

# SHAYNE OLSEN Logan's Landing

# Preliminary Stormwater TIR JULY 11, 2023



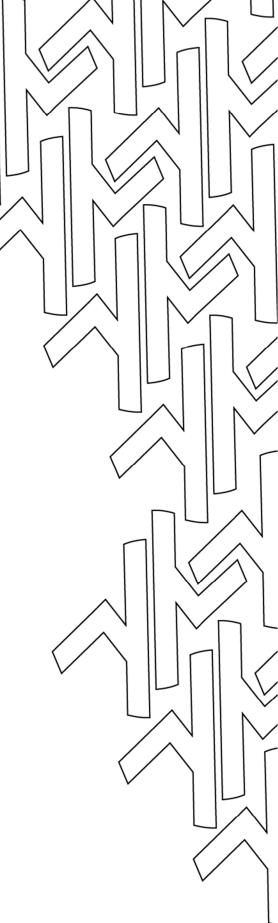




Windsor Engineers Civil, Mechanical & Electrical Engineers 27300 NE 10<sup>th</sup> Avenue Ridgefield, WA 98642 360.610.4931

#### Prepared for

Logan Partners, LLC Attention: Shayne Olsen PO Box 1940 Bend OR 97709 541.306.1611





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#### 1.0 PROJECT TEAM

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Owner/Applicant	<b>Logan Partners, LLC</b> PO Box 1940 Bend, OR 97709 541.306.1611
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	Emily Stephens, PE, Civil Engineer estephens@windsorengineers.com
	Oliver Kadow okadow@windsorengineers.com







#### **CERTIFICATE OF THE ENGINEER**

Title: Preliminary Stormwater TIR

Project: Logan's Landing

This Technical Information Report (TIR) has been prepared under my supervision and meets the standard of care for similar documents within this community. The TIR includes the required information per the below references and complies with the code. The proposed stormwater design is feasible.

References:

2019 Stormwater Management Manual for Western Washington (The 2019 SWMMWW) – Department of Ecology, State of Washington

Windsor Engineers LLC



Reviewed By: Emily Stephens, PE Designed By: Oliver Kadow



#### 3.0 REFERENCES

Clean Water Act. (n.d.). Retrieved from https://www.epa.gov/laws-regulations/summary-clean-water-act

Department of Ecology. (n.d.). Western Washington Stormwater Manual (WWSWM). Retrieved from https://www.clark.wa.gov/public-works/stormwater-code-and-manual

DOE Water Quality Permits. (n.d.). Retrieved from https://ecology.wa.gov/Water-Shorelines/Water-quality/Waterquality-permits

National Pollutant Discharge Elimination System (NPDES). (n.d.). Retrieved from https://www.epa.gov/npdes

Washington Department of Ecology. (n.d.). Construction Stormwater General Permit. Retrieved from https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Constructionstormwater-permit

Washington State Department of Ecology. (n.d.). DOE Stormwater Manuals. Retrieved from https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidanceresources/Stormwater-manuals



#### 4.0 GENERAL

#### 4.1 **Purpose and Scope**

The purpose of this report is to demonstrate preliminary feasibility of stormwater management associated with the construction of the of the Logan's Landing mixed use development. This report will evaluate the proposed stormwater conveyance, water quality, and water quantity design. This report also includes a critical areas report completed by Shott and Associates, Inc.

#### 4.2 **Project Location**

Address	N/A	
Parcels	50729, 5068023, 50730	
Area	19.3 Acres	
Section-Township-Range	13-5N-1W	
Jurisdiction	City limits of Woodland	
Water District	City of Woodland	
Sewer District	City of Woodland	
Fire District	Clark-Cowlitz Fire Rescue	

#### 4.3 **Project Description**

The project site consists of a 13.4-acre parcel (50729), a 0.9-acre parcel (5068023), and a 5.0-acre parcel (50730), all located within the city limits of Woodland, WA. The parcels are located at 0 Franklin Street, Woodland, WA 98674, refer to **Figure 1**. Current zoning provides flexibility for how to use the property. Currently, the City has this area zoned highway commercial (C-2). The developer plans to construct eight 3-story mixed-use buildings with office or retail spaces and parking on the ground floor, and residential units on the second and third floors. The developer also plans to construct all necessary development roads, utilities, stormwater features and open space.

The site topography based on the Cowlitz County Environmental Planning Internet Clearance (EPIC) map identifies slopes on the site ranging from 0-5 percent (%).

The soils described in the geotechnical report by United States Department of Agriculture Natural Resources Conservation Service (NRCS) (see **Appendix B**) are two types of loam, Maytown silt loam, in the western half of the site, and Newberg fine sandy loam, in the eastern half of the site.

For the purposes of this report and stormwater treatment, the project site is defined as the entire 19.3acre parcel; however, only 16.444 acres will be disturbed for the development due to a wetland that will be avoided. Site grading will be done in a manner that will drain runoff away from the buildings. Runoff from the roofs and parking areas will primarily drain to swales along the edge of the parking areas,



where it will be captured and routed to a combined wet pond and detention basin. The runoff from the streets will primarily be captured in storm sewer pipes and routed to the combined wet pond and detention basin. A stormwater pond, as shown in **Appendix A**, will treat all impervious surfaces on the site and provide for flow control before the runoff leaves the site.

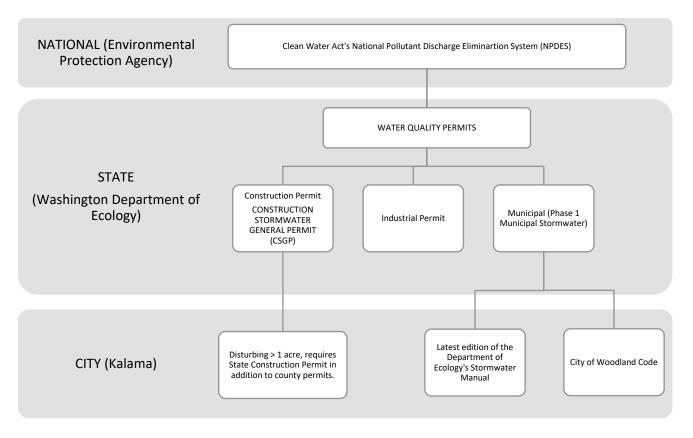


Figure 1: Cowlitz County GIS Site Location

#### 4.4 Applicable Codes and Standards

To protect our country's waters, legislature was enacted starting very broadly as the Clean Water Act of 1972, administered by the Environmental Protection Agency (EPA) as the National Pollutant Discharge Elimination System (NPDES) and subsequently delegated to the local (state) authority as a Washington Department of Ecology (DOE) Water Quality Permit, and finally managed as the Construction Stormwater General Permit (CSGP) Washington State implements the CSGP through the Washington DOE Stormwater Manual and municipalities/counties may adopt portions of this manual or an equivalent.





The calculations and stormwater management edition methods in the report are based on the following references:

2019 Stormwater Management Manual for Western Washington (SWMMWW)

#### 4.5 Determination of Applicable Minimum Requirements

The 16.444-acre project will construct mixed use building, roads, parking areas, utilities, and stormwater facilities. It is assumed that 16.444 acres will be disturbed. The wetland and buffer will not be disturbed.

- Total Site Area: 19.3 acres.
- Disturbed Area: 16.444 acres.
- Existing Impervious: 0.00 acres (0.00%).
- Proposed Impervious: 9.564 acres (49.5%).

The project proposes more than 5,000 square feet (SF) of new impervious surfaces. All minimum requirements (MRs) #1-9 will apply to the project sites new and replaced hard surfaces.

Assumptions included in the calculation and MGS Flood modeling described in this report include:



#### Table 1: Land Use Summary

0 416,619 0	0.000 9.564
	9.564
0	
	0.000
193,036	4.431
0	0.000
106,659	2.449
116,820	2.682
299,799	6.882
309,856	7.113
299,799	6.882
716,314	16.444
	0 106,659 116,820 299,799 309,856 299,799

AC – acre

BMPs – Best Management Practices



#### 5.0 MINIMUM REQUIREMENTS

This site triggers MRs #1-9 because it will add more than 5,000 SF of impervious surface. The following best management practices (BMP) are proposed to be incorporated into the site and will be discussed with each applicable MR in the sections below:

- Combined Wet Pond (BMP T10.10) & Detention Pond (BMP D.1)
- Basic Biofiltration Swale (BMP T9.10)
- Amended Soils on all lawn green space (BMP T5.13)

Typical details for the proposed BMPs can be found in Appendix D.

#### 5.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

A site stormwater plan is included in this report. The development is divided into drainage areas, but has only one threshold discharge area as shown in **Appendix A**.

#### 5.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention

The project disturbs more than one acre; therefore, a Construction Stormwater Pollution Prevention Plan (SWPPP) and a National Pollutant Discharge Elimination System (NPDES) Permit are required and will be part of the construction plans.

Should clearing, grading and other soil disturbing activities occur between October 1<sup>st</sup> through April 30<sup>th</sup>, additional measures, as needed, will be taken to satisfy the SWMMWW seasonal work limitations.

#### 5.3 Minimum Requirement #3: Source Control of Pollution

The mixed-use site consists of road construction, multiple 3-story buildings, parking areas, utilities, and stormwater BMPs. The parking areas and roadways are considered pollutant generating hard surfaces (PGHS). All PGHS and non-pollutant generating hard surfaces (NPGHS) within the project site will be routed through a Bioretention Pond to provide treatment meeting the low impact development (LID) approach and basic treatment requirements.

#### 5.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

Natural drainage patterns on the site will be maintained by minimizing the areas of disturbance for the construction of the buildings, parking areas, and roads to the extent feasible. No major grading is proposed for the site that would alter the general drainage pattern.

#### 5.5 Minimum Requirement #5: On-site Stormwater Management

The project is within the city limits of Woodland and is not inside the urban growth area (UGA), therefore, based on the SWMMWW, Low Impact Development (LID) standards are required to be met



by using "*any Flow Control BMP(s)*" listed in the SWMMWW as well as "*applying BMP T5.13: Post-Construction Soil Quality and Depth.*"

Competing Needs Criteria & List #2:

Due to the developed area being directly adjacent to a wetland buffer, it is highly likely that groundwater will be present, and infiltration will not be feasible. A geotechnical analysis will be completed upon final engineering, however, for the purpose of this stormwater design, we've assumed that the infiltration rate on the site will be zero. Should the investigation show more than 3-feet of separation from the proposed bottom of the swales and detention pond, the modeling can be adjusted, and pond likely reduced in size, and LID performance standards may be able to be met. The tables below show the List #2 BMPs and the outcome of feasibility based on the assumption that there will be no infiltration available due to groundwater.

	List #2 BMP	Feasible? (Y/N)	Justification
Lawn &	BMP T5.13: Post-Construction Soil		
Landscaped	Quality and Depth		
Areas		Y	

	List #2 BMP	Feasible? (Y/N)	Justification
	1. BMP T5.30: Full Dispersion	Ν	Groundwater Likely Present> 0 infiltration
	BMP T5.10A: Downspout Full Infiltration	Ν	Groundwater Likely Present> 0 infiltration
Roofs	2. BMP T7.30: Bioretention	N	Groundwater Likely Present> 0 infiltration
NOOIS	3. BMP T5.10B: Downspout Dispersion Systems	Ν	Groundwater Likely Present> 0 infiltration
	<u>4. BMP T5.10C: Perforated Stub-out</u> <u>Connections</u>	Ν	Groundwater Likely Present> 0 infiltration

	List #2 BMP	Feasible? (Y/N)	Justification	
	1. BMP T5.30: Full Dispersion	Ν	Groundwater Likely Present> 0 infiltration	
	2. BMP T5.15: Permeable Pavements	Ν	Groundwater Likely Present> 0 infiltration	
Other Hard	3. BMP T7.30: Bioretention	Ν	Groundwater Likely Present> 0 infiltration	
Surface	4. BMP T5.12: Sheet Flow Dispersion	N	Groundwater Likely Present> 0 infiltration	
	BMP T5.11: Concentrated Flow	N	Groundwater Likely Present> 0 infiltration	
	Dispersion	IN		

Due to the groundwater challenge that is likely on this site, the detention pond was sized for flow control and does not meet LID performance standards. The site will utilize BMP T5.13: Post-Construction Soil Quality and Depth to meet as much of MR #5, on-site stormwater management as practically feasible.



See **Appendix C** for MGSFlood model inputs and results.

#### 5.6 Minimum Requirement #6: Runoff Treatment

Minimum Requirement (MR) #6 is applicable to threshold discharge areas (TDAs) that have more than 5,000 SF of PGHS. The project proposed approximately 9.564 acres of new impervious surfaces from the roads and parking areas; therefore, MR #6 applies. All new PGHS and NPGHS on the site will be routed to a wet pond for treatment. Roof runoff and parking area runoff will first be routed to basic biofiltration swales prior to entering the wet pond.

A wet pond can provide treatment of runoff if the dead pool storage is sized large enough for the 91% exceedance water quality treatment volume. Based on the MGSFlood modeling, the required dead pool volume for the proposed site is approximately 60,968 cubic feet (CF). The stormwater facility has been designed to provide dead pool treatment of at least 61,000 CF with a dead pool depth of approximately 2.0 feet.

#### 5.6.1 Modeling

MGSFlood was used to model compliance with the requirements of the 2019 SWMMWW.

Model inputs used for the subbasin were as follows:

Infiltration was assumed to be zero on all stormwater facilities modeled due to the adjacent wetland that indicates groundwater is likely to be present. A geotechnical analysis and report has yet to be completed and this rate is an estimate based off the soils information found in the NRCS web soil survey (See **Appendix B**). Once a geotechnical analysis and report is completed, the actual infiltration rates will be updated to reflect the findings. Should there be 3 feet or more of separation from the proposed bottom of the swales and or wet pond, the facilities may reduce in size in order to meet the requirements.

#### 5.7 Minimum Requirement #7: Flow Control

Developed discharge duration must match pre-developed durations for the range of pre-developed discharge rates from 50% of the 20-year peak flow up to full 50-year peak flow. The detention basin provides adequate flow control at the outlet, which has been set as the point of compliance. See **Appendix C** for MGSFlood results that demonstrate flow control provided with the proposed pond.

#### 5.8 Minimum Requirement #8: Wetlands Protection

The project does not propose any discharge of stormwater directly or indirectly into a wetland; however, a swale will be placed in the wetland buffer of an existing, category 4 wetland on site. The swale will not disturb more than 25% of the wetland buffer and will not discharge to the buffer. The site development is not altering drainage to the buffer as the existing site primarily drained to the northwest, to an existing ditch system along I-5. A critical areas analysis has been included as **Appendix E**.



#### 5.9 Minimum Requirement #9: Operation and Maintenance

The stormwater system will be privately owned, operated, and maintained. See Volume V of the SWMMWW.



#### 6.0 CONVEYANCE SYSTEMS ANALYSIS AND DESIGN

All stormwater piping shall meet the minimum requirements of the Uniform Plumbing Code and the City of Woodland Code. All storm sewer conveyance calculations will be completed with the final stormwater TIR and managed following the 2019 SWMMWW, making the potential impact on the downstream properties and conveyance systems minimal.



#### 7.0 ADDITIONAL REQUIREMENTS

#### 7.1 Offsite Analysis

No offsite analysis has been completed at this stage.

#### 7.2 Closed Depression Analysis

This site is not classified as a closed depression; therefore, this section does not apply.

#### 7.3 Other Permits

- NPDES permit will be applied for prior to construction.
- If needed, UIC permit will be applied for prior to construction.
- If needed, USACE permit will be applied for prior to construction.

#### 7.4 Approval Conditions Summary

All conditions noted in the pre-application conference final report will be addressed.

#### 7.5 Special Reports and Studies

The following analysis's have been, or will be completed:

- Critical Areas See **Appendix E**
- Geotechnical To be Completed



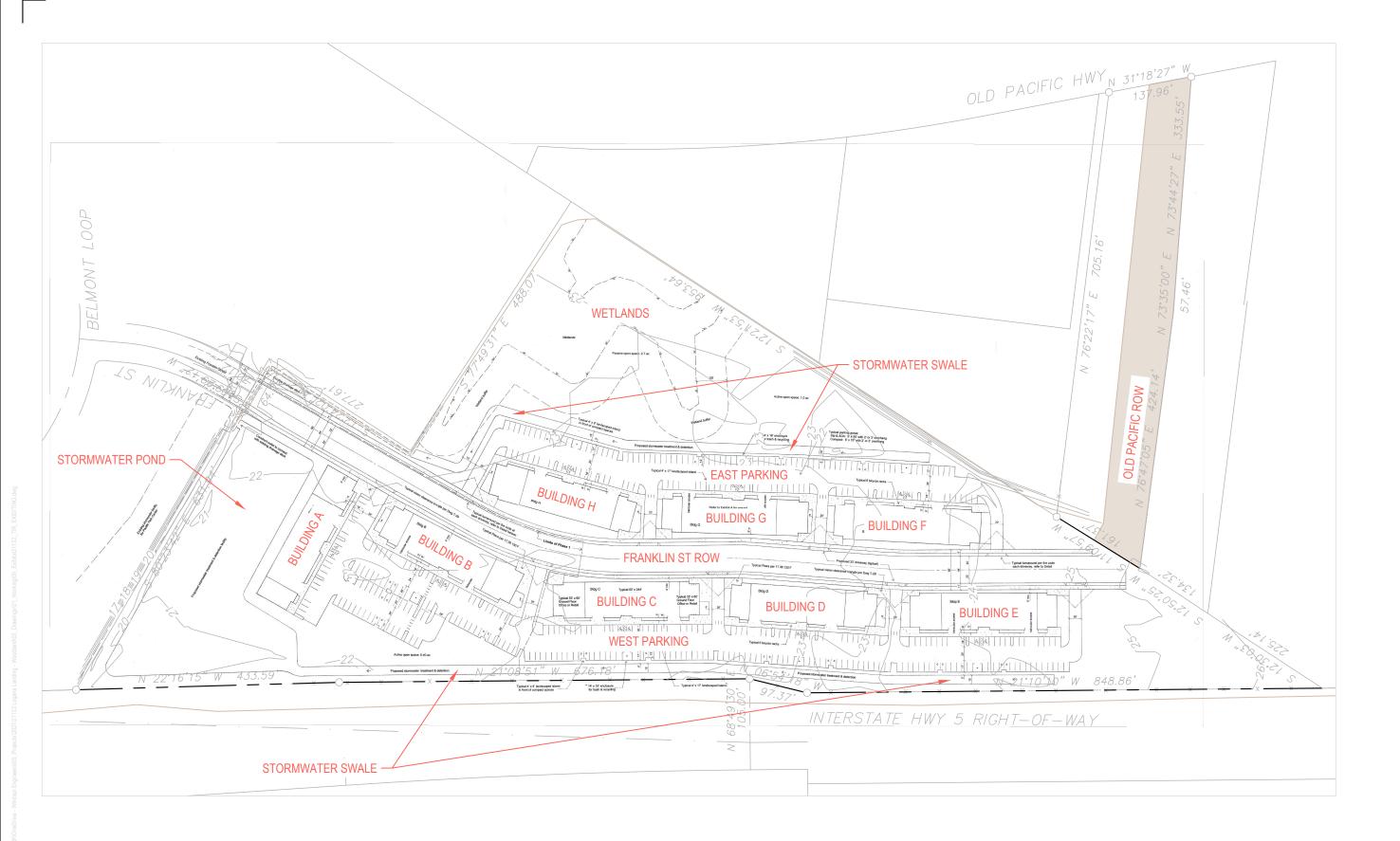
#### 8.0 **APPENDICES**

- Appendix A Stormwater Calculation Assumptions and Stormwater Concept
- **Appendix B Geotechnical Information (Preliminary)**
- Appendix C MGS Flood Stormwater Modeling Results (Preliminary)
- Appendix D BMP Details
- **Appendix E Critical Areas Report**



### **ATTACHMENT 1**

Stormwater Calculation Assumptions and Stormwater Concept



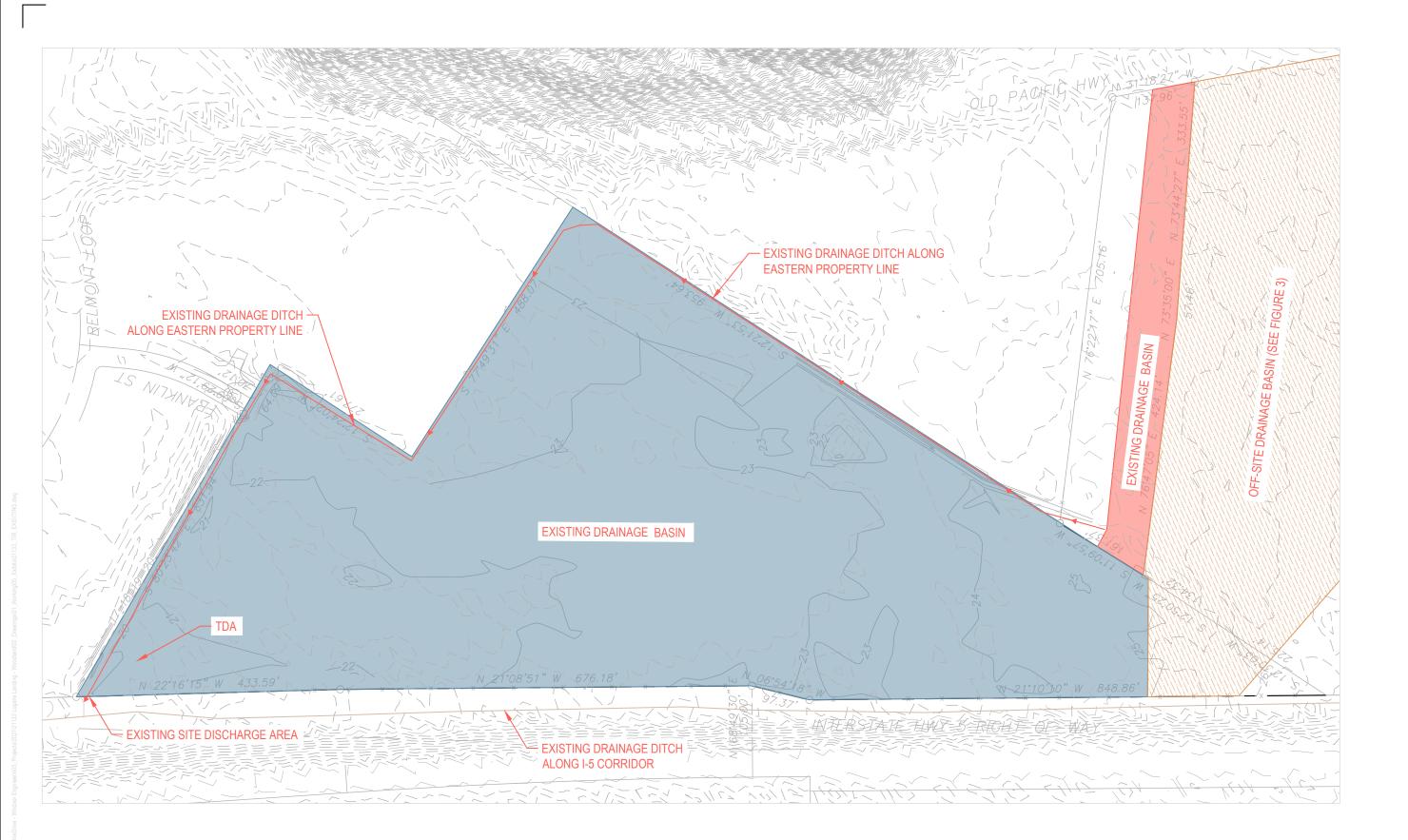
## STORMWATER PLAN (SCALE 1" = 150')

LOGAN'S LANDING WOODLAND, WA 98604



Project No: 21132 Date: 06/22/2023 Copyright 2022 By Windsor Engineers, LLC All Rights Reserved.

**FIGURE - 1.00** 



# EXISTING DRAINAGE BASINS (SCALE 1" = 150')

LOGAN'S LANDING

WOODLAND, WA 98604



Project No: 21132 Date: 06/22/2023 Copyright 2022 By Windsor Engineers, LLC All Rights Reserved.

FIGURE - 2.00



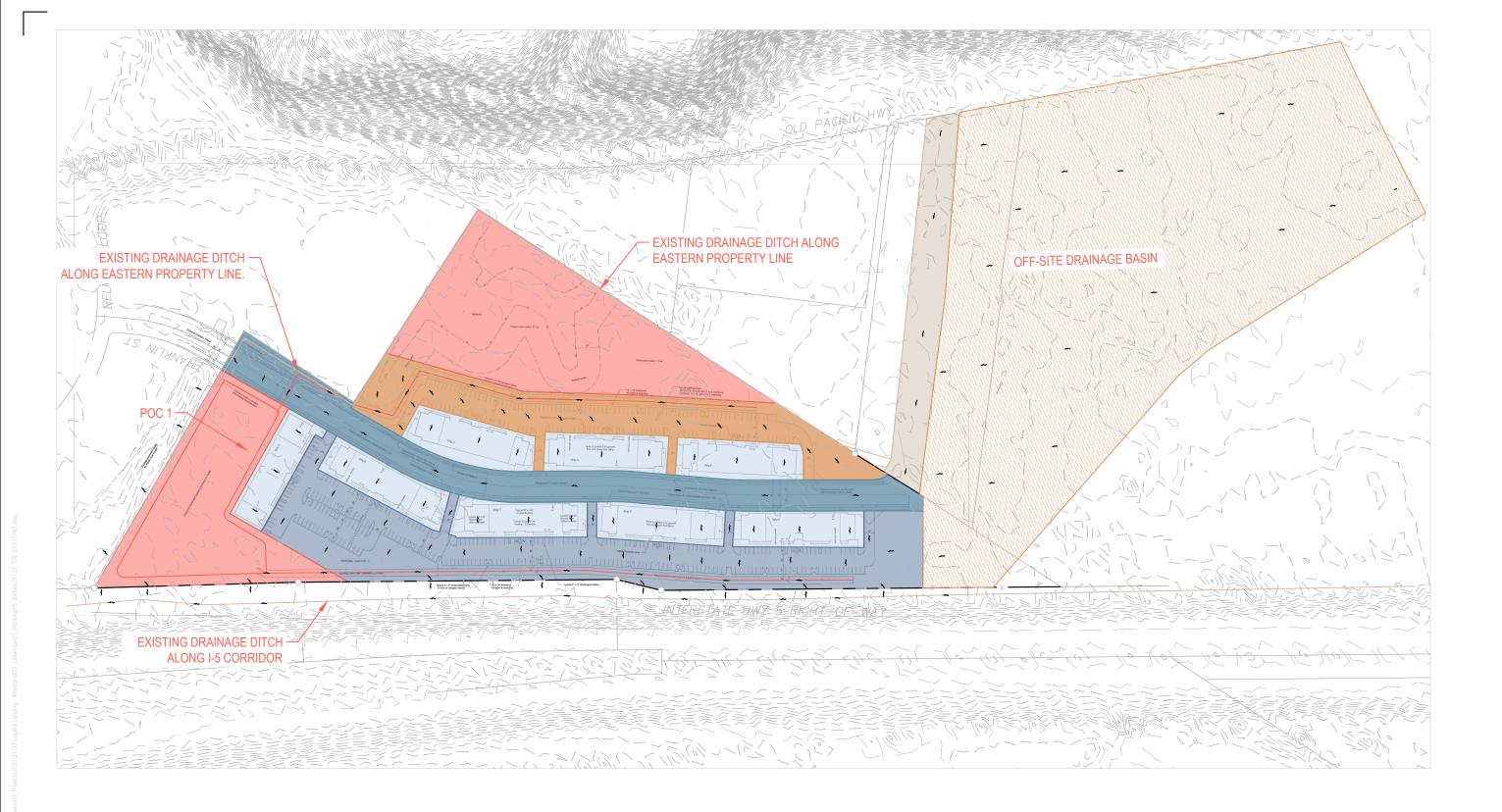
## DRAINAGE BASINS (SCALE 1" = 150')

LOGAN'S LANDING WOODLAND, WA 98604



Project No: 21132 Date: 06/22/2023 Copyright 2022 By Windsor Engineers, LLC All Rights Reserved.

# **FIGURE -** 3.00



DRAINAGE BASINS (Off-site drainage

LOGAN'S LANDING WOODLAND, WA 98604



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### **ATTACHMENT 2**

Geotechnical Report (Preliminary)



United States Department of Agriculture

Natural Resources Conservation

Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for **Cowlitz County, Washington**



# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2\_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# **How Soil Surveys Are Made**

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

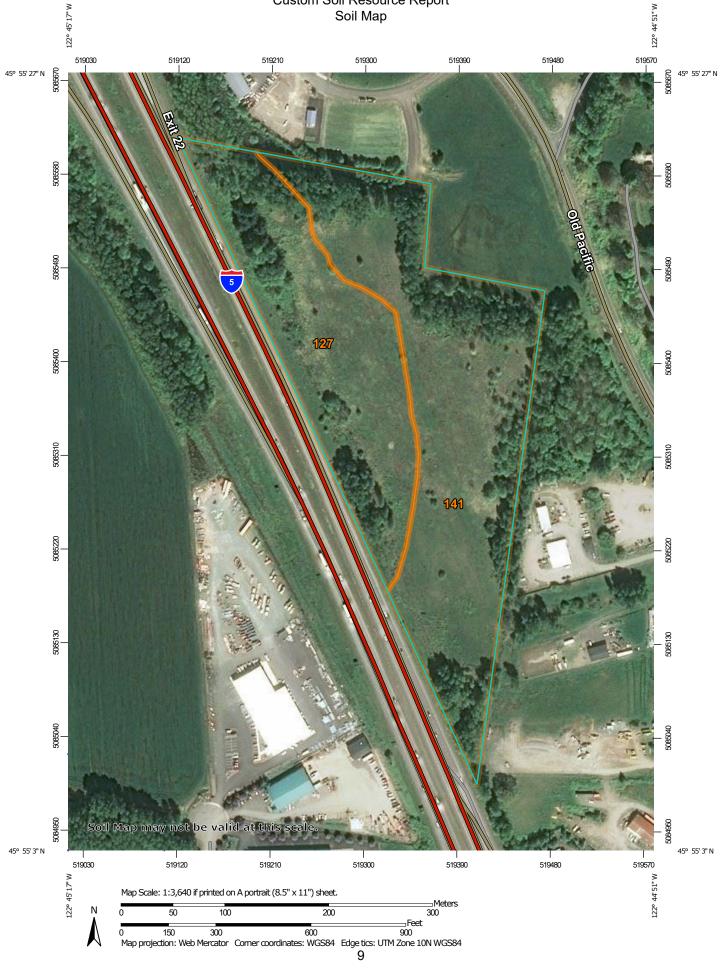
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

### Custom Soil Resource Report



	MAP LEGEND			MAP INFORMATION	
	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.	
Soils	Soil Map Unit Polygons Soil Map Unit Lines	03 V	Very Stony Spot Wet Spot	Warning: Soil Map may not be valid at this scale.	
	Soil Map Unit Points Point Features		Other Special Line Features	Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed	
<u>ی</u>	Blowout Borrow Pit	Water Featu	Streams and Canals	scale.	
<b>≍</b>	Clay Spot Closed Depression	Transportat	tion Rails Interstate Highways	Please rely on the bar scale on each map sheet for map measurements.	
872 	Gravel Pit Gravelly Spot	~	US Routes Major Roads	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)	
۵ ۸	Landfill Lava Flow	Backgroun	Local Roads	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts	
<u>له</u> ج	Marsh or swamp Mine or Quarry		Aerial Photography	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.	
0	Miscellaneous Water Perennial Water			This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.	
~ +	Rock Outcrop Saline Spot			Soil Survey Area: Cowlitz County, Washington Survey Area Data: Version 21, Jun 4, 2020	
:.: =	Sandy Spot Severely Eroded Spot			Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
♦	Sinkhole Slide or Slip			Date(s) aerial images were photographed: Apr 26, 2019—Jun 11, 2019	
Ŕ	Sodic Spot			The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.	

### **Map Unit Legend**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
127	Maytown silt loam, 0 to 3 percent slopes	9.1	39.1%
141	Newberg fine sandy loam, 0 to 3 percent slopes	14.2	60.9%
Totals for Area of Interest		23.3	100.0%

### **Map Unit Descriptions**

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

#### **Cowlitz County, Washington**

#### 127—Maytown silt loam, 0 to 3 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2f2r Elevation: 50 to 500 feet Mean annual precipitation: 45 to 70 inches Mean annual air temperature: 50 to 52 degrees F Frost-free period: 165 to 195 days Farmland classification: All areas are prime farmland

#### **Map Unit Composition**

Maytown and similar soils: 80 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Maytown**

#### Setting

Landform: Flood plains Parent material: Alluvium

#### **Typical profile**

*H1 - 0 to 18 inches:* silt loam *H2 - 18 to 36 inches:* silt loam, silty clay loam *H2 - 18 to 36 inches:* silty clay loam, silt loam

- H3 36 to 60 inches:
- H3 36 to 60 inches:

#### **Properties and qualities**

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 30 to 42 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water capacity: Very high (about 19.4 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: C Forage suitability group: Soils with Few Limitations (G002XV502WA) Other vegetative classification: Soils with Few Limitations (G002XV502WA) Hydric soil rating: No

#### **Minor Components**

#### Godfrey

Percent of map unit: 10 percent Hydric soil rating: Yes

### 141—Newberg fine sandy loam, 0 to 3 percent slopes

#### Map Unit Setting

National map unit symbol: 2f3d Elevation: 10 to 1,500 feet Mean annual precipitation: 18 to 60 inches Mean annual air temperature: 50 to 54 degrees F Frost-free period: 165 to 210 days Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

#### Map Unit Composition

Newberg and similar soils: 85 percent Minor components: 5 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Newberg**

#### Setting

Landform: Flood plains Parent material: Alluvium

#### **Typical profile**

H1 - 0 to 10 inches: fine sandy loam

- H2 10 to 28 inches: very fine sandy loam, sandy loam, fine sandy loam
- H2 10 to 28 inches: fine sandy loam, loamy fine sand, loamy very fine sand
- H2 10 to 28 inches:
- H3 28 to 60 inches:
- H3 28 to 60 inches:
- H3 28 to 60 inches:

#### **Properties and qualities**

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: NoneOccasional

Frequency of ponding: None

Available water capacity: Very high (about 20.1 inches)

### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: A Forage suitability group: Soils with Few Limitations (G002XV502WA) Other vegetative classification: Soils with Few Limitations (G002XV502WA) Hydric soil rating: No

### **Minor Components**

### Chehalis

Percent of map unit: 5 percent Hydric soil rating: No

# References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2\_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2\_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2\_053624

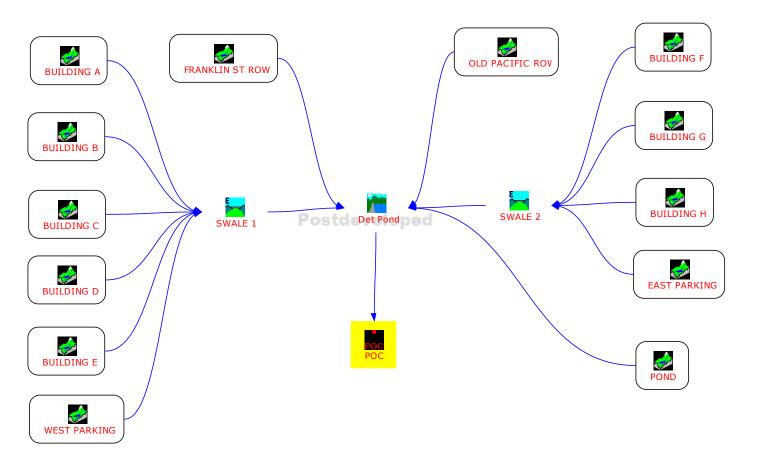
United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE\_DOCUMENTS/nrcs142p2\_052290.pdf



# **ATTACHMENT 3**

MGS Flood Modeling Results





# MGS FLOOD PROJECT REPORT

### Program Version: MGSFlood 4.58 Program License Number: 202010002 Project Simulation Performed on: 07/11/2023 11:24 AM Report Generation Date: 07/11/2023 11:24 AM

Input File Name: Project Name: Analysis Title:	21132 LL Logan's L	_ Preliminary-V3 _anding	.fld	
Comments:	Wet Pone		TION INPUT ——	
Computational Time Ste	ep (Minute			
Extended Precipitation	Гime Serie	es Selected		
Full Period of Record Av	vailable us	sed for Routing		
Climatic Region Numbe Precipitation Station : Evaporation Station :	9	26 97004805 Vanco 971048 Vancouv		10/01/1939-10/01/2060
Evaporation Scale Facto	or: O	0.750		
HSPF Parameter Regio HSPF Parameter Regio			Default	
********** Default HSPF	Paramete	ers Used (Not M	odified by User) *	*****
**************************************				
Predevelopment/Po Total Subbasin Area (a Area of Links that Inclu Total (acres)	cres) de Precip/ <b>ARIO: PRI</b>	/Evap (acres)	Predeveloped 16.445 0.000 16.445	Post Developed 16.346 0.099 16.445
Number of Subbasins:	1			
Subbasin : Sub Area C, Forest, Flat 16.445	(Acres)			
Subbasin Total	16.445			
SCENA Number of Subbasins:		STDEVELOPEI	)	
Subbasin : BUI Area C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	(Acres) 0.087			
Subbasin Total				
Subbasin : BUI Area C, Lawn, Flat				

ROOF TOPS/FLAT SIDEWALKS/FLAT		0.335 0.130
Subbasin Total	0.517	
Subbasin : BU Area		
C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	`0.029́	0.335 0.140
Subbasin Total	0.504	
	(Acres)	
C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	0.042	0.335 0.111
Subbasin Total	0.488	
Subbasin : BU Area C, Lawn, Flat	-	
ROOF TOPS/FLAT SIDEWALKS/FLAT		0.335 0.117
Subbasin Total	0.486	
	(Acres)	
C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	0.057	0.335 0.109
Subbasin Total	0.501	
Subbasin : BU Area	(Acres)	
C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	0.046	0.335 0.100
Subbasin Total	0.481	
Subbasin : BU Area	(Acres)	
C, Lawn, Flat ROOF TOPS/FLAT SIDEWALKS/FLAT	0.108	0.335 0.116
Subbasin Total	0.559	
Subbasin : EA Area		
C, Lawn, Flat DRIVEWAYS/FLAT	1.078	1.247
Subbasin Total	2.325	
Subbasin : WI	(Acres)	
C, Lawn, Flat	1.623	

DRIVEWAYS/FLAT		2.268
Subbasin Total	3.891	
Subbasin : FF Area		
C, Lawn, Flat ROADS/FLAT	0.511 1.537	
SIDEWALKS/FLAT		0.411
Subbasin Total	2.459	
Subbasin : OL		
Area C, Lawn, Flat	0.764	
ROADS/FLAT	0.458	
SIDEWALKS/FLAT		0.106
Subbasin Total	1.328	
Subbasin : PC		
Area		
C, Lawn, Flat POND	1.350 1.000	
Subbasin Total	2.350	
*****	LINK DA <sup>.</sup>	TA ************************************

-----SCENARIO: PREDEVELOPED
Number of Links: 1

\_\_\_\_\_

**Link Name: POC** Link Type: Copy Downstream Link: None

-----SCENARIO: POSTDEVELOPED Number of Links: 4

-----

Link Name: POC

Link Type: Copy Downstream Link: None

# Link Name: SWALE 1

Link Type: Ecology Bioretention Facility Downstream Link Name: Det Pond

Floor Elevation (ft)	:	100.00	
Riser Crest Elevation (ft)		:	100.40
Storage Depth (ft)	:	0.40	
Bottom Length (ft)	:	1250.0	
Bottom Width (ft)	:	2.0	
Bottom Slope (ft/ft)	:	0.020	
Side Slopes (ft/ft)	: 2	Z1= 3.00	Z2= 3.00 Z3= 3.00 Z4= 3.00
Bottom Area (sq-ft)	:	2500.	
Area at Riser Crest El (sq-ft)	:	93.	
(acres)	:	0.002	

Volume at Riser Crest (cu-ft) : 54. (ac-ft) : 0.001
Infiltration on Bottom only Selected
Soil Properties Layer No Soil Name Thickness (ft) 1 ASTM 100 0.250 2 SMMWW 12 in/hr (Ecol 1.500 3 GRAVEL 0.000
KSat Safety Factor: None Native Soil Infiltration Rate (in/hr) : 0.50
Underdrain Not Present
Riser Geometry Riser Structure Type : Circular Riser Diameter (in) : 10.00 Common Length (ft) : 0.000 Riser Crest Elevation : 100.40 ft
Hydraulic Structure Geometry
Number of Devices: 0
Link Name: SWALE 2 Link Type: Ecology Bioretention Facility Downstream Link Name: Det Pond
Floor Elevation (ft): 100.00Riser Crest Elevation (ft): 100.40Storage Depth (ft): 0.40Bottom Length (ft): 915.0Bottom Width (ft): 2.0Bottom Slope (ft/ft): 0.020Side Slopes (ft/ft): Z1= 3.00Bottom Area (sq-ft): 1830.Area at Riser Crest El (sq-ft): 93.(acres): 0.002Volume at Riser Crest (cu-ft): 54.(ac-ft): 0.001
Infiltration on Bottom only Selected
Soil Properties Layer No Soil Name Thickness (ft) 1 ASTM 100 0.250 2 SMMWW 12 in/hr (Ecol 1.500 3 GRAVEL 0.000
KSat Safety Factor: None Native Soil Infiltration Rate (in/hr) : 0.50
Underdrain Not Present
Riser Geometry Riser Structure Type : Circular Riser Diameter (in) : 10.00 Common Length (ft) : 0.000 Riser Crest Elevation : 100.40 ft Hydraulic Structure Geometry
Number of Devices: 0

