last Calibration for pH Meter** _____

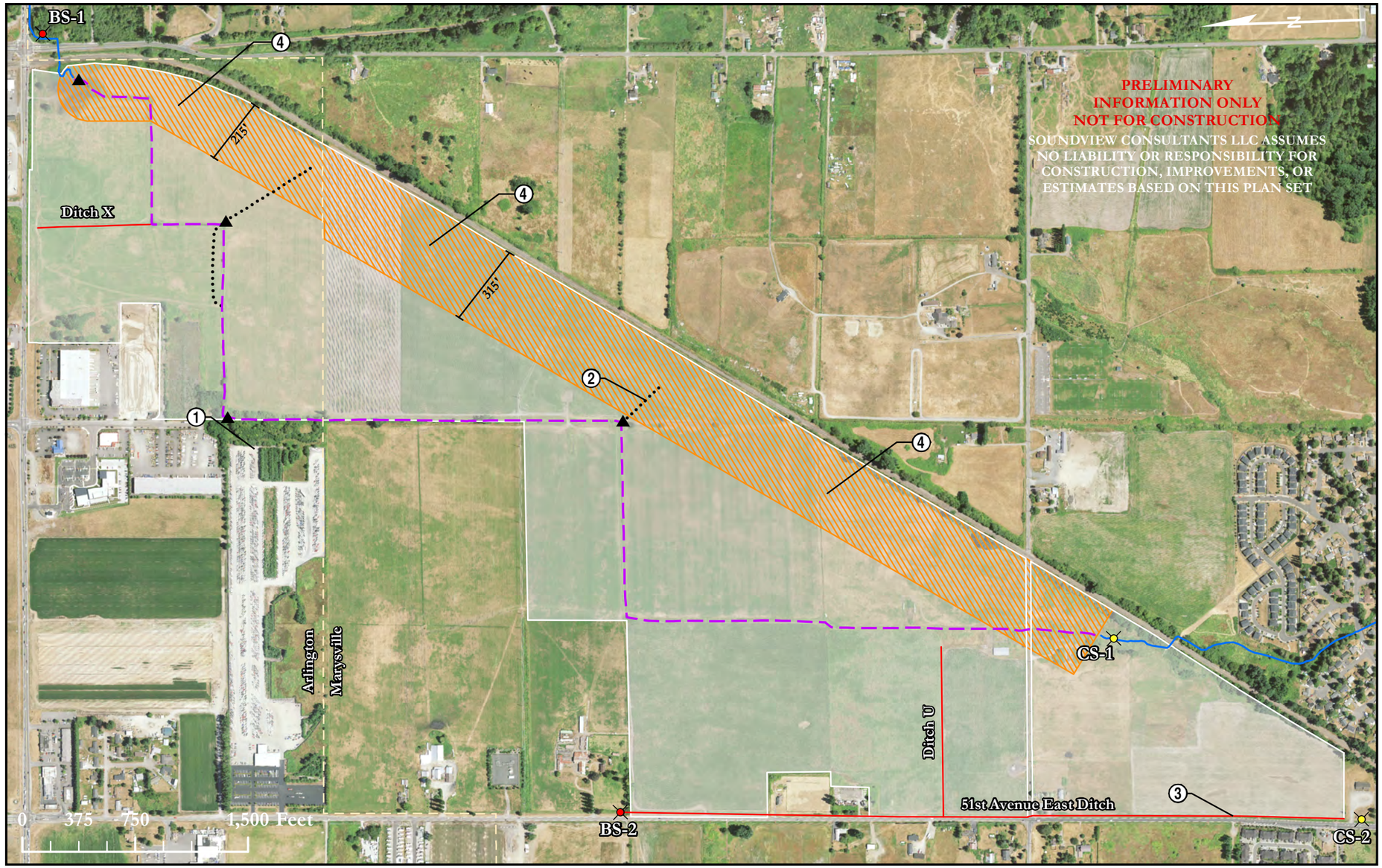
Waterbody_____ **Activity**_____ **Start Time**_____ **Stop Time**_____

Sample Location	Monitoring Point	Time	Turbidity[1]	pH[2]	Sheen (Y/N)	Exceedance (Y/N)	Notes (contingency actions, weather, waterbody flow in cfs, other observations of waterbody, etc.)