Link Name: Det Pond

-----

Link Type: Structure Downstream Link Name: POC Prismatic Pond Option Used Pond Floor Elevation (ft) : 100.00 Riser Crest Elevation (ft) 106.00 . Max Pond Elevation (ft) : 115.00 Storage Depth (ft) : 6.00 : Pond Bottom Length (ft) 375.0 Pond Bottom Width (ft) 100.0 Pond Side Slopes (ft/ft) : Z1= 3.00 Z2= 3.00 Z3= 3.00 Z4= 3.00 Bottom Area (sq-ft) : 37500. : 55,896. Area at Riser Crest El (sq-ft) (acres) : 1.283 Volume at Riser Crest (cu-ft) : 278,892. (ac-ft) : 6.402 Area at Max Elevation (sq-ft) : 88350. (acres): 2.028 : 923,613. Vol at Max Elevation (cu-ft) (ac-ft) : 21.203 Constant Infiltration Option Used Infiltration Rate (in/hr): 0.00 Riser Geometry Riser Structure Type : Circular Riser Diameter (in) : 6.00 Common Length (ft) : 0.000 Riser Crest Elevation : 106.00 ft Hydraulic Structure Geometry Number of Devices: 2 ---Device Number 1 ---Device Type : Circular Orifice Control Elevation (ft) : 100.00 Diameter (in) : 2.00 Orientation : Horizontal Elbow : Yes ---Device Number 2 ---Device Type : Circular Orifice Control Elevation (ft) : 104.00 Diameter (in) : 3.00 Orientation : Vertical Elbow : Yes

#### \*FLOOD FREQUENCY AND DURATION STATISTICS\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-----SCENARIO: PREDEVELOPED Number of Subbasins: 1 Number of Links: 1

\*\*\*\*\*\*\*\*\*\* Subbasin: Subbasin 1 \*\*\*\*\*\*\*\*\*\*

10-Year1.01725-Year1.35050-Year1.715100-Year2.019200-Year2.513500-Year3.167

\*\*\*\*\*\*\*\*\*\* Link: POC \*\*\*\*\*\*\*\*\* Lin Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs)

2-Year	0.513
5-Year	0.790
10-Year	1.017
25-Year	1.350
50-Year	1.715
100-Year	2.019
200-Year	2.513
500-Year	3.167

-----SCENARIO: POSTDEVELOPED

Number of Subbasins: 13 Number of Links: 4

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING A \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs)

2-Year	0.170	
5-Year	0.226	
10-Year	0.258	
25-Year	0.335	
50-Year	0.371	
100-Year	0.471	
200-Year	0.505	
500-Year	0.550	

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING B \*\*\*\*\*\*\*\*\*\*

50-Year	0.437
100-Year	0.569
200-Year	0.625
500-Year	0.698

500-Year

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING C \*\*\*\*\*\*\*\*\*\*

0.716

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs)

2-Year 0.197 5-Year 0.260 10-Year 0.305 25-Year 0.388 50-Year 0.418 100-Year 0.543 200-Year 0.598 500-Year 0.671

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING E \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs) 2-Year 0.198 5-Year 0.262 10-Year 0.309 25-Year 0.390 50-Year 0.422 100-Year 0.547 200-Year 0.605 500-Year 0.681

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING F \*\*\*\*\*\*\*\*\*\*

 25-Year
 0.390

 50-Year
 0.419

 100-Year
 0.547

 200-Year
 0.598

 500-Year
 0.666

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING G \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs)

2-Year	0.193	
5-Year	0.254	
10-Year	0.297	
25-Year	0.379	
50-Year	0.408	
100-Year	0.531	
200-Year	0.584	
500-Year	0.653	

#### \*\*\*\*\*\*\*\*\*\* Subbasin: BUILDING H \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs) Flood Peak (cfs)

2-Year	0.208
5-Year	0.275
10-Year	0.315

25-Year	0.409
50-Year	0.454
100-Year	0.574
200-Year	0.615
500-Year	0.670

#### \*\*\*\*\*\*\*\*\*\* Subbasin: EAST PARKING \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) Flood Peak (cfs) 2-Year 0.676 5-Year 0.867 10-Year 1.072 25-Year 1.301 50-Year 1.680

25-Year1.30150-Year1.680100-Year1.841200-Year1.900500-Year1.979

#### \*\*\*\*\*\*\*\*\*\* Subbasin: WEST PARKING \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs)

(Recurrence Interval Computed Using Gringorten Plotting Position)

2-Year	1.179
5-Year	1.519
10-Year	1.846
25-Year	2.296
50-Year	2.879
100-Year	3.275
200-Year	3.308
500-Year	3.352

#### \*\*\*\*\*\*\*\*\*\* Subbasin: FRANKLIN ST ROW \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs)

2-Year 0.900 1.196 5-Year 10-Year 1.369 25-Year 1.779 50-Year 1.983 2.497 100-Year 200-Year 2.665 500-Year 2.887

#### \*\*\*\*\*\*\*\*\*\* Subbasin: OLD PACIFIC ROW \*\*\*\*\*\*\*\*\*\*

 50-Year
 0.865

 100-Year
 0.930

 200-Year
 0.984

 500-Year
 1.057

#### \*\*\*\*\*\*\*\*\*\* Subbasin: POND \*\*\*\*\*\*\*\*\*\*

Flood Frequency Data(cfs) (Recurrence Interval Computed Using Gringorten Plotting Position)

	ood Peak (cfs)	ed Using Gringorten	Plotting Position)	
2-Year 5-Year 10-Year 25-Year 50-Year 100-Year 200-Year 500-Year	0.593 0.754 1.009 1.167 1.534 1.647 1.744 1.873			
	ncy Data(cfs)	ed Using Gringorten		ink Outflow 1 Frequency Stats
2-Year 5-Year 10-Year 25-Year 50-Year 100-Year 200-Year 500-Year	· · /			
Tr(yrs) F	ncy Data(cfs) Interval Compute lood Peak (cfs)	ed Using Gringorten	********** Plotting Position)	Link Inflow Frequency Stats
2-Year 5-Year 10-Year 25-Year 50-Year 100-Year 200-Year 500-Year	2.135 2.815 3.318 4.274 4.944 6.001 6.233 6.539			
	ncy Data(cfs) Interval Compute lood Peak (cfs)	ed Using Gringorten	********** Plotting Position)	Link Outflow 1 Frequency Stats
2-Year 5-Year 10-Year 25-Year 50-Year 100-Year 200-Year 500-Year	1.883 2.304 2.700 2.961 3.147 3.239 3.257 3.281			
********* Link: WSEL Frequ (Recurrence Tr (yrs) W	ency Data(ft) Interval Compute /SEL Peak (ft)	ed Using Gringorten	********** Plotting Position)	Link WSEL Stats

1.05-Year 100.709

1.11-Year	100.741
1.25-Year	100.824
2.00-Year	101.141
3.33-Year	101.411
5-Year	101.510
10-Year	101.924
25-Year	102.234
50-Year	102.470
100-Year	102.593

********* Link: SWALE 2 Flood Frequency Data(cfs) (Recurrence Interval Comput Tr (yrs) Flood Peak (cfs)	********* ed Using Gringorten Plotting Position)	Link mow Frequency Stats
2-Year 1.264 5-Year 1.635 10-Year 1.961 25-Year 2.503 50-Year 2.966 100-Year 3.537 200-Year 3.623 500-Year 3.736		
********** Link: SWALE 2 Flood Frequency Data(cfs) (Recurrence Interval Comput Tr (yrs) Flood Peak (cfs)	********* ed Using Gringorten Plotting Position)	Link Outflow 1 Frequency Stats
2-Year1.2045-Year1.49110-Year1.79725-Year2.07950-Year2.254100-Year2.471200-Year2.491500-Year2.518		
********* Link: SWALE 2 WSEL Frequency Data(ft) (Recurrence Interval Comput Tr (yrs) WSEL Peak (ft)	********** ed Using Gringorten Plotting Position)	LINK WOEL Stats
1.05-Year         100.588           1.11-Year         100.602           1.25-Year         100.623           2.00-Year         100.721           3.33-Year         100.799           5-Year         100.865           10-Year         101.076           25-Year         101.304           50-Year         101.677		
Tr (yrs) Flood Peak (cfs)	********* ed Using Gringorten Plotting Position)	Link Inflow Frequency Stats
2-Year 4.925 5-Year 6.023 10-Year 7.191 25-Year 8.287		

50-Year	9.660
100-Year	10.025
200-Year	10.165
500-Year	10.349

\*\*\*\*\*\*\*\*\*\* Link Outflow 1 Frequency Stats

\*\*\*\*\*\*\*\*\* Link: Det Pond
Flood Frequency Data(cfs)
(Recurrence Interval Computed Using Gringorten Plotting Position)
Tr (yrs) Flood Peak (cfs)
2-Year 0.220
5-Year 0.463
10-Year 0.544
25-Year 0.737
50-Year 1 101

10-Year0.54425-Year0.73750-Year1.101100-Year1.127200-Year1.167500-Year1.220

\*\*\*\*\*\*\*\*\*\* Link WSEL Stats

\*\*\*\*\*\*\*\*\* Link: Det Pond \*\*\*\*\*\*\*\*\* Link: Det Pond \*\*\*\*\*\*\*\*\*\* Link: WSEL Frequency Data(ft) (Recurrence Interval Computed Using Gringorten Plotting Position) Tr (yrs) WSEL Peak (ft)

1.05-Year 102.320 102.549 1.11-Year 1.25-Year 102.931 2.00-Year 104.086 3.33-Year 104.708 5-Year 105.166 10-Year 105.846 25-Year 106.101 50-Year 106.407 100-Year 106.445

#### 

Recharge is computed as input to PerInd Groundwater Plus Infiltration in Structures

	Total Predeveloped Recharge During Simulation					
Model I	Model Element Recharge Amount (ac-ft)					
Subbas Link:	sin: Subbasin 1	0.000	2584.654	4		
Total:			2584.654	64		
	Total Post Dev	eloped R	echarge [	During Simulation		
Model I	Element	R	Recharge /	Amount (ac-ft)		
	sin: BUILDING A	-	8.860			
	sin: BUILDING B		5.273			
			2.946			
			4.288 3.404			
			5.404 5.751			
			4.653			
	sin: BUILDING H	-	11.013			
			109.566			
Subbasin: WEST PARKING			1	164.907		
Subbas	Subbasin: FRANKLIN ST ROW 51.928					
Subbasin: OLD PACIFIC ROW			7	77.643		
Subbas	sin: POND		137.160			
Link:		0.000				
	SWALE 1		437.451			
Link:	SWALE 2		374.298			

Link: Det Pond 0.000 Total: 1399.140

Total Predevelopment Recharge is Greater than Post Developed Average Recharge Per Year, (Number of Years= 121) Predeveloped: 21.361 ac-ft/year, Post Developed: 11.563 ac-ft/year

-----SCENARIO: PREDEVELOPED

Number of Links: 1

\*\*\*\*\*\*\*\*\*\*\* Link: POC

\*\*\*\*\*\*\*

2-Year Discharge Rate : 0.513 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge On-line Design Discharge Rate (91% Exceedance): 0.39 cfs Off-line Design Discharge Rate (91% Exceedance): 0.22 cfs

Infiltration/Filtration Statistics------Inflow Volume (ac-ft): 2040.89 Inflow Volume Including PPT-Evap (ac-ft): 2040.89 Total Runoff Infiltrated (ac-ft): 0.00, 0.00% Total Runoff Filtered (ac-ft): 0.00, 0.00% Primary Outflow To Downstream System (ac-ft): 2040.89 Secondary Outflow To Downstream System (ac-ft): 0.00 Volume Lost to ET (ac-ft): 0.00 Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 0.00%

### -----SCENARIO: POSTDEVELOPED

Number of Links: 4

\*\*\*\*\*\*\*\*\*\*\* Link: POC

\*\*\*\*\*\*\*

2-Year Discharge Rate : 0.220 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge On-line Design Discharge Rate (91% Exceedance): 999.00 cfs Off-line Design Discharge Rate (91% Exceedance): 999.00 cfs

Infiltration/Filtration Statistics------Inflow Volume (ac-ft): 4941.70 Inflow Volume Including PPT-Evap (ac-ft): 4941.70 Total Runoff Infiltrated (ac-ft): 0.00, 0.00% Total Runoff Filtered (ac-ft): 0.00, 0.00% Primary Outflow To Downstream System (ac-ft): 4941.70 Secondary Outflow To Downstream System (ac-ft): 0.00 Volume Lost to ET (ac-ft): 0.00 Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 0.00%

\*\*\*\*\*\*\*\*\*\*\*\* Link: SWALE 1

\*\*\*\*\*\*\*

2-Year Discharge Rate : 1.883 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge On-line Design Discharge Rate (91% Exceedance): 0.74 cfs Off-line Design Discharge Rate (91% Exceedance): 0.43 cfs

Infiltration/Filtration Statistics------Inflow Volume (ac-ft): 2329.11 Inflow Volume Including PPT-Evap (ac-ft): 2330.34 Total Runoff Infiltrated (ac-ft): 437.45, 18.77% Total Runoff Filtered (ac-ft): 0.00, 0.00% Primary Outflow To Downstream System (ac-ft): 1858.89 Secondary Outflow To Downstream System (ac-ft): 0.00 Volume Lost to ET (ac-ft): 34.00 Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 20.23%

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Link: SWALE 2

\*\*\*\*\*\*

2-Year Discharge Rate : 1.204 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge On-line Design Discharge Rate (91% Exceedance): 0.43 cfs Off-line Design Discharge Rate (91% Exceedance): 0.25 cfs

Infiltration/Filtration Statistics------Inflow Volume (ac-ft): 1389.64 Inflow Volume Including PPT-Evap (ac-ft): 1390.68 Total Runoff Infiltrated (ac-ft): 374.30, 26.91% Total Runoff Filtered (ac-ft): 0.00, 0.00% Primary Outflow To Downstream System (ac-ft): 991.96 Secondary Outflow To Downstream System (ac-ft): 0.00 Volume Lost to ET (ac-ft): 24.43 Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 28.67%

\*\*\*\*\*\*\*\*\*\* Link: Det Pond

\*\*\*\*\*\*\*

Basic Wet Pond Volume (91% Exceedance): 64362. cu-ft Computed Large Wet Pond Volume, 1.5\*Basic Volume: 96543. cu-ft

2-Year Discharge Rate : 0.220 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge On-line Design Discharge Rate (91% Exceedance): 1.79 cfs Off-line Design Discharge Rate (91% Exceedance): 1.04 cfs

Infiltration/Filtration Statistics------Inflow Volume (ac-ft): 4941.93 Inflow Volume Including PPT-Evap (ac-ft): 4941.93 Total Runoff Infiltrated (ac-ft): 0.00, 0.00% Total Runoff Filtered (ac-ft): 0.00, 0.00% Primary Outflow To Downstream System (ac-ft): 4941.70 Secondary Outflow To Downstream System (ac-ft): 0.00 Volume Lost to ET (ac-ft): 0.00 Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 0.00%

#### \*\*\*\*\*\*\*\*\*\*Compliance Point Results \*\*\*\*\*\*\*\*\*\*\*\*\*

Scenario Predeveloped Compliance Link: POC Scenario Postdeveloped Compliance Link: POC

# \*\*\* Point of Compliance Flow Frequency Data \*\*\*

Recurrence Interval Computed Using Gringorten Plotting Position

Prede	velopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)		Tr (Years) Discharge (cfs)	
2-Year	0.513	2-Year	0.220	
5-Year	0.790	5-Year	0.463	
10-Year	1.017	10-Year	0.544	
25-Year	1.350	25-Year	0.737	
50-Year	1.715	50-Year	1.101	
100-Year	2.019	100-Yea	ar 1.127	
200-Year	2.513	200-Yea	ar 1.167	
500-Year	3.167	500-Yea	ar 1.220	
** •	0			4

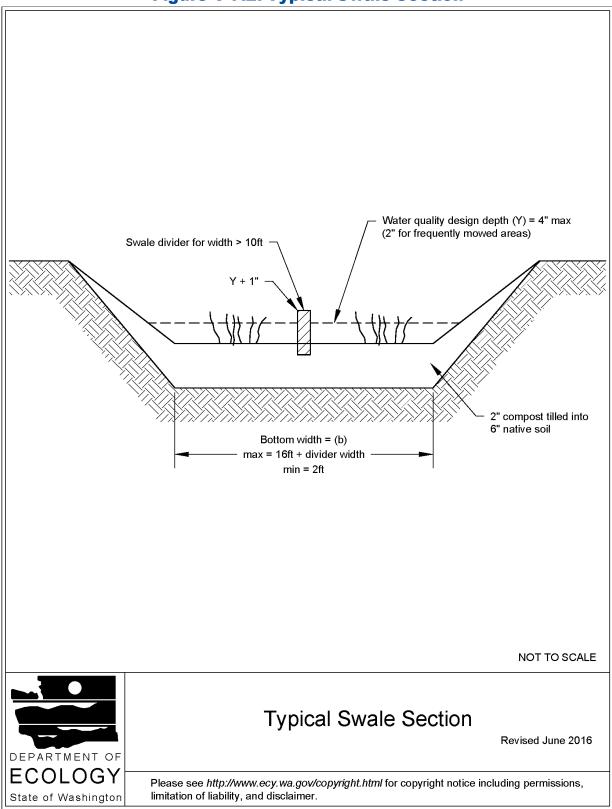
\*\* Record too Short to Compute Peak Discharge for These Recurrence Intervals

Excursion at Predeveloped 50%Q2 (Must be Less Than or Equal to 0%): Maximum Excursion from 50%Q2 to Q2 (Must be Less Than or Equal to 0 Maximum Excursion from Q2 to Q50 (Must be less than 10%): Percent Excursion from Q2 to Q50 (Must be less than 50%):	%): - -	41.9% PASS 17.5% PASS 48.9% PASS 0.0% PASS
MEETS ALL FLOW DURATION DESIGN CRITERIA: PASS		
**** <b>LID Duration Performance</b> **** Excursion at Predeveloped 8%Q2 (Must be Less Than 0%): Maximum Excursion from 8%Q2 to 50%Q2 (Must be Less Than 0%):	212.6% 240.1%	FAIL FAIL
LID DURATION DESIGN CRITERIA: FAIL		



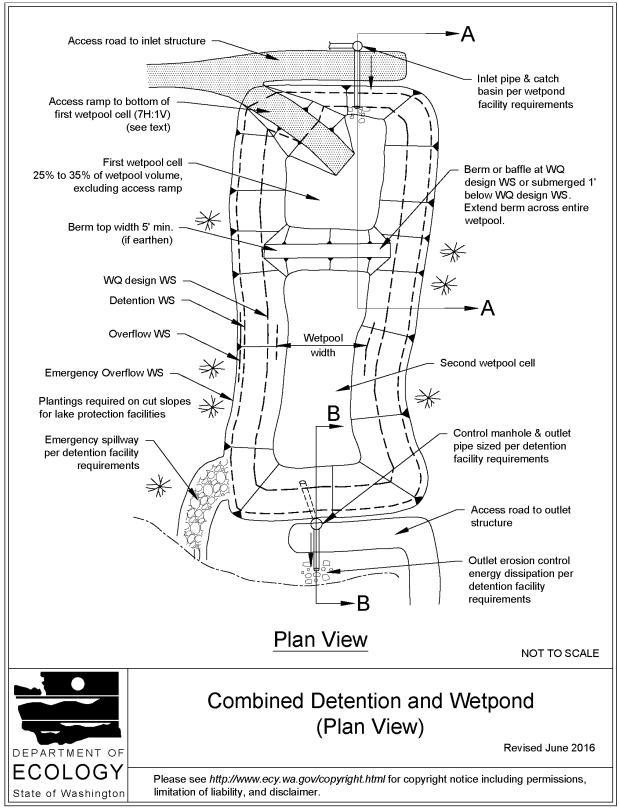
# **ATTACHMENT 4**

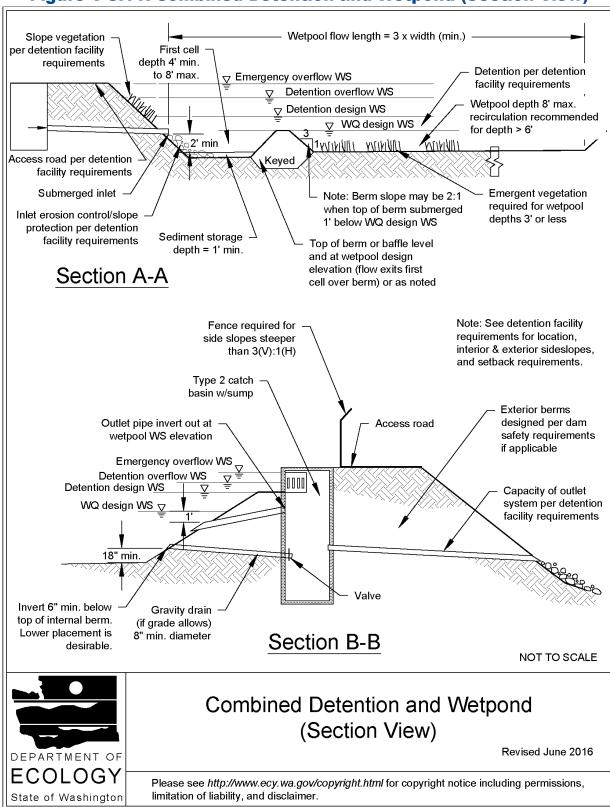
**BMP** Details



### **Figure V-7.2: Typical Swale Section**

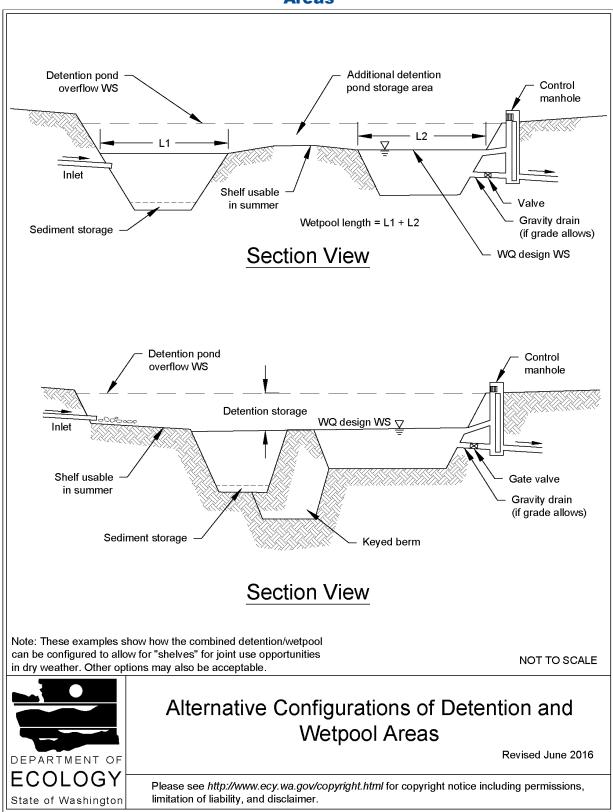
### Figure V-8.10: Combined Detention and Wetpond (Plan View)





### Figure V-8.11: Combined Detention and Wetpond (Section View)

### Figure V-8.12: Alternative Configurations of Detention and Wetpool Areas





# **ATTACHMENT 5**

Critical Areas Report



# SCHOTT & ASSOCIATES Ecologists & Wetlands Specialists

21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

# JURISDICTIONAL WETLAND DELINEATION REPORT FOR

Logan's Landing

T5N, R1W, Section 13, Parcels 50730, 50720, 50714, 50680023 Woodland, Cowlitz County, Washington

# **Prepared for**

Shayne Olsen Logan Partners, LLC P.O. Box 1940 Bend, OR 97709

# **Prepared by**

Kim Cartwright & Juniper Tagliabue of Schott & Associates, Inc.

# Date:

February 2022

**Project #: 2818** 

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### I. Introduction

Schott & Associates (S&A) was contracted to conduct wetland delineation on a 21.46acre study site located at the south end of Franklin Street in Woodland, Cowlitz County, WA (T5N, R1W, Section 13, Parcels 50730, 50720, 50714, 50680023; Figures 1 and 2). A wetland investigation of the study site was initiated by the landowner in support of their proposed mixed use commercial project.

The purpose of this study was to document the presence and extent of existing onsite wetlands and other waters that may be regulated under the Clean Water Act (CWA) by the U.S. Army Corps of Engineers (Corps) and under the Shoreline Management Act and Water Pollution Act by the Washington State Department of Ecology (Ecology). This report follows guidance issued by both agencies for wetland delineation reports and jurisdictional determinations for the purpose of regulating fill and removal within waters of the state. This report will be used to establish federal and state wetland jurisdictional boundaries for project permitting and local jurisdictional requirements.

The findings of this report are based upon information gathered during field investigation and upon state and federal laws regulating wetland areas. S&A staff utilized the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2* (USACE 2010) to conduct wetland delineations. Study site wetlands were rated using the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby 2014) to inform preliminary wetland requirements as outlined by the City of Woodland Critical Areas Regulation, WMC 15.08.

### II. <u>Methods</u>

Delineation methods included both desktop review and onsite data collection. Prior to the field investigation, the following existing data and information was reviewed:

- Cowlitz County GIS
- United States Geological Survey (USGS) 7.5-minute topographic quadrangle Deer Island and Woodland (Figure 2)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington Department of Natural Resources (WDNR) forest practices wetland and stream mapping (Figure 3)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) online mapper (<u>https://geodataservices.wdfw.wa.gov/hp/phs/</u>)
- Washington Natural Heritage Program (WNHP) rare plant and high-quality ecosystem GIS data available at https://www.dnr.wa.gov/natural-heritage-program
- U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) gridded Soil Survey Geographic (gSSURGO) database for Cowlitz County (Figure 4)

 Recent and historical aerial photographs provided by Google Earth (Figures 5a-5b)

Delineation fieldwork was conducted on October 8, 2020. Vegetation, soils, and hydrology data were collected according to methods described in the *1987 Manual* and the *Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys, and Coast (Version 2.0).* Fifty-four (54) sample plots were established throughout the site to determine the presence or absence of wetlands (Appendix C). Plant indicator status was determined using the 2018 National Wetland Plant List (Corps 2018). Onsite streams, if present, were delineated via the ordinary highwater mark (OHWM) as indicated by top of bank, wrack or scour lines, change in vegetation communities, or gage elevation where applicable.

All identified wetlands and waters were classified according to the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and rated by hydrogeomorphic (HGM) class according to the western Washington wetland rating system (Hruby 2014).

Representative ground level photographs were recorded to document site conditions (Appendix B; Figure 6).

### A. Mapping Method

Wetland, OHWM, photo point, sample plot, and study site locations were recorded with a handheld Trimble GPS unit capable of sub-meter accuracy following differential correction with Pathfinder Office desktop software. These data were converted to ESRI shapefile and mapped using ArcMap 10.6 desktop software. Wetland/stream buffers were mapped using ArcMap's buffer function.

# III. Results and Discussion

# A. Site Description

The study site consisted of four contiguous parcels located between Old Pacific Highway and Interstate-5 at the south terminus of Franklin Street. The site consisted of a vacant field vegetated largely by reed canarygrass (*Phalaris arundinacea*), creeping bentgrass (*Agrostis stolonifera*), and scattered thickets of spiraea (*Spiraea douglasii*) and Himalayan blackberry (*Rubus armeniacus*). The margins of the field were forested primarily by black cottonwood (*Populus basamifera*) with some red alder (*Alnus rubra*) and an understory of hazelnut (*Corylus cornuta*), English hawthorn (*Crataegus mongyna*), Himalayan blackberry, and western swordfern (*Polystichum munitum*), along with areas of redosier dogwood (*Cornus sericea*) and English ivy (*Hedera helix*). A ditch ran along the eastern boundary of the site, was conducted through a culvert at the northeastern corner, and then followed the northern boundary of the site, apparently just beyond the parcel boundary. A gravel access road runs along the southern boundary of tax lot 50714. At the time of delineation, the study site was zoned for highway commercial. Topography within the study site was generally flat with little variation. Three soil series were mapped within the study site according to the USDA NRCS soil survey for Cowlitz County. The majority of the site was mapped with Newberg fine sandy loam, 0 to 3 percent slopes. The western portion of the site was mapped with Maytown silt loam, 0 to 3 percent slopes. The eastern margin of Parcel 50714 was mapped with Kelso silt loam, 15 to 30 percent slopes. All mapped soils onsite are non-hydric.

According to WDNR mapping and the NWI, a temporarily flooded emergent (PEM1A) wetland is mapped over most of the site. Also present were seasonally flooded palustrine scrub/shrub wetland (PSSC) and seasonally flooded emergent wetland (PEM1C) along the eastern perimeter and palustrine forested temporarily flooded wetland (PFOA) along the northern perimeter. WDNR hydrography data shows a Type U water extending north-northwest, portions of which are located within the northern portion of the study site. Type U is an identifier for unknown water features that need to be verified and identified on proposed forest practice activity maps. Onsite verification did not identify any portions of this waterway onsite, though a manmade ditch was identified in the general location (described below).

No PHS priority habitats outside of wetlands were identified on the property according to PHS mapping. One PHS species, the big brown bat (*Eptesicus fuscus*), was identified as a PHS Listed Occurrence, but this mapping was based on township scale (the entire township is mapped as an occurrence area), not on individual site scale. The site does not feature typical bat habitat including Douglas fir or Ponderosa pine forest, large dead trees or snags, caves, cliffs, mines, bridges or buildings. No WHNP species were mapped within or near the site (WDFW 2022).

Aerial photographs for the time period between 1990 and 2021, available from Google Earth, were reviewed to assess site history. In the earliest available aerial photograph (1990; Figure 5b), the site appears to contain the same conditions as during the time of fieldwork (Figure 5a).

### 1. Precipitation Data and Analysis

Precipitation data for the date of fieldwork and the time period preceding it were reviewed to evaluate observed wetland hydrology conditions relative to actual and statistically normal precipitation. Precipitation that deviates from normal ranges can affect site conditions and impact observed wetland hydrology indicators. Precipitation data was acquired from the NRCS Agricultural Applied Climate Information System (AgACIS) for the Vancouver 4NNE station to provide context for observed hydrological conditions of the study area at the time of the site visit (AgACIS 2019-2020). Tables 1 and 2 provide current year precipitation data, comparison to the normal water year average, as well as normal monthly ranges of precipitation representing 70% probability as reported for the Vancouver 4NNE NRCS WETS station (NRCS 1990-2020).

Table 1. Precipitation summary for the date of fieldwork and preceding water year (October 1, 2019 – Date of Fieldwork)

	Observed Precipitation*			
Date of Field Work	Date of Visit (in.)	2 weeks prior (in.)	Previous Water Year (in.)	
October 8, 2020	0.00	1.04	36.63	

\*Data provided by NRCS AgACIS data from the Vancouver 4NNE Station, WA, 2019-2020 Previous water year data Oct. 2019 – Sept. 2020

Month	Total Precipitation (inches) <sup>1</sup>	WETS Normal Range (inches) <sup>2</sup>	Condition (Value)	Month Weight	Weighted Condition (value*weight) <sup>3</sup>		
September	1.61	0.65-1.82	Normal (2)	3	6		
August	0.24	0.27-0.73	Dry (1)	2	2		
July	0.85	0.20-0.53	Wet (3)	1	3		
	Sum (Fieldwork Condition) 11 (Normal)						

### Table 2. Precipitation assessment for the three months preceding fieldwork

<sup>1</sup>Data provided by NRCS AgACIS data from the Vancouver 4NNE Station, WA, 2020 <sup>2</sup>Data provided by NRCS WETS station for the Vancouver 4NNE Station, WA, 1990-2020 <sup>3</sup>Sum = 6-9: Dry conditions, Sum = 10-14: normal conditions, Sum = 15-18: wet conditions

Fieldwork took place on October 8, 2020. No precipitation was observed on that day or within the month of October thus far. In the two weeks preceding fieldwork, 1.04 inches of precipitation was observed, in the first three days of the two-week period. Precipitation observed in the three months prior to fieldwork was generally within WETS normal range (though August was slightly below). Based on a weighted summary of weather conditions in the three months preceding fieldwork, hydrological conditions were estimated to be normal during the time of fieldwork.

# B. Findings

Based on soils, vegetation, hydrology, and OHWM data gathered in the field, eight wetlands were identified within the study site. Wetland area onsite totaled 1.58 acres. Wetland, sample plots, and photo point locations are shown in Appendix A on Figure 6. The wetlands are described in detail below.

# 1. Wetland 1

Wetland 1 (1.24-acre) consisted of a broad flat with narrow, shallow swales extending to the west and south. It was bordered by a ditch along the east property line. The wetland extended offsite to the north and east. The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope. The wetland was a slope HGM with a Cowardin class of seasonally saturated, palustrine forested (PFOB). The overstory

was dominated by black cottonwood with reed canarygrass (FACW) and patches of spiraea (FACW) and redosier dogwood (FACW).

Soil samples met the Corps hydric soil indicator for sandy redox (S5) and redox dark surface (F6) indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were generally dark grayish brown (10 YR 3/2 or 10YR2/2) with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was silt loam, sandy loam and loamy sand. Hydrology was generally based on secondary Corps wetland hydrological indicators including geomorphic position (D2) and FAC-neutral test (D5).

Wetland 1 boundaries reflected the gradual slopes of the wetland swale features. The boundaries were defined by topographic breaks, a lack of hydric soil or hydrology indicators, and the transition into vegetation communities dominated by hazelnut (FACU) and snowberry (FACU), Himalayan blackberry (FAC), sweet vernal grass (*Anthoxanthum odoratum*; FACU) (SP24) and English ivy (FACU) (SP43).

# 2. Wetland 2

Wetland 2 (0.04-acre) consisted of an isolated, semi-permanently, flooded palustrine emergent (PEMF) depressional wetland in the southeastern portion of Parcel 50729. The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope impounded by topography and it contained several inches of ponded surface water during the time of fieldwork. Vegetation consisted largely of reed canarygrass as well as slough sedge (*Carex obnupta*; OBL) and some Sitka willow (*Salix sitchensis*; FACW) and redosier dogwood, which grew along the edges of the wetland. Black cottonwoods provided canopy cover but were not rooted within the wetland.

Soil sample met the Corps hydric soil indicator S5 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were dark grayish brown (10 YR 3/2) with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was loamy sand. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries were characterized by a defined topographic break as well as a lack of hydric soil or hydrology indicators. Reed canarygrass continued to be the dominant vegetation beyond the wetland boundary.

# 3. Wetland 3

Wetland 3 (0.006-acre) consisted of a very small, very shallow, isolated depression. The wetland was estimated to be sustained largely by groundwater discharge as well as impounded precipitation and runoff. It was assessed as a Cowardin class of seasonally saturated, palustrine scrub-shrub (PSSB). Vegetation was dominated by Douglas spiraea and reed canarygrass.

The soil sample met the Corps hydric soil indicator F6 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were dark grayish brown with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was sandy silt loam. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries were characterized by slight topographic break as well as a lack of hydric soil or hydrology indicators. Reed canarygrass continued to be the dominant vegetation beyond the wetland boundary.

### 4. Wetland 4

Wetland 4 consisted of a linear 0.12-acre shallow swale along the northern boundary of Parcel 50714. The wetland was classified as a depressional HGM class with a Cowardin class of PEMB. The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope. Vegetation was dominated by reed canarygrass with scattered soft rush (*Juncus effusus*; FACW) and redosier dogwood.

Soil samples met the Corps hydric soil indicator F6 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were dark grayish brown with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was silt loam. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries were characterized by slight topographic break as well as a lack of hydric soil or hydrology indicators. Reed canarygrass continued to be the dominant vegetation beyond the wetland boundary.

# 5. Wetland 5

Wetland 5 (0.05-acre) consisted of a ditched, linear wetland extending west from a small depression near the center of Parcel 50714. The wetland was classified as a slope HGM class with a Cowardin class of PFOBd. The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope. The ditched wetland drained north into an upland ditch which extended offsite and along the eastern property boundary of Parcel 50729. Vegetation included an overstory of black cottonwood, with an understory of Sitka willow, English hawthorn, reed canarygrass, soft rush, and birds foot trefoil (*Lotus corniculatus*; FAC).

Soil samples met the Corps hydric soil indicator S5 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were dark grayish brown and grayish brown (10 YR 4/2) with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was loamy sand. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries were characterized by slight topographic break as well as a lack of hydric soil or hydrology indicators and transition in vegetation community. Upland

vegetation included hazelnut, serviceberry (Amelanchier alnifolia; FAC), and Himalayan blackberry.

# 6. Wetland 6

Wetland 6 (0.03 acre) consisted of an isolated, small, very shallow PFOB depressional wetland in the center of Parcel 50714. The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope. Vegetation was dominated by black cottonwood, redosier dogwood, reed canarygrass and soft rush.

The soil sample met the Corps hydric soil indicator S5 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were light gray (10YR5/2) with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was sand. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries were characterized by slight topographic break as well as a lack of hydric soil or hydrology indicators. Cottonwood and reed canarygrass continued to be the dominant vegetation beyond the wetland boundary.

# 7. Wetland 7

Wetland 7 was a 0.09-acre ditched slope wetland located at the eastern boundary of Parcel 50714. The wetland drained gradually to the east offsite into a roadside ditch along Old Pacific Highway. Vegetation was dominated by reed canarygrass and Cowardin class was seasonally saturated, partially ditched, palustrine emergent (PEMBd). The wetland was estimated to be sustained by groundwater discharge and runoff from areas upslope.

Soil sample met the Corps hydric soil indicator F6 indicating that iron in the soil has been removed and translocated under saturated, anoxic conditions. Soil layers were dark gravish brown (10 YR 3/2) with yellow-red redoximorphic concentrations occurring as soft masses. Soil texture was loam. Hydrology was based on secondary Corps wetland hydrological indicators including D2 and D5.

Upland boundaries to the west were characterized by slight topographic break as well as a transition to Himalayan blackberry and lack of hydric soil or hydrology indicators. Reed canarygrass continued beyond the wetland boundary. To the east the wetland boundary was defined by the toe of slope to the adjacent roadway.

# C. Wetland Ratings

Wetlands 1-7 were rated as a Category IV slope or depression wetlands according to the western Washington wetland rating system (forms and figures included as Appendix D).

Wetland 1 was rated moderate for water quality function and hydrologic function due the very gentle slope, high cover of persistent ungrazed vegetation. The landscape potential to support the functions was rated low, however, as the relatively undisturbed surroundings do not contribute pollutants or stormwater discharge into the wetland. Site

value was rated low as there is no aquatic resource in the basin on the 303(d) list or with a TMDL. Habitat function was rated moderate due to low species richness, high habitat interspersion and habitat type, and one special habitat feature. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 2 was rated moderate for water quality function as it is a depressional wetland with no outlet and seasonal ponding in greater than ½ the total area. Landscape potential to support the functions was rated low as the relatively undisturbed adjacent landscape does not contribute pollutants or stormwater discharge into the wetland. Site value was rated low as there is no aquatic resource in the basin on the 303(d) list or with a TMDL. Hydrologic function rated high due to lack of outlet, large proportion of seasonally ponded area, moderate storage depth, and low contributing basin ratio. Landscape potential to support the functions was rated low as the relatively undisturbed adjacent landscape does not contribute pollutants or stormwater discharge into the wetland. Habitat potential for Wetland 2 was rated low due to low species richness, habitat type and interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 3 was rated moderate for water quality function as it is a depressional wetland with no outlet and seasonal ponding in greater than ½ the total area. Landscape potential to support the functions was rated low as the relatively undisturbed adjacent landscape does not contribute pollutants or stormwater discharge into the wetland. Site value was rated low as there is no aquatic resource in the basin on the 303(d) list or with a TMDL. Hydrologic function rated low due to limited storage and high contributing basin ratio. Habitat function was rated low due to low species richness, habitat type and interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 4 was rated moderate for water quality function as it is a depression wetland with no outlet and high percentage of persistent ungrazed vegetative cover. Hydrologic function rated low due to limited storage and high contributing basin ratio. Landscape potential to support the functions was rated moderate due to presence of pollutants discharging from adjacent uplands. Site value was rated low for water quality as there is no aquatic resource in the basin on the 303(d) list or with a TMDL and moderate for hydrologic function. Habitat function was rated low due to low species richness, habitat type and interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 5 was rated moderate for water quality function due to minimal slope and high percentage of uncut herbaceous vegetation. Landscape potential to support the functions was rated moderate due to presence of pollutants discharging from some adjacent uplands. Site value was rated low for water quality as there is no aquatic resource in the

basin on the 303(d) list or with a TMDL. Hydrologic function rated low due to low percentage of rigid uncut vegetation within the wetland. Landscape potential was low due to low excess runoff from adjacent lands. Value was moderate due to potential to alleviate surface flooding downstream in the watershed. Habitat function was rated low due to low species richness, habitat type and interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 6 was rated moderate for water quality function as it is a depressional wetland with no outlet and high percentage of persistent ungrazed vegetative cover. Hydrologic function rated low due to limited storage and high contributing basin ratio. Landscape potential to support the functions was rated moderate due to presence of pollutants discharging from some adjacent uplands. Site value was rated low for water quality as there is no aquatic resource in the basin on the 303(d) list or with a TMDL and moderate for hydrologic function. Habitat function was rated low due to low species richness, habitat type and interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

Wetland 7 was rated moderate for water quality function due to minimal slope and high percentage of uncut herbaceous vegetation. Landscape potential to support the functions was rated moderate due to presence of pollutants discharging from some adjacent uplands. Site value was rated low as there is no aquatic resource in the basin on the 303(d) list or with a TMDL. Hydrologic function rated low due to low percentage of rigid uncut vegetation within the wetland. Landscape potential was moderate due to percentage of adjacent lands generating excess runoff. Value was moderate due to potential to alleviate surface flooding downstream in the watershed. Habitat function was rated low due to low number of habitat types and low interspersion. Habitat landscape potential was rated moderate due to some undisturbed surroundings and accessible habitat. Site value was rated low due to lack of significant habitat.

According to Woodland Municipal Code 15.08.400 and associated tables, wetland buffer widths are based on the wetland category rating and land use intensity of the proposed development activity. A Category IV wetland and anticipated "high" land use intensity activity are accorded a standard buffer width of 50 feet. Wetlands 2 and 3 meet criteria for exempted wetlands per 15.08.400(L) and were not accorded a buffer (Figure 6a-d). Wetland buffer area onsite totaled 2.99 acres.

#### IV. Summary and Conclusions

Based on vegetation, soils, and hydrology data, seven wetlands totaling 1.58 acres were present onsite. Wetlands 1, 5 and 7 were classified as slope wetlands and Wetlands 2, 3, 4 and 6 were classified as depressional wetlands. Wetland 2 was assessed as PFO Cowardin class and Wetlands 3 and 6 were assessed as PSS. The remaining wetlands were assessed as PEM Cowardin class.

All wetlands were rated as Category IV wetlands according to the western Washington wetland rating system and accorded a buffer width of 50 feet per Woodland Municipal code except for Wetlands 2 and 3, which met City criteria for exempted wetlands and were not accorded a buffer.

Wetlands are assumed to be state and federally jurisdictional unless an official jurisdictional determination specifies otherwise. Wetland buffers are assumed to be regulated by City of Woodland. Any proposed impacts to wetlands/waters or buffers will likely require permitting through the appropriate regulatory agencies.

Wetland	Size (ac)	HGM	Cowardin	Rating	Buffer
					Width (ft)
1	1.24	Slope	PFOB	IV	50
2	0.04	Depression	PEMF	IV	exempt
3	0.006	Depression	PSSB	IV	exempt
4	0.12	Depression	PEMB	IV	50
5	0.05	Slope	PFOBd	IV	50
6	0.03	Depression	PFOB	IV	50
7	0.09	Slope	PEMBd	IV	50

Table 3 Wetland Summary

#### A. Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Washington Department of Ecology and the U.S. Army Corps of Engineers.

#### V. Literature Citations

- Environmental Laboratory, 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory, 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, Coast Region (Version 2.0), Wetlands Regulatory Assistance Program ERDC/EL TR-10-3 U.S. Army Engineer Research and Development Center. Vicksburg, MS.
- Federal Register, 1980. 40 CFR Part 230: Section 404(b)(1), Guidelines for Specification of Disposal Sites of Dredged or Fill Material, Vol. 45, No. 249, pp. 85352-85353, U.S. Govt. Printing Office, Multnomah, D.C.
- Federal Register, 1982. Title 33, Navigation and Navigable Waters; Chapter II, Regulatory Programs of the Corps of Engineers. Vol. 47, No. 138, p. 31810, U.S. Govt. Printing Office, Multnomah, D.C.

- Federal Register, 1986. 33 CFR Parts 320 through 330, Regulatory Programs of the Corps of Engineers; Final Rule, Vol. 51, No. 219 pp. 41206-41259, U.S. Govt. Printing Office, Multnomah, D.C.
- Gridded Soil Survey Geographic (gSSURGO) Database for Washington. United States Department of Agriculture, Natural Resources Conservation Service. Available online at https://gdg.sc.egov.usda.gov/.
- Hruby, T. (2014). Washington State Wetland Rating System for Western Washington:
   2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology
- Kollmorgen Corporation, 1975. Munsell Soil Color Charts. Macbeth Division of Kollmorgen Corporation, Baltimore, MD.
- Natural Resource Conservation Service Water Agricultural Applied Climate Information Center: Vancouver 1990-2020. U.S. Department of Agriculture. Available: http://agacis.rcc-acis.org
- U.S. Army Corps of Engineers 2018.National Wetland Plant List, version 3.4 http://wetland-plants.usace.army.mil/U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH
- U. S. Fish and Wildlife Service. 2022. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/
- U.S. Geological Survey. 7.5 Minute Topographical Quadrangle. Deer Creek and Woodland. U.S Department of the Interior. Reston, VA. Available online at https://ngmdb.usgs.gov/topoview/
- Washington Department of Fish and Wildlife. 2022. Priority Habitats and Species on the Web. Available online at: https://geodataservices.wdfw.wa.gov/hp/phs/.
- Washington Department of Natural Resources. DNR Hydrography Watercourses Forest Practices Regulation. 2021 https://fortress.wa.gov/dnr/adminsa/GisData/metadata/ROPA\_WCHYDRO.pdf
- Washington Department of Natural Resources. Forest Practices Wetlands. 1995. https://fortress.wa.gov/dnr/adminsa/gisdata/metadata/fpwet metadata.pdf
- Washington Department of Natural Resources. Washington LiDAR Portal. South Cascades, 2014. Available online at: https://lidarportal.dnr.wa.gov/

Washington Natural Heritage Program. WHNP Element Occurrences - Current. Department of Natural Resources. Olympia, Washington. available at https://www.dnr.wa.gov/natural-heritage-program APPENDIX A. FIGURES

FIGURE 1: LOCATION MAP



Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, 2020

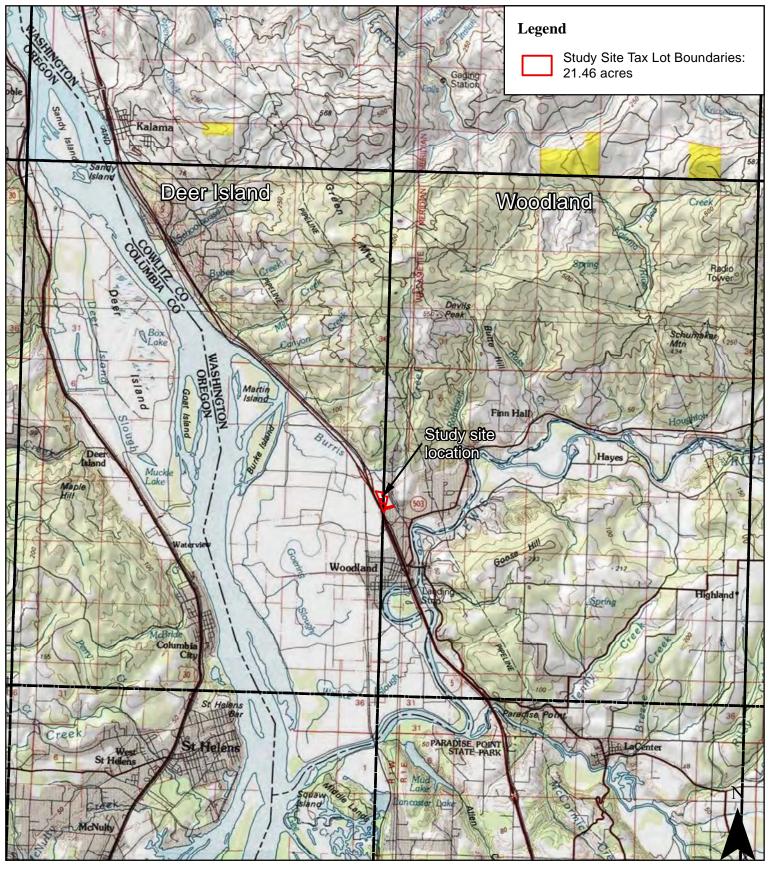


# Figure 1. Location Map

# Woodland Project Site: S&A # 2818

0 1,000 2,000 4,000 Feet

FIGURE 2: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP – DEER ISLAND AND WOODLAND

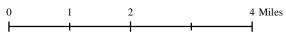


Date: 2/17/2022

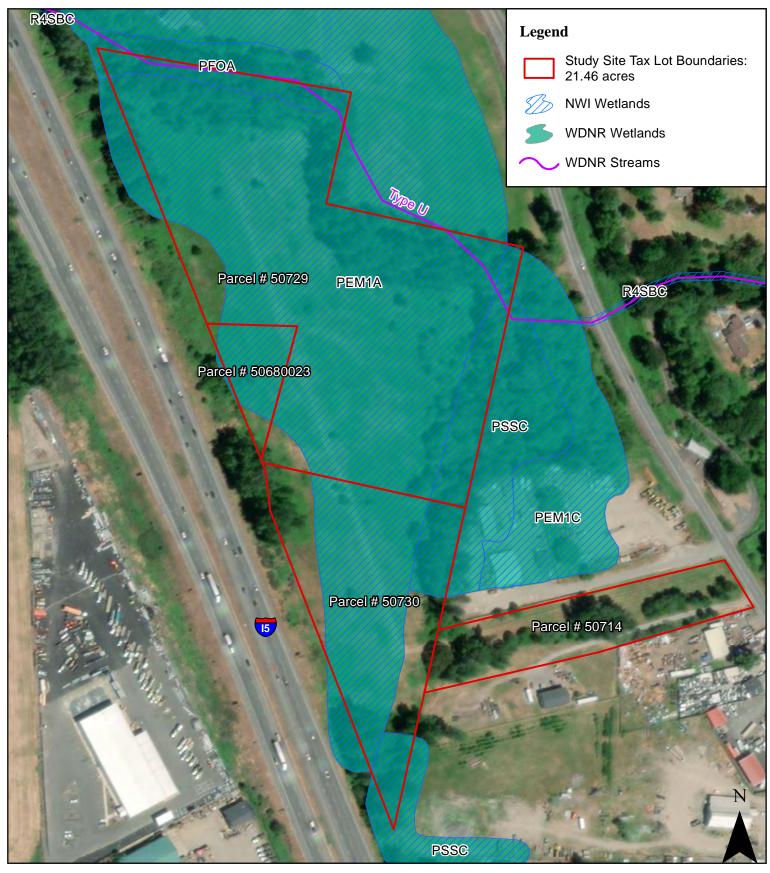
Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, 2020



# Figure 2. USGS Topographic Quadrangles -Deer Island and Woodland



### FIGURE 3: WETLAND INVENTORY MAP

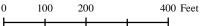


Date: 2/17/2022

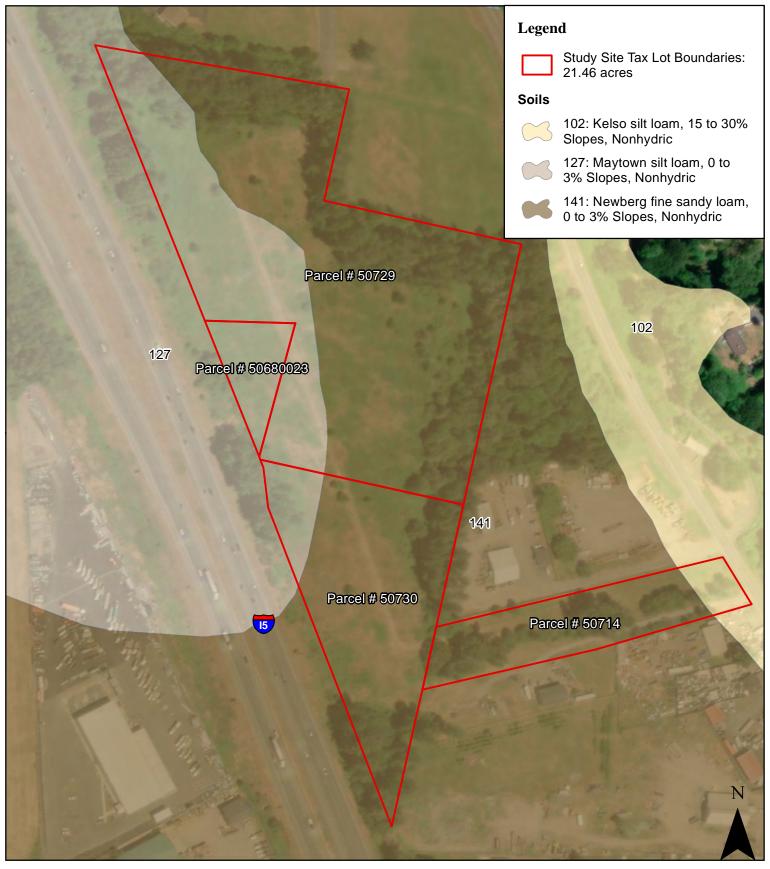
Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USFWS, NWI, 2022; WDNR, 2022

# Figure 3. Wetland Inventory Map





## FIGURE 4: USDA/NRCS SOIL SURVEY MAP

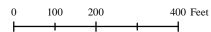


Date: 2/17/2022

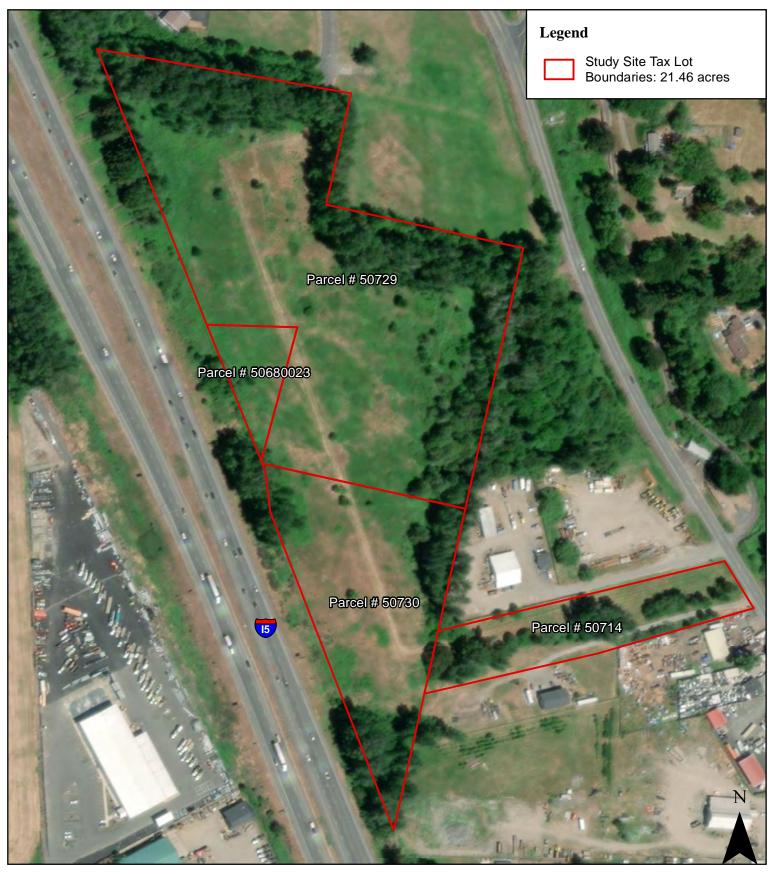
#### Figure 4. USDA/NRCS Soil Survey Map of Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; Cowlitz County



Soil Survey Staff, USDA, NRCS, 2/17/2022



## FIGURE 5A: RECENT AERIAL IMAGE



Date: 2/17/2022

Data Source: ESRI, 2021; Cowlitz County GIS Dept., 2019

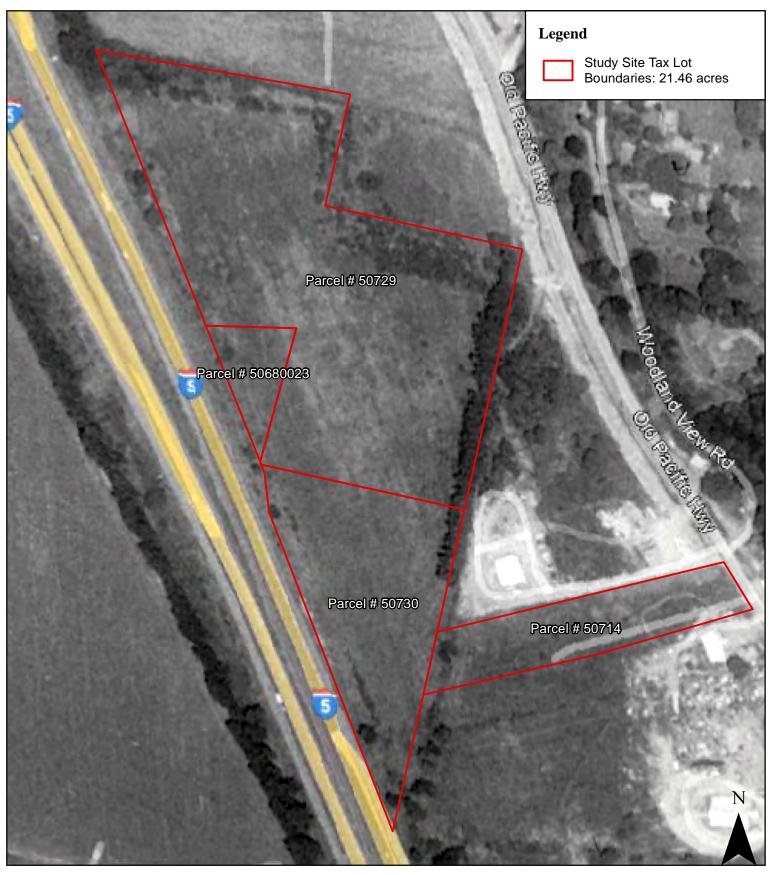
# SCHOTT & ASSOCIATES, Inc.

# Figure 5a. Recent Aerial Imagery -July 18, 2021

## Woodland Project Site: S&A # 2818

0 100 200 400 Feet

### FIGURE 5B: HISTORICAL AERIAL IMAGE

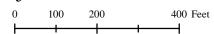


Date: 2/17/2022

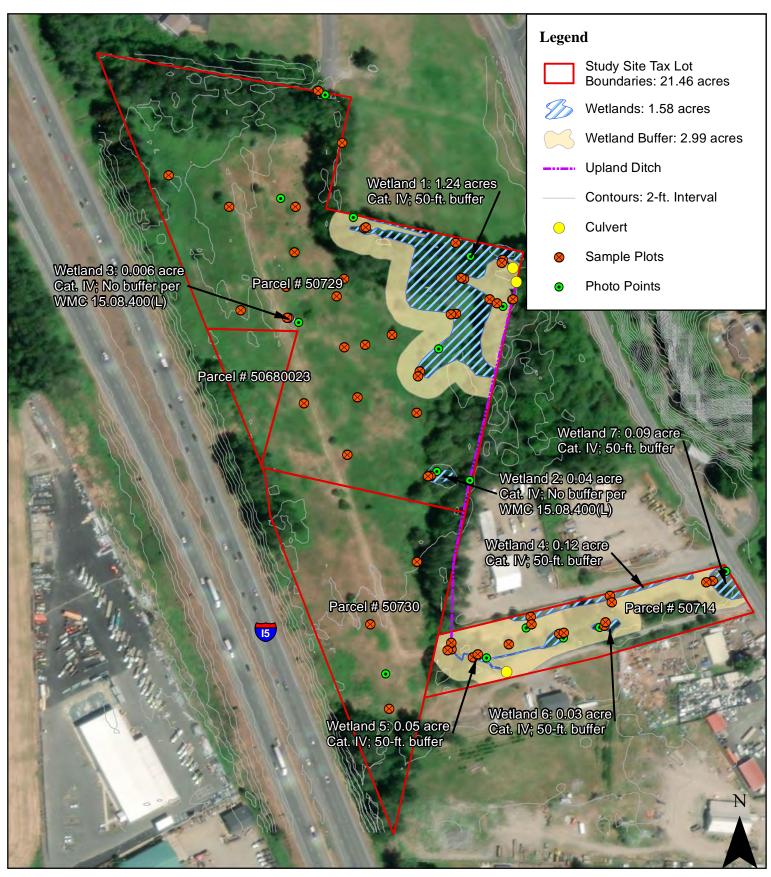
Data Source: Google Earth 2022; Cowlitz County GIS Dept., 2022



# Figure 5b. Historical Aerial Imagery -July 14, 1990



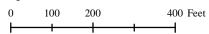
### FIGURE 6A-D: WETLAND DELINEATION MAPS

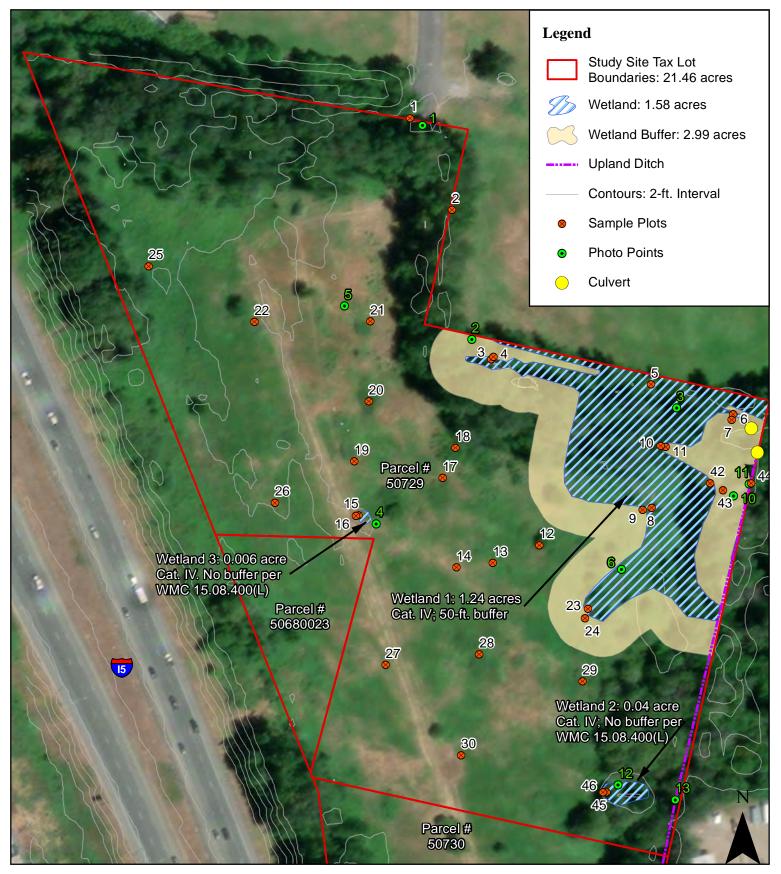


Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, NED, 2013



# Figure 6a. Wetland Delineation Map - Overview

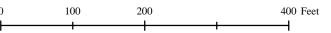


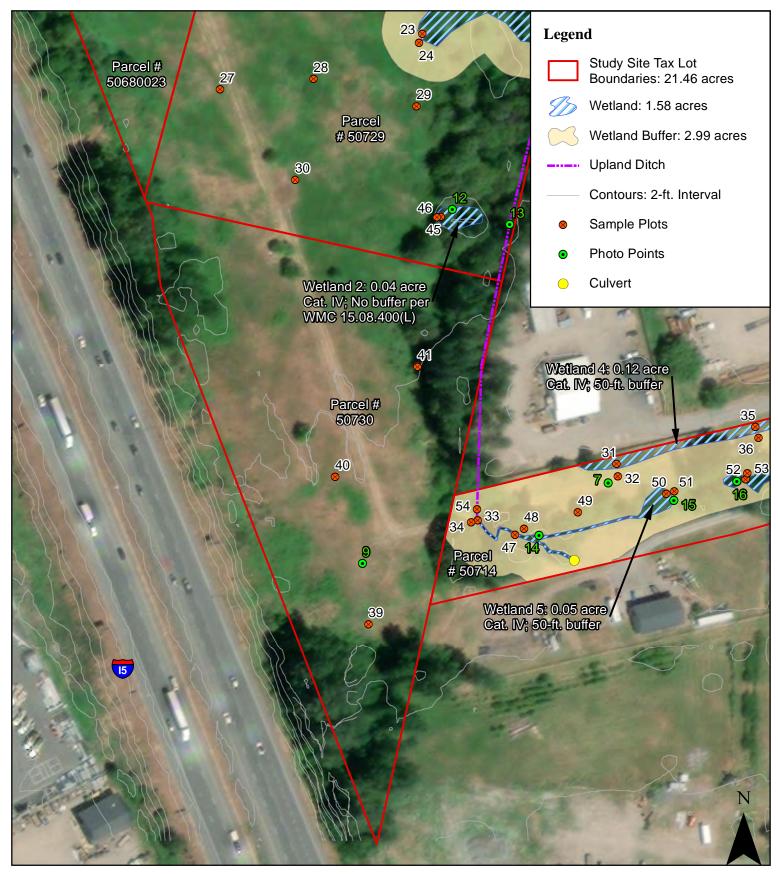


Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, NED, 2013



# Figure 6b. Wetland Delineation Map - North Detail

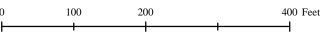


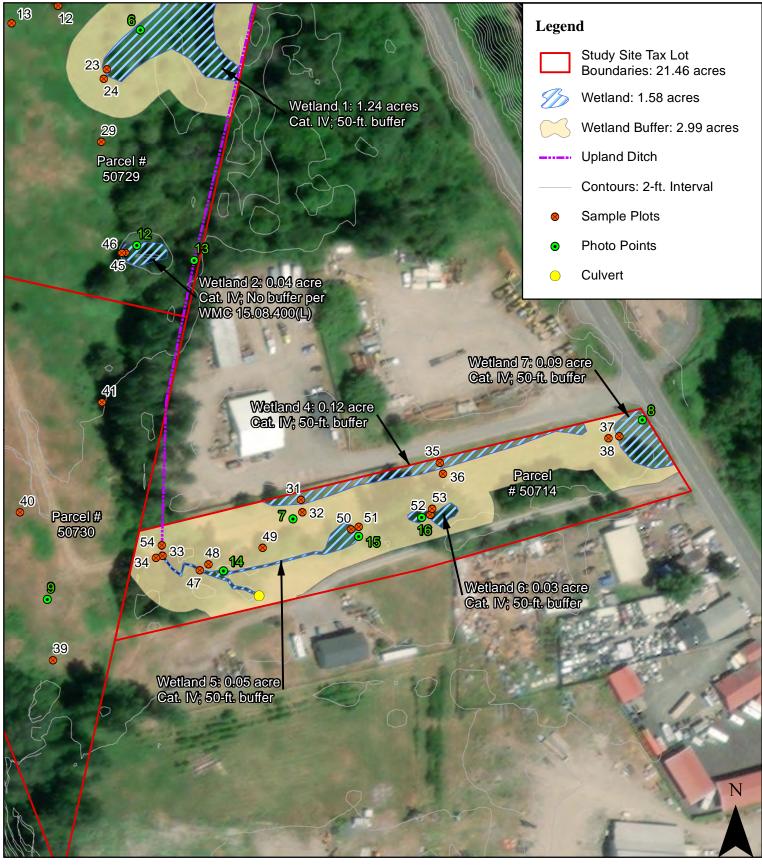


Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, NED, 2013



# Figure 6c. Wetland Delineation Map - South Detail

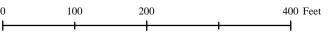




Data Source: ESRI, 2022; Cowlitz County GIS Dept., 2022; USGS, NED, 2013



# Figure 6d. Wetland Delineation Map - East Detail



#### APPENDIX B: GROUND LEVEL PHOTOGRAPHS



Photo Point 1. From the northern portion of the site facing west.



Photo Point 1. From the northern portion of the site facing east.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 2. From the northwestern portion of Wetland 1 facing south toward wetland boundary demarcated by orange flagging.



Photo Point 2. From the northwestern portion of Wetland 1 facing west.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 3. From the northeastern portion of Wetland 1 facing east.



Photo Point 3. From the northeastern portion of Wetland 1 facing west.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 4. From the Wetland 3 facing west toward wetland area.



Photo Point 4. From the Wetland 3 facing northwest toward adjacent upland.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 4. From the Wetland 3 facing west north toward adjacent upland.



Photo Point 4. From the Wetland 3 facing west east toward adjacent upland

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 5. From the northern portion of the site facing north.



Photo Point 5. From the northern portion of the site facing east.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 5. From the northern portion of the site facing south.



Photo Point 5. From the northern portion of the site facing west

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 6. From the southwestern portion of Wetland 1 facing northeast along the wetland boundary.



Photo Point 6. From the southwestern portion of Wetland 1 facing southwest along the wetland boundary.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 6. From the southwestern portion of Wetland 1 facing south toward wetland area.



Photo Point 6. From the southwestern portion of Wetland 1 facing west toward adjacent upland.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 7. From Wetland 4 facing north toward wetland area.



Photo Point 7. From Wetland 4 facing east along the wetland boundary.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 7. From Wetland 4 facing northwest toward wetland area.



Photo Point 7. From Wetland 4 facing west toward adjacent upland.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 8. From Wetland 7 facing south.



Photo Point 8. From Wetland 7 facing west.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 9. From the southern portion of the site facing north.



Photo Point 9. From the southern portion of the site facing east.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 9. From the southern portion of the site facing south.



Photo Point 9. From the southern portion of the site facing west.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 10. From the northeastern site boundary facing south toward upland forest.



Photo Point 10. From the northeastern site boundary facing north toward upland forest.



Photo Point 10. From the northeastern site boundary facing west toward Wetland 1.



Photo Point 11. From the upland ditch along the eastern boundary facing south.



Photo Point 11. From the ditch along the northeastern site boundary facing north.



Photo Point 12. From Wetland 2 facing south toward wetland area.



Photo Point 12. From Wetland 2 facing east toward wetland area.



Photo Point 12. From Wetland 2 facing west toward adjacent upland.



Photo Point 13. From the upland ditch along the eastern boundary facing north.



Photo Point 13. From the upland ditch along the eastern boundary facing south.



Photo Point 14. From Wetland 5 facing east along wetland ditch.



Photo Point 14. From Wetland 5 facing west along wetland ditch..

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 15. From Wetland 5 facing west toward wetland area.



Photo Point 15. From Wetland 5 facing north toward adjacent upland



Photo Point 15. From Wetland 5 facing east toward adjacent upland.



Photo Point 16. From Wetland 6 facing east toward wetland area.

APPENDIX B: GROUND LEVEL PHOTOGRAPHS Logan's Landing Project Site S&A # 2818



Photo Point 16. From Wetland 6 facing west toward wetland area.



Photo Point 16. From Wetland 6 facing north toward adjacent upland.

# APPENIDIX C: WETLAND DELINEATION DATA FORMS

Project/Site:	I-5 Woodland C			City/County: Woodland/Co	wlitz		Sampling Dat	e: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Poir	nt:	1
Investigator(s):	КВ			Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>none</u>	SI	ope (%):	0-3%
Subregion (LRR):	Northwest Forests a	ind Coast (LRR A)	Lat:	45.92343	39990	Long: -1	22.750620614	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PFOA		
Are climatic / hydro	logic conditions on th	ne site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Ye	es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remark	s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.		- <u>-</u>		Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 = 0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	0			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Ranunculus repens	30	Y	⊫FAC⊡	Prevalence Index = B/A =
2. Phalaris arundinacea	10	Y	FACW 🗆	
3. Epilobium sp.	5			Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.		·		5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		·		
Total Cover:	45			
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				Uvdronhytio
Total Cover:	0	<u></u>		Hydrophytic Vegetation
% Bare Ground in Herb Stratum 25 %		iotic Crust	0	Present? Yes x No
Remarks: 30% litter				

	Matrix		Re	dox Featu	ures						
Depth (inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-3	10 YR 3/2	100	/				LS				
3-5	10YR4/1	95	10YR4/4	5	С	М	S				
5-13	10YR3/2	95	10YR3/3	5	С	М	S				
		- <u> </u>									
Hydric Soil	I Indicators: (Applic		I LRRs, unless oth	nerwise r	noted.)	ted Sand		ematic Hydric Soils <sup>3</sup> :	x.		
	sol (A1)			Redox (S	,			Muck (A10)			
	Epipedon (A2)			d Matrix (				Parent Material (TF2)			
	Histic (A3)			•	ineral (F1)	(except l	MLRA 1) Othe	er (Explain in Remarks)			
Hydro	gen Sulfide (A4)		Loamy	Gleyed N	latrix (F2)						
Deplet	ted Below Dark Surfa	ace (A11)	Deplete	ed Matrix	(F3)						
Thick	Dark Surface (A12)		Redox	Dark Surf	face (F6)		<sup>3</sup> Indicators of hydrophytic vegetation and				
Sandy	/ Muck Mineral (S1)		Deplete	ed Dark S	urface (F7	)	wetland hydrology must be present,				
Sandy	v gleyed Matrix (S4)		Redox	Depressio	ons (F8)		unless distu	urbed or problematic.			
	Layer (if present):										
<u> </u>											
<u> </u>											

Wetland Hydrology Indicators:			
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)		
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2) MLRA 1, 2, 4A and 4B)	4A and 4B)		
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)		
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)		
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3	B) Geomorphic Position (D2)		
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)		
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6)	FAC-Neutral Test (D5)		
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)		
Sparsely Vegetated Concave Surface (B8)			
Field Observations:			
Surface Water Present? Yes No X Depth (inches):			
Water table Present?   Yes   No   x   Depth (inches):			
	Hydrology Present? Yes <u>No x</u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if availab	le:		
Remarks:			
itemarita.			

Western Mountains, Valleys and Coast -Version 2.0

1

Project/Site:	I-5 Woodland C		City/County: <u>Woodland/Co</u>	wlitz		Sampling Da	ate: Oct.8, 20	)20	
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	2
Investigator(s):	КВ			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>concave</u>		Slope (%): <u>0-</u>	3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92309	6599	Long: -1	22.750377409	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	e site typical for this t	time of ye	ear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present?	Yes <u>X</u> N	0
Are Vegetation	, Soil	, or Hydrology	I	naturally problematic?	(If nee	ded, explain any ar	nswers in Rema	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	60	Y	FAC□	That Are OBL, FACW, or FAC: <b>3</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
Total Cover:	60			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1.				Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 = 0
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	0			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Ranunculus repens	5		⊫FAC□	Prevalence Index = B/A =
2. Phalaris arundinacea	20	Y	FACW□	
3. Lotus corniculatus	15	Y	FAC□	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	40			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. <u>Rubus ursinus</u>	20	Y	FACU□	be present, unless disturbed or problematic.
2				Hydrophytic
Total Cover:	20			Vegetation
% Bare Ground in Herb Stratum 50 %	Cover of B	iotic Crust	0	Present? Yes x No
Remarks:				

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Depth	Matrix		Re	dox Features				
(inches)	Color (moist)	%	Color (moist)	% Туре	<sup>1</sup> Loc <sup>2</sup>	Texture	Remarks	
0-16	10 YR 3/3	100				LS		
						·		
						·		
<sup>1</sup> Type: C=C		- <u> </u>						
Type. C=C	Joncentration, D=Dep	pletion, RN	I=Reduced Matrix,	CS=Covered or (	Coated Sand	d Grains. <sup>2</sup> Location: F	PL=Pore Lining, M=Matrix.	
	Indicators: (Applic				Coated Sand		PL=Pore Lining, M=Matrix.	
Hydric Soil			I LRRs, unless otl		Coated Sand	Indicators for Prob		
Hydric Soil Histos	Indicators: (Applic		I LRRs, unless oti Sandy	herwise noted.)	Coated Sand	Indicators for Prob	plematic Hydric Soils <sup>3</sup> :	
Hydric Soil Histos	I Indicators: (Applic ol (A1)		I LRRs, unless oti Sandy Strippe	herwise noted.) Redox (S5)		Indicators for Prob 2 cr Rec	<b>Diematic Hydric Soils<sup>3</sup>:</b> m Muck (A10)	
Hydric Soil Histos Histic Black	I Indicators: (Applic ol (A1) Epipedon (A2)		I LRRs, unless otl Sandy Strippe Loamy	h <b>erwise noted.)</b> Redox (S5) d Matrix (S6)	1) (except	Indicators for Prob 2 cr Rec	<b>Dematic Hydric Soils<sup>3</sup>:</b> m Muck (A10) d Parent Material (TF2)	
Hydric Soil Histos Histic Black Hydrog	I Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3)	able to al	I LRRs, unless otl Sandy Sandy Strippe Loamy Loamy	h <b>erwise noted.)</b> Redox (S5) d Matrix (S6) Mucky Mineral (F	1) (except	Indicators for Prob 2 cr Rec	<b>Dematic Hydric Soils<sup>3</sup>:</b> m Muck (A10) d Parent Material (TF2)	
Hydric Soil Histos Histic Black Hydrog Deplet	I <b>Indicators: (Applic</b> ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4)	able to al	I LRRs, unless otl Sandy Strippe Loamy Deplete	<b>herwise noted.)</b> Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F	1) ( <b>except</b> 2)	Indicators for Prob 2 cr Rec MLRA 1) Oth	<b>Dematic Hydric Soils<sup>3</sup>:</b> m Muck (A10) d Parent Material (TF2)	
Hydric Soil Histos Histic Black Hydrog Deplet Thick	I Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa	able to al	I LRRs, unless otl Sandy Strippe Loamy Loamy Deplete Redox	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F3)	1) ( <b>except</b> 2)	Indicators for Prob 2 cr Rec MLRA 1) Oth <sup>3</sup> Indicators of h	<b>Dematic Hydric Soils<sup>3</sup>:</b> m Muck (A10) d Parent Material (TF2) her (Explain in Remarks)	
Hydric Soil Histos Histic Black Hydrog Deplet Thick Sandy	I Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12)	able to al	I LRRs, unless oti Sandy Strippe Loamy Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F3) Dark Surface (F6	1) ( <b>except</b> 2) ) F7)	Indicators for Prob 2 cr Rec MLRA 1) Oth <sup>3</sup> Indicators of P wetland hyd	Dematic Hydric Soils <sup>3</sup> : m Muck (A10) d Parent Material (TF2) her (Explain in Remarks)	
Hydric Soil Histos Histic Black Hydrog Deplet Thick Sandy Sandy	I Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12) Muck Mineral (S1)	able to al	I LRRs, unless oti Sandy Strippe Loamy Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F ed Matrix (F3) Dark Surface (F6 ed Dark Surface (	1) ( <b>except</b> 2) ) F7)	Indicators for Prob 2 cr Rec MLRA 1) Oth <sup>3</sup> Indicators of P wetland hyd	Dematic Hydric Soils <sup>3</sup> : m Muck (A10) d Parent Material (TF2) her (Explain in Remarks) hydrophytic vegetation and lrology must be present,	
Hydric Soil Histos Histic Black Hydrog Deplet Thick Sandy Sandy	I Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)	able to al	I LRRs, unless oti Sandy Strippe Loamy Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F ed Matrix (F3) Dark Surface (F6 ed Dark Surface (	1) ( <b>except</b> 2) ) F7)	Indicators for Prob 2 cr Rec MLRA 1) Oth <sup>3</sup> Indicators of P wetland hyd	Dematic Hydric Soils <sup>3</sup> : m Muck (A10) d Parent Material (TF2) her (Explain in Remarks) hydrophytic vegetation and lrology must be present,	

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2) MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Ro	oots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils	(C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A	A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water table Present?   Yes   No   x   Depth (inches):	
	Vetland Hydrology Present? Yes No x
(includes capillary fringe)	2 - 21 - 1 - 1
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if	available:
Remarks:	

2

Project/Site:	I-5 Woodland			City/County: Woodland/C	owlitz		Sampling Dat	te: <u>Oct.8, 2</u>	2020
Applicant/Owner:	Logan Partne	ers LLC				State: WA	Sampling Poi	nt:	3
Investigator(s):	KB			Section, Township, F	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.)	depression		Local relief (concave,	convey	, none): <u>concave</u>	S	lope (%):	0-3%
Subregion (LRR):	Northwest Fo	rests and Coast (LRR A	) Lat:	45.9225	30827	Long: -	122.750139681	Datum:	
Soil Map Unit Name	e: Newb	erg fine sandy loam				NWI Classification	: PEM1A		
Are climatic / hydro	logic condition	is on the site typical for	this time of y	year? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstan	ces" Present? Y	es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any a	answers in Remark	(s.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> Yes <u>x</u> Yes <u>x</u>	No No No	Is the Sampled Area within a Wetland?	Yes <u>x</u> No	
Area is sparsely vegetated (<5% cov	er) depression	under tree canop	y with high leaf litter cover.		