[1]Turbidity- Within 5 NTU of background
[2]pH - pH variation within < 0.5 units of background level

Appendix B — Monitoring Location Map

CASCADE LOGISTICS PARK - WATER QUALITY MONITORING MAP



- Background Sampling Point
- Compliance Sampling Point
- Temporary Dams
- Edgecomb Creek
- Edgecomb Creek Channel to be Realigned
- Ditch to be Filled
- Diversion Pipe
- Restoration Corridor
- Jurisdictional Boundary
- Subject Property

1. No flow observed downstream from this point (Beaver Dam) during Summer 2020

2. Temporary dam and diversion only to be installed if necessitated by streamflow presence in channel

3. Sampling will be conducted for 51st Avenue East Ditch if flow is present in ditch at time of fill - exact compliance sample point location will be determined by impact extent at time of sampling event

4. Restoration corridor to contain realigned Edgecomb Creek

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

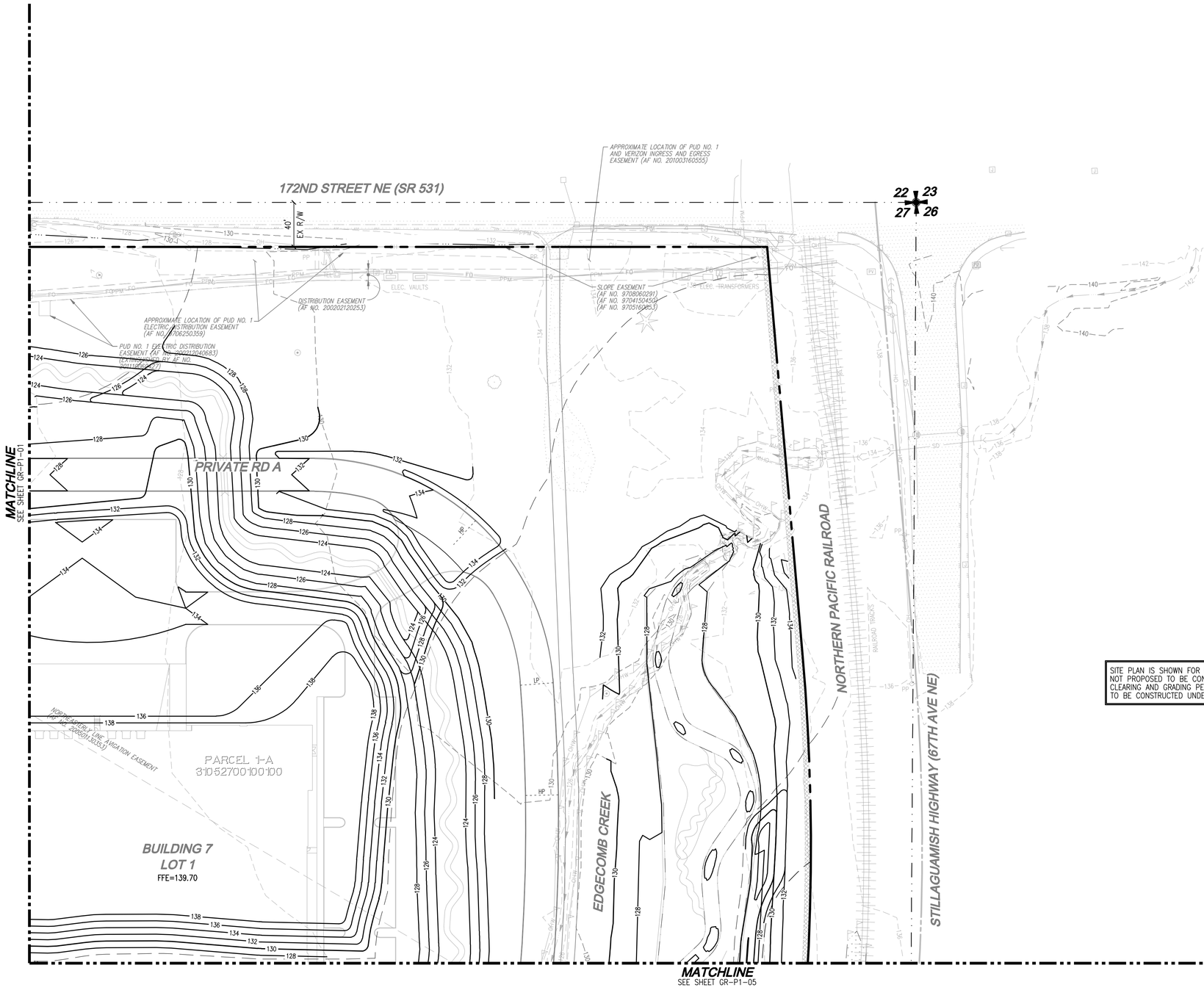
CASCADE LOGISTICS PARK

GENERALLY LOCATED:
6600 172ND STREET NORTHEAST
IN THE CITY OF ARLINGTON
15223 AND 16015 51ST AVENUE NORTHWEST,
5414 152ND STREET EAST
IN THE CITY OF MARYSVILLE, WASHINGTON

DATE:	3/4/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 750 '
FIGURE NO.	1

Appendix C — Temporary Erosion and Sediment Control Plan Edgecomb Creek Bypass Reach Plan and Typical Groundwater Infiltration Plan

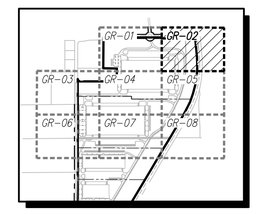
SEC 27, TWN 31 N, RGE 5 E, W.M., CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON



SITE PLAN IS SHOWN FOR REFERENCE ONLY AND IS NOT PROPOSED TO BE CONSTRUCTED WITH THIS EARLY CLEARING AND GRADING PERMIT. SITE IMPROVEMENTS TO BE CONSTRUCTED UNDER SEPARATE PERMIT.

N

SCALE: 1" = 50'
50' 0 50' 100'



KEY MAP
SCALE: 1"=1500'

UTILITY NOTE

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

DISCLAIMER

THE TOPOGRAPHIC SURVEY WAS PERFORMED BY LDC, INC. IN MAY 2020. ANY CHANGES TO THE SITE AFTER THIS DATE WILL NOT BE REFLECTED IN THE PLANS. ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLANS AND WHAT IS NOTED IN THE FIELD SHOULD BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.

Call 2 Business Days Before You Dig
811 or 1-800-424-5555
Utilities Underground Location Center

REVISIONS

NO.	DATE	DESCRIPTION	BY

LDC
Surveying
Engineering
Planning
Woodinville
20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869
Kent
1851 Central Pl S. #101
Kent, WA 98030
www.LDCcorp.com
F 425.482.2893

NORTHPOINT

CASCADE INDUSTRIAL CENTER
EARLY CLEARING AND GRADING
PHASE 1 GRADING PLAN

JOSEPH M. HOPPEN
STATE OF WASHINGTON
41823
REGISTERED
PROFESSIONAL ENGINEER
4-13-21

JOB NUMBER:	C20133
DRAWING NAME:	C20133BECAR-GR-PL
DESIGNER:	JMH
DRAFTING BY:	RCR
DATE:	4-13-21
SCALE:	1"=50'
JURISDICTION:	CITY OF ARLINGTON

GR-P1-02

SHEET 21 OF 45

Drawing: P:\Civil\2020\C20-133 Cascade Industrial Center\Drawings\Overall EC&G\2-Arlington EC0\C20133BECAR-GR-PL.dwg Plotted: Apr 23, 2021 - 12:30pm

SEC 27, TWN 31 N, RGE 5 E, W.M., CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON

REFERENCE LINE
SEE SHEET GR-P1-09

LOT 9

75' WETLAND BUFFER

150' EX NGPA BUFFER

35' WETLAND BUFFER

PARCEL NO. 31053400200800
15223 51ST AVE NE

DETENTION POND 14

51ST AVE NE

40' EX R/W
21'± EX PVMT
25' R/W DEDICATION

QUIT CLAIM DEED V.209, P.196 (AFN. 308936) *SEE SURVEYOR'S NOTE #

36' R/W DEDICATION
90' R/W
45' PVMT
35' EX R/W
20'± EX PVMT
19' R/W DEDICATION

152ND ST NE

QUIT CLAIM DEED V.228, P.446 (AFN. 375485) *SEE SURVEYOR'S NOTE #

PARCEL 2-C
(FROM TITLE REPORT NO. 203847)
PARCEL NO. 31053400200700
5414 152ND ST NE

DETENTION POND 15

150' EX NGPA BUFFER

BUILDING 9
LOT 11
FFE=114.00

60' EX R/W
21'± EX PVMT
25' R/W DEDICATION

REFERENCE LINE
SEE SHEET GR-P1-12

REFERENCE LINE
SEE SHEET GR-P1-13

SCALE: 1" = 50'
50' 0 50' 100'

KEY MAP
SCALE: 1"=1500'

GR-01 GR-02 GR-03 GR-04 GR-05 GR-06 GR-07 GR-08 GR-09 GR-10 GR-11 GR-12 GR-13 GR-14

UTILITY NOTE
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DISCLAIMER
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REVISIONS

NO.	DATE	DESCRIPTION	BY

LDC | Surveying Engineering Planning
Woodinville
20210 142nd Avenue NE
Woodinville, WA 98072
T 425.806.1869
Kent
1851 Central Pl S, #101
Kent, WA 98030
www.LDCorp.com
F 425.482.2893