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 0 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 = 0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	0			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1				Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is $\leq 3.0^1$
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				x Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	0			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus ursinus	2%		FACU□	, , , ,
2.				Hydrophytic
Total Cover:	2			Vegetation
% Bare Ground in Herb Stratum 10 %				Present? Yes <u>x</u> No
Remarks: 90% litter. Area meets hydrological and soil crit	eria so ass	umed wetlan	d despite ve	ery sparse cover of R. ursinus

SOIL	
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		Sampling Point:
Profile Desc	cription: (Describe to the d	epth needed to document the indicator or confirm the absence of indicators.)
Depth	Matrix	Redox Features

3

Depth	Matrix		Re	dox Feat	ures					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	F	emarks	
0-3	10 YR 3/2	100					SiSL			
3-16	10YR3/2	93	10YR3/6	5	С	М	SiSL			
			10YR3/3	2	С	М				
							·			
							·			
1							2			
'Type: C=C	Concentration, D=Dep	oletion, RM	I=Reduced Matrix, (	CS=Cove	ered or Coa	ated Sano	d Grains. <sup>2</sup> Location:	PL=Pore Lining, N	/I=Matrix.	
Hvdric Soil	Indicators: (Applic	able to al	I LRRs. unless oth	erwise r	noted.)		Indicators for Pro	blematic Hydric	Soils <sup>3</sup> :	
-	ol (A1)			Redox (S				cm Muck (A10)		
	Epipedon (A2)			d Matrix (	,			ed Parent Material	(TF2)	
	Histic (A3)			```	ineral (F1)	(except		ther (Explain in Re	. ,	
	gen Sulfide (A4)			-	latrix (F2)	•	, <u> </u>		,	
Deplet	ed Below Dark Surfa	ce (A11)	Deplete	d Matrix	(F3)					
Thick	Dark Surface (A12)		x Redox I	Dark Surf	face (F6)		<sup>3</sup> Indicators of	f hydrophytic veget	ation and	l
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7	)	wetland hy	/drology must be p	resent,	
Sandy	gleyed Matrix (S4)		Redox I	Depressio	ons (F8)		unless di	isturbed or probler	natic.	
Restrictive	Layer (if present):									
Type:										
Depth (inch	es):					Ну	dric Soil Present?	Yes	х	No
Remarks:			_							

#### HYDROLOGY

US Army Corps of Engineers

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
—	Recent Iron Reduction in Plowed Soi	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
x Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No X	Depth (inches):	
Water table Present? Yes No x	Depth (inches):	
Saturation Present? Yes No x	Depth (inches):	Wetland Hydrology Present? Yes x No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous inspections)	, if available:
Demotion		
Remarks:		

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Dat	e: <u>Oct.8,</u>	2020
Applicant/Owner:	Logan Partners LLC	:				State: WA	Sampling Poi	nt:	4
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	lope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92254	40293	Long: -1	22.750129163	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remark	(s.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No	x x x	Is the Sampled Area within a Wetland?	Yes	No	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Corylus cornuta	40	Y	FACU□	That Are OBL, FACW, or FAC: 2 (A)
2. Fraxinus latifolia	10		FACW 🗆	Total Number of Dominant
3. Crataegus monogyna	10		FAC□	Species Across All Strata: 5 (B)
4				Percent of Dominant Species
Total Cover:	60			That Are OBL, FACW, or FAC: 40% (A/B)
Shrub Stratum		.,	TAOUT	Prevalence Index Worksheet:
1. Symphoricarpos albus	30	<u>Y</u>	FACU	Total % Cover of: Multiply by:
2. <u>Rubus armeniacus</u>	10	Y		OBL species x1 =0
3. <u>Spiraea douglasii</u>	10	Y	FACW	FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	50			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1				Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	0	·		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus ursinus	15%	Y	FACU□	
2.		·		Indeedotie
Total Cover:	15			Hydrophytic Vegetation
% Bare Ground in Herb Stratum 20 %		iotic Crust	0	•
Remarks: 65% litter				· · · · · · · · · · · · · · · · · · ·

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Depth	Matrix		Re	dox Features				
(inches)	Color (moist)	%	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-10	10 YR 2/2	100				SiSL		
10-16	10YR2/2	100				L		
<sup>1</sup> Type: C=C	oncentration, D=Dep	oletion, RM	I=Reduced Matrix,	CS=Covered or Co	ated Sand	Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix.	
	oncentration, D=Dep				ated Sand		PL=Pore Lining, M=Matrix.	
	Indicators: (Applic		I LRRs, unless otl		ated Sand	Indicators for Pro		
Hydric Soil	Indicators: (Applic		I LRRs, unless oti Sandy	herwise noted.)	ated Sand	Indicators for Pro2	oblematic Hydric Soils <sup>3</sup> :	
Hydric Soil Histoso Histic E	Indicators: (Applic ol (A1)		I LRRs, unless oti Sandy Strippe	<b>herwise noted.)</b> Redox (S5)		Indicators for Pro2	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10)	
Hydric Soil Histoso Histic E Black H	Indicators: (Applic ol (A1) Epipedon (A2)		I LRRs, unless otl Sandy Strippe Loamy	<b>herwise noted.)</b> Redox (S5) d Matrix (S6)	except I	Indicators for Pro2	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2)	
Hydric Soil Histoso Histoso Black H Hydrog	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3)	cable to al	I LRRs, unless otl Sandy Strippe Loamy Loamy	<b>herwise noted.)</b> Redox (S5) d Matrix (S6) Mucky Mineral (F1)	except I	Indicators for Pro2	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2)	
Hydric Soil Histoso Histic E Black H Hydrog Deplete	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F1) Gleyed Matrix (F2)	except I	Indicators for Pro 2 R MLRA 1) O	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2)	
Hydric Soil Histoso Histoso Black H Hydrog Deplete Thick I	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Surfa	cable to al	I LRRs, unless ot Sandy Strippe Loamy Loamy Deplete Redox	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F1 Gleyed Matrix (F2) ed Matrix (F3)	except I	Indicators for Pro 2 R MLRA 1) O	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2) Other (Explain in Remarks)	
Hydric Soil Histoso Histic E Black H Hydrog Depleto Thick E Sandy	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Surfa Dark Surface (A12)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F1) Gleyed Matrix (F2) ed Matrix (F3) Dark Surface (F6)	except I	Indicators for Pro 2 MLRA 1) O <sup>3</sup> Indicators o wetland hy	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2) other (Explain in Remarks) f hydrophytic vegetation and	
Hydric Soil Histoso Histic E Black H Hydrog Deplete Thick I Sandy Sandy	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Surfa Dark Surface (A12) Muck Mineral (S1)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F1) Gleyed Matrix (F2) ed Matrix (F3) Dark Surface (F6) ed Dark Surface (F6)	except I	Indicators for Pro 2 MLRA 1) O <sup>3</sup> Indicators o wetland hy	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2) other (Explain in Remarks) of hydrophytic vegetation and ydrology must be present,	
Hydric Soil Histoso Histic E Black H Hydrog Deplete Thick I Sandy Sandy	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplete Redox Deplete	herwise noted.) Redox (S5) d Matrix (S6) Mucky Mineral (F1) Gleyed Matrix (F2) ed Matrix (F3) Dark Surface (F6) ed Dark Surface (F6)	except I	Indicators for Pro 2 MLRA 1) O <sup>3</sup> Indicators o wetland hy	oblematic Hydric Soils <sup>3</sup> : cm Muck (A10) Red Parent Material (TF2) other (Explain in Remarks) of hydrophytic vegetation and ydrology must be present,	

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roo	ots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C	C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	—
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water table Present?   Yes   No   x   Depth (inches):	
	etland Hydrology Present? Yes <u>No x</u>
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if a	ivailable:
Remarks:	
Nonano.	

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Project/Site:	I-5 Woodland Cit			City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	5
Investigator(s):	or(s): KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	swale		Local relief (concave, o	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92245	52524	Long: -1	22.749265341	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of ye	ear? Yes	Х	No	(If no, explain i	n Remarks)	1
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remai	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 1 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 = 0
4				FAC species x3 =0
5				FACU species x4 =0
Total Cover:	0			UPL speciesx5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	90	Y	FACW□	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	90			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1		Y		be present, unless disturbed or problematic.
2.				I hadron when the
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum 10 %	Present? Yes <u>x</u> No			
Remarks:				

			•			nfirm the absence o	i maloatoro.y
epth	Matrix		Redo	x Features		_	
nches)	Color (moist)	%	Color (moist)	% Туре	e <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-7	10 YR 3/2	95	10YR3/4	5 C	М	SiL	
7-16	10YR3/2	98	10YR3/4	2 C	M	SiL	
		·			 		
/dric Soil	Indicators: (Applic		I LRRs, unless othe	rwise noted.)	Coated San	Indicators for Pr	<ul> <li>PL=Pore Lining, M=Matrix.</li> <li>oblematic Hydric Soils<sup>3</sup>:</li> </ul>
Histos	Epipedon (A2)		Sandy Re	Matrix (S6)			: cm Muck (A10) Red Parent Material (TF2)
Black I Hydrog	Histic (A3) gen Sulfide (A4) ed Below Dark Surfa	co (A11)	Loamy Mu	ucky Mineral (F eyed Matrix (F Matrix (F3)			Other (Explain in Remarks)
	Dark Surface (A12)			ark Surface (F6	3)	<sup>3</sup> Indicators o	of hydrophytic vegetation and
Thick [				Dark Surface (	'F7)	wetiand n	vdrology must be present
Thick I Sandy	Muck Mineral (S1)		'	Dark Surface ( pressions (F8	· /		ydrology must be present, disturbed or problematic.
Thick I Sandy Sandy			'	Dark Surface ( epressions (F8	· /		
Thick I Sandy Sandy	Muck Mineral (S1) gleyed Matrix (S4)		'		· /		

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) <u>x</u> Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soi	ls (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No X	Depth (inches):	
Water table Present? Yes No x	Depth (inches):	
Saturation Present? Yes No x	Depth (inches):	Wetland Hydrology Present? Yes x No
(includes capillary fringe)		if available:
Describe Recorded Data (stream gauge, monitoring well	in, aenai photos, previous inspections).	
Remarks:		

Project/Site:	I-5 Woodland Ci			ity/County: Woodland/Cowlitz		Sampling Dat	e: <u>Oct.8, 2</u>	020	
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Poi	nt:	6
Investigator(s):	КВ			Section, Township, Range: <u>S13, T5N, R1W</u>					
Landform (hillslope	, terrace, etc.):	swale		Local relief (concave, c	convex	, none): <u>concave</u>	S	lope (%): <u>C</u>	-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92234	8649	Long: -1	22.748811117	Datum:	
Soil Map Unit Name	e: Newberg fin	ie sandy loam				NWI Classification:	PEM1C		
Are climatic / hydro	logic conditions on t	he site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present? Y	es <u>X</u> N	lo
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remark	.s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)	
2.				Total Number of Dominant	
3.				Species Across All Strata: 1 (B)	
4.				Percent of Dominant Species	
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)	
Shrub Stratum				Prevalence Index Worksheet:	
1				Total % Cover of: Multiply by:	
2				OBL species x1 = 0	
3				FACW species x2 =0	
4				FAC species x3 = 0	
5				FACU species x4 = 0	
Total Cover:	0			UPL species x5 =0	
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)	
1. Phalaris arundinacea	40	Y	FACW	Prevalence Index = B/A =	
2					
3				Hydrophytic Vegetation Indicators:	
4				1 - Rapid Test for Hydrophytic Vegetation	
5				X 2 - Dominance Test is >50%	
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7				4 - Morphological Adaptation1 (Provide supporting	
8				data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11					
Total Cover:	40				
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
1		Y		be present, unless disturbed or problematic.	
2.				Hydrophytic	
Total Cover:				Vegetation	
Remarks: Cottonwood overstory. Rooted outside plot.					

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OIL								Sampling Point:	6
Profile Desc	cription: (Describe	to the de	pth needed to docu	ument th	ne indicato	or or cor	firm the absence	of indicators.)	
Depth	Matrix		Rec	lox Featı	ures		_		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-5	10 YR 2/2	100					SiL		
5-16	10YR2/2	95	7.5YR3/4	5	C	М	SiL		
							·		
					·		·		
						ated San		Dn: PL=Pore Lining, M=Matrix.	
•	Indicators: (Applic	able to al	•		•		Indicators for I	Problematic Hydric Soils <sup>3</sup> :	
Histoso	· · ·		Sandy R	`	,			2 cm Muck (A10)	
	Epipedon (A2)		Stripped	`	,		<u> </u>	Red Parent Material (TF2)	
	Histic (A3)				ineral (F1)	(except	MLRA 1)	Other (Explain in Remarks)	
	gen Sulfide (A4)				latrix (F2)				
Deplete	ed Below Dark Surfa	ice (A11)	Depleted	d Matrix	(F3)				
Thick I	Dark Surface (A12)		x Redox D	ark Surf	ace (F6)		<sup>3</sup> Indicators	s of hydrophytic vegetation and	
Sandy	Muck Mineral (S1)		Depleted	d Dark S	urface (F7	)	wetland	I hydrology must be present,	
Sandy	gleyed Matrix (S4)		Redox D	epressio	ons (F8)		unless	s disturbed or problematic.	
Restrictive	Layer (if present):								
Type:									
Depth (inche	es):					H	ydric Soil Present	? Yes <u>x</u> No	

Remarks:

### HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)		
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)		
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)		
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)		
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	Oxidized Rhizospheres along Living I	Roots (C3) x Geomorphic Position (D2)		
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)		
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soil	ls (C6) x FAC-Neutral Test (D5)		
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRF	R A) Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks) Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surface (B8)				
Field Observations:				
Surface Water Present? Yes No	X Depth (inches):			
Water table Present? Yes No	x Depth (inches):	Wettend Underland Discourt () Version No.		
Saturation Present? Yes <u>No</u> (includes capillary fringe)	x Depth (inches):	Wetland Hydrology Present? Yes x No		
		if available		
Describe Recorded Data (stream gauge, monitoring	well, aeriai priotos, previous inspections),	, il avallable:		
Remarks:				

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8, 2	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	7
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	hillslope		Local relief (concave, c	convex	, none): <u>none</u>		Slope (%): <u>(</u>	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92232	27554	Long: -1	22.748820615	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1C		
Are climatic / hydro	logic conditions on t	he site typical for this	time of y	ear? Yes	Х	No	_(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	res X I	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)
2.			·	Total Number of Dominant
2				Species Across All Strata: 5 (B)
4.			·	( ' '
Total Cover:	0			Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Salix scouleriana	10	Y	FAC□	Total % Cover of: Multiply by:
2. Rubus armeniacus	30	Y	FAC□	OBL species x1 = 0
3. Rosa pisocarpa	10	Y	FAC□	FACW species x2 = 0
4.				FAC species x3 = <b>0</b>
5.				FACU species x4 = <b>0</b>
Total Cover:	50			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Polystichum munitum	5	Y	FACU	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	5			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus ursinus	5%		FACU□	be present, unless disturbed or problematic.
2. <u>Hedera helix</u>	90	Y	FACU□	Hydrophytic
Total Cover:	95			Vegetation
% Bare Ground in Herb Stratum% 0	Cover of Bi	otic Crust	0	Present?         Yes         No         x
Remarks:				•

SOIL	
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Depth	pth Matrix			dox Features			
inches)	Color (moist)	%	Color (moist)	% Туре	<sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-3	10 YR 2/2	100			_	SiL	
3-16	10YR2/2	98	10YR3/2	2 C	M	SiL	
						·	
					_		
•••		•			Coated San	d Grains. <sup>2</sup> Location: PL	
ydric Soi/	Indicators: (Applie	cable to all	IDDa unlaga ath				
						Indicators for Proble	•
Histos	ol (A1)		Sandy F	Redox (S5)		2 cm	Muck (A10)
Histos Histic	ol (A1) Epipedon (A2)		Sandy F	Redox (S5) d Matrix (S6)		2 cm Red F	Muck (A10) Parent Material (TF2)
Histos Histic Black	ol (A1) Epipedon (A2) Histic (A3)		Sandy F Stripped Loamy	Redox (S5) d Matrix (S6) Mucky Mineral (F		2 cm Red F	Muck (A10)
Histos Histic Black	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4)		Sandy F Stripped Loamy	Redox (S5) d Matrix (S6)		2 cm Red F	Muck (A10) Parent Material (TF2)
Histos Histic Black	ol (A1) Epipedon (A2) Histic (A3)		Sandy F Stripped Loamy Loamy	Redox (S5) d Matrix (S6) Mucky Mineral (F		2 cm Red F	Muck (A10) Parent Material (TF2)
Histos Histic Black Hydrog Deplet	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4)		Sandy F Stripped Loamy Deplete	Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F	2)	2 cm Red F MLRA 1) Other	Muck (A10) Parent Material (TF2)
Histos Histic Black Hydrog Deplet	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa		Sandy F Stripped Loamy b Deplete Redox F	Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F d Matrix (F3)	)	MLRA 1) 2 cm MLRA 1) Other <sup>3</sup> Indicators of hyd	Muck (A10) Parent Material (TF2) · (Explain in Remarks)
Histos Histic Black Hydro Deplet Thick Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12)		Sandy F Stripped Loamy Deplete Redox f Deplete	Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F d Matrix (F3) Dark Surface (F6	) F7)	MLRA 1) 2 cm Red F Other <sup>3</sup> Indicators of hydro wetland hydro	Muck (A10) Parent Material (TF2) · (Explain in Remarks) drophytic vegetation and
Histos Histic Black Hydrog Deplet Thick Sandy Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ded Below Dark Surfa Dark Surface (A12) Muck Mineral (S1)		Sandy F Stripped Loamy Deplete Redox f Deplete	Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F d Matrix (F3) Dark Surface (F6 d Dark Surface (	) F7)	MLRA 1) 2 cm Red F Other <sup>3</sup> Indicators of hydro wetland hydro	Muck (A10) Parent Material (TF2) • (Explain in Remarks) drophytic vegetation and logy must be present,
Histos Histic Black Hydrog Deplet Thick Sandy Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)		Sandy F Stripped Loamy Deplete Redox f Deplete	Redox (S5) d Matrix (S6) Mucky Mineral (F Gleyed Matrix (F d Matrix (F3) Dark Surface (F6 d Dark Surface (	) F7)	MLRA 1) 2 cm Red F Other <sup>3</sup> Indicators of hydro wetland hydro	Muck (A10) Parent Material (TF2) • (Explain in Remarks) drophytic vegetation and logy must be present,

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		—
Field Observations:		
	X Depth (inches):	
	x Depth (inches):	
Saturation Present? Yes <u>No</u>	x Depth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring w	vell, aerial photos, previous inspections)	, if available:
Remarks:		

Western Mountains, Valleys and Coast -Version 2.0

Project/Site:	I-5 Woodland		0	City/County: <u>Woodland/Co</u>	wlitz		Sampling Da	ate: Oct.8, 2	020
Applicant/Owner:	Logan Partners LLC	;				State: WA	Sampling Po	oint:	8
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	swale		Local relief (concave, c	onvex	, none): <u>concave</u>		Slope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests a	ind Coast (LRR A)	Lat:	45.92198	2342	Long: -1	22.749242844	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this t	time of ye	ear? Yes	Х	No	(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present?	Yes X N	No
Are Vegetation	, Soil	, or Hydrology	I	naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4		·		Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 100% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	5	Y	FAC□	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 = 0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	5			UPL species x5 =0
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	95	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	5		FAC□	
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is $≤3.0^1$
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1		Y		be present, unless disturbed or problematic.
2.		·		
Total Cover:		·		Hydrophytic Vocatetion
% Bare Ground in Herb Stratum %		iotic Crust	0	Vegetation           Present?         Yes         No
Remarks:				

Depth	epth Matrix		Red	dox Feati	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10 YR 2/2	100					SiS	
6-13	10YR2/2	70	10YR3/4	20	С	М	S	
			10YR4/1	10	D	М	S	

Rs, unless otherwise noted.)	Indicators for Problemat	ic Hydric Soils <sup>3</sup> :
x Sandy Redox (S5)	2 cm Muc	k (A10)
Stripped Matrix (S6)	Red Pare	nt Material (TF2)
Loamy Mucky Mineral (F1) ( <b>exce</b>	pt MLRA 1) Other (Ex	plain in Remarks)
Loamy Gleyed Matrix (F2)		
Depleted Matrix (F3)		
Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrop	hytic vegetation and
Depleted Dark Surface (F7)	wetland hydrology	must be present,
Redox Depressions (F8)	unless disturbed	or problematic.
	Hydric Soil Present?	Yes <u>x</u> No_
	x       Sandy Redox (S5)         Stripped Matrix (S6)         Loamy Mucky Mineral (F1) (exception)         Loamy Gleyed Matrix (F2)         Depleted Matrix (F3)         Redox Dark Surface (F6)         Depleted Dark Surface (F7)         Redox Depressions (F8)	x       Sandy Redox (S5)       2 cm Muc         Stripped Matrix (S6)       Red Pare         Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Ex         Loamy Gleyed Matrix (F2)       Depleted Matrix (F3)         Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrop         Depleted Dark Surface (F7)       wetland hydrology

#### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)	
Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	_ Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) x Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) x FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	(RA) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
	x Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspections)	), if available:
Remarks: Assumed seasonal high water table.		

Project/Site:	ie: <u>I-5 Woodland</u> C		City/County: Woodland/Co		ate: Oct.8, 2	2020			
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	9
Investigator(s):	KB		Section, Township, Range: S13, T5N, R1W						
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>none</u>		Slope (%): (	)-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92197	4237	Long: -1	22.749291373	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	time of y	ear? Yes	Х	No	_(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	/es <u>X</u> I	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)
2.			·	Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Crataegus monogyna	10	Y	⊫FAC□	Total % Cover of: Multiply by:
2. <u>Rubus armeniacus</u>	20	Y	FAC□	OBL species x1 =0
3				FACW species x2 = <b>0</b>
4				FAC species x3 = 0
5				FACU species x4 = <b>0</b>
Total Cover:	30			UPL speciesx5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	30	Y	FACW□	Prevalence Index = B/A =
2. Anthoxanthum odoratum	40	Y	FACU□	
3. Holcus lanatus	10		⊫FAC□	Hydrophytic Vegetation Indicators:
4. Carex obnupta	5		©BL□	1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	85			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				lludranku dia
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum 0 %		otic Crust	0	-
Remarks: 15% litter				

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			-				firm the absence o				
Depth	Matrix		Redox Features								
inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	;		
0-6	10 YR 2/2	100					SiL				
6-8	10YR5/6	100					S				
8-16	10YR2/2	100					SiL				
							2				
		-	-			lied Sand		: PL=Pore Lining, M=Matri	х.		
•	I Indicators: (Applic	cable to al						roblematic Hydric Soils <sup>3</sup> :			
	sol (A1)			Redox (S	,			2 cm Muck (A10)			
	Epipedon (A2) Histic (A3)			d Matrix (	,	(avaant l		Red Parent Material (TF2)			
_	( )			•	ineral (F1)	(except i		Other (Explain in Remarks)			
_ `	gen Sulfide (A4) ted Below Dark Surfa	000 (111)	,	d Matrix	latrix (F2)						
	Dark Surface (A12)	ace (ATT)			(F3) face (F6)		<sup>3</sup> Indicators of hydrophytic vegetation and				
	Muck Mineral (S1)				urface (F7	<b>`</b>			iu		
	gleyed Matrix (S4)			Depressio	· ·	)	wetland hydrology must be present, unless disturbed or problematic.				
_ ·	•••			Jepressi			uniess				
estrictive	Layer (if present):										
							dric Soil Present?				
ype: epth (inch								Yes	No	Х	

Wetland Hydrology Indicators:				
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)			
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)		4A and 4B)		
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)		
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)		
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)		
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)		
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) FAC-Neutral Test (D5)		
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks) Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surface (B8)	_ 、			
Field Observations:				
	C Depth (inches):			
Water table Present? Yes No	Depth (inches):			
	C Depth (inches):	Wetland Hydrology Present? Yes No x		
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspections)	, if available:		
<b>-</b>				
Remarks:				

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Project/Site:	I-5 Woodland C			ity/County: Woodland/Cowlitz			Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	pint:	10
Investigator(s):	KB			Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92221	16307	Long: -1	22.749174627	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remai	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	75	Y	FAC□	That Are OBL, FACW, or FAC:2 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4		·		Percent of Dominant Species
Total Cover:	75			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1.				Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 = 0
4.				FAC species x3 = 0
5.				FACU species x4 = 0
Total Cover:	0			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	100	Y	FACW	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus ursinus	10%	Y	FACU□	be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:	10			Vegetation
% Bare Ground in Herb Stratum0 %	Cover of B	iotic Crust	0	
Remarks:				

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SOIL								Sampling Poi	int:	10
Profile Des	cription: (Describe	to the de	pth needed to doc	ument th	e indicato	or or con	firm the absence o	of indicators.)		
Depth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-4	10 YR 3/2	100					SL			
4-12	10YR3/2	95	7.5YR3/4	5	С	М	SL			
<sup>1</sup> Type: C=C	oncentration, D=Dep		1=Reduced Matrix, (	  CS=Cove	red or Coa		d Grains. <sup>2</sup> Location	: PL=Pore Lin	ing, M=Matrix.	
Histoso	Indicators: (Applic ol (A1) Epipedon (A2)	able to al	Sandy F	Redox (St d Matrix (\$	5) S6)		F	<b>oblematic Hy</b> 2 cm Muck (A1 Red Parent Ma	0)	
Hydrog	Histic (A3) jen Sulfide (A4) ed Below Dark Surfa	ce (A11)	Loamy	-	neral (F1) atrix (F2) F3)	(except	MLRA 1) (	Other (Explain	in Remarks)	
·	Dark Surface (A12)	( )	·	Dark Surf	,		<sup>3</sup> Indicators of	of hydrophytic	vegetation and	
Sandy	Muck Mineral (S1)		Deplete	d Dark Si	urface (F7	)	wetland hydrology must be present,			
	gleyed Matrix (S4)		Redox I	Depressic	ons (F8)		unless	disturbed or pr	oblematic.	
Restrictive	Layer (if present):									
Type: Depth (inche	refusal es):1	2				Ну	/dric Soil Present?	١	res <u>x</u>	No
Remarks:										

Wetland Hydrology Indicators:				
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)			
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,			
High Water Table (A2) MLRA 1, 2, 4A and 4B)	4A and 4B)			
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)			
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)			
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3)	x Geomorphic Position (D2)			
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)			
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6)	X FAC-Neutral Test (D5)			
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surface (B8)				
Field Observations:				
Surface Water Present? Yes <u>No X</u> Depth (inches):				
Water table Present? Yes No x Depth (inches):				
	lydrology Present? Yes x No			
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available				
Remarks:				
Remarks.				

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Project/Site:	I-5 Woodland Ci			City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	:				State: WA	Sampling Po	int:	11
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92221	19810	Long: -1	22.749204083	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	60	Y	FAC	That Are OBL, FACW, or FAC: 3 (A)
2. Prunus emarginata	15		FACU□	Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4.				Percent of Dominant Species
Total Cover:	75			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	20	Y	⊫FAC□	Total % Cover of: Multiply by:
2.		·		OBL species x1 = 0
3		·		FACW species x2 = <b>0</b>
4				FAC speciesx3 = <b>0</b>
5				FACU species x4 = 0
Total Cover:	20			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	30	Y	FACW	
2				
3		<u> </u>		Hydrophytic Vegetation Indicators:
4		<u> </u>		1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.		·		4 - Morphological Adaptation1 (Provide supporting
8.		· <u> </u>		data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	30			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus ursinus	60%	Y	FACU□	be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:	60			Vegetation
% Bare Ground in Herb Stratum 50 %	0	Present? Yes x No		
Remarks:				

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Re	dox Feat	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-12	10YR3/2	100					SL		
					. <u> </u>				

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

Hydric Soil Indicators: (Applicable to all LRRs,	Indicators for Problema	tic Hydric Soils <sup>3</sup> :				
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)				
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Par	ent Material (TF2)			
Black Histic (A3)	_ Loamy Mucky Mineral (F1) ( <b>exc</b>	ept MLRA 1) Other (E	xplain in Remarks)			
Hydrogen Sulfide (A4)	_ Loamy Gleyed Matrix (F2)					
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)					
Thick Dark Surface (A12)	Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and					
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7) wetland hydrology must be present,					
Sandy gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.				
Restrictive Layer (if present):						
Type: refusal						
Depth (inches): 12		Hydric Soil Present?	Yes	No	х	
Remarks:						

#### HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)				
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,			
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)			
Saturation (A3)	_ Salt Crust (B11)	Drainage Patterns (B10)			
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)			
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)			
Iron Deposits (B5)					
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surface (B8)	_				
Field Observations:					
	X Depth (inches):				
Water table Present? Yes No	x Depth (inches):	Wetland Undralamy Present? Vac. No. v			
Saturation Present? Yes <u>No</u> (includes capillary fringe)	x Depth (inches):	Wetland Hydrology Present? Yes No x			
Describe Recorded Data (stream gauge, monitoring w	val parial photos, previous inspections'	) if available:			
Describe Recorded Data (Stream gauge, monitoring w		), il available.			
Remarks:					

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	:				State: WA	Sampling Po	pint:	12
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92182	28685	Long: -1	22.749849080	Datum:	
Soil Map Unit Name	e: Newberg fine	e sand loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remai	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>4</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	20	Y	FACW□	Total % Cover of: Multiply by:
2.				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 =0
5				FACU species x4 = 0
Total Cover:	20			UPL speciesx5 =0
Herb Stratum				Column Totals:(A)(B)
1. Phalaris arundinacea	50	Y	FACW□	
2. Agrostis stolonifera	20	Y	⊫FAC□	
3. Lotus corniculatus	30	Y	⊫FAC□	Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.		·		Uudranhutia
Total Cover:	Hydrophytic Vegetation			
% Bare Ground in Herb Stratum%	Present? Yes x No			
Remarks:				·

SOIL								Sampling Point:	1	
Profile Des	cription: (Describe	to the dep	oth needed to doc	ument t	he indicate	or or co	onfirm the absence of	of indicators.)		
Depth	Matrix		Red	dox Feat	ures					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remark	ks	
0-3	10YR3/3	100	· · · · · · · · · · · · · · · · · · ·				SL			
3-9	10YR3/3	95	10YR3/6	5	С	М	SL			
9-16	10YR5/3	100					LS			
							_			
1										
'Type: C=C	concentration, D=Dep	pletion, RM	=Reduced Matrix, 0	CS=Cove	ered or Coa	ated Sa	nd Grains. <sup>2</sup> Locatior	n: PL=Pore Lining, M=Mat	rix.	
Hvdric Soil	Indicators: (Applic	able to all	LRRs. unless oth	erwise	noted.)		Indicators for P	roblematic Hydric Soils <sup>3</sup>	:	
Histos				Sandy Redox (S5)			2 cm Muck (A10)			
	Epipedon (A2)			Stripped Matrix (S6) Red Parent Material (TF2)					)	
	Histic (A3)					(excep		Other (Explain in Remarks		
	gen Sulfide (A4)			-	/latrix (F2)		,		,	
	ed Below Dark Surfa	ice (A11)		d Matrix						
Thick I	Dark Surface (A12)		Redox [	Dark Sur	face (F6)		<sup>3</sup> Indicators	of hydrophytic vegetation a	and	
Sandy Muck Mineral (S1)			Deplete	Depleted Dark Surface (F7)			wetland hydrology must be present,			
Sandy gleyed Matrix (S4)			Redox [	Depressi	ons (F8)		unless disturbed or problematic.			
Restrictive	Layer (if present):									
Type:										
Depth (inche	es):					H	Hydric Soil Present?	? Yes	<u>No x</u>	
Remarks:										
HYDROLOGY	,									
Wetland Hy	drology Indicators	:								
Primary Indi	cators (any one indic	cator is suff	icient)				S	econdary Indicators (2 or i	more required)	
Surfac	e Water (A1)		Water-S	Stained L	eaves (B9)	) (exce	ot	Water-Stained Leaves (B9	) (MLRA 1, 2,	
High V	High Water Table (A2)		MLR	MLRA 1, 2, 4A and 4B)				4A and 4B)		
Satura	tion (A3)		Salt Cru	st (B11)				Drainage Patterns (B10)		
Water	Water Marks (B1)			Aquatic Invertebrates (B13)				Dry-Season Water Table (	(C2)	
Sedim	Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C						
Drift D	Drift Deposits (B3)			Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)						
Algal N	Algal Mat or Crust (B4)			Presence of Reduced Iron (C4) Shallow Aquitard (D3)						
Iron De	Iron Deposits (B5)			Recent Iron Reduction in Plowed Soils (C6)				FAC-Neutral Test (D5)		
Surfac	Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (LRR				Raised Ant Mounds (D6) (	LRR A)	
Inunda	ition Visible on Aeria	l Imagery (I	37) Other (E	Explain ir	n Remarks)	)		Frost-Heave Hummocks (I	D7)	
Sparse	ely Vegetated Conca	ve Surface	(B8)							
Field Obse	rvations:									
Surface Wa				(inches	/					
Water table Present?     Yes     No       Saturation Present?     Yes     No							Wotland Hydrold	Wetland Hydrology Present? Yes No x		
	pillary fringe)	s <u> </u>	No <u>x</u> Depth	I (IIICHES				ogy Present? Yes	NoX	
•	orded Data (stream g	gauge, mon	itoring well, aerial p	hotos, p	previous ins	spection	s), if available:			
	、 、 、 、		- 1	<i>,</i> 1	_	-				
Remarks:										

Project/Site:	I-5 Woodland		City/County: Woodland/C	owlitz		Sampling Dat	e: <u>Oct.8, 2</u>	2020	
Applicant/Owner:	Logan Partners LLC						Sampling Poi	nt:	13
Investigator(s):	КВ			Section, Township, F	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>	S	lope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.9217	56108	Long: -1	22.750100460	Datum:	
Soil Map Unit Name	e: Newberg f	ne sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on	the site typical for this	s time of y	rear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstand	es" Present? Y	es <u>X</u> I	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	nswers in Remark	(s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species		
1.				That Are OBL, FACW, or FAC: 2 (A)		
2.				Total Number of Dominant		
3.				Species Across All Strata: 3 (B)		
4				Percent of Dominant Species		
Total Cover:	0			That Are OBL, FACW, or FAC: 67% (A/B)		
Shrub Stratum				Prevalence Index Worksheet:		
1. Spiraea douglasii	5	Y	FACW□			
2.	0	· !		$\frac{1}{\text{OBL species}} x1 = 0$		
				FACW species x2 =0		
A				FAC species $x_3 = 0$		
5.		·	·	FACU species $x4 = 0$		
Total Cover:	5			UPL species         x5 =         0		
Herb Stratum				Column Totals: 0 (A) 0 (B)		
1. Phalaris arundinacea	60	Y	FACW□	Prevalence Index = B/A =		
2. Anthoxanthum odoratum	5	Y	FACU			
3. Lotus corniculatus	5		FAC□	Hydrophytic Vegetation Indicators:		
4. Carex obnupta	5		©BL□	1 - Rapid Test for Hydrophytic Vegetation		
5. Bidens cernua	5		©BL□	X 2 - Dominance Test is >50%		
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7.				4 - Morphological Adaptation1 (Provide supporting		
8.				data in Remarks or on a separate sheet)		
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>		
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
11						
Total Cover:	80					
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
1				be present, unless disturbed or problematic.		
2.				Hydrophytic		
Total Cover:				Hydrophytic Vegetation		
% Bare Ground in Herb Stratum 20 %	Cover of Bi	iotic Crust	0	Present? Yes x No		
Remarks: within open field.						