NORTHPOINT

CASCADE COMMERCE CENTER
EARLY CLEARING AND GRADING

PHASE 1 GRADING PLAN

JOSEPH M. HOOPER
STATE OF WASHINGTON
21823
REGISTERED PROFESSIONAL ENGINEER
4-13-21

JOB NUMBER:	C2013.33
DRAWING NAME:	C2013.33EGM-ECG-GR-PL
DESIGNER:	JMH
DRAFTING BY:	RCR
DATE:	4-13-21
SCALE:	1"=50'
JURISDICTION:	CITY OF MARYSVILLE

GR-P1-11

SHEET 43 OF 77

Drawing: P:\Civil\2020\C20-133 Cascade Industrial Center\Drawings\Overall EC&G\1-Marysville ECG\C20133BEGM-ECG-GR-PL.dwg Plotted: Apr 23, 2021 - 12:07pm

SEC 27, TWN 31 N, RGE 5 E, W.M., CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON

REFERENCE LINE
SEE SHEET GR-P1-11

SCALE: 1" = 50'
50' 0 50' 100'

N

51ST AVE NE

60' EX R/W
21'± EX PVMT
25' R/W DEDICATION

EX SSMH RIM=105.10

EX SSMH RIM=103.70

BARBED-WIRE FENCE

DETENTION POND 15

DETENTION POND 16

150' EX NGPA BUFFER

100' WETLAND BUFFER

BUILDING 9
LOT 11
FFE=114.00

100' NORTHERN PACIFIC RAILROAD RIGHT OF WAY PER LOCATED CENTER OF TRACKS

NORTH PACIFIC RAILROAD

DETENTION POND 16

100' WETLAND BUFFER

33 34

REFERENCE LINE
SEE SHEET GR-P1-14

KEY MAP
SCALE: 1"=1500'

GR-01 GR-02 GR-03 GR-04 GR-05 GR-06 GR-07 GR-08 GR-09 GR-10 GR-11 GR-12 GR-13 GR-14

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NORTHPOINT

CASCADE COMMERCE CENTER
EARLY CLEARING AND GRADING

PHASE 1 GRADING PLAN

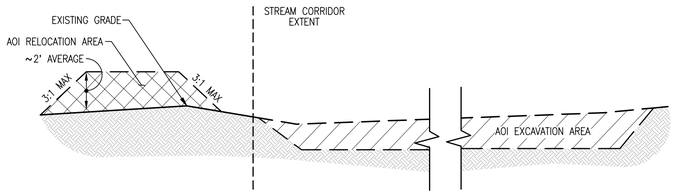
JOSEPH M. HOOPER
STATE OF WASHINGTON
41823
REGISTERED
PROFESSIONAL ENGINEER
4-29-21

JOB NUMBER:	C20133
DRAWING NAME:	C20133ECIM-ECG-GR-PL
DESIGNER:	JMH
DRAFTING BY:	RCR
DATE:	4-13-21
SCALE:	1" =50'
JURISDICTION:	CITY OF MARYSVILLE

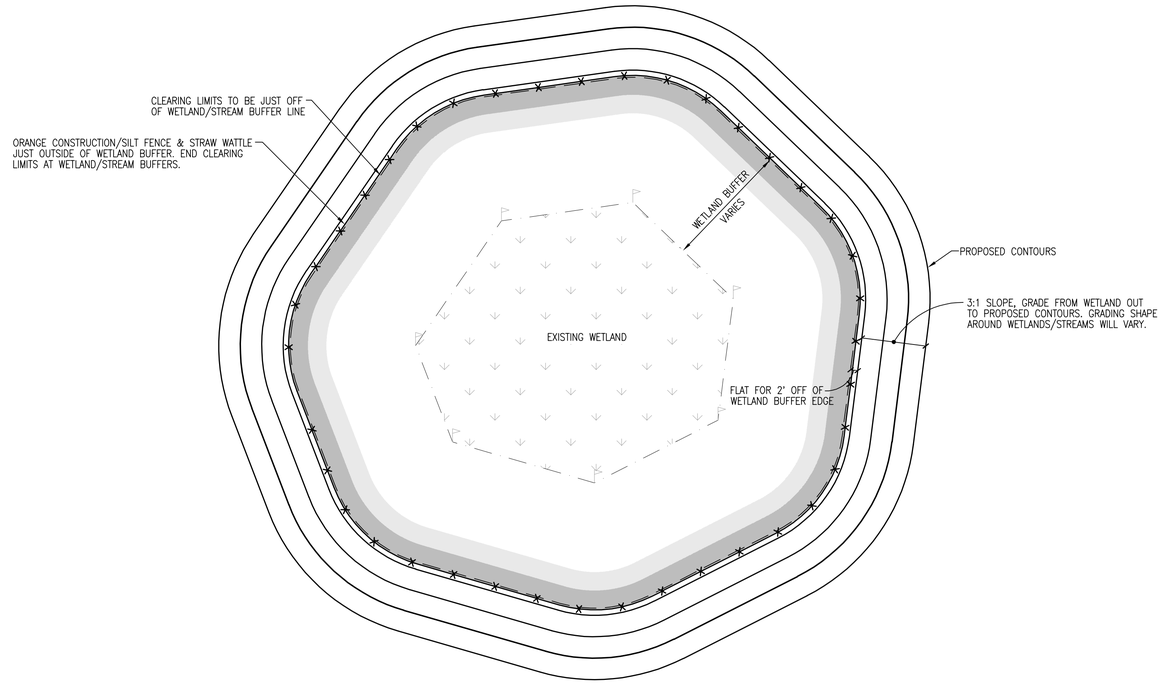
GR-P1-13

SHEET 45 OF 77

Drawing: P:\Civil\2020\C20-133 Cascade Industrial Center\Drawings\Overall ECG\G1-Marysville ECG\C20133BECIMV-ECG-GR-PL.dwg Plotted: Apr 23, 2021 - 12:07pm



STREAM SOIL REDISTRIBUTION TYPICAL SECTION
NOT TO SCALE



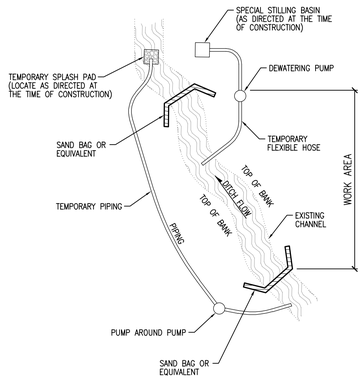
WETLAND/STREAM BUFFER GRADING DETAIL
SCALE: NOT TO SCALE

NOTES:

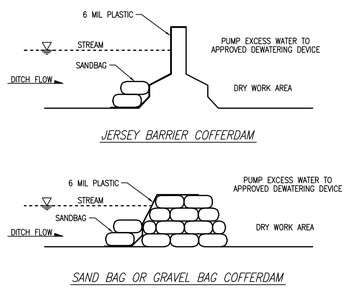
1. EXCAVATION SHALL BE PERFORMED IN ONLY DRY SECTIONS OF CHANNEL UNLESS DRAINAGE AREA EXCEEDS 6 SQUARE MILES.
2. IMPERVIOUS DIKES SHOULD BE USED TO ISOLATE WORK AREAS FROM STREAM FLOW.
3. THE CONTRACTOR SHALL NOT DISTURB MORE AREA THAN CAN BE STABILIZED IN ONE WORKING DAY.
4. EACH PUMP AROUND PUMP SHOULD ADEQUATELY CONVEY BASE FLOW VOLUMES.
5. PUMP AROUND OPERATIONS SHOULD NOT BE UNDERTAKEN IF SIGNIFICANT RAINFALL IS FORECAST IN THE CONSTRUCTION PERIOD.

SEQUENCE OF CONSTRUCTION FOR TYPICAL PUMP AROUND:

1. INSTALL SPECIAL STILLING BASIN AT THE DOWNSTREAM END OF THE DESIGNATED PROJECT WORKING AREA.
2. THE CONTRACTOR WILL INSTALL THE PUMP AROUND PUMP AND THE TEMPORARY PIPING THAT WILL CONVEY THE BASE FLOW FROM UPSTREAM OF THE WORK SITE TO THE SPECIAL STILLING BASIN.
3. INSTALL UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. INSTALL THE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS IF NEEDED TO DEWATER THE ENTRAPPED AREA. THE PUMP AND HOSE FOR THIS PURPOSE SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA. THIS WATER WILL ALSO FLOW INTO A SPECIAL STILLING BASIN.
5. THE CONTRACTOR WILL PERFORM STREAM RESTORATION WORK IN ACCORDANCE WITH THE PLAN AND FOLLOWING THE GENERAL CONSTRUCTION SEQUENCE.
6. THE CONTRACTOR WILL EXCAVATE ANY ACCUMULATED SEDIMENT AND DEWATER BEFORE REMOVAL OF THE IMPERVIOUS DIKE. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE/PIPING STARTING WITH THE DOWNSTREAM DIKE FIRST.
7. ONCE THE WORKING AREA IS COMPLETED, REMOVE THE STILLING BASINS AND STABILIZE DISTURBED AREAS TO SPECIFICATIONS AS SHOWN ON PLANS.