SOI	L
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Profile Des	scription: (Describe	to the dep	oth needed to	o document th	ne indicato	or or con	firm the absend	ce of indicator	's.)	
Depth	Matrix			Redox Feat	ures					
(inches)	Color (moist)	%	Color (mois		Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-13	10YR3/2	100			<u> </u>		SSiL		. to mainte	
					·					
					·					
<sup>1</sup> Type: C=C	Concentration, D=Dep	bletion. RM	=Reduced Ma	trix. CS=Cove	ered or Coa	ated Sanc	d Grains. <sup>2</sup> Loca	tion: PL=Pore	Lining, M=Matrix,	
JI - 1	- , I	,		,	_				3,	
Hydric Soi	I Indicators: (Applic	able to all	l LRRs, unles	s otherwise r	noted.)		Indicators fo	r Problematic	Hydric Soils <sup>3</sup> :	
Histos	sol (A1)		Sa	ndy Redox (S	5)			2 cm Muck	(A10)	
Histic	Epipedon (A2)		St	ripped Matrix (	S6)			Red Parent	Material (TF2)	
Black	Histic (A3)		Lo	amy Mucky M	ineral (F1)	(except l	MLRA 1)	Other (Expla	ain in Remarks)	
Hydro	gen Sulfide (A4)		Lo	amy Gleyed N	latrix (F2)					
	ted Below Dark Surfa	ice (A11)		pleted Matrix						
Thick	Dark Surface (A12)			dox Dark Sur					tic vegetation and	
	/ Muck Mineral (S1)			pleted Dark S	``	)	wetlar	nd hydrology m	nust be present,	
Condu	gleyed Matrix (S4)		Re	dox Depressi	ons (F8)		unle	ess disturbed or	r problematic.	
Sandy	gleyed Matrix (04)				( )					
	Layer (if present):				( )					
					. ,					
Restrictive	E Layer (if present):				. ,	Ну	vdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive	e Layer (if present):					Ну	dric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch	e Layer (if present):					Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch	e Layer (if present):					Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch	e Layer (if present):		···			Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch	e Layer (if present):					Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch Remarks: Mo	e Layer (if present):					Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch Remarks: Mo	e Layer (if present):					Ну	rdric Soil Prese	nt?	Yes	No <u>x</u>
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland H	e Layer (if present): nes): le holes Y					Ну	rdric Soil Prese		Yes	
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland H Primary Ind	e Layer (if present): hes): le holes Y ydrology Indicators		ficient)	ater-Stained L				Secondary In		e required)
Restrictive Type: Depth (inch Remarks: Mo Remarks: Mo HYDROLOG Wetland Hy Primary Ind Surfac	E Layer (if present):      Ines):     Ines     Ines				eaves (B9)			Secondary In	ndicators (2 or more	e required)
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland H Primary Ind Surfac High V	E Layer (if present):       hes):  le holes      Y  ydrology Indicators licators (any one indic ce Water (A1)		ficient)	ater-Stained L	eaves (B9) A and 4B)			Secondary In Water-Stain <b>4A and</b> 4	ndicators (2 or more	e required)
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland Hy Primary IndSurfacHigh VSatura	A Layer (if present):      A Layer (if present):      A Layer (if present):      A Layer (if present):      A Layer (licators)      A Layer (lica		ficient) W. Sa	ater-Stained L MLRA 1, 2, 4/	eaves (B9) A and 4B)	(except		Secondary In Water-Stain <b>4A and 4</b> Drainage Pa	ndicators (2 or moru ned Leaves (B9) ( <b>№</b> 4 <b>B</b> )	e required)
Restrictive Type: Depth (inch Remarks: Mo  TyDROLOG  Wetland H Primary Ind Surfac High V Satura Water	A Layer (if present):      Y		ficient) W. Sa Ac	ater-Stained L MLRA 1, 2, 4/ It Crust (B11)	eaves (B9) A and 4B) rates (B13)	)		Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season	ndicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10)	e required) ILRA 1, 2,
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland H Primary IndSurfacHigh VSaturaSedim	A Layer (if present):      A Layer (if present):      A Layer (if present):      A Layer (if present):      A Layer Layer Layer Layer Layer Layer Layer Layer Layer (A1)     Water Layer La		ficient) W Sa Ac Hy	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb	eaves (B9) A and 4B) rates (B13 e Odor (C1	) )		Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V	ndicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) n Water Table (C2)	e required) ILRA 1, 2,
Restrictive Type: Depth (inch Remarks: Mo IYDROLOG Wetland H Primary Ind Surfac Satura Satura Sedim Drift D	P Layer (if present):         hes):         hes):         hes):         hes         he holes         Y         ydrology Indicators         licators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)		ficient) 	ater-Stained L MLRA 1, 2, 4, It Crust (B11) uatic Inverteb drogen Sulfide	eaves (B9) A and 4B) rates (B13) e Odor (C1 pheres alo	) ng Living		Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V	ndicators (2 or moru ned Leaves (B9) ( <b>N</b> 4 <b>B</b> ) atterns (B10) 1 Water Table (C2) /isible on Aerial Im c Position (D2)	e required) ILRA 1, 2,
Restrictive Type: Depth (inch Remarks: Mo  IYDROLOG  Vetland H Primary IndSurfacHigh VSaturaSedimSedimSedimAlgal I	e Layer (if present):         hes):         ydrology Indicators:         licators (any one indicators:         licators (any one indicators:         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)         Deposits (B3)		ficient) W. Sa Ac Hy Ox Pr	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos	eaves (B9) <b>A and 4B</b> ) rates (B13 e Odor (C1 pheres alo duced Iron	) ) ng Living (C4)	Roots (C3)	Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic	ndicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) 1 Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3)	e required) ILRA 1, 2,
Restrictive Type: Depth (inch Remarks: Mo  HypRoLOG  HypRoLOG  Vetland Hy Primary Ind Surfac High V Satura Water Sedim Drift D Algal I Iron D	A Layer (if present):     A Layer (if p		ficient) V Sa Ac Hy Oy Pr Re	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec	eaves (B9) A and 4B) rates (B13) e Odor (C1 pheres alo luced Iron uction in P	) ) ng Living (C4) lowed So	Roots (C3)	Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra	ndicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) 1 Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3)	e required) ILRA 1, 2, agery (C9)
Restrictive Type: Depth (inch Remarks: Mo  HyDROLOG  HyDROLOG  HyDROLOG  Vetland Hy Primary Ind Surfac High V Satura Water Sedim Algal I Inon D Surfac	P Layer (if present):         hes):         hes):         hes):         hes         hes </td <td>ator is suff</td> <td>ficient) </td> <td>ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec ecent Iron Red</td> <td>eaves (B9) A and 4B) rates (B13 e Odor (C1 pheres alo duced Iron uction in P sed Plants</td> <td>) )ng Living (C4) lowed So (D1) (LR</td> <td>Roots (C3)</td> <td>Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant</td> <td>ndicators (2 or more ned Leaves (B9) (<b>N</b> <b>4B</b>) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5)</td> <td>e required) ILRA 1, 2, agery (C9)</td>	ator is suff	ficient) 	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec ecent Iron Red	eaves (B9) A and 4B) rates (B13 e Odor (C1 pheres alo duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ndicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5)	e required) ILRA 1, 2, agery (C9)
Restrictive Type: Depth (inch Remarks: Mo  IYDROLOG  IYDROLOG  Vetland H Primary Ind Surfac High V Satura Usatura Usatura Usatura Linon D Surfac Inunda	A Layer (if present):     A Layer (if present):     A Layer (if present):     A Layer (if present):     A Layer Lay	ator is suff	iicient)	ater-Stained L MLRA 1, 2, 4, It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec ecent Iron Red unted or Stres	eaves (B9) A and 4B) rates (B13 e Odor (C1 pheres alo duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant	adicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5) Mounds (D6) ( <b>LRF</b>	e required) ILRA 1, 2, agery (C9)
Restrictive         Type:         Depth (inch         Remarks: Mo         Hype:         Metland Hy         Primary Ind         Surfac         High V         Satura         Water         Sedim         Drift D         Algal I         Iron D         Surfac         Inunda	<b>a</b> Layer (if present):         hes):         hes):         hes):         hes):         ydrology Indicators         licators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         Deposits (B5)         ce Soil Cracks (B6)         ation Visible on Aeria         ely Vegetated Conca	ator is suff	iicient)	ater-Stained L MLRA 1, 2, 4, It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec ecent Iron Red unted or Stres	eaves (B9) A and 4B) rates (B13 e Odor (C1 pheres alo duced Iron uction in P sed Plants	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant	adicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5) Mounds (D6) ( <b>LRF</b>	e required) ILRA 1, 2, agery (C9)
Restrictive Type: Depth (inch Remarks: Mo  TyDROLOG  TyDROLO	<b>a</b> Layer (if present):         hes):         hes):         hes):         ydrology Indicators         licators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         Deposits (B5)         ce Soil Cracks (B6)         ation Visible on Aeria         ely Vegetated Conca         ervations:         ater Present?	ator is suff I Imagery (I ve Surface	ficient) 	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec esence of Rec esent Iron Red unted or Stres her (Explain ir	eaves (B9) A and 4B) rates (B13 e Odor (C1 pheres alo duced Iron uction in P sed Plants n Remarks)	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and</b> 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant	adicators (2 or more ned Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5) Mounds (D6) ( <b>LRF</b>	e required) ILRA 1, 2, agery (C9)
Restrictive Type: Depth (inch Remarks: Mo  TyDROLOG  TyDROLO	<b>a</b> Layer (if present):         hes):         hes):         hes):         hes):         ydrology Indicators         licators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         Deposits (B5)         ce Soil Cracks (B6)         ation Visible on Aeria         ely Vegetated Conca         ervations:         ater Present?         ater Present?	ator is suff	ficient)	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec scent Iron Red unted or Stres her (Explain ir Depth (inches Depth (inches	eaves (B9) A and 4B) rates (B13) e Odor (C1 pheres alo duced Iron uction in P sed Plants n Remarks) ):	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ndicators (2 or more hed Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5) Mounds (D6) ( <b>LRF</b> e Hummocks (D7)	e required) ILRA 1, 2, agery (C9) R A)
Restrictive Type: Depth (inch Remarks: Mo  HYDROLOG  HYDROLOG  High V Primary Ind Surfac High V Satura Unuta Sedim Drift D Algal I Inon D Surfac Surfac Surfac Surfac Surfac Surfac Surfac Water table Saturation I	<b>a</b> Layer (if present):         hes):         hes):         hes):         hes):         ydrology Indicators         licators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         hent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         Deposits (B5)         ce Soil Cracks (B6)         ation Visible on Aeria         ely Vegetated Conca         ervations:         ater Present?         ater Present?	ator is suff	ficient)	ater-Stained L MLRA 1, 2, 4/ It Crust (B11) uatic Inverteb drogen Sulfide idized Rhizos esence of Rec esence of Rec esent Iron Red unted or Stres her (Explain ir	eaves (B9) A and 4B) rates (B13) e Odor (C1 pheres alo duced Iron uction in P sed Plants n Remarks) ):	) )ng Living (C4) lowed So (D1) (LR	Roots (C3)	Secondary In Water-Stain <b>4A and 4</b> Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ndicators (2 or more hed Leaves (B9) ( <b>N</b> <b>4B</b> ) atterns (B10) i Water Table (C2) /isible on Aerial Im c Position (D2) uitard (D3) al Test (D5) Mounds (D6) ( <b>LRF</b> e Hummocks (D7)	e required) ILRA 1, 2, agery (C9)

Remarks:

Project/Site:	I-5 Woodland		City/County: <u>Woodland/Cowlitz</u>		Sampling		te: <u>Oct.8,</u>	2020	
Applicant/Owner:	Logan Partners LLC						_ Sampling Po	int:	14
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92173	34696	Long: -1	22.750298923	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain in	Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 1 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 = 0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	0			UPL species x5 = 0
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	90	Y	FACW□	Prevalence Index = B/A =
2. <u>Bidens cernua</u>	5		©BL□	
3. Lotus corniculatus	5		FAC□	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				Iludrauku dia
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum 0 %	-	otic Crust	0	Present? Yes <u>x</u> No
Remarks: within open field.				· · · · · · · · · · · · · · · · · · ·

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Profile Des	cription: (Describe	to the de	pth needed to doc	ument tl	ne indicato	or or con	firm the absence of indi	cators.)
Depth	Matrix		Red	dox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-7	10YR2/2	100					SSiL	
7-16	2.5Y5/4	100					S	

<sup>1</sup> Type:	C=Concentration,	D=Depletion, RM	=Reduced Matrix,	CS=Covered or	Coated Sand Gr	ains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix.

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Hydric Soil Indicators: (Applicable to all LRRs	, unless otherwise noted.)	Indicators for Problem	atic Hydric Soils <sup>3</sup>	3:	
Histosol (A1)	Sandy Redox (S5)	2 cm Mu			
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Pai	ent Material (TF2)	)	
Black Histic (A3)	Loamy Mucky Mineral (F1) ( <b>ex</b>	cept MLRA 1) Other (E	Explain in Remarks	s)	
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)				
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)				
Thick Dark Surface (A12)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,			
Sandy gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbe	ed or problematic.		
Restrictive Layer (if present):					
Туре:					
Depth (inches):		Hydric Soil Present?	Yes	No	Х
Remarks:		•			

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### HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)		
Surface Water (A1) W	/ater-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)		
Saturation (A3)	alt Crust (B11)	Drainage Patterns (B10)		
Water Marks (B1) Ad	quatic Invertebrates (B13)	Dry-Season Water Table (C2)		
Sediment Deposits (B2) Hy	ydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	xidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)		
Algal Mat or Crust (B4)	Algal Mat or Crust (B4) Presence of Reduced Iron (C4)			
Iron Deposits (B5)				
Surface Soil Cracks (B6) St	tunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7)	ther (Explain in Remarks)	Frost-Heave Hummocks (D7)		
Sparsely Vegetated Concave Surface (B8)				
Field Observations:				
	Depth (inches):			
	Depth (inches):			
	Depth (inches):	Wetland Hydrology Present? Yes No x		
(includes capillary fringe)		12		
Describe Recorded Data (stream gauge, monitoring well, a	ierial photos, previous inspections),	, if available:		
Remarks:				

Project/Site:	I-5 Woodland		City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8,	2020	
Applicant/Owner:	Logan Partners LLC				State: WA		Sampling Po	pint:	15
Investigator(s):	КВ			Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92192	23487	Long: -1	22.750839799	Datum:	
Soil Map Unit Name	e: Maytown sil	t loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	the site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remai	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.		·	·	Total Number of Dominant
3.		<u> </u>	·	Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	60	Y	<b>FACW</b> □	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	60			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	40	Y	FACW	Prevalence Index = B/A =
2.				
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		·		
Total Cover:	40			
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
1 2.		·		
Z			·	Hydrophytic Monototic
% Bare Ground in Herb Stratum 0 %	Vegetation           Present?         Yes x         No			
Remarks: within open field.				

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ing Point:	
ators.)	

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Depth	Matrix		Red	dox Featu	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0-16	10YR3/2	95	7.5YR3/4	5	C	М	SSiL		
1		· <del></del>					2.		
'Type: C=C	Concentration, D=Dep	letion, RM:	=Reduced Matrix, 0	CS=Cove	ered or Coa	ated Sanc	l Grains. <sup>2</sup> L	_ocation:	PL=Pore Lining, M=Matrix.
Hydric Soi	I Indicators: (Applic	able to all	LRRs, unless oth	erwise r	oted.)		Indicator	s for Pr	oblematic Hydric Soils <sup>3</sup> :
-	sol (A1)			Redox (S	-				cm Muck (A10)
	Epipedon (A2)			d Matrix (					Red Parent Material (TF2)
Black	Histic (A3)		Loamy	Mucky Mi	neral (F1)	(except l	MLRA 1)	c	Other (Explain in Remarks)
Hydro	gen Sulfide (A4)		Loamy (	Gleyed M	latrix (F2)				
Deplet	ted Below Dark Surfa	ce (A11)	Deplete	d Matrix	(F3)				
Thick	Dark Surface (A12)		x Redox [	Dark Surf	ace (F6)		<sup>3</sup> Ind	icators o	f hydrophytic vegetation and
Sandy	/ Muck Mineral (S1)		Deplete	d Dark S	urface (F7	)	w	etland h	ydrology must be present,
			Redox [	Depressio	ons (F8)			unless c	listurbed or problematic.
Sandy	v gleyed Matrix (S4)		I LEUOX L	oprocord	( )				
	<ul> <li>gleyed Matrix (S4)</li> <li>Layer (if present):</li> </ul>				( )				
Restrictive					. ,				
	Layer (if present):				. ,	Ну	dric Soil Pr		Yes <u>x</u> No
Restrictive	Layer (if present):		1.600.1			Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch	Layer (if present):		(Neddx 1			Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch	Layer (if present):		Nedox I		. ,	Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch	Layer (if present):		(Neddx 1			Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch emarks:	Layer (if present):		Nedox I			Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch emarks:	Layer (if present):		Nedox I			Ну			Yes <u>x</u> No
Restrictive Type: Depth (inch emarks: YDROLOGY Wetland Hy	Layer (if present): les): Y ydrology Indicators:					Ну		resent?	
Restrictive Type: Depth (inch emarks: YDROLOG Wetland Hy Primary Ind	Layer (if present):         ies):         Y         ydrology Indicators:         licators (any one indic						dric Soil Pr	resent?	econdary Indicators (2 or more required)
Restrictive Type: Depth (inch emarks: YDROLOG <sup>*</sup> Wetland Hy Primary Ind Surfac	Layer (if present):         nes):         Y         ydrology Indicators:         icators (any one indic         ce Water (A1)		icient)	Stained L	eaves (B9	) (except	dric Soil Pr	resent?	condary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>
Restrictive Type: Depth (inch emarks: YDROLOG Wetland Hy Primary Ind Surfac High V	A Layer (if present):         des):         Y         ydrology Indicators:         licators (any one indic         ce Water (A1)         Water Table (A2)		icient) Water-S MLR/	Stained Lu A 1, 2, 44	eaves (B9 A and 4B)	) (except	dric Soil Pr	<u>Se</u>	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> )
Restrictive Type: Depth (inch emarks: YDROLOGY Wetland Hy Primary Ind Surfac High V Satura	Y Y Y Y Y ydrology Indicators: icators (any one indic ce Water (A1) Water Table (A2) ation (A3)		icient) Water-S MLR/ Salt Cru	Stained Lo <b>A 1, 2, 4</b> Ist (B11)	eaves (B9 A and 4B)	) (except	dric Soil Pr	<u>Se</u>	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10)
Restrictive         Type:         Depth (inch         emarks:         YDROLOG'         Wetland Hy         Primary Ind         Surfac         High V         Satura         Water	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)		icient) Water-S Salt Cru Salt Cru	Stained Lu <b>A 1, 2, 4</b> <i>A</i> Ist (B11) Inverteb	eaves (B9 A and 4B) rates (B13	) (except	dric Soil Pr	<u>Se</u>	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
Restrictive         Type:         Depth (inch         emarks:         YDROLOG         Wetland Hy         Primary Ind         Surfac         High V         Satura         Water         Sedim	Y         ydrology Indicators:         iicators (any one indic         ce Water (A1)         Nater Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)		icient) Water-S Salt Cru Salt Cru Aquatic Hydroge	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide	eaves (B9 A and 4B) rates (B13 e Odor (C1	) (except ) )	dric Soil Pr	<u>Se</u>	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Restrictive Type: Depth (inch emarks: YDROLOGY Wetland Hy Primary Ind Surfac High V Satura Water Sedim Drift D	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)		icient) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj	eaves (B9 A and 4B) rates (B13 e Odor (C1	) ( <b>except</b> ) ) ng Living	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
Restrictive Type: Depth (inch emarks: YDROLOGY Wetland Hy Primary IndSurfacSurfacSurfacSaturaSedimDrift DAlgal I	Y         ydrology Indicators:         iicators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)         Deposits (B3)		icient) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presend	Stained Lo A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj ce of Red	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo	) (except ) ) ng Living (C4)	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2)
Restrictive Type: Depth (inch emarks: YDROLOG' Wetland Hy Primary Ind Surfac High V Satura Water Sedim Drift D Algal I Iron D	Y ydrology Indicators: icators (any one indic ce Water (A1) Water Table (A2) ation (A3) Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4)		icient) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presend Recent	Stained Lu A 1, 2, 44 Ist (B11) Inverteb en Sulfide d Rhizosj ce of Red Iron Red	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo luced Iron	) ( <b>except</b> ) ) ng Living (C4) 'lowed So	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Gaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Restrictive Type: Depth (inch emarks: YDROLOG' Wetland Hy Primary Ind Surfac Surfac Satura Satura Sedim Drift D Algal I Iron D Surfac	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         reposits (B5)	ator is suffi	icient) — Water-S MLR/ — Salt Cru — Aquatic — Hydroge — Oxidized — Presend — Recent — Stunted	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj ce of Red Iron Red or Stress	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo luced Iron uction in P	) (except ) ng Living (C4) 'lowed So (D1) (LR	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) GC-Neutral Test (D5)
Restrictive Type: Depth (inch emarks: YDROLOG Wetland Hy Primary Ind Surfac High V Satura Water Sedim Drift D Algal I Iron D Surfac Inunda	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Nater Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         reposits (B5)         ce Soil Cracks (B6)	<u>ator is suffi</u> Imagery (E	icient) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted 37) Other (E	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj ce of Red Iron Red or Stress	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo luced Iron uction in P sed Plants	) (except ) ng Living (C4) 'lowed So (D1) (LR	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Restrictive         Type:         Depth (inch         emarks:         YDROLOGY         Wetland Hy         Primary Ind         Surfac         High V         Satura         Water         Sedim         Drift D         Algal I         Iron D         Surfac         Inunda	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         reposits (B5)         ce Soil Cracks (B6)         ation Visible on Aerial         ely Vegetated Concave	<u>ator is suffi</u> Imagery (E	icient) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted 37) Other (E	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj ce of Red Iron Red or Stress	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo luced Iron uction in P sed Plants	) (except ) ng Living (C4) 'lowed So (D1) (LR	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Restrictive Type: Depth (inch emarks: YDROLOG' Wetland Hy Primary Ind Surfac High V Satura Water Sedim Drift D Algal I Iron D Surfac Inunda Sparse Field Obse	Y         ydrology Indicators:         icators (any one indic         ce Water (A1)         Water Table (A2)         ation (A3)         Marks (B1)         nent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         reposits (B5)         ce Soil Cracks (B6)         ation Visible on Aerial         ely Vegetated Concave         rrvations:         ater Present?	Imagery (E /e Surface	icient) — Water-S MLR/ — Salt Cru — Aquatic — Hydroge — Oxidized — Presend — Recent — Stunted 37) — Other (E (B8)	Stained Lu A 1, 2, 44 Ist (B11) Invertebr en Sulfide d Rhizosj ce of Red Iron Red or Stress	eaves (B9 A and 4B) rates (B13 e Odor (C1 oheres alo luced Iron uction in P sed Plants Remarks	) (except ) ng Living (C4) 'lowed So (D1) (LR	dric Soil Pr	Se	econdary Indicators (2 or more required) Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )

Remarks:

(includes capillary fringe)

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

Project/Site:	I-5 Woodland		City/County: Woodland/Co	owlitz		Sampling Da	te: <u>Oct.8,</u>	2020	
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	int:	16
Investigator(s):	KB			Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	lope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92192	21488	Long: -1	22.750854634	Datum:	
Soil Map Unit Name	e: Maytown sil	lt loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	the site typical for this	time of y	ear? Yes	Х	No	(If no, explain ir	Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>4</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 100% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rosa pisocarpa	5	Y	FAC□	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	5			UPL species x5 =0
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	70	Y	FACW□	Prevalence Index = B/A =
2. Agrostis stolonifera	20	Y	FAC□	
3. Lotus corniculatus	20	Y	⊫FAC□	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	110			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
2.		·		
Total Cover:			·	Hydrophytic Verentetion
% Bare Ground in Herb Stratum%		iotic Crust	0	Vegetation           Present?         Yes         No
Remarks:				

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

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Depth	Matrix		Red	dox Feat	ures					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rema	arks	
0-16	10YR3/3	95	10YR3/4	5	С	М	SSIL			
<sup>1</sup> Type: C=0	Concentration, D=Dep	letion, RN	/=Reduced Matrix, 0	CS=Cove	ered or Coa	ated Sand	d Grains. <sup>2</sup> Location: F	PL=Pore Lining, M=M	atrix.	
Hydric Soi	I Indicators: (Applic	able to a	II LRRs, unless oth	erwise r	noted.)		Indicators for Prob	lematic Hydric Soil	s <sup>3</sup> :	
Histos	sol (A1)		Sandy F	Redox (S	5)		2 cr	m Muck (A10)		
Histic	Epipedon (A2)		Stripped	d Matrix (	(S6)		Rec	Parent Material (TF	2)	
Black	Histic (A3)		Loamy I	Mucky M	lineral (F1)	(except	MLRA 1) Oth	er (Explain in Remar	ks)	
Hydro	gen Sulfide (A4)		Loamy (	Gleyed N	Aatrix (F2)					
Deple	ted Below Dark Surfa	ce (A11)	Deplete	d Matrix	(F3)					
Thick	Dark Surface (A12)		Redox [	Dark Sur	face (F6)		<sup>3</sup> Indicators of h	ydrophytic vegetation	n and	
Sandy	y Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	)	wetland hyd	rology must be prese	ent,	
Sandy	y gleyed Matrix (S4)		Redox [	Depressi	ons (F8)		unless dis	turbed or problematic	).	
Restrictive	e Layer (if present):									
Type:										
Depth (inch	nes):					Hy	dric Soil Present?	Yes	No	х
emarks:						I				

### HYDROLOGY

Wetland Hydrology Indicators:									
Primary Indicators (any one indicator is sufficient)	Primary Indicators (any one indicator is sufficient)								
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,							
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)							
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)							
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)							
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)							
Drift Deposits (B3)	Oxidized Rhizospheres along Living R	Roots (C3) Geomorphic Position (D2)							
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)							
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soils	s (C6) FAC-Neutral Test (D5)							
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRR	R A) Raised Ant Mounds (D6) (LRR A)							
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)							
Sparsely Vegetated Concave Surface (B8)		—							
Field Observations:									
Surface Water Present? Yes No	X Depth (inches):								
Water table Present? Yes No	x Depth (inches):								
Saturation Present? Yes No	x Depth (inches):	Wetland Hydrology Present? Yes No x							
(includes capillary fringe)	L								
Describe Recorded Data (stream gauge, monitoring	y well, aerial photos, previous inspections), i	if available:							
Remarks:									
Remarks.									

Project/Site:	Site: I-5 Woodland C		City/County: Woodland/Co	wlitz		Sampling Da	te: <u>Oct.8,</u>	2020	
Applicant/Owner:	Logan Partners LLC	:				State: WA	Sampling Po	int:	17
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92207	74917	Long: -1	22.750387944	Datum:	
Soil Map Unit Nam	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	n Remarks)	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 100% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	20	Y	FACW□	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	20			UPL species x5 = 0
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	60	Y	FACW□	Prevalence Index = B/A =
2. Anthoxanthum odoratum	15		FACU□	
3. Lotus corniculatus	10		⊫FAC□	Hydrophytic Vegetation Indicators:
4. Equisetum arvense	5		FAC□	1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	90			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum 10 %		iotic Crust	0	Present? Yes <u>x</u> No
Remarks: within open field.				

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		Sampling Point:	
Profile Des	cription: (Describe to the de	pth needed to document the indicator or confirm the absence of indicators.)	
Depth	Matrix	Redox Features	

Depth	Matrix		Rec	dox Feat	ures		_			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remark	S	
0-16	10YR3/2	95	10YR3/3	5	С	М	SiL			
<sup>1</sup> Type: C=(	Concentration, D=Der	letion, RN	/-Reduced Matrix, (	CS=Cove	ered or Coa	ated San	d Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Mat	rix.	
-	il Indicators: (Applic	able to al			-			blematic Hydric Soils <sup>3</sup> :		
	sol (A1)			Redox (S				cm Muck (A10)		
Histic	Epipedon (A2)		Strippec	d Matrix (	(S6)		Re	ed Parent Material (TF2)		
Black	Histic (A3)		Loamy N	Mucky M	lineral (F1)	(except	MLRA 1) Ot	her (Explain in Remarks	)	
Hydro	ogen Sulfide (A4)		Loamy (	Gleyed N	/latrix (F2)					
Deple	eted Below Dark Surfa	ce (A11)	Deplete	d Matrix	(F3)					
Thick	Dark Surface (A12)		Redox [	Dark Sur	face (F6)		<sup>3</sup> Indicators of	hydrophytic vegetation a	and	
Sandy	y Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	)	wetland hy	drology must be present	,	
Sandy	y gleyed Matrix (S4)		Redox [	Depressi	ions (F8)		unless di	sturbed or problematic.		
Restrictive	e Layer (if present):									
Type:										
Depth (inch	nes):					H	ydric Soil Present?	Yes	No	х
Remarks: Mo	le holes					· · · ·				

### HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (any one indicator is sufficient) Secondary Indicators (2 or more re	equired)				
Surface Water (A1)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLF	RA 1, 2,				
High Water Table (A2)         MLRA 1, 2, 4A and 4B)         4A and 4B)	4A and 4B)				
Saturation (A3)     Salt Crust (B11)     Drainage Patterns (B10)					
Water Marks (B1)    Aquatic Invertebrates (B13)    Dry-Season Water Table (C2)					
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Image	ery (C9)				
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)					
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)					
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6) FAC-Neutral Test (D5)					
	Raised Ant Mounds (D6) (LRR A)				
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)	Frost-Heave Hummocks (D7)				
Sparsely Vegetated Concave Surface (B8)					
Field Observations:					
Surface Water Present? Yes No _X Depth (inches):					
Water table Present? Yes No x Depth (inches):					
	No <u>x</u>				
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					
Remarks:					

Project/Site:	I-5 Woodland C		City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.8,	2020	
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	18
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92219	90515	Long: -1	22.750321868	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	ne site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstand	es" Present?	/es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species		
1. Populus balsamifera	20	Y	FAC□	That Are OBL, FACW, or FAC:2 (A)		
2.				Total Number of Dominant		
3.				Species Across All Strata: 3 (B)		
4.				Percent of Dominant Species		
Total Cover:	20			That Are OBL, FACW, or FAC:67% (A/B)		
Shrub Stratum				Prevalence Index Worksheet:		
1.				Total % Cover of: Multiply by:		
2.		·	·	OBL species x1 = 0		
3.			·	FACW species x2 = 0		
4.			·	FAC species x3 =0		
5.		·	·	FACU species x4 = <b>0</b>		
Total Cover:	0	·	·	UPL species x5 = 0		
Herb Stratum				Column Totals: 0 (A) 0 (B)		
1. Phalaris arundinacea	70	Y	FACW			
2. Anthoxanthum odoratum	20	Y	FACU			
3. Lotus corniculatus	10		⊫FAC□	Hydrophytic Vegetation Indicators:		
4. Equisetum arvense	2		FAC□	1 - Rapid Test for Hydrophytic Vegetation		
5.				X 2 - Dominance Test is >50%		
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7.				4 - Morphological Adaptation1 (Provide supporting		
8.				data in Remarks or on a separate sheet)		
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>		
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
11			·			
Total Cover:	102					
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
1				be present, unless disturbed or problematic.		
2.				Ibideenbootte		
Total Cover:			·	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum 0 %	0	Present? Yes x No				
Remarks: Plot taken within small patch of cottonwood.						

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Profile De	escription: (Describe	to the dep	oth needed to doc	ument th	e indicato	or or con	firm the absence	e of indicat	tors.)	
Depth	Matrix		Re	dox Featu	ures					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-16	10YR3/2	100					SiL			
								·		
								·		
	- · ·									
	<u> </u>									
								·		
	Concentration, D=Dep	lation BM	-Reduced Matrix	<u> </u>	rod or Cor	tod Son	Craina <sup>2</sup> Locati	on: DI - Do	ro Lipipa M-Motrix	
Type. C-				55-0006		lieu Sant	Grains. Locati			
Hydric So	il Indicators: (Applic	cable to all	LRRs, unless oth	erwise n	oted.)		Indicators for	Problemat	ic Hydric Soils <sup>3</sup> :	
Histo	osol (A1)		Sandy F	Redox (S	5)			2 cm Muc	ck (A10)	
Histic	c Epipedon (A2)		Stripped	Matrix (	S6)			Red Pare	nt Material (TF2)	
Black	k Histic (A3)		Loamy	Loamy Mucky Mineral (F1) (except MLRA 1) Other (Explain in Remarks)						
	ogen Sulfide (A4)		Loamy	Gleyed M	latrix (F2)					
	eted Below Dark Surfa	ace (A11)		d Matrix (	. ,					
	Coark Surface (A12)			Dark Surf	. ,			• •	hytic vegetation and	
	ly Muck Mineral (S1)				urface (F7	)			must be present,	
	ly gleyed Matrix (S4)		Redox I	Depressio	ons (F8)		unles	s disturbed	l or problematic.	
Restrictive	e Layer (if present):									
Туре:										
Depth (incl	hes):					Ну	dric Soil Presen	t?	Yes	No <u>x</u>
Remarks:										
IYDROLOG	βY									
	lydrology Indicators									
Primary Inc	dicators (any one indic	cator is suff	icient)					Secondary	Indicators (2 or mor	e required)
	ace Water (A1)			Stained Le	eaves (B9)	(except			ained Leaves (B9) ( <b>N</b>	
	Water Table (A2)				A and 4B)	•		4A an		
Satur	ration (A3)		Salt Cru	st (B11)	,		_	Drainage	Patterns (B10)	
	er Marks (B1)				rates (B13)	)		-	on Water Table (C2)	)
	ment Deposits (B2)				e Odor (C1			-	n Visible on Aerial Im	
Drift I	Deposits (B3)		Oxidize	d Rhizos	oheres alo	ng Living	Roots (C3)	Geomorp	hic Position (D2)	

- Oxidized Rhizospheres along Living Roots (C3) \_\_\_\_ Geomorphic Position (D2)
  - Shallow Aquitard (D3)
  - FAC-Neutral Test (D5)
  - Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)
- Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) Field Observations:

Surface Water Present?	Yes		No	Х	Depth (inches):				
Water table Present?	Yes		No	х	Depth (inches):				
Saturation Present?	Yes		No	х	Depth (inches):	Wetland Hydrology Present?	Yes	No	х
(includes capillary fringe)									
Describe Descrided Date (atream gauge, manifering well, serial photos, provinus inspections), if availables									

Recent Iron Reduction in Plowed Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

Presence of Reduced Iron (C4)

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

Remarks:

Algal Mat or Crust (B4)

Surface Soil Cracks (B6)

Iron Deposits (B5)

Project/Site:	I-5 Woodland C			ity/County: Woodland/Cowlitz			Sampling Da	te: <u>Oct.8,</u>	2020
Applicant/Owner:	Logan Partners Ll	_C			State: WA		Sampling Po	int:	19
Investigator(s):	KB		Section, Township, Range: S13, T5N, R1W						
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92212	28080	Long: -1	22.750872100	Datum:	
Soil Map Unit Nam	e: Maytown s	ilt Ioam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on	the site typical for this	time of y	rear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remarl	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Corylus cornuta	15	Y	FACU	That Are OBL, FACW, or FAC:2 (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 3 (B)
4.				Percent of Dominant Species
Total Cover:	15			That Are OBL, FACW, or FAC: 67% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	30	Y	FACW 🗆	Total % Cover of: Multiply by:
2		<u></u>		OBL species x1 = 0
3.		·		FACW species x2 = <b>0</b>
4.				FAC species x3 = <b>0</b>
5.		·		FACU species x4 = 0
Total Cover:	30	·		UPL species x5 = <b>0</b>
Herb Stratum		•		Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	70	Y	FACW□	
2.		<u></u>		
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	70	<u></u>		
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.		·		Hydrophytic
Total Cover:		<u> </u>	·	Hydrophytic Vegetation
% Bare Ground in Herb Stratum%	Present? Yes x No			
Remarks: Plot taken within small patch of cottonwood.				

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Profile Des	scription: (Describe	to the de	oth needed to docu	ument the ir	ndicator o	or confi	irm the absence	of indicate	ors.)	
Depth	Matrix		Rec	lox Features						
(inches)	Color (moist)	%	Color (moist)	<u>%</u> T	ype <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-5	10YR3/3	100					SSiL			
5-16	10YR3/3	95	10YR3/4	5	С	М	SSiL			
. <u></u>										
<sup>1</sup> Type: C=0	Concentration, D=Dep	oletion, RM	=Reduced Matrix, C	CS=Covered	or Coate	d Sand	Grains. <sup>2</sup> Locatio	on: PL=Por	e Lining, M=Matrix	
Hydric Soi	I Indicators: (Applic	cable to al	I PPs unless oth	orwise note	d)		Indicators for	Problemati	c Hydric Soils <sup>3</sup> :	
•	sol (A1)			Redox (S5)	u.)		mulcators for	2 cm Mucł	•	
	Epipedon (A2)			Matrix (S6)					nt Material (TF2)	
				. ,	al (E4) (as		——————————————————————————————————————		· · · ·	
	Histic (A3)			Mucky Miner		серт м	ILRA 1)	Other (Exp	olain in Remarks)	
	gen Sulfide (A4)			Gleyed Matri						
	ted Below Dark Surfa	ace (A11)		d Matrix (F3)			3			
	Dark Surface (A12)			Dark Surface					nytic vegetation and	1
	/ Muck Mineral (S1)			d Dark Surfa					must be present,	
	v gleyed Matrix (S4)		Redox D	Depressions	(F8)		unles	s disturbed	or problematic.	
Restrictive	Layer (if present):									
Туре:										
Depth (inch	es):					Hyd	tric Soil Present	?	Yes	No <u>x</u>
Remarks:										
1										
HYDROLOG										
	ydrology Indicators									
	licators (any one indic	cator is suff							Indicators (2 or mo	
Surfac	ce Water (A1)		Water-S	stained Leave	es (B9) ( <b>e</b>	xcept		Water-Sta	ined Leaves (B9) (I	MLRA 1, 2,
High V	Vater Table (A2)		MLRA	A 1, 2, 4A an	nd 4B)			4A and	l 4B)	
Satura	ation (A3)		Salt Cru	st (B11)				Drainage I	Patterns (B10)	
Water	Marks (B1)		Aquatic	Invertebrate	s (B13)			Dry-Seaso	on Water Table (C2	<u>?</u> )
	nent Deposits (B2)			en Sulfide Od				-	Visible on Aerial Ir	-
	Deposits (B3)			Oxidized Rhizospheres along Living Roots (C3)					nic Position (D2)	

Algal Mat or Crust (B4) Field

Iron Deposits (B5)	Recent Iron Reduction in Plowed Soils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
d Observations:		

Surface Water Present?	Yes	No	Х	Depth (inches):					
Water table Present?	Yes	No	х	Depth (inches):					
Saturation Present?	Yes	No	Х	Depth (inches):	Wetland Hydrology Present?	Yes	No	х	
(includes capillary fringe)		_							
Describe Recorded Data (str	eam daude, n	nonitorin	a well	aerial photos, previous inspection	s) if available:				1

Presence of Reduced Iron (C4)

Remarks:

Shallow Aquitard (D3)

Project/Site:	I-5 Woodland			City/County: Woodland/Co	owlitz		Sampling Date	Oct.8, 2	2020
Applicant/Owner:	Logan Partners LL	.C				State: WA	_ Sampling Point	:	20
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	Slo	pe (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92235	57753	Long: -1	22.750801961	Datum:	
Soil Map Unit Name	e: Maytown s	ilt loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on	the site typical for this	s time of y	vear? Yes	Х	No	_(If no, explain in F	emarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstand	ces" Present? Yes	1 <u>X</u>	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	nswers in Remarks	.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	100	Y	FACW	Total % Cover of: Multiply by:
2		· . <u></u>		OBL species x1 = 0
3		· . <u></u>		FACW species x2 = <b>0</b>
4				FAC species x3 =0
5				FACU species x4 =0
Total Cover:	100			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	30	Y	FACW	Prevalence Index = B/A =
2.				
3				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.		·		data in Remarks or on a separate sheet)
9.		·		5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	30	·		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
2.				
Z		·		Hydrophytic
% Bare Ground in Herb Stratum 70 %		iotic Crust	0	Vegetation Present? Yes x No
		ione crust	0	Present? Yes <u>x</u> No
Remarks:				

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oint:	
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						Sam	<u> </u>		
Profile Des	cription: (Describe to the	depth needed to do	cument the i	indicator o	r confirm the	absence of indi	cators.)		
Depth	Matrix	Re	edox Feature						
inches)	Color (moist) %	Color (moist)	%	Type <sup>1</sup> L	.oc <sup>2</sup> Tex	(ture	Remarks	3	
0-16	10YR3/3 95	10YR3/4	5	<u>с</u>	M SSiL				
			·						
			·						
ype: C=C	oncentration, D=Depletion	RM=Reduced Matrix,	CS=Covered	d or Coated	Sand Grains.	<sup>2</sup> Location: PL=	Pore Lining, M=Matri	х.	
ydric Soil	Indicators: (Applicable t	o all LRRs, unless ot	herwise not	ed.)	Indica	tors for Problen	natic Hydric Soils <sup>3</sup> :		
Histos			Redox (S5)			2 cm N	luck (A10)		
	Epipedon (A2)	Strippe	Stripped Matrix (S6) Red Parent Material (TF2)						
	Histic (A3)		•		cept MLRA 1)		Explain in Remarks)		
	gen Sulfide (A4)		Gleyed Matr		•	`	,		
	ed Below Dark Surface (A1	1) Deplete	ed Matrix (F3	3)					
Deplet	ed Below Dark Surface (A1 Dark Surface (A12)	· ·	ed Matrix (F3 Dark Surfac		3	ndicators of hvdr	ophytic vegetation ar	nd	
Deplet Thick	Dark Surface (A12)	Redox	Dark Surface	e (F6)	3		ophytic vegetation ar	nd	
Deplet Thick I Sandy	•	Redox Deplete		e (F6) ace (F7)	3	wetland hydrolc	ophytic vegetation ar gy must be present, ed or problematic.	nd	
Deplet Thick I Sandy Sandy	Dark Surface (A12) Muck Mineral (S1)	Redox Deplete	Dark Surface ed Dark Surfa	e (F6) ace (F7)	3 <sub>1</sub>	wetland hydrolc	gy must be present,	nd	
Deplet Thick I Sandy Sandy	Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4) Layer (if present):	Redox Deplete	Dark Surface ed Dark Surfa	e (F6) ace (F7)	3 Hydric Soil	wetland hydrold unless disturb	gy must be present,	nd No x	

#### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2) MLRA 1, 2, 4A and 4B)	<b>4A and 4B</b> )
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living R	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils	s (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	
Field Observations:	
Surface Water Present?         Yes         No         X         Depth (inches):	
Water table Present? Yes <u>No x</u> Depth (inches):	
	Wetland Hydrology Present? Yes No x
(includes capillary fringe)	Marca Nahlar
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), i	if available:
Remarks:	

Project/Site:	I-5 Woodland			City/County: Woodland/C	Cowlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	21
Investigator(s):	КВ			Section, Township,	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave	, convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.922	662217	Long: -	122.750806006	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification	: PEM1A		
Are climatic / hydro	logic conditions on th	e site typical for this	time of ye	ear? Yes_	Х	No	_(If no, explain i	n Remarks)	1
Are Vegetation	, Soil	, or Hydrology	:	significantly disturbed?	Are "N	Iormal Circumstan	ces" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology	I	naturally problematic?	(If nee	eded, explain any a	nswers in Rema	rks.)	