TYPICAL PUMP AROUND SETUP

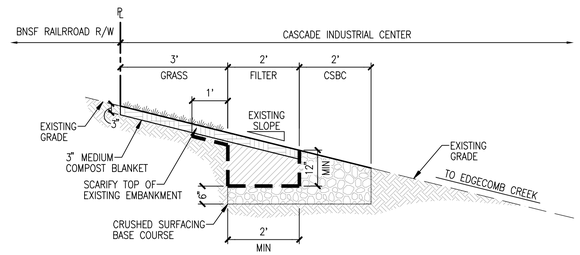


JERSEY BARRIER COFFERDAM

SAND BAG OR GRAVEL BAG COFFERDAM

TEMPORARY COFFERDAMS

PUMP/ DAM SYSTEM DETAIL
SCALE: NOT TO SCALE



WSDOT MEDIA FILTER DRAIN TYPE 3
SIDE SLOPE APPLICATION WITHOUT UNDERDRAIN
NOT TO SCALE

#G21-0028

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CITY OF MARYSVILLE CONSTRUCTION DRAWING REVIEW ACKNOWLEDGEMENT

THIS PLAN SHEET HAS BEEN REVIEWED AND EVALUATED FOR GENERAL COMPLIANCE WITH THE APPLICABLE CITY OF MARYSVILLE CODES AND ORDINANCES. CONFORMANCE OF THIS DESIGN WITH ALL APPLICABLE LAWS AND REGULATIONS IS THE FULL AND COMPLETE RESPONSIBILITY OF THE LICENSED DESIGN ENGINEER, WHOSE STAMP AND SIGNATURE APPEAR ON THIS SHEET. ACKNOWLEDGMENT OF CONSTRUCTION DRAWING REVIEW DOES NOT IMPLY CITY APPROVAL FOR CONSTRUCTION ACTIVITIES THAT REQUIRED OTHER COUNTY, STATE OR FEDERAL PERMIT REVIEW AND APPROVAL. THE PROPERTY OWNER AND LICENSED DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE ACQUISITION AND COMPLIANCE OF ALL APPLICABLE PERMITS OR AUTHORIZATIONS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WSDRW HYDRAULIC PROJECT APPROVAL (HPS), WSDOE NOTICE OF INTENT (NOI), ANY CORPS OF ENGINEERS FILL PERMITS AND THE REQUIREMENTS OF THE ENDANGERED SPECIES ACT.
THIS DAY OF _____

BY: _____
JEFF LAYCOCK, PE, CITY ENGINEER

THESE APPROVED CONSTRUCTION PLANS EXPIRE AFTER PERIOD OF 60 MONTHS FROM THE DATE SHOWN ABOVE OR UPON EXPIRATION OF PRELIMINARY PLAT OR SITE PLAN APPROVAL, PER MMC 15.09.080.

UTILITY NOTE
THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

DISCLAIMER
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REVISIONS

NO.	DATE	DESCRIPTION	BY
1	5-19-21	REVISED PER 5/13/2021 CITY OF MARYSVILLE EDGECOMB GRADING REVIEW #1	JMH

LDC | Surveying Engineering Planning
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Kent, WA 98030
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NORTHPOINT

CASCADE COMMERCE CENTER
EDGECOMB CREEK EARLY CLEARING AND GRADING

TESC GRADING NOTES AND DETAILS

JOSEPH M. HOPKINS — STATE OF WASHINGTON — 41823 — REGISTERED PROFESSIONAL ENGINEER

JOB NUMBER:	C201.33
DRAWING NAME:	C20133BECMVC-ER-DT
DESIGNER:	JMH
DRAFTING BY:	RCR
DATE:	5-4-21
SCALE:	AS NOTED
JURISDICTION:	CITY OF MARYSVILLE

DT-03

SHEET 17 OF 17

Drawing: P:\Civil\2020\C20-133 Cascade Industrial Center\Drawings\Overall EC&G\3-Marysville Creek ECG\C20133BECMVC-ER-DT.dwg Plotted: May 19, 2021 - 10:29am

SEC 27, TWN 31 N, RGE 5 E, W.M., CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON

SCALE: 1" = 50'

50' 0 50' 100'

N

REFERENCE LINE
SEE SHEET ER-P1-07

REFERENCE LINE
SEE SHEET ER-P1-09

REFERENCE LINE
SEE SHEET ER-P1-12

LOT 8

PARCEL 1-D
31052700300600

PARCEL E
31052700300900

PARCEL F
31052700300800

PARCEL NO.
31053400100700
OWNER: KLEIN
FAMILY
PROPERTIES, LLC

PARCEL 3-B
(FROM TITLE REPORT No. 203848)
PARCEL NO. 31053400200400
NO ADDRESS ON FILE

PARCEL 3-A
(FROM TITLE REPORT No. 203848)
PARCEL NO. 31053400200300
NO ADDRESS ON FILE

PARCEL NO. 31053400200500
NO ADDRESS ON FILE

PARCEL 2-C
(FROM TITLE REPORT No. 203848)

BUILDING 8
LOT 9

TRACT 998
NGPA/CREEK

150' EXISTING NGPA BUFFER

150' EXISTING NGPA BUFFER

DISCHARGE BAKER TANK VOLUME INTO EDGECOMB CREEK

20'x2' DISPERSION TRENCH

STANDARD BAKER TANK

PUMP SEDIMENT POND TO BAKER TANK

POND INLET/PUMP

TESC TEMPORARY SEDIMENT TRAP POND 5
DEPTH: 2.0'
SIDE SLOPE: 2:1
BOTTOM EL: 109.0

TEMPORARY PUMP TO BAKER TANK AS NEEDED REFER TO TABLE TEMPORARY SEDIMENT POND 3, THIS SHEET

5'x5' RIPRAP PAD, TYP

SITE PLAN IS SHOWN FOR REFERENCE ONLY AND IS NOT PROPOSED TO BE CONSTRUCTED WITH THIS EARLY CLEARING AND GRADING PERMIT. SITE IMPROVEMENTS TO BE CONSTRUCTED UNDER SEPARATE PERMIT.

INGRESS AND EGRESS EASEMENT
*THIS EASEMENT IS TEMPORARY IN NATURE, COULD BE EXPIRED (AFN. 7912280263)

DISTRIBUTE ~2' OF CUT FROM EDGECOMB CREEK RELOCATION AOI 4 WITHIN THIS AREA

AOI 4
EXCAVATION
AREA

AOI 5
RELOCATION
AREA

AOI 5
EXCAVATION
AREA

DISTRIBUTE ~2' OF CUT FROM EDGECOMB CREEK RELOCATION AOI 5 WITHIN THIS AREA

59TH AVE NE

NORTH PACIFIC RAILROAD

CITY OF MARYSVILLE

30' WETLAND BUFFER

100' NORTHERN PACIFIC RAILROAD RIGHT OF WAY PER LOCATED CENTER OF TRACKS

70' R/W

7' MEDIA FILTER STRIP, SEE DETAIL ON SHEET DT-03

18"X41" METAL SIDE

27
34

LEGEND

- CLEARING AREA / PROTECTED AREA — CLEARING LIMITS
- SILT FENCE/ ORANGE FENCE
- CONVEYANCE SWALE
- P1 — PUMPED DISCHARGE LINE
- 1 — ROCK CONSTRUCTION ENTRANCE
- CATCH BASIN PROTECTION
- TESC POND
- PRE DEVELOPMENT DRAINAGE PATTERN
- POST DEVELOPMENT DRAINAGE PATTERN
- INSTALL CHECK DAM EVERY 100' OR 2' OF ELEVATION CHANGE
- TBR — TO BE REMOVED
- BAKER TANK
- RIPRAP PAD
- AOI EXCAVATION AREA
- AOI RELOCATION AREA
- 7' MEDIA FILTER STRIP

TESC SEDIMENT POND 5	
BOTTOM ELEVATION	109.00
BOTTOM AREA (SF)	6,175 SF
TOP ELEVATION	111.00
TOP AREA (SF)	7,505 SF
SIDE SLOPES	2:1
OVERFLOW ELEVATION	111.00

ALL TESC SEDIMENT PONDS TO BE 95'x65' (BOTTOM) UNLESS OTHERWISE NOTED.

KEY MAP
SCALE: 1"=1500'

ER-01 ER-02 ER-03 ER-04 ER-05 ER-06 ER-07 ER-08 ER-09 ER-10 ER-11 ER-12 ER-13 ER-14

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Kent, WA 98030
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www.LDCorp.com

NORTHPOINT

CASCADE COMMERCE CENTER
EARLY CLEARING AND GRADING

PHASE 1 TESC AND DEMOLITION PLAN

JOSEPH M. HOOPER
STATE OF WASHINGTON
21823
REGISTERED
PROFESSIONAL ENGINEER
4-13-21

JOB NUMBER:	C2013.3
DRAWING NAME:	C2013.3EGM-ER-PL
DESIGNER:	JMH
DRAFTING BY:	RCR
DATE:	4-13-21
SCALE:	1"=50'
JURISDICTION:	CITY OF MARYSVILLE