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

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

3.	
3.	
3.	
Total Cover:       0       Percent of Dominant Species         Total Cover:       0       That Are OBL, FACW, or FAC:       100% (A/B)         Shrub Stratum       30       Y       FACW       Total % Cover of:       Multiply by:         2.       0       0       OBL species       x1 =       0         3.       0       FACW       FACW species       x2 =       0         4.       1       FAC species       x3 =       0	
Shrub Stratum     Prevalence Index Worksheet:       1. Spiraea douglasii     30     Y     FACW       2.     OBL species     x1 =     0       3.     Image: Spirae state s	
Spiraea douglasii       30       Y       IFACW       Total % Cover of:       Multiply by:         2.       OBL species       x1 =       0         3.       FACW species       x2 =       0         4.       FAC species       x3 =       0         5.       FAC species       x4 =       0	3)
Op/reduction     Op/reduction     Matrix Sector of the mat	
3.	
4. FAC species $x_3 = 0$	
5. FACU species $x4 = 0$	
Total Cover:         30         UPL species         x5 =         0	
Herb Stratum         Column Totals:         0         (A)         0         (B)	
1. Phalaris arundinacea       80       Y       IFACW       Prevalence Index = B/A =	
2. Anthoxanthum odoratum 10 FACU	
3. Lotus corniculatus 10 IFAC Hydrophytic Vegetation Indicators:	
4. Cirsium arvense 2 IFAC 1 - Rapid Test for Hydrophytic Vegetation	
5 X 2 - Dominance Test is >50%	
6 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7. 4 - Morphological Adaptation1 (Provide supporting	g
8 data in Remarks or on a separate sheet)	-
9 5 - Wetland Non-Vascular Plants <sup>1</sup>	
10.     Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	
Total Cover: 102	
Woody Vine Stratum <sup>1</sup> Indicators of hydric soil and wetland hydrology must	
1.     be present, unless disturbed or problematic.	
Z.      Hydrophytic       Total Cover:      Vegetation	
% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0 Present? Yes x No	
Remarks:	-

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Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.	Depth	Matrix		Re	dox Featu	ires				
0-7       10YR2/2       100	inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location:       PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3) <sup>3</sup> Indicators of hydrophytic vegetation and         Sandy Muck Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.	0-7	10YR2/2	100					L		
Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.	7-16	2.5Y4/3	95	2.5Y5/6	5	C	M	S		
Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.										
Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present,         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.	Type: C=C	oncentration, D=Dep	Dietion, Riv	Reduced Matrix,	CS=Cove	red or Coa	aled Sand	Grains. Location:	PL=Pore Lining, M=Matrix.	
Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)         unless disturbed or problematic.	•		cable to al						•	
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)         unless disturbed or problematic.	•		cable to al					2	cm Muck (A10)	
Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)         Sandy gleyed Matrix (S4)       Redox Depressions (F8)         unless disturbed or problematic.	Histose Histic I	ol (A1) Epipedon (A2)	cable to al	Sandy Sandy Strippe	Redox (St d Matrix (\$	5) S6)		2 R	cm Muck (A10) ed Parent Material (TF2)	
Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present,         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       ype:	Histose Histic I	ol (A1) Epipedon (A2)	cable to al	Sandy Sandy Strippe	Redox (St d Matrix (\$	5) S6)	(except I	2 R	cm Muck (A10) ed Parent Material (TF2)	
Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       'ype:	Histose Histic I Black I	ol (A1) Epipedon (A2) Histic (A3)	cable to al	Sandy   Strippe Loamy	Redox (St d Matrix (\$ Mucky Mi	5) S6) neral (F1)	(except I	2 R	cm Muck (A10) ed Parent Material (TF2)	
Sandy gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):	Histoso Histic I Black I Hydrog	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4)		Sandy   Strippe Loamy Loamy	Redox (St d Matrix (t Mucky Mi Gleyed M	5) S6) neral (F1) atrix (F2)	(except l	2 R	cm Muck (A10) ed Parent Material (TF2)	
Restrictive Layer (if present):   Type:	Histoso Histic I Black I Hydrog Deplet	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) red Below Dark Surfa		Sandy I Strippe Loamy Deplete	Redox (St d Matrix (\$ Mucky Mi Gleyed M ed Matrix (	5) S6) neral (F1) atrix (F2) (F3)	(except I	2 R MLRA 1) O	cm Muck (A10) ed Parent Material (TF2) ther (Explain in Remarks)	
Гуре:	Histoso Histic I Black I Hydrog Deplet Thick I	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Surfa Dark Surface (A12)		Sandy I Strippe Loamy Deplete Redox	Redox (S d Matrix ( Mucky Mi Gleyed M d Matrix ( Dark Surf	5) S6) neral (F1) (atrix (F2) (F3) ace (F6)		2 R MLRA 1) O	cm Muck (A10) ed Parent Material (TF2) ther (Explain in Remarks) f hydrophytic vegetation and	
	Histoso Histic I Black I Hydrog Deplet Thick I Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Surfa Dark Surface (A12) Muck Mineral (S1)		Sandy I Strippe Loamy Deplete Redox Deplete	Redox (S d Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf ed Dark S	5) S6) neral (F1) atrix (F2) (F3) ace (F6) urface (F7		MLRA 1) 2 MILRA 1) 0 <sup>3</sup> Indicators o wetland hy	cm Muck (A10) led Parent Material (TF2) ther (Explain in Remarks) f hydrophytic vegetation and ydrology must be present,	
	Histose Histic I Black I Hydrog Deplet Thick I Sandy Sandy	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) red Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)		Sandy I Strippe Loamy Deplete Redox Deplete	Redox (S d Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf ed Dark S	5) S6) neral (F1) atrix (F2) (F3) ace (F6) urface (F7		MLRA 1) 2 MILRA 1) 0 <sup>3</sup> Indicators o wetland hy	cm Muck (A10) led Parent Material (TF2) ther (Explain in Remarks) f hydrophytic vegetation and ydrology must be present,	
	Histose Histic I Black I Hydrog Deplet Thick I Sandy Sandy Restrictive	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) red Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)		Sandy I Strippe Loamy Deplete Redox Deplete	Redox (S d Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf ed Dark S	5) S6) neral (F1) atrix (F2) (F3) ace (F6) urface (F7		MLRA 1) 2 MILRA 1) 0 <sup>3</sup> Indicators o wetland hy	cm Muck (A10) led Parent Material (TF2) ther (Explain in Remarks) f hydrophytic vegetation and ydrology must be present,	

### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)	
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	bils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	RA) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	—	—
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
Saturation Present? Yes No	x Depth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspections)	, if available:
Remarks:		
Remarks.		

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Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	wlitz		Sampling Dat	e: <u>Oct.8, 2</u>	2020
Applicant/Owner:	Logan Partners LL	C				State: WA	Sampling Poir	nt:	22
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>none</u>	SI	ope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92264	8464	Long: -1	22.751438558	Datum:	
Soil Map Unit Name	e: Maytown sil	t loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Ye	es <u>X</u>	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remark	s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.		· .		Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	50	Y	FACW□	Total % Cover of: Multiply by:
2		· . <u></u>		OBL species x1 = 0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	50			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	50	Y	FACW□	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		·		
Total Cover:	50	·		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
2.		·		
2Total Cover:		·		Hydrophytic
% Bare Ground in Herb Stratum 50 %	-	iotic Crust	0	Vegetation Present? Yes x No
		ione crust	0	Present? Yes <u>x</u> No
Remarks:				

SOI	
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0-16       10YR3/2       100       SSiL         0-16       10YR3/2       100       SSiL         1       SSiL       SSiL         1       Sinter Stripped Natrix, CS=Covered or Coated Sand Grains.       Location: PL=Pore Lining, Methods         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Sol         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histosol (A1)       Sandy Redox (S5)       Red Parent Material (Si)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Hydrogen Sulfide (A1)       Depleted Matrix (F3)       3Indicators of hydrophytic vegeta         Sandy Muck Mineral (S1)       Depleted Dark Surface (F6)       3Indicators of hydrophytic vegeta	Remarks		Texture		ures			to the de	cription: (Describe	Profile Des
Inches)       Color (moist)       %       Type1       Loc2       Texture       Re         0-16       10YR3/2       100	Remarks	Remark		Loc <sup>2</sup>		Redox Fea				
0-16       10YR3/2       100       SSiL         0-16       10YR3/2       100       SSiL         100       SSiL       SSiL         100       Site       SSiL         100       Site       SSite         100       Site       Site         100       Site       Site         100       Site       Indicators         100       Stripped Matrix (S6)       Red Parent Material (S6)         100       Stripped Matrix (S6)       Red Parent Material (S1)         100       Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         100       Depleted Matrix (F3)       Sindy Redox Dark Surface (F6)         100       Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)	Remarks	Remark		Loc <sup>2</sup>	<b>T</b> . m a <sup>1</sup>					Depth
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)			SSiL		туре	%	Color (moist)	%	Color (moist)	inches)
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       3Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.								100	10YR3/2	0-16
ydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       3Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.										
ydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)										
vdric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3) <sup>3</sup> Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.			. <u> </u>							
vdric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       3Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.										
Additional and the second structure       Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Second structure         Histosol (A1)			·		·					
ydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       3Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.			·		·					
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric So         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (*         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       3Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.	M=Matrix	PI =Pore Lining, M=Mat	d Grains $^{2}$ location: PI =	ted Sand	ered or Coa	ix CS=Co	=Reduced Matr	pletion, RM	Concentration D=Der	vpe: C=C
Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (C         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Redox Dark Surface (F6)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be presented of the surface (F7)						,			, <u> </u>	)po: 0 0
Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Rem         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Thick Dark Surface (A12)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be presented on the surface (F7)	: Soils <sup>3</sup> :	•			-			able to al		
Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Rem         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be presented by the pr						-			( )	
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetar         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be preserved.	. ,	, ,			,	•				
Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)	Remarks)	her (Explain in Remarks	MLRA 1) Other	(except N	. ,				· · ·	
Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegeta         Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be pre-					. ,				•	
Sandy Muck Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be pre			2		. ,			ce (A11)		
			•		. ,				. ,	
Sandy gleved Matrix (S4) Redox Depressions (F8) unless disturbed or problema	present,	drology must be present	wetland hydrol	)						
	ematic.	sturbed or problematic.	unless distur		ons (F8)	ox Depres	Red		gleyed Matrix (S4)	
estrictive Layer (if present):									Layer (if present):	estrictive
/pe:										
epth (inches): Yes	No	Yes	/dric Soil Present?	Нус					es):	epth (inch

Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living I	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soi	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRI	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:         Surface Water Present?       Yes         Nater table Present?       Yes         Saturation Present?       Yes         Situration Present?       Yes         Vincludes capillary fringe)       No	X       Depth (inches):         x       Depth (inches):         x       Depth (inches):	Wetland Hydrology Present? Yes <u>No x</u>
scribe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspections),	, if available:
emarks:		

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	23
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92159	91067	Long: -1	22.749573787	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this	s time of y	ear? Yes	Х	No	_(If no, explain i	in Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Rema	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.		·	·	Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	90	Y	FACW□	Total % Cover of: Multiply by:
2				OBL species x1 = 0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	90			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	10	Y	FACW	
2.				
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.		·		4 - Morphological Adaptation1 (Provide supporting
0				data in Remarks or on a separate sheet)
<u>^</u>				5 - Wetland Non-Vascular Plants <sup>1</sup>
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10		·		
Total Cover:	10	·	·	
Woody Vine Stratum	10			
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 90 %	Cover of B	iotic Crust	0	-
Remarks:				I

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SOIL								Sampling Point:	23
Profile Des	cription: (Describe	to the dep	oth needed to doc	ument th	ne indicate	or or cor	nfirm the absence	of indicators.)	
Depth	Matrix	-	Red	dox Feat	ures			-	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks	
0-4	10YR3/2	100					SiSL		
4-16	10YR3/2	95	7.5YR3/4	5	С	М	SiSL		
					·				
					·				
					·				
					. <u> </u>				
					. <u> </u>				
<sup>1</sup> Type: C=C	Concentration, D=Dep	oletion, RM	=Reduced Matrix, 0	CS=Cove	ered or Coa	ated San	d Grains. <sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.	
	-							-	
-	Indicators: (Applic	cable to all			-		Indicators for F	Problematic Hydric Soils <sup>3</sup> :	
	ol (A1)			Redox (S				2 cm Muck (A10)	
Histic	Epipedon (A2)			d Matrix (				Red Parent Material (TF2)	
	Histic (A3)				ineral (F1)	• •	MLRA 1)	Other (Explain in Remarks)	
	gen Sulfide (A4)		-	-	latrix (F2)				
	ed Below Dark Surfa	ace (A11)		d Matrix			0		
	Dark Surface (A12)				face (F6)			of hydrophytic vegetation and	
	Muck Mineral (S1)				urface (F7	)		hydrology must be present,	
	gleyed Matrix (S4)		Redox [	Depressi	ons (F8)		unless	s disturbed or problematic.	
Restrictive	Layer (if present):								
Туре:									
Depth (inch	es):					H	ydric Soil Present	? Yes N	٥
Remarks:									
HYDROLOG	(								
Wetland Hy	/drology Indicators:								
Primary Ind	icators (any one indic	cator is suff	icient)				9	Secondary Indicators (2 or more re	quired)
Surfac	e Water (A1)		Water-S	Stained L	eaves (B9	) (except	t	Water-Stained Leaves (B9) (MLR	A 1, 2,
High V	Vater Table (A2)		MLR	A 1, 2, 4	A and 4B)			4A and 4B)	
Satura	ation (A3)			ıst (B11)				Drainage Patterns (B10)	
Water	Marks (B1)		Aquatic	Inverteb	rates (B13	)		Dry-Season Water Table (C2)	
Sedim	ent Deposits (B2)				e Odor (C1			Saturation Visible on Aerial Image	ry (C9)
	eposits (B3)				-	-	Roots (C3) x	Geomorphic Position (D2)	,
	Mat or Crust (B4)				duced Iron		· · · <u> </u>	Shallow Aquitard (D3)	
	eposits (B5)				uction in P	• •	oils (C6) x	FAC-Neutral Test (D5)	
	e Soil Cracks (B6)				sed Plants			Raised Ant Mounds (D6) (LRR A)	
	ation Visible on Aerial	l Imagery (I			Remarks	. , .		Frost-Heave Hummocks (D7)	
	ely Vegetated Conca		· ·			,	—		
Field Obse		. s candoo	()				1		
	iter Present? Yes	s	No X Depth	(inches	):				
Water table				(inches)					
Saturation F				(inches			Wetland Hydrol	ogy Present?  Yes <u>x</u> N	o 0
	apillary fringe)								
Describe Rec	orded Data (stream g	gauge, mor	itoring well, aerial p	photos, p	revious ins	pections	s), if available:		

Remarks:

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	te: <u>Oct.8, 2</u>	2020
Applicant/Owner:	Logan Partners LL	С				State: WA	Sampling Po	int:	24
Investigator(s):	KB			Section, Township, R	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.9215	56334	Long: -1	22.749588595	Datum:	
Soil Map Unit Name	e: Newberg fir	ne sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	the site typical for this	s time of y	ear? Yes	Х	No	_(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)
2.				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1.				Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 =0
4.				FAC species x3 = <b>0</b>
5.				FACU species x4 =0
Total Cover:	0			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	100	Y	FACW	Prevalence Index = B/A =
2.				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				Uudranhutia
Total Cover:		·		Hydrophytic Vegetation
% Bare Ground in Herb Stratum 50 %		iotic Crust	0	Present? Yes x No
Remarks:				· · · · · · · · · · · · · · · · · · ·

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Profile Des	cription: (Describe	to the dep	oth needed to docu	ument the ind	icator or co	onfirm the absence of i	indicators.)			
Depth	Matrix		Red	lox Features						
(inches)	Color (moist)	%	Color (moist)	% Ту	be <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks			
0-16	10YR3/2	100				SSiL				
<sup>1</sup> Type: C=0	Concentration, D=Dep	pletion, RM	=Reduced Matrix, C	S=Covered o	r Coated Sa	nd Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix	κ.		
	Indicators: (Applic	cable to all			.)		blematic Hydric Soils <sup>3</sup> :			
	ol (A1)			edox (S5)			m Muck (A10)			
	Epipedon (A2)			Matrix (S6)			d Parent Material (TF2)			
	Histic (A3)			/lucky Mineral	• • • •	t MLRA 1) Oth	ner (Explain in Remarks)			
	gen Sulfide (A4)	<i> </i> .		Bleyed Matrix	(F2)					
	ted Below Dark Surfa	ice (A11)		d Matrix (F3)		3				
	Dark Surface (A12)			ark Surface (l	-		hydrophytic vegetation an	d		
	Muck Mineral (S1)			Dark Surface	. ,	wetland hydrology must be present,				
	gleyed Matrix (S4)		Redox D	epressions (F	8)	unless dis	sturbed or problematic.			
Restrictive	Layer (if present):									
Туре:										
Depth (inch	es):					Hydric Soil Present?	Yes	No <u>x</u>		
Remarks:										
HYDROLOG										
	drology Indicators:									
-	icators (any one indic	cator is suff					ondary Indicators (2 or mo			
Surfac	e Water (A1)		Water-S	tained Leaves	(B9) ( <b>exce</b>	pt Wa	ater-Stained Leaves (B9) (	MLRA 1, 2,		

Primary Indicators (any one indicator is sufficient Surface Water (A1)	) Water-Stained Leaves (B9) (except	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living F	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soil	ls (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRF	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		<u> </u>
Field Observations:       Yes       No         Surface Water Present?       Yes       No         Water table Present?       Yes       No         Saturation Present?       Yes       No         (includes capillary fringe)       Ves       No	XDepth (inches):xDepth (inches):xDepth (inches):	Wetland Hydrology Present? Yes <u>No x</u>
Describe Recorded Data (stream gauge, monitoring	g well, aerial photos, previous inspections),	, if available:
Remarks:		

Project/Site:	I-5 Woodland		C	City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8, 2	:020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	25
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92284	19244	Long: -1	22.752023925	Datum:	
Soil Map Unit Name	e: Maytown silt	t loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this t	time of ye	ear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology	I	naturally problematic?	(If nee	eded, explain any ar	nswers in Rema	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC:
1				1 A COBE, 1 A CW, 61 A C 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	20	Y	FAC□	Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 = 0
4.				FAC species x3 = <b>0</b>
5.				FACU species x4 = <b>0</b>
Total Cover:	20			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	90	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	5		FAC□	
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	95	·		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				I ludve who die
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum 5 %		iotic Crust	0	Present? Yes <u>x</u> No
Remarks:				

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									Samp		
Profile Des	cription: (Describe	to the dept	th needed	to docu	iment th	ne indicat	or or c	onfirm the abse	ence of indica	ators.)	
Depth	Matrix			Red	ox Feat	ures		_			
inches)	Color (moist)	%	Color (mo	oist)	%	Type <sup>1</sup>	Loc	2 Texture	1	Remarks	5
0-7	10YR2/2	100	•					L			
7-9	10YR4/4	100						S			
9-12	10YR2/2	100						L			
12-14	10YR4/4	100						S			
				·				_			
Type: C=C	concentration, D=Dep	letion, RM=	Reduced N	Matrix, C	S=Cove	ered or Co	ated Sa	nd Grains. <sup>2</sup> Lc	ocation: PL=P	ore Lining, M=Matri	х.
ydric Soil	Indicators: (Applic	able to all	LRRs, unle	ess othe	erwise r	noted.)		Indicators	for Problema	atic Hydric Soils <sup>3</sup> :	
Histos	ol (A1)		5	Sandy R	edox (S	5)			2 cm Mu	uck (A10)	
Histic	Epipedon (A2)		5	Stripped	Matrix (	(S6)		<u>.</u>	Red Par	ent Material (TF2)	
Black	Histic (A3)		L	Loamy N	/lucky M	ineral (F1)	(excep	ot MLRA 1)	Other (E	Explain in Remarks)	
Hydrog	gen Sulfide (A4)		L	Loamy G	Bleyed N	latrix (F2)	)				
Deplet	ed Below Dark Surfa	ce (A11)	[	Depleted	d Matrix	(F3)					
Thick I	Dark Surface (A12)		F	Redox D	ark Sur	face (F6)		<sup>3</sup> Indic	ators of hydro	phytic vegetation ar	nd
Sandy	Muck Mineral (S1)		[	Depleted	l Dark S	urface (F7	7)	we	tland hydrolog	y must be present,	
Sandy	gleyed Matrix (S4)		F	Redox D	epressio	ons (F8)		u	nless disturbe	ed or problematic.	
epth (inch	es):							Hydric Soil Pre	sent?	Yes	No
ype: Depth (inch marks:								Hydric Soil Pre	sent?	Yes	<u>No</u>
DROLOGY	,							Hydric Soil Pre	sent?	Yes	<u>No</u>
DROLOGY	, vdrology Indicators:		cient)					Hydric Soil Pre			
DROLOG Vetland Hy	v drology Indicators: cators (any one indic			Water-S	tained I	eaves (B9			Secondar	ry Indicators (2 or m	ore required
PROLOG PROLOG PROLOG Surfac	rdrology Indicators: cators (any one indic e Water (A1)					eaves (B9	) (exce		Secondar	ry Indicators (2 or mi itained Leaves (B9)	ore required
Pepth (inchinarks: DROLOG) Vetland Hy rimary Indi Surfac High V	v drology Indicators: cators (any one indic e Water (A1) Vater Table (A2)		\	MLRA	1, 2, 4/	A and 4B)	) (exce		Secondar Water-S 4A a	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> )	ore required
PROLOG PROLOG PROLOG Vetland Hy rimary Indi Surfac High V Satura	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3)		\ \$	MLRA Salt Crus	<b>1, 2, 4</b> st (B11)	A and 4B)	) (exce		Secondal Water-S 4A a Drainag	ry Indicators (2 or m stained Leaves (B9) nd 4B) e Patterns (B10)	ore required (MLRA 1, 2
PROLOGY Metland Hy rimary Indi Surfac High V Satura Water	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		\	MLRA Salt Crus Aquatic I	<b>1, 2, 4/</b> st (B11) Inverteb	A and 4B) rates (B13	)) (exce		Secondar Water-S 4A a Drainag Dry-Sea	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C	ore required (MLRA 1, 2
DROLOGY Artiand Hy rimary Indi Surfac High V Satura Satura Satura Sedim	v vdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)			MLRA Salt Crus Aquatic I Hydroge	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide	A and 4B) rates (B13 e Odor (C	) (exce 3) 1)	pt	Secondar Water-S 4A a Drainag Dry-Sea Saturati	ry Indicators (2 or m stained Leaves (B9) nd 4B) e Patterns (B10)	ore required (MLRA 1, 2
DROLOGY Artiand Hy rimary Indi Surfac High V Satura Water Sedim Drift D	vdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)			MLRA Salt Crus Aquatic I Hydroge Oxidized	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide I Rhizos	A and 4B) rates (B13 e Odor (C	) (exce 3) 1) ong Livi		Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2)	ore required (MLRA 1, 2
Pepth (inchinarks: PROLOGY /etland Hy rimary Indi Surfac High V Satura Water Sedim Drift D Algal N	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)			MLRA Salt Crus Aquatic I Hydroge Oxidized Presenc	<b>1, 2, 4</b> st (B11) Inverteb n Sulfide I Rhizos e of Rec	A and 4B) rates (B13 e Odor (C pheres alc duced Iron	)) (exce 3) 1) ong Livin (C4)	pt ng Roots (C3)	Secondal Water-S 4A a Drainag Dry-Sea Saturati Geomor Shallow	ry Indicators (2 or m stained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3)	ore required (MLRA 1, 2
Pepth (inchinarks: PROLOG) Vetland Hy rimary Indi Surfac High V Satura Water Sedim Drift D Algal M Iron Do	vdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)			MLRA Salt Crus Aquatic I Hydroge Oxidized Presenc Recent I	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red	A and 4B) rates (B13 e Odor (C pheres ald	) (exce 3) 1) ong Livir (C4) Plowed	pt ng Roots (C3) Soils (C6)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS
DROLOGY Artiand Hy rimary Indi Cetland Hy rimary Indi Cetland Hy rimary Indi Cetland Hy rimary Indi Cetland Hy Surfac Drift D Algal M Iron Do Surfac	vdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	ator is suffic		MLRA Salt Crus Aquatic I Hydroge Oxidized Presenc Recent I Stunted	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres	A and 4B) rates (B13 e Odor (C pheres alc duced Iron luction in F	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> )
DROLOGY Marks: DROLOGY /etland Hy rimary Indi Vetland Hy rimary Indi Vater Surfac Drift D Algal M Iron Do Surfac Inunda	y rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)	ator is suffic		MLRA Salt Crus Aquatic I Hydroge Oxidized Presenc Recent I Stunted	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres	A and 4B) rates (B13 e Odor (C pheres ald duced Iron luction in F sed Plants	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LI	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> )
Depth (inchi marks: DROLOG) Vetland Hy Primary Indi Curfac Unifac Satura Satura Satura Unift D Algal M Iron Di Surfac Inunda	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concar	ator is suffic		MLRA Salt Crus Aquatic I Hydroge Oxidized Presenc Recent I Stunted	<b>1, 2, 4/</b> st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres	A and 4B) rates (B13 e Odor (C pheres ald duced Iron luction in F sed Plants	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LI	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> )
Depth (inch- marks: DROLOG) Vetland Hy Primary Indi Surfac High V Satura Vater Sedim Drift D Algal N Iron Do Surfac Surfac Surface Wa	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes	Imagery (B ve Surface (	7) (B8)	MLRA Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	A 1, 2, 4/ st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres xplain in (inches)	A and 4B) rates (B13 e Odor (C pheres ald duced Iron fuction in F sed Plants n Remarks	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised	ry Indicators (2 or m itained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LI	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> )
Depth (inchimarks: DROLOG) Vetland Hy Primary Indi Surfac High V Satura Water Sedim Drift D Algal N Iron Do Surfac Surfac Surface Wa Vater table	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concar rvations: ter Present? Yes Present? Yes	Imagery (B ve Surface (	7) (B8)	MLRA Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E Depth Depth	A 1, 2, 4/ st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres xplain in (inches) (inches)	A and 4B) rates (B13 e Odor (C pheres alc duced Iron fuction in F sed Plants n Remarks ):);	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6) _RR A)	Secondal Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised J Frost-He	ry Indicators (2 or m Stained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (L1 eave Hummocks (D2)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> ) 7)
Depth (inchimarks: DROLOG) Vetland Hy Primary Indi Surfac High V Satura Water Sedim Drift D Algal N Iron Do Surfac Surface Surface Wa Vater table Saturation F	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes Present? Yes	Imagery (B ve Surface (	7) (B8)	MLRA Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E Depth Depth	A 1, 2, 4/ st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres xplain in (inches)	A and 4B) rates (B13 e Odor (C pheres alc duced Iron fuction in F sed Plants n Remarks ):);	)) (exce 3) 1) ong Livin (C4) Plowed 5 (D1) (l	pt ng Roots (C3) Soils (C6) _RR A)	Secondar Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised	ry Indicators (2 or m Stained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (L1 eave Hummocks (D2)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> )
DEROLOG Marks: DROLOG Vetland Hy Vetland Hy Vetland Hy Vetland Hy Vetland Hy Surfac Water Sedim Drift D Algal N Iron Do Surfac Surfac Surface Wa Vater table iaturation F ncludes ca	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes Present? Yes pillary fringe)	Imagery (B ve Surface ( S 1 S 1	7) (B8)	MLRA Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E Depth Depth Depth Depth	A 1, 2, 4/ st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres xplain in (inches) (inches)	A and 4B) rates (B13 e Odor (C pheres ald duced Iron fuction in F sed Plants n Remarks ):	) (exce 3) 1) ong Livin (C4) Plowed 1 5 (D1) (l )	pt ng Roots (C3) Soils (C6) _RR A) Wetland Hy	Secondal Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised J Frost-He	ry Indicators (2 or m Stained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (L1 eave Hummocks (D2)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> ) 7)
Depth (inchimarks: DROLOG) Vetland Hy Primary Indi Surfac High V Satura Water Sedim Drift D Algal N Iron Do Surfac Surface Surface Wa Vater table Saturation F includes ca	rdrology Indicators: cators (any one indic e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concav rvations: ter Present? Yes Present? Yes	Imagery (B ve Surface ( S 1 S 1	7) (B8)	MLRA Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E Depth Depth Depth Depth	A 1, 2, 4/ st (B11) Inverteb n Sulfide I Rhizos e of Rec ron Red or Stres xplain in (inches) (inches)	A and 4B) rates (B13 e Odor (C pheres ald duced Iron fuction in F sed Plants n Remarks ):	) (exce 3) 1) ong Livin (C4) Plowed 1 5 (D1) (l )	pt ng Roots (C3) Soils (C6) _RR A) Wetland Hy	Secondal Water-S 4A a Drainag Dry-Sea Saturatio Geomor Shallow FAC-Ne Raised J Frost-He	ry Indicators (2 or m Stained Leaves (B9) <b>nd 4B</b> ) e Patterns (B10) ison Water Table (C on Visible on Aerial phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (L1 eave Hummocks (D2)	ore required ( <b>MLRA 1, 2</b> :2) Imagery (CS <b>RR A</b> ) 7)

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	26
Investigator(s):	КВ			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	swale		Local relief (concave, o	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92196	62459	Long: -1	22.751298741	Datum:	
Soil Map Unit Name	e: Maytown silt	loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	e site typical for this	time of ye	ear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Rema	rks.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No	x x x	Is the Sampled Area within a Wetland?	Yes	No	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4 Total Cover:	0			Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	0			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	70	Y	<b>FACW</b> □	Prevalence Index = B/A =
2. Lotus corniculatus	5		FAC□	
3. Anthoxanthum odoratum	20	Y	FACU□	Hydrophytic Vegetation Indicators:
4. Cirsium arvense	5		FAC□	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100		·	
Woody Vine Stratum 1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 0 %	Cover of B	iotic Crust	0	Present?         Yes         No         x
Remarks:				•

SOIL	
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epth	Matrix		Re	edox Featu	ures						
nches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks		
0-11	10YR2/2	100					L				
11-16	2.5YR4/3	98	10YR3/4	2	C	M	S				
	oncentration, D=Dep					ated Sand			e Lining, M=Matrix c Hydric Soils <sup>3</sup> :		
	Indicators: (Applic		I LRRs, unless ot		noted.)	ated Sand			c Hydric Soils <sup>3</sup> :	<u>.</u>	
/dric Soil Histoso	Indicators: (Applic		I LRRs, unless ot Sandy	herwise r	<b>10ted.)</b> 5)	ated Sand		Problemati 2 cm Muc	c Hydric Soils <sup>3</sup> :		
/dric Soil Histoso Histic E	Indicators: (Applic		I LRRs, unless ot Sandy Strippe	<b>herwise r</b> Redox (S ed Matrix (	<b>10ted.)</b> 5)		Indicators for	Problemati 2 cm Muc Red Parer	<b>c Hydric Soils<sup>3</sup>:</b> < (A10)		
/dric Soil Histoso Histic E Black F	Indicators: (Applic ol (A1) pipedon (A2)		I LRRs, unless ot Sandy Strippe Loamy	<b>herwise r</b> Redox (Se ed Matrix ( Mucky Mi	noted.) 5) S6)		Indicators for	Problemati 2 cm Muc Red Parer	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) ht Material (TF2)		
ydric Soil Histoso Histic E Black H Hydrog	Indicators: (Applic ol (A1) Epipedon (A2) Histic (A3)	cable to al	I LRRs, unless ot Sandy Sandy Strippe Loamy Loamy	<b>herwise r</b> Redox (Se ed Matrix ( Mucky Mi	noted.) 5) S6) ineral (F1) 1atrix (F2)		Indicators for	Problemati 2 cm Muc Red Parer	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) ht Material (TF2)	<u>.</u>	
ydric Soil Histoso Histic E Black H Hydrog Deplete	Indicators: (Applic ol (A1) pipedon (A2) listic (A3) en Sulfide (A4)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplet	<b>herwise r</b> Redox (Se ed Matrix ( Mucky Mi Gleyed M	noted.) 5) S6) ineral (F1) latrix (F2) (F3)		Indicators for	<b>Problemati</b> 2 cm Muc Red Parer Other (Exp	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) ht Material (TF2)		
ydric Soil Histoso Histic E Black H Hydrog Deplete Thick E	Indicators: (Applic ol (A1) pipedon (A2) listic (A3) en Sulfide (A4) ed Below Dark Surfa	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplet Redox	herwise r Redox (Se ed Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf	noted.) 5) S6) ineral (F1) latrix (F2) (F3)	(except I	Indicators for MLRA 1)	<b>Problemati</b> 2 cm Muc Red Parer Other (Exp s of hydropl	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) nt Material (TF2) blain in Remarks)		
ydric Soil Histoso Black H Hydrog Deplete Sandy	Indicators: (Applic of (A1) Epipedon (A2) distic (A3) en Sulfide (A4) ed Below Dark Surfa Dark Surface (A12)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplet Redox Deplet	herwise r Redox (Se ed Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf	noted.) 5) S6) ineral (F1) latrix (F2) (F3) face (F6) urface (F7	(except I	Indicators for MLRA 1)	Problemati 2 cm Muc Red Parer Other (Exp s of hydropl d hydrology	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) ht Material (TF2) blain in Remarks)		
ydric Soil Histoso Black H Hydrog Deplete Thick I Sandy Sandy	Indicators: (Applic ol (A1) pipedon (A2) distic (A3) en Sulfide (A4) ed Below Dark Surfa Dark Surface (A12) Muck Mineral (S1)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplet Redox Deplet	herwise r Redox (S ed Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf ed Dark S	noted.) 5) S6) ineral (F1) latrix (F2) (F3) face (F6) urface (F7	(except I	Indicators for MLRA 1)	Problemati 2 cm Muc Red Parer Other (Exp s of hydropl d hydrology	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) nt Material (TF2) plain in Remarks) nytic vegetation an must be present,		
ydric Soil Histoso Black H Hydrog Deplete Thick I Sandy Sandy	Indicators: (Applic ol (A1) pipedon (A2) listic (A3) en Sulfide (A4) ed Below Dark Surfa Dark Surface (A12) Muck Mineral (S1) gleyed Matrix (S4)	cable to al	I LRRs, unless ot Sandy Strippe Loamy Deplet Redox Deplet	herwise r Redox (S ed Matrix ( Mucky Mi Gleyed M ed Matrix ( Dark Surf ed Dark S	noted.) 5) S6) ineral (F1) latrix (F2) (F3) face (F6) urface (F7	(except I	Indicators for MLRA 1)	Problemati 2 cm Muc Red Parer Other (Exp s of hydropl d hydrology	<b>c Hydric Soils<sup>3</sup>:</b> < (A10) nt Material (TF2) plain in Remarks) nytic vegetation an must be present,		

### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)     MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roc	ots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (	(C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A	A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	—
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water table Present? Yes <u>No x</u> Depth (inches):	
	etland Hydrology Present? Yes No x
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if a	available:
Remarks:	
Remarks.	

Western Mountains, Valleys and Coast -Version 2.0

Project/Site:	I-5 Woodland			City/County: Woodland/Co	wlitz		Sampling Date	e: <u>Oct.8, 2</u>	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Poir	nt:	27
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	onvex	, none): <u>none</u>	Sl	ope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92135	6422	Long: -1	22.750668133	Datum:	
Soil Map Unit Name	e: Maytown silt	t loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this	time of y	rear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present? Ye	es X I	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remark	s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:			
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)			
2.				Total Number of Dominant			
3.				Species Across All Strata: 1 (B)			
4.				Percent of Dominant Species			
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)			
Shrub Stratum				Prevalence Index Worksheet:			
1		· . <u></u>		Total % Cover of: Multiply by:			
2		· . <u></u>		OBL species x1 = 0			
3		· . <u></u>		FACW species x2 = <b>0</b>			
4				FAC species x3 =0			
5				FACU species x4 = 0			
Total Cover:	0			UPL species x5 = 0			
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)			
1. Phalaris arundinacea	60	Y	FACW□	Prevalence Index = B/A =			
2. Lotus corniculatus	5		FAC□				
3				Hydrophytic Vegetation Indicators:			
4				1 - Rapid Test for Hydrophytic Vegetation			
5				X 2 - Dominance Test is >50%			
6.				3 - Prevalence Index is $\leq 3.0^1$			
7.				4 - Morphological Adaptation1 (Provide supporting			
8.				data in Remarks or on a separate sheet)			
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>			
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
11.		·					
Total Cover:	65	·					
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must			
1				be present, unless disturbed or problematic.			
2.				I ludva v ku dia			
Total Cover:		·		Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 10 %		iotic Crust	0	Present? Yes x No			
Remarks: Litter 25%							

SOIL	
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Yes

No

Х

Profile Desc	cription: (Describe	to the de	pth needed to doc	ument th	ne indicato	or or con	firm the absence	of indicators.)		
Depth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-3	10YR3/2	100					SiL			
3-12	10YR3/2	98	10YR3/3	2	С	М	SiL			
12-14	10YR4/3	98	10YR3/4	2	С	М	S			
		- <u> </u>			·	1	·			
					·					
1 <u>Turney 0-</u> 0			-Deduced Metrix			ted Car		n: PL=Pore Lining, M=Matrix.		
Type. C-C				5-000		aleu Sano	d Grains. Locatio	III. PL=Pore Linning, M=Matrix.		
Hydric Soil	Indicators: (Applic	able to al	I LRRs, unless oth	erwise r	noted.)		Indicators for F	Problematic Hydric Soils <sup>3</sup> :		
Histoso	ol (A1)		Sandy F	Redox (S	5)			2 cm Muck (A10)		
Histic E	Epipedon (A2)		Stripped	Matrix (	S6)		Red Parent Material (TF2)			
Black H	Histic (A3)		Loamy	Mucky M	ineral (F1)	(except	MLRA 1)	Other (Explain in Remarks)		
Hydrog	gen Sulfide (A4)		Loamy (	Gleyed M	latrix (F2)					
Deplete	ed Below Dark Surfa	ce (A11)	Deplete	d Matrix	(F3)					
Thick E	Dark Surface (A12)		Redox [	Dark Sur	face (F6)		<sup>3</sup> Indicators	of hydrophytic vegetation and		
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7	)	wetland	hydrology must be present,		
Sandy	gleyed Matrix (S4)		Redox [	Depressi	ons (F8)		unless	s disturbed or problematic.		
Restrictive	Layer (if present):									

Hydric Soil Present?

Remarks:

Type: Depth (inches):

### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living F	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soil	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRF	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		<u> </u>
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
Saturation Present? Yes <u>No</u>	x Depth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)		<u> </u>
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspections),	, if available:
Remarks:		

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	28
Investigator(s):	КВ			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92140	06779	Long: -1	22.750159737	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on th	e site typical for this	time of ye	ear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology	:	significantly disturbed?	Are "N	Iormal Circumstand	ces" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	nswers in Remai	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)
2.				Total Number of Dominant
3.		<u> </u>	·	Species Across All Strata: 3 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	60	Y	FACW□	Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3				FACW species x2 = 0
4				FAC species x3 = 0
5.				FACU species x4 = 0
Total Cover:	60			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	30	Y	FACW 🗆	Prevalence Index = B/A =
2. Lotus corniculatus	15		FAC□	
3. Agrostis stolonifera	25	Y	FAC□	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.		·		5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	70	·		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.		·		
Z			·	Hydrophytic
% Bare Ground in Herb Stratum 30 %		iotic Crust	0	Vegetation Present? Yes x No
			0	
Remarks:				

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OIL		Sampling Point:	28
Profile Desc	ription: (Describe to the dep	th needed to document the indicator or confirm the absence of indicators.)	
Depth	Matrix	Redox Features	

Depth	Matrix		Re	dox Featu	ures						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-16	10YR3/3	100					SiSL				
							<u> </u>				
							. <u> </u>				
							<b>.</b>				
					· ·		· ·				
<u>1</u>			De duce el Metrico				21	DL Dana Linia a M. Matei			
Type: C=C	oncentration, D=Dep	netion, Rivi-	-Reduced Matrix, 0	JS=Cove	ered or Coal	eu Sano	d Grains. Location:	PL=Pore Lining, M=Matrix			
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless oth	erwise n	noted.)		Indicators for Pro	blematic Hydric Soils <sup>3</sup> :			
Histos	ol (A1)		Sandy F	Redox (S	5)		2 0	cm Muck (A10)			
Histic	Epipedon (A2)		Stripped	d Matrix (	S6)		Red Parent Material (TF2)				
Black	Histic (A3)		Loamy	Mucky Mi	ineral (F1) (	except	MLRA 1) Ot	her (Explain in Remarks)			
Hydrog	gen Sulfide (A4)		Loamy	Gleyed M	latrix (F2)						
Deplet	ed Below Dark Surfa	ce (A11)	Deplete	d Matrix (	(F3)						
Thick	Dark Surface (A12)		Redox I	Dark Surf	ace (F6)		<sup>3</sup> Indicators of hydrophytic vegetation and				
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7)		wetland hydrology must be present,				
Sandy	gleyed Matrix (S4)		Redox I	Depressio	ons (F8)		unless di	sturbed or problematic.			
Restrictive	Layer (if present):										
Туре:											
Depth (inch	es):					Hy	vdric Soil Present?	Yes	No	х	
Remarks:											

### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Le	eaves (B9) (except Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2) MLRA 1, 2, 4A	A and 4B) 4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebr	ates (B13) Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide	e Odor (C1) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizosp	oheres along Living Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Red	uced Iron (C4) Shallow Aquitard (D3)
Iron Deposits (B5)	uction in Plowed Soils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stress	sed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in	Remarks) Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	—
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches)	
Water table Present?         Yes         No         x         Depth (inches)	
Saturation Present? Yes <u>No x</u> Depth (inches)	: Wetland Hydrology Present? YesNo
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pr	evious inspections), if available:
Remarks:	
Itemains.	

Project/Site:	I-5 Woodland C			City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	29
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92131	14507	Long: -1	22.749592612	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Total Cover	: 0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	40	Y	FACW	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 =0
5				FACU species x4 = 0
Total Cover	40			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	60	Y	FACW□	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover	60			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.		·		
Total Cover			·	Hydrophytic Verstation
% Bare Ground in Herb Stratum 30 %		iotic Crust	0	Vegetation Present? Yes x No
Remarks:			0	

SOIL	
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Profile Desc	ription: (Describe	to the de	pth needed to doc	ument th	e indicato	r or co	nfirm the absence of in	dicators.)		
Depth	Matrix		Rec	lox Featu	ures		_			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-6	10YR3/3	100					SiSL			
6-16	10YR3/2	85	7.5YR3/3	5	С	М	S			
		·	10YR4/3	10	D	М	<u>S</u>			
·		·								
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	Reduced Matrix, C	CS=Cove	red or Coa	ted Sar	nd Grains. <sup>2</sup> Location: P	L=Pore Lining, M=Matrix.		
Hydric Soil	ndicators: (Applic	able to al	I LRRs, unless oth	erwise n	oted.)		Indicators for Prob	lematic Hydric Soils <sup>3</sup> :		
Histoso				edox (S			2 cn	n Muck (A10)		
Histic E	pipedon (A2)		Stripped	Matrix (	S6)		Red	Parent Material (TF2)		
Black H	listic (A3)		Loamy I	/lucky Mi	neral (F1)	(excep	MLRA 1) Othe	er (Explain in Remarks)		
Hydrog	en Sulfide (A4)		Loamy (	Gleyed M	latrix (F2)					
Deplete	d Below Dark Surfa	ce (A11)	Deplete	d Matrix (	(F3)					
Thick D	ark Surface (A12)		Redox [	ark Surf	ace (F6)		<sup>3</sup> Indicators of h	ydrophytic vegetation and		
Sandy I	Muck Mineral (S1)		Deplete	d Dark S	urface (F7)	)	wetland hydr	ology must be present,		
Sandy g	gleyed Matrix (S4)		Redox [	Pepressio	ons (F8)		unless dist	urbed or problematic.		
Restrictive L	ayer (if present):									
Type: Depth (inche	s):					F	ydric Soil Present?	Yes	No	x

Remarks:

### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	(RA) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No X	Depth (inches):	
Water table Present?     Yes     No     x       Saturation Present?     Yes     No     x	Depth (inches):	Wetland Hydrology Present? Yes No x
Saturation Present? Yes <u>No x</u> (includes capillary fringe)	_ Depth (inches):	Wetland Hydrology Present? Yes No X
Describe Recorded Data (stream gauge, monitoring well	I, aerial photos, previous inspections)	, if available:
	· · · · · · · · · · · · · · · · · · ·	
Remarks:		

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Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	30
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92102	21350	Long: -1	22.750243089	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on tl	ne site typical for this	s time of y	ear? Yes	Х	No	_(If no, explain i	in Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Rema	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.		- <u>-</u>		Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	50	Y	FACW□	Total % Cover of: Multiply by:
2		· . <u></u>		OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	50			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	50	Y	FACW□	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		·		
Total Cover:	50			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
2.		·		
2Total Cover:		·		Hydrophytic
% Bare Ground in Herb Stratum 30 %	-	iotic Crust	0	Vegetation Present? Yes x No
		ione crust	0	Present? Yes <u>x</u> No
Remarks:				

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30

	(2000)	-					nfirm the absence	•
epth	Matrix		Re	dox Featı			_	
nches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-10	10YR3/2	100			·		SiSL	
10-16	10YR3/2	95	10YR3/3	5	<u> </u>	M	<u>S</u>	- <u></u>
					. <u> </u>			
/pe: C=0	Concentration, D=Dep	letion, RM:	=Reduced Matrix,	CS=Cove	ered or Coa	ated Sa	nd Grains. <sup>2</sup> Locat	ion: PL=Pore Lining, M=Matrix.
	Indicators: (Applic	able to all			-		Indicators for	Problematic Hydric Soils <sup>3</sup> :
	ol (A1)			Redox (S				2 cm Muck (A10)
	Epipedon (A2)			d Matrix (				Red Parent Material (TF2)
	Histic (A3)						t MLRA 1)	Other (Explain in Remarks)
-	gen Sulfide (A4)	- ( )		-	latrix (F2)			
-	ted Below Dark Surface	ce (A11)		ed Matrix (			31	
	Dark Surface (A12)			Dark Surf		~		rs of hydrophytic vegetation and
-	Muck Mineral (S1)				urface (F7	)		d hydrology must be present,
-	gleyed Matrix (S4)		Redox	Depressio	ons (F8)		unies	ss disturbed or problematic.
pe:							ludric Soil Prosor	nt? Vas No
/pe: epth (inch						ŀ	lydric Soil Preser	nt? Yes No
/pe: epth (inch						ŀ	lydric Soil Preser	nt? YesNo
/pe: epth (inch narks:	es):					ŀ	lydric Soil Preser	nt? YesNo
/pe: epth (inch narks: DROLOG	es):					•	lydric Soil Preser	nt? Yes No
/pe: epth (inch narks: PROLOG etland H	es):	ator is suffi					lydric Soil Preser	nt? Yes No No
pe: pth (inch arks: ROLOG <sup>*</sup> etland H	es): Y ydrology Indicators:	ator is suffi		Stained Lo	eaves (B9			
pe: pth (inch arks: ROLOG etland Hy mary Ind Surfac	es): Y Ydrology Indicators: icators (any one indic	ator is suffi	Water-S		eaves (B9 A and 4B)			Secondary Indicators (2 or more require
pe: pth (inch arks: ROLOG <sup>*</sup> etland H mary Ind Surfac High V	es): Y ydrology Indicators: icators (any one indicators ce Water (A1)	ator is suffi	Water-S					Secondary Indicators (2 or more require Water-Stained Leaves (B9) (MLRA 1, 2
pe: pth (inch arks: ROLOG` etland H mary Ind Surfac High V Satura	es): Y ydrology Indicators: icators (any one indic ica Water (A1) Vater Table (A2)	ator is suff	Water-S MLR Salt Cru	<b>A 1, 2, 4</b> ust (B11)		) (excet		Secondary Indicators (2 or more require Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B)
pe: pth (inch arks: Arks: Etland H Mary Ind Surfac High V Satura Vater	es): Y ydrology Indicators: icators (any one indicators ce Water (A1) Vater Table (A2) ation (A3)	ator is suffi	Water-S MLR Salt Cru Aquatic	<b>A 1, 2, 4</b> ust (B11) : Invertebi	A and 4B)	) (excep		Secondary Indicators (2 or more require Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B) Drainage Patterns (B10)
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pe: pth (inch arks: <b>ROLOG</b> <b>Salura</b> <b>Surfac</b> - Satura - Satura - Satura - Sedim - Drift D - Algal I - Iron D - Surfac	r r r r r r r r r r r r r r		Water-S MLR Salt Cru Aquatic Hydrog Oxidize Presend Recent Stunted	A 1, 2, 44 ust (B11) Invertebre en Sulfide d Rhizosp ce of Red Iron Red	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron	) ( <b>excep</b> ) I) ng Livin (C4) Plowed S	oils (C6)	Secondary Indicators (2 or more require Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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Project/Site:	I-5 Woodland C		City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8,	2020	
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	31
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91997	4006	Long: -1	22.748447346	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)
2				Total Number of Dominant Species Across All Strata: 1 (B)
4Total Cover:				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
<u>Shrub Stratum</u> 1.				Prevalence Index Worksheet: Total % Cover of: Multiply by:
				FACW species         x2 =         0           FAC species         x3 =         0
5			·	
Total Cover:	0		·	FACU species         x4 =         0           UPL species         x5 =         0
Herb Stratum	0			Column Totals:         O         (A)         O         (B)
1. Phalaris arundinacea	100	Y	FACW□	Prevalence Index = B/A =(5)
2.		· _ ·		
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum 1.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover: % Bare Ground in Herb Stratum 0 %			0	Vegetation
Remarks:			0	

SOIL	
------	--

Depth	Matrix	-	Ro	dox Feati	ires			
		0/			Type <sup>1</sup>	Loc <sup>2</sup>	Toyturo	Bemerke
inches)	Color (moist)	<u>%</u>	Color (moist)	%	Туре	LOC	Texture	Remarks
0-4	10YR3/2	100				<u> </u>	SiL	
4-16	10YR3/2	95	10YR3/4	5	C	M	SiL	
Гуре: С=0	Concentration, D=Dep	oletion, RM	=Reduced Matrix, (	CS=Cove	ered or Coa	ated Sand	d Grains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
ydric Soi	il Indicators: (Applic	able to al	LRRs, unless oth	erwise r	noted.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histos	sol (A1)		Sandy F	Redox (S	5)		_	2 cm Muck (A10)
Histic	Epipedon (A2)		Stripped	d Matrix (	S6)		-	Red Parent Material (TF2)
Black	Histic (A3)		Loamy	Mucky M	ineral (F1)	(except	MLRA 1)	Other (Explain in Remarks)
Hydro	ogen Sulfide (A4)		Loamy	Gleyed M	latrix (F2)			
Deple	eted Below Dark Surfa	ice (A11)	Deplete	d Matrix	(F3)			
Thick	Dark Surface (A12)		x Redox I	Dark Surf	face (F6)		<sup>3</sup> Indic	ators of hydrophytic vegetation and
	y Muck Mineral (S1)				urface (F7	)		land hydrology must be present,
	y gleyed Matrix (S4)			Depressio	-	,		nless disturbed or problematic.
					. ,			•
Restrictive	aver of present).							
	e Layer (if present):							
Гуре:						ну	udric Soil Pre	sant? Yas v No
Type: Depth (inch						Ну	rdric Soil Pre	sent? Yes <u>x</u> No
Type: Depth (inch marks:	res):					Ну	rdric Soil Pre	sent? Yes <u>x</u> No
Type: Depth (inch marks: DROLOG Vetland H	nes):		icient)			Ну	rdric Soil Pre	
ype: Depth (inch marks: DROLOG Vetland H Primary Ind	nes): Y ydrology Indicators: dicators (any one indic			Stained L	eaves (B9			sent? Yes x No
ype: Depth (inch marks: DROLOG Vetland H Primary Ind Surfac	Y ydrology Indicators: dicators (any one indic ce Water (A1)		Water-S		eaves (B9)			Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2
Type: Depth (inch marks: DROLOG Vetland H Primary Ind Surfac High \	Y ydrology Indicators dicators (any one indic ce Water (A1) Water Table (A2)		Water-S	A 1, 2, 4/	eaves (B9) A and 4B)			Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B)
Type: Depth (inch marks: DROLOG Vetland H Primary Inc Surfac High \ Satura	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3)		Water-S MLR Salt Cru	<b>A 1, 2, 4</b> Ist (B11)	A and 4B)	) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10)
Type: Depth (inch marks: DROLOG Vetland H Primary Ind Surfac Surfac Surfac Satura Satura	Y ydrology Indicators dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1)		Water-S MLR Salt Cru Aquatic	<b>A 1, 2, 4/</b> ist (B11) Inverteb	A and 4B) rates (B13	) (except		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
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ype: Depth (inch marks: DROLOG Vetland H Primary Ind Surfac Surfac Satura Satura Sedim Sedim Drift E	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3)		Water-S MLR Salt Cru Aquatic Hydrogo Oxidize	<b>A 1, 2, 4</b> Ist (B11) Inverteb en Sulfide d Rhizosj	A and 4B) rates (B13 e Odor (C1 pheres alo	) ( <b>except</b> ) ) ng Living		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 x Geomorphic Position (D2)
ype:          Depth (inch         marks:         DROLOG         Vetland H         Primary Ind         Surfac         High \	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4)		Water-S MLR Salt Cru Aquatic Hydroge Oxidize	A 1, 2, 4/ Inst (B11) Invertebren Sulfide d Rhizos ce of Red	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron	) ( <b>except</b> ) ) ng Living (C4)	- - - - - - - - - - - - - - - - - - -	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 x Geomorphic Position (D2) Shallow Aquitard (D3)
Type: Depth (inch marks: <b>DROLOG</b> Vetland H Primary Ind Surfac High N Satura Water Sedim Drift E Algal Iron D	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5)		Water-S MLR Salt Cru Aquatic Hydroge Oxidize Presend Recent	A 1, 2, 4 Ist (B11) Invertebren Sulfide d Rhizos ce of Red Iron Red	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P	) ( <b>except</b> ) ) ng Living (C4) lowed So	Roots (C3)	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 X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5)
Type: Depth (inch marks: /DROLOG Wetland H Primary Ind Satura Surfac Unit D Sedim Drift D Algal Inon D Surfac	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6)	ator is suff	Water-S MLR. Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted	A 1, 2, 4 Inst (B11) Inverteb en Sulfide d Rhizos ce of Red Iron Red or Stress	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P sed Plants	) (except ) ng Living (C4) lowed So (D1) (LR	Roots (C3)	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 x Geomorphic Position (D2) Shallow Aquitard (D3) x FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Type: Depth (inch emarks: (DROLOG Wetland H Primary Ind Surfac Satura Sedim Sedim Sedim Drift D Algal Iron D Surfac Surfac	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial	ator is suff	Water-S MLR Salt Cru Aquatic Hydroga Oxidize Presena Recent Stunted B7) Other (F	A 1, 2, 4 Inst (B11) Inverteb en Sulfide d Rhizos ce of Red Iron Red or Stress	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P	) (except ) ng Living (C4) lowed So (D1) (LR	Roots (C3)	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 X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5)
Type: Depth (inch emarks: YDROLOG Wetland H Primary Ind Surfac High \ Satura Satura Sedim Drift [ Algal ] Iron D Surfac Inund Spars	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial sely Vegetated Concar	ator is suff	Water-S MLR Salt Cru Aquatic Hydroga Oxidize Presena Recent Stunted B7) Other (F	A 1, 2, 4 Inst (B11) Inverteb en Sulfide d Rhizos ce of Red Iron Red or Stress	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P sed Plants	) (except ) ng Living (C4) lowed So (D1) (LR	Roots (C3)	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 x Geomorphic Position (D2) Shallow Aquitard (D3) x FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Type: Depth (inch emarks: YDROLOG Wetland H Primary Ind Surfac High \ Satura Satura Sedim Drift [ Algal ] Iron D Surfac Inund Spars Field Obse	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial sely Vegetated Concar ervations:	ator is suff	Water-S MLR Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (f (B8)	A 1, 2, 4 ist (B11) Invertebre an Sulfide d Rhizos ce of Red Iron Red or Stress Explain in	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P sed Plants Remarks	) (except ) ng Living (C4) lowed So (D1) (LR	Roots (C3)	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 x Geomorphic Position (D2) Shallow Aquitard (D3) x FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Type: Depth (inch marks: //DROLOG Wetland H Primary Ind Surfac High \ Satura Satura Sedim Drift [ Algal ] Iron D Surfac Inund Spars Field Obse	Y ydrology Indicators: dicators (any one indic ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial sely Vegetated Concar ervations: ater Present? Yes	ator is suff	Water-S MLR Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (f (B8)	A 1, 2, 4 Inst (B11) Inverteb en Sulfide d Rhizos ce of Red Iron Red or Stress	A and 4B) rates (B13 e Odor (C1 pheres alo luced Iron uction in P sed Plants Remarks)	) (except ) ng Living (C4) lowed So (D1) (LR	Roots (C3)	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 X Geomorphic Position (D2) Shallow Aquitard (D3) X FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)

Remarks:

(includes capillary fringe)

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

Project/Site:	I-5 Woodland C		City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.8,	2020	
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	32
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91992	27175	Long: -1	22.748438025	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on t	he site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:				
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC:				
1				That Are OBL, FACW, of FAC: <u>2</u> (A)				
2				Total Number of Dominant				
3				Species Across All Strata: <u>3</u> (B)				
4				Percent of Dominant Species				
Total Cover:	0			That Are OBL, FACW, or FAC:67% (A/B)				
Shrub Stratum				Prevalence Index Worksheet:				
1.				Total % Cover of: Multiply by:				
2.				OBL species x1 = 0				
3.				FACW species x2 = 0				
4.				FAC species $x3 = 0$				
5.				FACU species x4 =0				
Total Cover:	0			UPL species x5 = <b>0</b>				
Herb Stratum				Column Totals: 0 (A) 0 (B)				
1. Phalaris arundinacea	60	Y	FACW 🗆					
2. Lotus corniculatus	30		FAC□					
3.				Hydrophytic Vegetation Indicators:				
4.				1 - Rapid Test for Hydrophytic Vegetation				
5.				X 2 - Dominance Test is >50%				
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>				
7				4 - Morphological Adaptation1 (Provide supporting				
8.				data in Remarks or on a separate sheet)				
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>				
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
11.								
Total Cover:	90							
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must				
1. Rubus laciniatus	40%	Y	FACU	be present, unless disturbed or problematic.				
2.				Hydrophytic				
Total Cover:	40			Vegetation				
% Bare Ground in Herb Stratum%	Cover of Bi	iotic Crust	0	Present? Yes <u>x</u> No				
Remarks:				·				

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Profile Description: (Descri	be to the depth n	eeded to document the indic	ator or confirm th	e absence of ind	icators.)	
Depth Matrix		Redox Features				
inches) Color (moist)	% C	olor (moist) % Type	<sup>1</sup> Loc <sup>2</sup> T	exture	Remarks	
0-16 10YR3/3	100		SiL			
·						
				<u> </u>		
Type: C=Concentration, D=D	epletion, RM=Re	duced Matrix, CS=Covered or 0	Coated Sand Grain	s. <sup>2</sup> Location: PL	=Pore Lining, M=Matri	х.
lydric Soil Indicators: (App	licable to all LRF	Rs, unless otherwise noted.)	Indio	cators for Proble	matic Hydric Soils <sup>3</sup> :	
Histosol (A1)		Sandy Redox (S5)			Muck (A10)	
Histic Epipedon (A2)		Stripped Matrix (S6)			Parent Material (TF2)	
Black Histic (A3)		Loamy Mucky Mineral (F	1) (except MI RA		(Explain in Remarks)	
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F	, ,	-, <u> </u>	(	
Depleted Below Dark Su	rface (A11)	Depleted Matrix (F3)	_,			
Thick Dark Surface (A12		Redox Dark Surface (F6	5)	<sup>3</sup> Indicators of by	drophytic vegetation ar	hd
Sandy Muck Mineral (S1		Depleted Dark Surface (	-	-	logy must be present,	
Sandy gleyed Matrix (S4)		Redox Depressions (F8)			bed or problematic.	
estrictive Layer (if present)			)		bed of problematic.	
	-					
		-	Utualitie C		Vaa	Na v
Depth (inches):			Hydric So	oil Present?	Yes	<u>No x</u>
Cype: Depth (inches): marks:		-	Hydric So	oil Present?	Yes	<u>No x</u>
Depth (inches):		-	Hydric S	oil Present?	Yes	<u>No x</u>
Depth (inches):			Hydric S	oil Present?	Yes	<u>No x</u>
epth (inches):			Hydric S	oil Present?	Yes	<u>No x</u>
narks:			Hydric S	oil Present?	Yes	<u>No x</u>
narks:	rs:		Hydric S	oil Present?	Yes	<u>No x</u>
narks: DROLOGY Vetland Hydrology Indicato		  t)	Hydric S		Yes	
pepth (inches): narks: DROLOGY /etland Hydrology Indicato		t) Water-Stained Leaves (		Secon		ore required)
epth (inches): narks: DROLOGY /etland Hydrology Indicato rimary Indicators (any one in			B9) ( <b>except</b>	Second Wate	dary Indicators (2 or m	ore required)
Pepth (inches): narks: DROLOGY /etland Hydrology Indicato rimary Indicators (any one in Surface Water (A1)		Water-Stained Leaves (	B9) ( <b>except</b>	Wate	dary Indicators (2 or m r-Stained Leaves (B9)	ore required)
Pepth (inches): narks: DROLOGY /etland Hydrology Indicato rimary Indicators (any one in Surface Water (A1) High Water Table (A2)		Water-Stained Leaves ( MLRA 1, 2, 4A and 4	B9) ( <b>except</b> B)	<u>Secono</u> Wate Drain	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> )	ore required) (MLRA 1, 2,
PROLOGY PROLOGY Vetland Hydrology Indicato rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3)		Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11)	B9) ( <b>except</b> B) 13)	Second Wate Drain Drain	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10)	ore required) ( <b>MLRA 1, 2,</b> 2)
PROLOGY Vetland Hydrology Indicato rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B	B9) ( <b>except</b> B) 13) (C1)	Second Wate Drain Dry-S Satur	dary Indicators (2 or m r-Stained Leaves (B9) and <b>4B</b> ) age Patterns (B10) eason Water Table (C	ore required) ( <b>MLRA 1, 2,</b> 2)
DROLOGY /etland Hydrology Indicato rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (	B9) ( <b>except</b> <b>B</b> ) 13) C1) along Living Roots	Second Wate Drain Dry-S Satur (C3) Geor	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial	ore required) ( <b>MLRA 1, 2,</b> 2)
DROLOGY Vetland Hydrology Indicato rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres a Presence of Reduced In	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4)	<u>Second</u> Wate Drain Dry-S Satur (C3) Geom Shalle	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3)	ore required) ( <b>MLRA 1, 2,</b> 2)
DROLOGY Vetland Hydrology Indicato Irimary Indicators (any one in 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)	dicator is sufficien	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres a Presence of Reduced In Recent Iron Reduction in	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4) n Plowed Soils (C6)	<u>Second</u> Wate Drain Dry-S (C3) Geom Shallo FAC-	dary Indicators (2 or m r-Stained Leaves (B9) a and 4B) age Patterns (B10) eason Water Table (C ation Visible on Aerial norphic Position (D2) ow Aquitard (D3) Neutral Test (D5)	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9)
Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Primary Indicators (any one in 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)	dicator is sufficien	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres a Presence of Reduced Im Recent Iron Reduction in Stunted or Stressed Pla	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) ( <b>LRR A</b> )	(C3) <u>Secon</u> Wate Drain Dry-S Satur (C3) <u>Geon</u> Shallo FAC- Raise	dary Indicators (2 or m r-Stained Leaves (B9) a and 4B) age Patterns (B10) eason Water Table (C ation Visible on Aerial norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> )
DROLOGY Marks: DROLOGY Vetland Hydrology Indicato Irimary Indicators (any one in 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 Ae	dicator is sufficien	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres Presence of Reduced In Recent Iron Reduction in Stunted or Stressed Plai Other (Explain in Remar	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) ( <b>LRR A</b> )	(C3) <u>Secon</u> Wate Drain Dry-S Satur (C3) <u>Geon</u> Shallo FAC- Raise	dary Indicators (2 or m r-Stained Leaves (B9) a and 4B) age Patterns (B10) eason Water Table (C ation Visible on Aerial norphic Position (D2) ow Aquitard (D3) Neutral Test (D5)	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> )
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Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Primary Indicators (any one in 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 Aet Sparsely Vegetated Con	dicator is sufficien ial Imagery (B7) cave Surface (B8)	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres a Presence of Reduced Im Recent Iron Reduction in Stunted or Stressed Pla Other (Explain in Remar	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) ( <b>LRR A</b> )	(C3) <u>Secon</u> Wate Drain Dry-S Satur (C3) <u>Geon</u> Shallo FAC- Raise	dary Indicators (2 or m r-Stained Leaves (B9) a and 4B) age Patterns (B10) eason Water Table (C ation Visible on Aerial norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> )
Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Primary Indicators (any one in 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 Aer Sparsely Vegetated Con- Field Observations: Surface Water Present?	dicator is sufficien	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres Presence of Reduced In Recent Iron Reduction in Stunted or Stressed Plai Other (Explain in Remar	B9) ( <b>except</b> B) 13) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) ( <b>LRR A</b> )	(C3) <u>Secon</u> Wate Drain Dry-S Satur (C3) <u>Geon</u> Shallo FAC- Raise	dary Indicators (2 or m r-Stained Leaves (B9) a and 4B) age Patterns (B10) eason Water Table (C ation Visible on Aerial norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> )
Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Primary Indicators (any one in 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 Aet Sparsely Vegetated Con Field Observations: Surface Water Present?	dicator is sufficien ial Imagery (B7) cave Surface (B8) ′es No	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres = Presence of Reduced Irr Recent Iron Reduction ir Stunted or Stressed Pla Other (Explain in Remar	B9) (except B) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) (LRR A) ks)	(C3) <u>Secon</u> Wate Drain Dry-S Satur (C3) <u>Geon</u> Shallo FAC- Raise	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L Heave Hummocks (D	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> )
Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Drimary Indicators (any one in 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 Aet Sparsely Vegetated Con- Siteld Observations: Surface Water Present? Vater table Present? Saturation Present?	dicator is sufficien ial Imagery (B7) cave Surface (B8) ⁄es No ⁄es No ⁄es No	Water-Stained Leaves (         MLRA 1, 2, 4A and 4         Salt Crust (B11)         Aquatic Invertebrates (B         Hydrogen Sulfide Odor (         Oxidized Rhizospheres :         Presence of Reduced Irr         Recent Iron Reduction ir         Stunted or Stressed Pla         Other (Explain in Remar         X       Depth (inches):         X       Depth (inches):         X       Depth (inches):	B9) (except B) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) (LRR A) ks) Wetla	(C3) <u>Second</u> Wate Drain Dry-S Satur (C3) Geom Shalld FAC- Raise Frost	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L Heave Hummocks (D	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> ) 7)
Depth (inches): marks: DROLOGY Vetland Hydrology Indicato Primary Indicators (any one in 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 Aet Sparsely Vegetated Con- Sield Observations: Surface Water Present? Vater table Present? Vater table Present? Saturation Present?	dicator is sufficien ial Imagery (B7) cave Surface (B8) ⁄es No ⁄es No ⁄es No	Water-Stained Leaves ( MLRA 1, 2, 4A and 4 Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor ( Oxidized Rhizospheres = Presence of Reduced Irr Recent Iron Reduction ir Stunted or Stressed Pla Other (Explain in Remar 	B9) (except B) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) (LRR A) ks) Wetla	(C3) <u>Second</u> Wate Drain Dry-S Satur (C3) Geom Shalld FAC- Raise Frost	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L Heave Hummocks (D	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> ) 7)
DROLOGY Vetland Hydrology Indicato Vetland Hydrology Indicato Vetland Hydrology Indicato Verimary Indicators (any one in 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 Aet Sparsely Vegetated Con- ield Observations: Surface Water Present? Vater table Present? Vater table Present? Vater table Present? Vater table Present?	dicator is sufficien ial Imagery (B7) cave Surface (B8) ⁄es No ⁄es No ⁄es No	Water-Stained Leaves (         MLRA 1, 2, 4A and 4         Salt Crust (B11)         Aquatic Invertebrates (B         Hydrogen Sulfide Odor (         Oxidized Rhizospheres :         Presence of Reduced Irr         Recent Iron Reduction ir         Stunted or Stressed Pla         Other (Explain in Remar         X       Depth (inches):         X       Depth (inches):         X       Depth (inches):	B9) (except B) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) (LRR A) ks) Wetla	(C3) <u>Second</u> Wate Drain Dry-S Satur (C3) Geom Shalld FAC- Raise Frost	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L Heave Hummocks (D	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> ) 7)
DROLOGY Vetland Hydrology Indicato Vetland Hydrology Indicato Vetland Hydrology Indicato Verimary Indicators (any one in 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 Aet Sparsely Vegetated Con- ield Observations: Surface Water Present? Vater table Present? Vater table Present? Vater table Present?	dicator is sufficien ial Imagery (B7) cave Surface (B8) ⁄es No ⁄es No ⁄es No	Water-Stained Leaves (         MLRA 1, 2, 4A and 4         Salt Crust (B11)         Aquatic Invertebrates (B         Hydrogen Sulfide Odor (         Oxidized Rhizospheres :         Presence of Reduced Irr         Recent Iron Reduction ir         Stunted or Stressed Pla         Other (Explain in Remar         X       Depth (inches):         X       Depth (inches):         X       Depth (inches):	B9) (except B) (C1) along Living Roots on (C4) n Plowed Soils (C6) nts (D1) (LRR A) ks) Wetla	(C3) <u>Second</u> Wate Drain Dry-S Satur (C3) Geom Shalld FAC- Raise Frost	dary Indicators (2 or m r-Stained Leaves (B9) a <b>and 4B</b> ) age Patterns (B10) eason Water Table (C ation Visible on Aerial horphic Position (D2) ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (L Heave Hummocks (D	ore required) ( <b>MLRA 1, 2,</b> 2) Imagery (C9) <b>RR A</b> ) 7)

Project/Site:	I-5 Woodland C		City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8, 2	2020	
Applicant/Owner:	Logan Partners LLC	2				State: WA	_ Sampling Po	oint:	33
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	ditch		Local relief (concave, c	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91974	5351	Long: -1	22.749195249	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on t	he site typical for thi	is time of y	ear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland?	Yes <u>x</u> No	
Ditched portion of Wetland 5				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1		· . <u></u>	·	Total % Cover of: Multiply by:
2				OBL species x1 = 0
3		· . <u></u>	·	FACW species x2 =0
4		· . <u></u>	·	FAC species x3 =0
5				FACU species x4 = <b>0</b>
Total Cover:	0			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	25	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	20	Y	FAC□	
3. Ranunculus repens	10		FAC□	Hydrophytic Vegetation Indicators:
4. Anthoxanthum odoratum	5		FACU□	1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	60			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 10 %	Present? Yes No x			
Remarks: Litter 30%				

Depth	Matrix		Rec	Redox Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	7.5YR3/2	100					SiL	
3-7	10YR3/2	90	10YR3/4	10	С	М	<u>L</u>	
7-12	2.5Y4/3	95	10YR3/4	5	С	М	S	
		- <u> </u>						
Type: C=C	Concentration, D=Dep	letion, RN	=Reduced Matrix, C	S=Cover	ed or Coa	ated Sand	Grains. <sup>2</sup> Location: PL	=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to al	I LRRs, unless oth	erwise no	oted.)		Indicators for Proble	matic Hydric Soils <sup>3</sup> :
L Pata a	ol (A1)		Sandy R		<b>`</b>		2 cm	
HISTOS				regox (22	)			Muck (A10)
	Epipedon (A2)			l Matrix (S	,			Muck (A10) Parent Material (TF2)
Histic	Epipedon (A2) Histic (A3)		Stripped	l Matrix (S	,	(except l	Red	
Histic Black			Stripped Loamy M	l Matrix (S	66) heral (F1)	(except I	Red	Parent Material (TF2)
Histic Black Hydro	Histic (A3)	ce (A11)	Stripped Loamy N Loamy C	l Matrix (S ⁄lucky Mir	66) neral (F1) atrix (F2)	(except I	Red	Parent Material (TF2)
Histic Black Hydro Deplet	Histic (A3) gen Sulfide (A4)	ce (A11)	Stripped Loamy M Loamy C Depleted	l Matrix (S ⁄lucky Mir Gleyed Ma	, 66) neral (F1) atrix (F2) =3)	(except I	MLRA 1) Cther	Parent Material (TF2)
Histic Black Hydro Deplet Thick	Histic (A3) gen Sulfide (A4) ted Below Dark Surfa	ce (A11)	Stripped Loamy M Loamy C Depleted Redox D	l Matrix (S Mucky Mir Gleyed Ma d Matrix (F Dark Surfa	, 66) neral (F1) atrix (F2) =3)		MLRA 1) Red I 3 <sup>3</sup> Indicators of hy	Parent Material (TF2) (Explain in Remarks)

Restrictive Layer (if present):		
Туре:		
Depth (inches):	Hydric Soil Present?	Yes x
Remarks:	•	

### HYDROLOGY

Wetland Hydrology Indicators:								
Primary Indicators (any one indicator is sufficient) Secondary Indicators (2 or more required)								
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,							
High Water Table (A2)MLRA 1, 2, 4A and 4B)	4A and 4B)							
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)							
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)							
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)							
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3)	) x Geomorphic Position (D2)							
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)							
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6)	x FAC-Neutral Test (D5)							
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)							
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)							
Sparsely Vegetated Concave Surface (B8)								
Field Observations:								
Surface Water Present? Yes <u>No X</u> Depth (inches):								
Water table Present? Yes No x Depth (inches):								
	Hydrology Present? Yes x No							
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if availabl	e:							
Remarks: No water flowing at time of site visit.								
Remarke. No water howing at time of one visit.								

No

Project/Site:	I-5 Woodland C		City/County: Woodland/Cowlitz		Sampling		ate: Oct.8, 2	2020	
Applicant/Owner:	Logan Partners LLC					State: WA	_ Sampling Po	oint:	34
Investigator(s):	КВ			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.91973	35996	Long: -1	22.749230161	Datum:	
Soil Map Unit Name	e: Newberg fir	ne sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on t	the site typical for this	time of y	ear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	ormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Quercus garryana	25	Y	FACU□	That Are OBL, FACW, or FAC: <b>3</b> (A)
2. Corylus cornuta	5		FACU	Total Number of Dominant
3.				Species Across All Strata: 5 (B)
4.				Percent of Dominant Species
Total Cover:	30			That Are OBL, FACW, or FAC: 60% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	10	Y	FAC□	Total % Cover of: Multiply by:
2. Symphoricarpos albus	5	Y	FACU	OBL species         x1 =         0
3. Rosa pisocarpa	5	Y	FAC□	FACW species x2 = 0
4.				FAC species x3 = <b>0</b>
5.				FACU species x4 = <b>0</b>
Total Cover:	20			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	60	Y	FACW	Prevalence Index = B/A =
2. Holcus lanatus	10		FAC□	
3. Agrostis stolonifera	5		⊫FAC□	Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5				<b>X</b> 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	75			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 20 %	Present? Yes <u>x</u> No			
Remarks: Appears to be an old access road.				

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Profile Des	scription: (Describe	to the depth	needed to docur	nent the indicate	or or conf	irm the absence of in	ndicators.)	
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-16	10YR3/2	100				SiL		
<sup>1</sup> Type: C=0	Concentration, D=De	oletion, RM=R	educed Matrix, CS	=Covered or Coa	ated Sand	Grains. <sup>2</sup> Location: F	PL=Pore Lining, M=Matrix	κ.
Hydric Soi	I Indicators: (Applie	able to all L	RRs, unless other	wise noted.)		Indicators for Prob	lematic Hydric Soils <sup>3</sup> :	
Histos	sol (A1)		Sandy Re	dox (S5)		2 cr	m Muck (A10)	
Histic	Epipedon (A2)		Stripped N	/latrix (S6)		Rec	d Parent Material (TF2)	
Black	Histic (A3)		Loamy Mu	icky Mineral (F1)	(except N	ILRA 1) Oth	er (Explain in Remarks)	
Hydro	gen Sulfide (A4)		Loamy Gl	eyed Matrix (F2)				
Deple	ted Below Dark Surfa	ice (A11)	Depleted	Matrix (F3)				
Thick	Dark Surface (A12)		Redox Da	rk Surface (F6)		<sup>3</sup> Indicators of h	hydrophytic vegetation an	id
Sandy	/ Muck Mineral (S1)		Depleted	Dark Surface (F7	)	wetland hyd	rology must be present,	
Sandy	y gleyed Matrix (S4)		Redox De	pressions (F8)		unless dis	turbed or problematic.	
Restrictive	E Layer (if present):							
Type:								
Depth (inch	nes):		_		Hyd	dric Soil Present?	Yes	No <u>x</u>
Remarks:								
HYDROLOG	Y							
Wetland H	ydrology Indicators							
Primary Ind	licators (any one indic	ator is sufficie	ent)			Seco	ondary Indicators (2 or mo	ore required)
Surfac	ce Water (A1)		Water-Sta	ined Leaves (B9)	) (except	Wa	ter-Stained Leaves (B9)	(MLRA 1, 2,
High \	Water Table (A2)		MLRA	1, 2, 4A and 4B)			4A and 4B)	
Satura	ation (A3)		Salt Crust	(B11)		Dra	inage Patterns (B10)	
Water	r Marks (B1)		Aquatic In	vertebrates (B13	)	Dry	-Season Water Table (C	2)
Sedim	nent Deposits (B2)		Hydrogen	Sulfide Odor (C1	)	Sat	uration Visible on Aerial I	magery (C9)
Drift D	Deposits (B3)		Oxidized I	Rhizospheres alo	ng Living F	Roots (C3) Geo	omorphic Position (D2)	
Algal I	Mat or Crust (B4)		Presence	of Reduced Iron	(C4)	Sha	allow Aquitard (D3)	
Iron D	eposits (B5)		Recent Irc	on Reduction in P	lowed Soil	ls (C6) FAC	C-Neutral Test (D5)	

- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

- Inundation Visible on Aerial Imagery (B7) \_\_\_\_ Other (Explain in Remarks) \_\_\_\_ Sparsely Vegetated Concave Surface (B8)
- Field Observations: Depth (inches): Depth (inches): Surface Water Present? Х Yes No Water table Present? Yes No Х Depth (inches): Wetland Hydrology Present? No \_\_\_\_ Yes х Saturation Present? No Yes Х (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Stunted or Stressed Plants (D1) (LRR A)

Remarks: Approximately 3' above ditch.

Surface Soil Cracks (B6)

Project/Site:	I-5 Woodland C		City/County: Woodland/Cowlitz			Sampling Da	ate: Oct.8,	2020	
Applicant/Owner:	Logan Partners LLC					State: WA	Sampling Po	oint:	35
Investigator(s):	KB			Section, Township, Range: <u>S13, T5N, R1W</u>					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92013	30768	Long: -1	22.747695118	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remai	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1		· . <u> </u>		That Are OBL, FACW, or FAC:3(A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Cornus alba	15	Y	FACW□	Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3				FACW species x2 = 0
4.				FAC species x3 = <b>0</b>
5.		·		FACU species x4 = <b>0</b>
Total Cover:	15	·		UPL species x5 = <b>0</b>
Herb Stratum		•		Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	90	Y	FACW	Prevalence Index = B/A =
2. Juncus effusus	20	Y	FACW	
3. Lotus corniculatus	15		FAC□	Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		·		
Total Cover:	125			
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.		<u> </u>		Hydrophytic
Total Cover:		<u> </u>	·	Vegetation
% Bare Ground in Herb Stratum%	0	Present? Yes x No		
Remarks:				

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SOIL							Samplin	g Point:	35
Profile De	scription: (Describe to the	depth needed to doc	ument th	ne indicato	or or cor	nfirm the absenc	e of indicate	ors.)	-
Depth	Matrix	Re	dox Featu	ures					
(inches)	Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-4	10YR3/2 100					SiL			
4-16	10YR3/2 95	7.5YR3/4	5	С	М	SiL			
		•							
		-				a) (			
4	·								
'Type: C=	Concentration, D=Depletion, F	Reduced Matrix, (	CS=Cove	ered or Coa	ated San	d Grains. <sup>2</sup> Locat	ion: PL=Por	e Lining, M=Matrix.	
Hydric Soi	il Indicators: (Applicable to	all I RRs. unless of	nerwise n	noted.)		Indicators for	Problemati	ic Hydric Soils <sup>3</sup> :	
	sol (A1)		Redox (St			indicatore for	2 cm Mucl	•	
	: Epipedon (A2)		d Matrix (				-	nt Material (TF2)	
	Histic (A3)			ineral (F1)	(except	MLRA 1)	_	plain in Remarks)	
	ogen Sulfide (A4)		-	latrix (F2)		,		,	
	eted Below Dark Surface (A11		d Matrix (						
Thick	Dark Surface (A12)	x Redox I	Dark Surf	face (F6)		<sup>3</sup> Indicato	rs of hydropł	nytic vegetation and	t
	y Muck Mineral (S1)			urface (F7	)			must be present,	
Sandy gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic.									
Restrictive	e Layer (if present):								
Type:									
Depth (incl	hes):				H	ydric Soil Preser	nt?	Yes x	No
Remarks:									
IYDROLOG	iΥ								
Wetland H	lydrology Indicators:								
	dicators (any one indicator is s	sufficient)						Indicators (2 or mo	
Surfa	ce Water (A1)	Water-S	Stained Le	eaves (B9)	) (except	t	Water-Sta	ined Leaves (B9) (I	MLRA 1, 2,
High	Water Table (A2)	MLR	A 1, 2, 4A	A and 4B)			4A and	<b>4B</b> )	
Satur	ation (A3)	Salt Cru	ust (B11)				Drainage	Patterns (B10)	
Wate	r Marks (B1)	Aquatic	Invertebr	rates (B13)	)		Dry-Seaso	on Water Table (C2	)
Sedin	nent Deposits (B2)	Hydroge	en Sulfide	e Odor (C1	)		Saturation	Visible on Aerial Ir	nagery (C9)
Drift [	Deposits (B3)	Oxidize	d Rhizosp	pheres alo	ng Living	Roots (C3) x	Geomorph	nic Position (D2)	
Algal	Mat or Crust (B4)	Presend	ce of Red	luced Iron	(C4)		Shallow A	quitard (D3)	
Iron E	Deposits (B5)	Recent	Iron Redu	uction in P	lowed So	oils (C6) x	FAC-Neut	ral Test (D5)	
Surfa	ce Soil Cracks (B6)	Stunted	or Stress	sed Plants	(D1) ( <b>LF</b>	RR A)	Raised Ar	nt Mounds (D6) ( <b>LR</b>	<b>R A</b> )
Inund	lation Visible on Aerial Imager	y (B7) Other (I	Explain in	Remarks	)		Frost-Hea	ve Hummocks (D7)	)

	nonai iniag			
Sparsely Vegetated C	oncave Su	ırface (B8)		
Field Observations:				
Surface Water Present?	Yes	No	Х	Depth (inches):
Water table Present?	Yes	No	Х	Depth (inches):
Saturation Present?	Yes	No	Х	Depth (inches):
// / / // // // /				

inches):				
(inches):				
inches):	Wetland Hydrology Present?	Yes_	X	_No

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

Remarks:

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	te: <u>Oct.8,</u>	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	36
Investigator(s):	estigator(s): KB Section		Section, Township, R	ange:	S13, T5N, R1W				
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92008	88463	Long: -1	22.747675892	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on t	he site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 3 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	15	Y	FAC□	Total % Cover of: Multiply by:
2		·		OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5.				FACU species x4 =0
Total Cover:	15			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	90	Y	FACW	Prevalence Index = B/A =
2. Lotus corniculatus	30	Y	FAC□	
3.				Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	120			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.		·		Uudranhutia
Total Cover:				Hydrophytic Vegetation
% Bare Ground in Herb Stratum%		iotic Crust	0	Present? Yes x No
Remarks:				