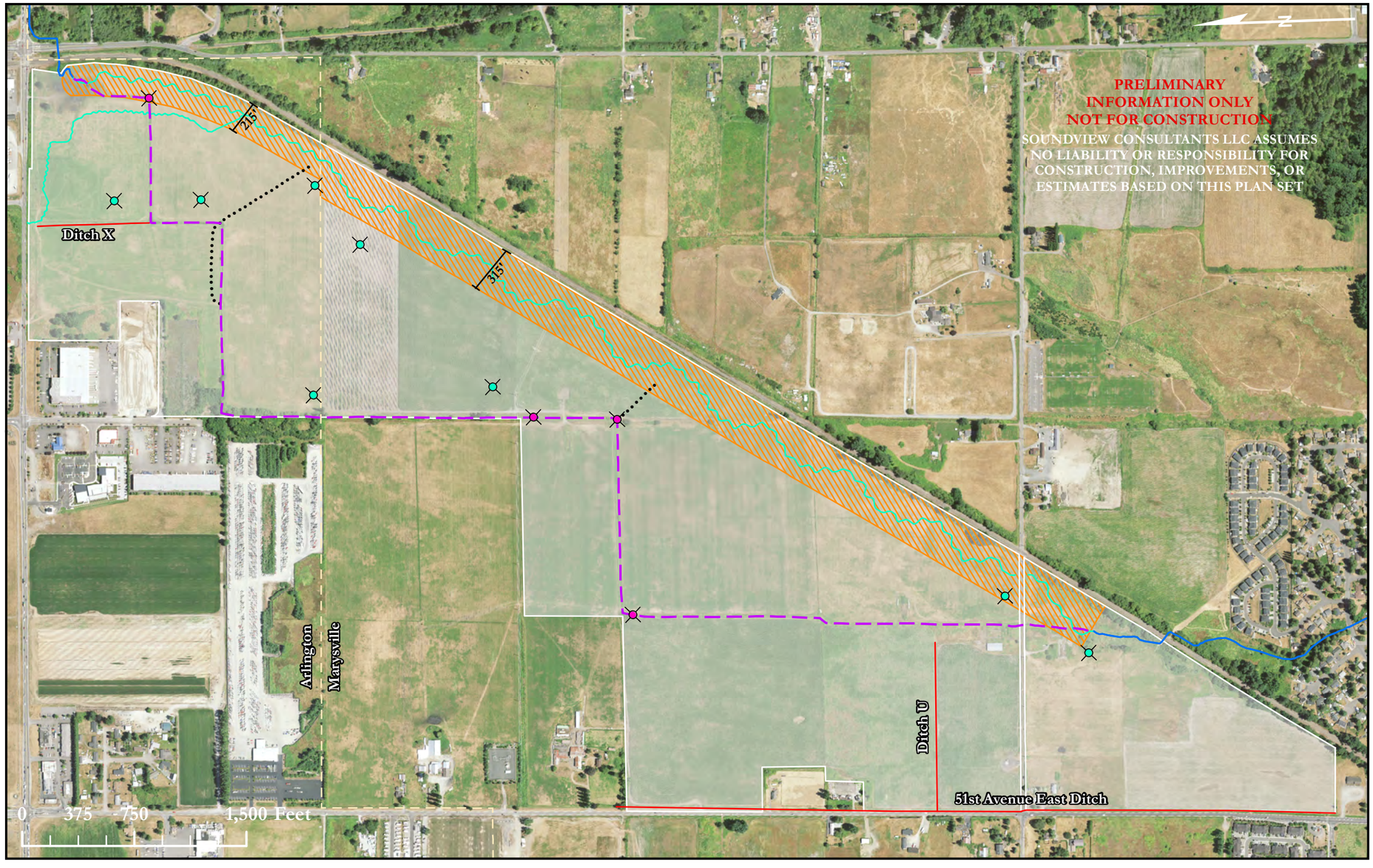
ER-P1-10

SHEET 28 OF 77

Drawing: P:\Civil\2020\C20-133 Cascade Industrial Center\Drawings\Overall EC&G\1-Marysville EC&G\C2013.3BEC.MV-ER-PL.dwg Printed: Apr 23, 2021 - 12:04pm

Appendix D — Groundwater Infiltration and Temporary Stream Crossing Location Map

CASCADE BUSINESS PARK - CONTINGENCY GROUNDWATER PLAN



- Groundwater Infiltration Points
- Temporary Crossing Locations
- Jurisdictional Boundary
- Edgecomb Creek
- Edgecomb Creek Channel to be Realigned
- Stream Relocation Channel
- Ditch to be Filled
- Diversion Pipe
- Streams
- Restoration Corridor
- Subject Property

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

CASCADE BUSINESS PARK

GENERALLY LOCATED:
6600 172ND STREET NORTHEAST
IN THE CITY OF ARLINGTON
15223 AND 16015 51ST AVENUE NORTHWEST,
5414 152ND STREET EAST
IN THE CITY OF MARYSVILLE, WASHINGTON

DATE:	5/26/2021
JOB:	1703.0004
BY:	DLS
SCALE:	1 " = 750 '
FIGURE NO.	1