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Profile Des Depth	cription: (Describe Matrix	to the dep		<b>ment th</b> ox Featu		or or con	firm the abse	nce of indica	ators.)	
						Loc <sup>2</sup>	Tautura		Demer	l e
(inches) 0-16	Color (moist) 10YR3/3	<u>%</u> 100	Color (moist)	%	Type <sup>1</sup>	LOC	Texture SiL		Remar	KS
			·							
	Concentration, D=Dep					ated Sand				
-	Indicators: (Applic	able to all			-		Indicators f		tic Hydric Soils <sup>3</sup>	<b>'</b> :
Histos	· · ·		Sandy R				_		ck (A10)	
	Epipedon (A2)		Stripped	•	,				ent Material (TF2)	
	Histic (A3)			-	neral (F1)	(except	MLRA 1)	Other (E	xplain in Remarks	5)
	gen Sulfide (A4)	(////)		-	atrix (F2)					
	ed Below Dark Surfa	ce (A11)	Depleted				<sup>3</sup> leadia a	to vo of budeo		
	Dark Surface (A12)		Redox D		• • •	、 、		-	phytic vegetation	
	Muck Mineral (S1)				urface (F7	)			y must be presen	t,
	gleyed Matrix (S4)		Redox D	epressio	ns (fo)		ur	less disturbe	d or problematic.	
	Layer (if present):									
Type:							duia Cail Dua		Vee	Na v
Depth (inch	es):					пу	dric Soil Pres	ent?	Yes	<u>No x</u>
-	drology Indicators:									
	cators (any one indic	ator is suffi							y Indicators (2 or	
	e Water (A1)				eaves (B9)	) (except	_		tained Leaves (B	9) ( <b>MLRA 1, 2,</b>
	Vater Table (A2)				and 4B)		_		nd 4B)	
	tion (A3)		Salt Crus				_	-	e Patterns (B10)	
	Marks (B1)				ates (B13	,	_		son Water Table	. ,
	ent Deposits (B2)				e Odor (C1				on Visible on Aeria	0,(,,
	eposits (B3)						Roots (C3)		phic Position (D2)	)
	Mat or Crust (B4)				uced Iron	. ,			Aquitard (D3)	
	eposits (B5)				uction in P				utral Test (D5)	
	e Soil Cracks (B6)	Imagan: /F			sed Plants		(K A) _		Ant Mounds (D6)	,
	ation Visible on Aerial			xpiain in	Remarks)	)	_	Frost-He	eave Hummocks (	(זט
Sparse	ely Vegetated Concav	e Surrace	(DO)							

- Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)

Sparsely Vegetated 0	Concave Su	urface (B8)							
Field Observations:									
Surface Water Present?	Yes	No	Х	Depth (inches):					
Water table Present?	Yes	No	х	Depth (inches):					
Saturation Present?	Yes	No	Х	Depth (inches):		Wetland Hydrology Present?	Yes	No	х
(includes capillary fringe)				-					
	Field Observations: Surface Water Present? Water table Present? Saturation Present?	Field Observations:         Surface Water Present?       Yes         Water table Present?       Yes         Saturation Present?       Yes	Field Observations:         Surface Water Present?       Yes         Water table Present?       Yes         Saturation Present?       Yes         No	Surface Water Present?       Yes       No       X         Water table Present?       Yes       No       x         Saturation Present?       Yes       No       x	Field Observations:       No       X       Depth (inches):         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):	Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):	Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       x       Depth (inches):       Wetland Hydrology Present?	Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):    Wetland Hydrology Present? Yes	Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):

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

Remarks:

Project/Site:	I-5 Woodland			City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners Ll	_C			State: WA		Sampling Po	oint:	37
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>concave</u>		Slope (%):	15-30%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92025	50190	Long: -1	22.746719831	Datum:	
Soil Map Unit Name	e: Kelso silt lo	bam				NWI Classification:	none		
Are climatic / hydro	logic conditions on	the site typical for this	s time of y	rear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstand	ces" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	nswers in Rema	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 100% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 = 0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	0			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	80	Y	FACW□	Prevalence Index = B/A =
2. Juncus effusus	20	Y	FACW	
3. Lotus corniculatus	15		FAC□	Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	115			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:		_		Vegetation
% Bare Ground in Herb Stratum%	Present? Yes <u>x</u> No			
Remarks:				

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Profile Des	cription: (Describe	to the de	pth needed to doc	ument th	e indicato	or or co	nfirm the absence of	f indicators.)			
Depth	Matrix		Re	dox Featu	ires		_				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	F	Remarks		
0-16	10YR3/2	90	7.5YR3/4	10	С	М	<u>    L                                </u>				
		·									
		·									
		·									
$\frac{1}{1}$ Type: C=C	oncentration D=Den	letion RM			red or Coa	ted San	d Grains. <sup>2</sup> Location:	PI - Pore Lining	M-Matrix		
Type: 0-0				00-0000				T L=1 ore Lining,	vi–iviatrix.		
Hydric Soil	Indicators: (Applic	able to a	I LRRs, unless oth	nerwise n	oted.)		Indicators for Pro	oblematic Hydric	Soils <sup>3</sup> :		
Histoso	ol (A1)		Sandy I	Redox (St	5)		2	cm Muck (A10)			
Histic E	Epipedon (A2)		Stripped	d Matrix (	S6)		R	Red Parent Materia	l (TF2)		
Black H	Histic (A3)		Loamy	Mucky Mi	neral (F1)	(except	MLRA 1) C	other (Explain in Re	emarks)		
Hydrog	gen Sulfide (A4)		Loamy	Gleyed M	atrix (F2)						
Deplete	ed Below Dark Surfa	ce (A11)	Deplete	ed Matrix (	(F3)						
Thick [	Dark Surface (A12)		x Redox I	Dark Surf	ace (F6)		<sup>3</sup> Indicators of hydrophytic vegetation and				
Sandy	Muck Mineral (S1)		Deplete	d Dark Si	urface (F7	)	wetland hydrology must be present,				
Sandy	gleyed Matrix (S4)		Redox I	Depressic	ons (F8)		unless c	disturbed or problem	matic.		
Restrictive	Layer (if present):										
Type:											
Depth (inche	es):					н	ydric Soil Present?	Yes	х	No	
Remarks:						1					

#### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) x Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) x FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	_	
Field Observations:		
	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
Saturation Present? Yes No	x Depth (inches):	Wetland Hydrology Present? Yes x No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring v	vell, aerial photos, previous inspections)	, if available:
Remarks:		

Project/Site:	I-5 Woodland			City/County: Woodland/Co	owlitz		Sampling Da	ate: Oct.8,	2020
Applicant/Owner:	Logan Partners LL	C			State: WA		Sampling Po	oint:	38
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	15-30%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.92024	40669	Long: -1	22.746780223	Datum:	
Soil Map Unit Name	e: Kelso silt lo	am				NWI Classification:	none		
Are climatic / hydro	logic conditions on	the site typical for this	s time of y	rear? Yes	Х	No	_(If no, explain i	n Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstand	ces" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	nswers in Remai	rks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)
2.				Total Number of Dominant
3.		·		Species Across All Strata: 4 (B)
4.		<u> </u>	·	Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	40	Y	FAC□	Total % Cover of: Multiply by:
2.				OBL species x1 =0
3.				FACW species x2 = 0
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	40			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	50	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	30	Y	FAC□	
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				$3$ - Prevalence Index is $\leq 3.0^1$
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	80	·		
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus laciniatus	15%	Y	FACU□	, , , , , , , , , , , , , , , , , , , ,
2.		·		Hydrophytic
Total Cover:	15	<u> </u>	·	Vegetation
% Bare Ground in Herb Stratum0 %	Cover of B	0	Present? Yes x No	
Remarks:				

OIL								Sampling Point:	
Profile Des	scription: (Describe	to the dep	oth needed to de	ocument the	indicator	or con	firm the absence	of indicators.)	
Depth	Matrix		F	Redox Feature	es				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remark	S
0-16	10YR3/2	100					SiL		
		:							
Type: C=0	Concentration, D=Dep	oletion, RM	=Reduced Matrix	د, CS=Covere	d or Coate	d Sand	d Grains. <sup>2</sup> Location	n: PL=Pore Lining, M=Matr	ix.
- - lydric Soi	I Indicators: (Applic	able to all	LRRs, unless o	otherwise not	ted.)		Indicators for F	Problematic Hydric Soils <sup>3</sup> :	
Histos	sol (A1)		Sand	y Redox (S5)				2 cm Muck (A10)	
Histic	Epipedon (A2)		Stripp	oed Matrix (S6	ა)			Red Parent Material (TF2)	
Black	Histic (A3)		Loam	ny Mucky Mine	əral (F1) ( <b>e</b>	xcept l	MLRA 1)	Other (Explain in Remarks)	)
Hydro	ogen Sulfide (A4)		Loam	y Gleyed Mat	rix (F2)				
Deple	ted Below Dark Surfa	ace (A11)	Deple	eted Matrix (F3	3)				
Thick	Dark Surface (A12)		Redo	x Dark Surfac	ce (F6)		<sup>3</sup> Indicators	of hydrophytic vegetation a	Ind
Sandy	y Muck Mineral (S1)		Deple	eted Dark Surf	face (F7)		wetland	hydrology must be present,	1
_ Sandy	y gleyed Matrix (S4)		Redo	x Depressions	s (F8)		unless	disturbed or problematic.	
Restrictive	e Layer (if present):								
Type:									
Depth (inch	ies):					Ну	dric Soil Present	? Yes	No x
emarks:									
(DROLOG) Wetland H	Y ydrology Indicators:								
	licators (any one indic		icient)				S	Secondary Indicators (2 or m	nore required)
	ce Water (A1)			r-Stained Lea	ves (B9) (	except		Water-Stained Leaves (B9)	) (MLRA 1, 2,
High \	Water Table (A2)			.RA 1, 2, 4A a				4A and 4B)	
	ation (A3)			Crust (B11)	•			Drainage Patterns (B10)	
	r Marks (B1)			tic Invertebrat	tes (B13)			Dry-Season Water Table (0	C2)
	nent Deposits (B2)			ogen Sulfide C	. ,			Saturation Visible on Aerial	-
	Deposits (B3)			zed Rhizosph		Living		Geomorphic Position (D2)	
	Mat or Crust (B4)			ence of Reduc	-	-		Shallow Aquitard (D3)	
	Deposits (B5)			nt Iron Reduc	`	,	oils (C6)	FAC-Neutral Test (D5)	
	ce Soil Cracks (B6)			ed or Stresse				Raised Ant Mounds (D6) (L	RR A)
	ation Visible on Aerial	l Imagery (F		r (Explain in R		/ (	· · · ·	Frost-Heave Hummocks (D	
	ely Vegetated Concav		· ·	(	,			(-	· · · /
Field Obse			(20)			<u> </u>			
	ater Present? Yes	s	No X De	pth (inches):					
Water table				pth (inches):					
Saturation		s	No x De	pth (inches):		_	Wetland Hydrolo	ogy Present? Yes	Nox
includes ca	apillary fringe)						1		

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

Remarks:

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.8,	2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	39
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91933	36971	Long: -1	22.749775144	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on tl	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.		·		Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x1 =0
3		· . <u></u>	. <u> </u>	FACW species x2 = <b>0</b>
4				FAC species x3 =0
5				FACU species x4 = 0
Total Cover:	0			UPL speciesx5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	60	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	20	Y	FAC□	
3. Cirsium arvense	15		FAC□	Hydrophytic Vegetation Indicators:
4. Galium aparine	5		FACU□	1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100	·	·	
Woody Vine Stratum		•		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.				
Total Cover:			·	Hydrophytic Vegetation
% Bare Ground in Herb Stratum %		iotic Crust	0	Present? Yes <u>x</u> No
Remarks:				

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	Matrix		Redo	x Features				
nches)	Color (moist)	%	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup> Textu	e	Remarks	
0-16	7.5YR3/2	100			<u> </u>			
ype: C=C	Concentration, D=Dep	pletion, RM=	Reduced Matrix, CS	=Covered or Coate	d Sand Grains. <sup>2</sup> L	ocation: PL=F	Pore Lining, M=Matrix	κ.
ydric Soi	I Indicators: (Applic	cable to all	LRRs, unless other	wise noted.)	Indicator	s for Problem	atic Hydric Soils <sup>3</sup> :	
Histos	sol (A1)		Sandy Re	dox (S5)		2 cm M	uck (A10)	
Histic	Epipedon (A2)		Stripped N	/atrix (S6)		Red Pa	rent Material (TF2)	
Black	Histic (A3)		Loamy Mu	icky Mineral (F1) ( <b>e</b> :	(cept MLRA 1)	Other (I	Explain in Remarks)	
Hydro	gen Sulfide (A4)		Loamy Gl	eyed Matrix (F2)				
 Deple	ted Below Dark Surfa	ace (A11)	Depleted	Matrix (F3)				
	Dark Surface (A12)		Redox Da	rk Surface (F6)	<sup>3</sup> Ind	cators of hydro	ophytic vegetation an	d
			Depleted		14	etland hydrolo	gy must be present,	
Thick	/ Muck Mineral (S1)		Depieteu	Dark Surface (F7)	vv			
Thick Sandy	/ Muck Mineral (S1) / gleyed Matrix (S4)			pressions (F8)		,	ed or problematic.	
Thick Sandy Sandy	( )					,	ed or problematic.	
Thick Sandy Sandy	y gleyed Matrix (S4) Layer (if present):					unless disturb	ed or problematic.	No

#### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)	)	Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
Saturation Present? Yes No	x Depth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring	g well, aerial photos, previous inspections)	, if available:
Remarks:		
romano.		

Project/Site:	I-5 Woodland			City/County: Woodland/C	Cowlitz		Sampling Date	e: Oct.8, 2	2020
Applicant/Owner:	Logan Partner	rs LLC				State: WA	Sampling Poin	t:	40
Investigator(s):	KB			Section, Township,	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	, convex	, none): <u>none</u>	Slo	ope (%): <u>(</u>	)-3%
Subregion (LRR):	Northwest For	ests and Coast (LRR A	.) Lat:	45.9198	894994	Long: -	122.749978337	Datum:	
Soil Map Unit Name	e: Newbe	rg fine sandy loam				NWI Classification	: PEM1A		
Are climatic / hydro	logic conditions	s on the site typical for	this time of	year? Yes	Х	No	(If no, explain in I	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstan	ces" Present? Ye	s <u>X</u>	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any a	inswers in Remarks	s.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>No x</u> Yes <u>No x</u>	Is the Sampled Area within a Wetland?	Yes <u>No x</u>	
Plot taken in small patch of PHAR				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant SpeciesThat Are OBL, FACW, or FAC:1
2.				Total Number of Dominant
3.				Species Across All Strata: 1 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
				Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 =0
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	0			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
I. Phalaris arundinacea	100	Y	FACW	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
l				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
S				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
3.				data in Remarks or on a separate sheet)
).				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
2				
Total Cover:				Hydrophytic Verstation
% Bare Ground in Herb Stratum 0 %			0	Vegetation Present? Yes x No
Remarks:			0	

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Depth	Matrix		Re	dox Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	6
0-14	10YR3/2	100					<u>L</u>		
				<u> </u>					
				<u> </u>					
Type: C=C	oncentration D=Der	oletion RM=	Reduced Matrix	S=Covere	ed or Coat	d Sand	Grains <sup>2</sup> Location:	PL=Pore Lining, M=Matri	iv.
Type: 0-0						u oana		T E=r ore Emilig, m=main	
lydric Soil	Indicators: (Applic	cable to all	LRRs, unless oth	erwise no	ted.)		Indicators for Pro	oblematic Hydric Soils <sup>3</sup> :	
Histoso	ol (A1)		Sandy F	Redox (S5)			2	cm Muck (A10)	
Histic E	Epipedon (A2)		Stripped	d Matrix (Se	6)		R	ed Parent Material (TF2)	
Black I	Histic (A3)		Loamy	Mucky Mine	eral (F1) ( <b>e</b>	xcept I	MLRA 1) O	ther (Explain in Remarks)	
Hydrog	gen Sulfide (A4)		Loamy	Gleyed Ma	trix (F2)				
Deplet	ed Below Dark Surfa	ace (A11)	Deplete	d Matrix (F	3)				
Thick [	Dark Surface (A12)		Redox I	Dark Surfac	ce (F6)		<sup>3</sup> Indicators of	f hydrophytic vegetation a	nd
Sandy	Muck Mineral (S1)		Deplete	d Dark Sur	face (F7)		wetland hy	/drology must be present,	
Sandy	gleyed Matrix (S4)		Redox I	Depression	is (F8)		unless d	isturbed or problematic.	
Restrictive	Layer (if present):								
Гуре:									
Depth (inche	es):					Hy	dric Soil Present?	Yes	No x
marks:									
DROLOGY									
etland Hy	drology Indicators	:							

Primary Indicators (any one indicate	or is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)		Water-Stained Leaves (B9) (exce	pt Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			4A and 4B)
Saturation (A3)		Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)		Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9
Drift Deposits (B3)		Oxidized Rhizospheres along Livin	ng Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)		Recent Iron Reduction in Plowed S	Soils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1) (L	<b>_RR A</b> ) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Inundation Visible on Aerial In	agery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave	Surface (B8)	_	—
Field Observations:			
Surface Water Present? Yes	No	X Depth (inches):	
Water table Present? Yes	No	x Depth (inches):	
Saturation Present? Yes	No	x Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)			

Project/Site:	I-5 Woodland C			ity/County: Woodland/Cowlitz			Sampling Da	te: <u>Oct.8,</u>	2020
Applicant/Owner:	Logan Partners LLC	:				State: WA	_ Sampling Po	int:	41
Investigator(s):	KB			Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	Local relief (concave, c	onvex	, none): <u>none</u>		Slope (%):	0-3%		
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	45.92032	3048	Long: -1	22.749547728	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PSSC		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	n Remarks)	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	20	Y	FAC□	That Are OBL, FACW, or FAC: <b>4</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4.				Percent of Dominant Species
Total Cover:	20			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Populus balsamifera	5	Y	FAC□	Total % Cover of: Multiply by:
2. Rubus armeniacus	5	Y	FAC□	OBL species         x1 =         0
3		··	·	FACW species x2 =0
4.				FAC species $x3 = 0$
5.				FACU species x4 =0
Total Cover:	10			UPL species $x5 = 0$
Herb Stratum				Column Totals: (A) (B)
1. Phalaris arundinacea	93	Y	FACW	Prevalence Index = B/A =
2. Lotus corniculatus	5		FAC□	
3. Cirsium arvense	2		FAC□	Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1.				be present, unless disturbed or problematic.
2.				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum0 %	Present? Yes x No			
Remarks:				

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SOIL							Sampling Point:		41
Profile Des	cription: (Describe	to the dep	th needed to docun	nent the indic	ator or co	onfirm the absen	ce of indicators.)		
Depth	Matrix	-	Redo	x Features			-		
(inches)	Color (moist)	%	Color (moist)	% Type	<sup>1</sup> Loc <sup>2</sup>	2 Texture		Remarks	
0-14	10YR2/2	100		<u> /// ////////////////////////////////</u>		SL		Remarks	
014	1011(2/2				_				
1Type: C=(	Concentration D=De	nletion RM-	-Reduced Matrix CS		Costed Sa	und Grains <sup>2</sup> Loc	ation: PL=Pore Lining	M-Matrix	
Type. C-C					Jualeu Ja			, m=matrix.	
Hydric Soi	I Indicators: (Appli	cable to all	LRRs, unless other	wise noted.)		Indicators for	or Problematic Hydri	c Soils <sup>3</sup> :	
-	ol (A1)		Sandy Re	-			2 cm Muck (A10)		
	Epipedon (A2)		Stripped N				Red Parent Mater	ial (TF2)	
	Histic (A3)			icky Mineral (F	1) ( <b>excer</b>	ot MLRA 1)	Other (Explain in I		
	gen Sulfide (A4)			eyed Matrix (F			_ • (	(0)(10)	
	ted Below Dark Surfa	ace (A11)		Matrix (F3)	_,				
	Dark Surface (A12)			rk Surface (F6	)	<sup>3</sup> Indicat	tors of hydrophytic veg	petation and	
	Muck Mineral (S1)			Dark Surface (	-		and hydrology must be	-	
	gleyed Matrix (S4)			pressions (F8)	-		less disturbed or probl	•	
	Layer (if present):				·			omatio	
	Layer (il present).								
Type: Depth (inch	oc):					Hydric Soil Prese	ent? Yes	s No	<b>•</b> •
						nyunc son Frese		· NC	o <u>x</u>
Remarks:									
	v.								
HYDROLOG									
	ydrology Indicators		ciont)				Casandan (Indiasta		au vize al )
	icators (any one indi	cator is suffi		/		<u> </u>	Secondary Indicato		
	ce Water (A1)			ined Leaves (E		pt	Water-Stained Le	aves (B9) (NILRA	A 1, 2,
	Vater Table (A2)			1, 2, 4A and 4	<b>B</b> )	—	4A and 4B)	(=	
	ation (A3)		Salt Crust				Drainage Patterns		
	Marks (B1)			vertebrates (B	,	_	Dry-Season Wate		
	ent Deposits (B2)			Sulfide Odor (	-		Saturation Visible	-	ry (C9)
	eposits (B3)			Rhizospheres a	•	ng Roots (C3)	Geomorphic Posit		
	Mat or Crust (B4)			of Reduced Iro	( )	_	Shallow Aquitard		
	eposits (B5)		Recent Iro	on Reduction ir	Plowed S	Soils (C6)	FAC-Neutral Test		
Surfac	ce Soil Cracks (B6)		Stunted or	Stressed Plar	nts (D1) ( <b>I</b>	_RR A)	Raised Ant Mound	ds (D6) (LRR A)	
	ation Visible on Aeria			olain in Remar	ks)	_	Frost-Heave Hum	mocks (D7)	
Spars	ely Vegetated Conca	ve Surface	(B8)						
Field Obse	rvations:								
	ater Present? Ye		No X Depth (i	·					
Water table				nches):		Wotland Used	rology Present?		
Saturation I (includes ca	Present? Ye apillary fringe)		No <u>x</u> Depth (i	nches):			rology resent?	Yes No	o <u>x</u>
	orded Data (stream g	auge. moni	toring well, aerial pho	otos, previous	inspection	ns), if available:			

Remarks:

Project/Site:	I-5 Woodland C			City/County: Woodland/Cowlitz			Sampling Da	te: Oct.15	5, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	42
Investigator(s):	KB			Section, Township, Range: <u>S13, T5N, R1W</u>					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.9220	83933	Long: -1	22.748927343	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on tl	ne site typical for this	s time of y	ear? Yes	Х	No	_(If no, explain ir	n Remarks	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species	
1. Populus balsamifera	100	Y	FAC□	That Are OBL, FACW, or FAC:3(A)	
2.				Total Number of Dominant	
3.				Species Across All Strata: 3 (B)	
4.				Percent of Dominant Species	
Total Cover:	100			That Are OBL, FACW, or FAC:(A/B)	
Shrub Stratum				Prevalence Index Worksheet:	
1. Cornus sericea	20	Y	FACW	Total % Cover of: Multiply by:	
2.		·		OBL species x1 = 0	
3.				FACW species x2 = <b>0</b>	
4.				FAC species x3 = <b>0</b>	
5.				FACU species x4 = <b>0</b>	
Total Cover:	20			UPL species x5 = <b>0</b>	
Herb Stratum		•		Column Totals: 0 (A) 0 (B)	
1. Phalaris arundinacea	100	Y	FACW□	Prevalence Index = B/A =	
2.					
3.				Hydrophytic Vegetation Indicators:	
4.				1 - Rapid Test for Hydrophytic Vegetation	
5.				X 2 - Dominance Test is >50%	
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7				4 - Morphological Adaptation1 (Provide supporting	
8.				data in Remarks or on a separate sheet)	
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11.					
Total Cover:	100				
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
1				be present, unless disturbed or problematic.	
2.		·		Uudranhutia	
Total Cover:		·		Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 0 %	0	-			
Remarks:					

OIL								Sampling Point:	42
Profile Des	cription: (Describe	to the de	pth needed to doc	ument the in	dicator o	r confir	m the absence	of indicators.)	
Depth	Matrix		Redox Features						
(inches)	Color (moist)	%	Color (moist)	<u>%</u> T	ype <sup>1</sup> L	.oc <sup>2</sup>	Texture	Remarks	
0-6	10YR3/2	100					L <u> </u>		
6-10	10YR3/2	95	7.5YR3/4	5	С	M	LS		
10-16	10YR4/2	95	7.5YR3/4	5	<u>C</u>	M	S		
1							2		
Type: C=C	concentration, D=Dep	pletion, RN	I=Reduced Matrix, (	CS=Covered	or Coated	Sand G	rains. <sup>2</sup> Location	n: PL=Pore Lining, M=Matrix	
Hydric Soil	Indicators: (Applic	able to al	I LRRs, unless oth	erwise note	d.)		Indicators for P	Problematic Hydric Soils <sup>3</sup> :	
Histos	ol (A1)		x Sandy F	Redox (S5)				2 cm Muck (A10)	
Histic	Epipedon (A2)		Stripped	d Matrix (S6)				Red Parent Material (TF2)	
Black	Histic (A3)		Loamy I	Mucky Minera	al (F1) ( <b>ex</b>	cept ML	.RA 1)	Other (Explain in Remarks)	
Hydrog	gen Sulfide (A4)		Loamy	Gleyed Matrix	(F2)				
Deplet	ed Below Dark Surfa	ce (A11)	Deplete	d Matrix (F3)					
Thick I	Dark Surface (A12)		Redox [	Dark Surface	(F6)		<sup>3</sup> Indicators	of hydrophytic vegetation and	b
Sandy	Muck Mineral (S1)		Deplete	d Dark Surfa	ce (F7)		wetland	hydrology must be present,	
Sandy	gleyed Matrix (S4)		Redox [	Depressions	(F8)		unless	disturbed or problematic.	
Restrictive	Layer (if present):								
Type:									
Depth (inch	es):					Hvdr	ic Soil Present?	? Yes x	No

Remarks:

#### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (	B9) (except Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2) MLRA 1, 2, 4A and 4	B) 4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (E	313) Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor	(C1) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)       Oxidized Rhizospheres         Algal Mat or Crust (B4)       Presence of Reduced Ir         Iron Deposits (B5)       Recent Iron Reduction i	on (C4) Shallow Aquitard (D3)
Surface Soil Cracks (B6)       Stunted or Stressed Pla         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remainstream)         Sparsely Vegetated Concave Surface (B8)       State	
Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Yes       No       x       Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous	inspections), if available:
Remarks:	

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.15	5, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	_ Sampling Po	oint:	43
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.92205	58545	Long: -1	22.748855941	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PSSC		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain i	n Remarks)	)
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No	x x x	Is the Sampled Area within a Wetland?	Yes	No	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	80	Y	FAC□	That Are OBL, FACW, or FAC: 2 (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4		· . <u></u>		Percent of Dominant Species
Total Cover:	80			That Are OBL, FACW, or FAC: 50% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Corylus cornuta	60	Y	FACU□	Total % Cover of: Multiply by:
2. Rubus armeniacus	20	Y	FAC□	OBL species x1 = 0
3.				FACW species x2 = 0
4				FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	80			UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1				Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	0			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. <u>Hedera helix</u>	80%	Y	FACU□	be present, unless disturbed or problematic.
2				Hydrophytic
Total Cover:	80			Vegetation
% Bare Ground in Herb Stratum 20 %	Cover of B	iotic Crust	0	-
Remarks:				

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2	13

Depth	Matrix		Red	ox Features					
(inches)	Color (moist)	%	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup> Te	exture	Remarks	6	
0-12	10YR3/2	100			<u> </u>				
Type: C=(	Concentration D=De	pletion RM:	Reduced Matrix	S=Covered or Coat	ed Sand Grains	<sup>2</sup> Location: PL	=Pore Lining, M=Matri	x	
-	Indicators: (Applie ol (A1)	cable to all		edox (S5)	Indic		matic Hydric Soils <sup>3</sup> : Muck (A10)		
	Epipedon (A2)			Matrix (S6)			Parent Material (TF2)		
	Histic (A3)			/lucky Mineral (F1) (	vcent MI PA 1		(Explain in Remarks)		
	gen Sulfide (A4)			Gleyed Matrix (F2)					
-	ed Below Dark Surfa	ace (A11)		d Matrix (F3)					
	Dark Surface (A12)			ark Surface (F6)	:	<sup>3</sup> Indicators of hv	drophytic vegetation a	nd	
	Muck Mineral (S1)			Dark Surface (F7)		•	logy must be present,		
	gleyed Matrix (S4)			Depressions (F8)			rbed or problematic.		
estrictive	Layer (if present):						-		
уре:	Roots								
Depth (inch	es):1	12			Hydric So	il Present?	Yes	No	Х

#### HYDROLOGY

Wetland Hydrology Indicators:						
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)				
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,				
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)				
Saturation (A3)	_ Salt Crust (B11)	Drainage Patterns (B10)				
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)				
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)				
Algal Mat or Crust (B4)						
Iron Deposits (B5)	ils (C6) FAC-Neutral Test (D5)					
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)				
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)				
Sparsely Vegetated Concave Surface (B8)						
Field Observations:						
Surface Water Present? Yes No _X	C Depth (inches):					
Water table Present? Yes No x	C Depth (inches):					
	Depth (inches):	Wetland Hydrology Present? Yes No x				
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monitoring w	vell, aerial photos, previous inspections)	, if available:				
Remarks:						
Remarks.						

Project/Site:	I-5 Woodland			City/County: Woodland/C	Cowlitz		Sampling Date:	Oct.15, 2	2020
Applicant/Owner:	Logan Partner	s LLC				State: WA	Sampling Point	:	44
Investigator(s):	KB			Section, Township, F	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	ditch		Local relief (concave,	conve	(, none): <u>none</u>	Slo	pe (%): <u>0-</u>	3%
Subregion (LRR):	Northwest For	ests and Coast (LRR A	) Lat:	45.9220	088094	Long: -	122.748702745	Datum:	
Soil Map Unit Name	e: Newbe	rg fine sandy loam				NWI Classification	PEM1C		
Are climatic / hydro	logic conditions	s on the site typical for t	his time of	year? Yes	Х	No	_(If no, explain in R	emarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstand	ces" Present? Yes	5 <u>X</u> No	o c
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any a	nswers in Remarks	)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No	x x x	Is the Sampled Area within a Wetland?	Yes	_ No
Plot located in bottom of uypland ditch						

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4.				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1		·		Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 = <b>0</b>
4				FAC species x3 =0
5				FACU species x4 = 0
Total Cover:	0			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1				Prevalence Index = B/A =
2.				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5.				2 - Dominance Test is >50%
δ.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
3				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	0			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Hedera helix	5%	Y	FACU□	be present, unless disturbed or problematic.
2. Rubus ursinus	5	Y	FACU□	Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 90 %	Cover of B	iotic Crust	0	-
Remarks:				

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Depth	scription: (Describe to Matrix	•		edox Featur							
	Color (moist)	% (	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remark	<u> </u>	
(inches) 0-8		100		70	туре				Reillaik	5	
8-16		100		· ·	·		S				
0-10	101 R4/2				·	<u>_</u>	3				
				· ·	·						
				· ·							
				· ·							
<sup>1</sup> Type: C=0	Concentration, D=Depleti	ion, RM=R	educed Matrix,	CS=Covere	ed or Coat	ted Sand Gr	ains. <sup>2</sup> Loca	tion: PL=Pa	ore Lining, M=Mati	ix.	
-	il Indicators: (Applicabl	le to all LR				lı	ndicators fo		tic Hydric Soils <sup>3</sup> :		
	sol (A1)			Redox (S5)				2 cm Mu			
Histic	Epipedon (A2)			ed Matrix (S				-	ent Material (TF2)		
	Histic (A3)			-		except ML	RA 1)	Other (Ex	kplain in Remarks	)	
-	ogen Sulfide (A4)			Gleyed Ma							
Deple	eted Below Dark Surface	(A11)	Deplet	ed Matrix (F	3)						
	Dark Surface (A12)		Redox	Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and							
Sandy	y Muck Mineral (S1)		Deplet	ed Dark Sur	rface (F7)		wetlar	nd hydrology	/ must be present,		
				(=				ما معمما ما معم ما			
	y gleyed Matrix (S4)		Redox	Depression	ıs (F8)		unle	ess disturbed	d or problematic.		
Sandy	y gleyed Matrix (S4) • Layer (if present):		Redox	Depression	ıs (F8)		unle	ess disturbed	or problematic.		
Sandy Restrictive			Redox	Depression	is (F8)		unle	ess disturbed	or problematic.		
Sandy Restrictive	a Layer (if present):		Redox	Depression	is (F8)	Hydrie	unle c Soil Prese		Yes	Nox	
Sandy	a Layer (if present):		Redox	Depression	is (F8)	Hydrie				No	
Sandy Restrictive Type: Depth (inch	a Layer (if present):		Redox	Depression	is (F8)	Hydrid				_ No	
Sandy Restrictive Type: Depth (inch	a Layer (if present):		Redox	Depression	is (F8)	Hydrie				_ No	
Sandy Restrictive Type: Depth (inch	a Layer (if present):		Redox	Depression	is (F8)	Hydrid				_ No	
Sandy Restrictive Type: Depth (inch	a Layer (if present):		Redox	Depression	IS (F8)	Hydrid				<u>No x</u>	
Sandy Restrictive Type: Depth (inch marks:	e Layer (if present):		Redox	Depression	IS (F8)	Hydrid				_ No _ x	
Sandy Restrictive Type: Depth (inch marks: DROLOG Wetland H	A Layer (if present): hes): Y ydrology Indicators:			Depression	IS (F8)	Hydrid		nt?	Yes		
Sandy Restrictive Type: Depth (inch marks: DROLOG Vetland H Primary Inc	A Layer (if present):      Des):      Y  ydrology Indicators:  dicators (any one indicato	or is sufficie						nt?	Yes	nore required)	
Sandy Restrictive Type: Depth (inch marks: DROLOG Wetland H Primary Inc	A Layer (if present):      Des):      Y  ydrology Indicators: dicators (any one indicato ce Water (A1)	or is sufficie	ent) Water-	Stained Lea	aves (B9)			nt? 	Yes / Indicators (2 or n ained Leaves (B9	nore required)	
Sandy Restrictive Type: Depth (inch marks: DROLOG Vetland H Primary Inco Surfac High V	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)	or is sufficie	ent) Water- MLF	Stained Lea	aves (B9)			nt? Secondary Water-St 4A an	Yes / Indicators (2 or n ained Leaves (B9 id 4B)	nore required)	
Sandy Restrictive Type: Depth (inch marks: Depth (inch Depth (inch)	Y ydrology Indicators: dicators (any one indicato ce Water (A1) Water Table (A2) ation (A3)	or is sufficie	ent) Water- MLF Salt Cr	Stained Lea RA 1, 2, 4A ust (B11)	aves (B9) and 4B)			nt? Secondary Water-St 4A an Drainage	Yes / Indicators (2 or n ained Leaves (B9 od 4B) Patterns (B10)	nore required) ) ( <b>MLRA 1, 2,</b>	
Sandy Restrictive Oppth (inch marks: DROLOG Vetland H Primary Inc Surfa Surfa High V Satura Wate	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)	or is sufficie	ent) Water- Water- Salt Cr Salt Cr Aquati	Stained Lea RA 1, 2, 4A ust (B11) c Invertebra	aves (B9) and 4B) tes (B13)	(except		nt? Secondary Water-St 4A an Drainage Dry-Seas	Yes / Indicators (2 or n ained Leaves (B9 d 4B) Patterns (B10) son Water Table ((	nore required) ) ( <b>MLRA 1, 2,</b> C2)	
Sandy Restrictive Depth (inch marks: DROLOG Vetland H Primary Inc Surfa High V Satura Wate Sedin	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         nent Deposits (B2)	or is sufficie	ent) Water- Water- Salt Cr Aquatir Aquatir Hydrog	Stained Lea RA 1, 2, 4A ust (B11) c Invertebra gen Sulfide (	aves (B9) and 4B) ites (B13) Odor (C1)	(except	c Soil Prese	nt? Secondary Water-St 4A an Drainage Dry-Seas Saturatio	Yes / Indicators (2 or n ained Leaves (B9 id 4B) Patterns (B10) son Water Table (0 n Visible on Aeria	nore required) ) ( <b>MLRA 1, 2,</b> C2)	
Sandy Restrictive Type: Depth (inch marks:  DROLOG Wetland H Primary Inc Surfa High V Satura Waten Sedin	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)	or is sufficie	ent) Water- MLF Salt Cr Aquati Hydrog Oxidize	Stained Lea RA 1, 2, 4A ust (B11) c Invertebra gen Sulfide ( ed Rhizosph	aves (B9) and 4B) tes (B13) Odor (C1) heres alon	( <b>except</b>	c Soil Prese	nt? Secondary Water-St 4A an Drainage Dry-Seas Saturatio	Yes / Indicators (2 or n ained Leaves (B9 d 4B) Patterns (B10) son Water Table ((	nore required) ) ( <b>MLRA 1, 2,</b> C2)	
Sandy Restrictive Type: Depth (inch marks: /DROLOG Wetland H Primary Inco Surfac High V Satura Satura Satura Uvatei Sedim Drift E	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         nent Deposits (B2)	or is sufficie	ent) Water- MLF Salt Cr Aquati Hydrog Oxidize	Stained Lea RA 1, 2, 4A ust (B11) c Invertebra gen Sulfide (	aves (B9) and 4B) tes (B13) Odor (C1) heres alon	( <b>except</b>	c Soil Prese	nt? Secondary Water-St 4A an Drainage Dry-Seas Saturatio Geomorp	Yes / Indicators (2 or n ained Leaves (B9 id 4B) Patterns (B10) son Water Table (0 n Visible on Aeria	nore required) ) ( <b>MLRA 1, 2,</b> C2)	
Sandy Restrictive Type: Depth (inch marks: /DROLOG Wetland H Primary Inc Surfac High V Satura Satura Satura Satura Satura Satura Algal	Y         ydrology Indicators:         dicators (any one indicato         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         nent Deposits (B2)         Deposits (B3)	or is sufficie	ent) — Water- MLF — Salt Cr — Aquation — Hydrogo — Oxidized — Preser	Stained Lea RA 1, 2, 4A ust (B11) c Invertebra gen Sulfide ( ed Rhizosph ace of Redu	aves (B9) <b>and 4B</b> ) tes (B13) Odor (C1) neres alon ced Iron (	( <b>except</b>	c Soil Prese	secondary Water-St Urainage Dry-Seas Saturatio Geomorp Shallow /	Yes / Indicators (2 or m ained Leaves (B9 d 4B) Patterns (B10) son Water Table (i n Visible on Aeria ohic Position (D2)	nore required) ) ( <b>MLRA 1, 2,</b> C2)	
Sandy Restrictive Type: Depth (inch marks: /DROLOG Wetland H Primary Inc Surfa Waten Surfa Waten Satura Unift I Sedin Drift I Algal Iron D	Y ydrology Indicators: dicators (any one indicato ce Water (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4)	or is sufficie	ent) Water- MLF Salt Cr Salt Cr Aquatir Aquatir Hydrog Oxidizer Preser Recen	Stained Lea R <b>A 1, 2, 4A</b> ust (B11) c Invertebra gen Sulfide ( ed Rhizosph nce of Redu	aves (B9) and 4B) tes (B13) Odor (C1) heres alon ced Iron ( ction in Pla	( <b>except</b> g Living Roo C4)	c Soil Prese	Secondary Water-St Urainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu	Yes / Indicators (2 or n ained Leaves (B9 od 4B) Patterns (B10) son Water Table (1 n Visible on Aeria whic Position (D2) Aquitard (D3)	nore required) ) ( <b>MLRA 1, 2,</b> C2) I Imagery (C9)	
Sandy Restrictive Type: Depth (inch emarks:	Y         ydrology Indicators:         dicators (any one indicator)         ce Water (A1)         Water Table (A2)         ation (A3)         r Marks (B1)         nent Deposits (B2)         Deposits (B3)         Mat or Crust (B4)         Deposits (B5)		ent) Water- MLF Salt Cr Aquation Aquatio	Stained Lea R <b>A 1, 2, 4A</b> ust (B11) c Invertebra gen Sulfide ( ed Rhizosph nce of Redu	aves (B9) and 4B) tes (B13) Odor (C1) heres alon ced Iron ( ction in Pla ced Plants (	( <b>except</b> g Living Rod C4) pwed Soils (	c Soil Prese	nt? Secondary Water-St 4A an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	Yes / Indicators (2 or m ained Leaves (B9 d 4B) Patterns (B10) son Water Table (( n Visible on Aerial bhic Position (D2) Aquitard (D3) itral Test (D5)	nore required) ) ( <b>MLRA 1, 2,</b> C2) I Imagery (C9)	

Field Observations:								
Surface Water Present?	Yes	No	Х	Depth (inches):				
Water table Present?	Yes	No	х	Depth (inches):				
Saturation Present?	Yes	No	х	Depth (inches):	Wetland Hydrology Present?	Yes	No	х
(includes capillary fringe)		_						
Describe Recorded Data (stre	eam gauge, m	onitorin	g well,	aerial photos, previous inspections	s), if available:			

Remarks:

Project/Site:	I-5 Woodland			City/County: Woodland/Co	owlitz	Sampling		ate: Oct.15	, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	oint:	45
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.9208	95834	Long: -1	22.749443613	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on the	ne site typical for this	time of y	ear? Yes	Х	No	_(If no, explain i	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	res X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species		
1. Populus balsamifera	100	Y	FAC□	That Are OBL, FACW, or FAC: 5 (A)		
2.				Total Number of Dominant		
3.				Species Across All Strata: 5 (B)		
4.				Percent of Dominant Species		
Total Cover:	100			That Are OBL, FACW, or FAC:(A/B)		
Shrub Stratum				Prevalence Index Worksheet:		
1. Cornus sericea	20	Y	FACW	Total % Cover of: Multiply by:		
2. Salix sitchensis	10	Y	FACW	OBL species x1 = 0		
3.				FACW species x2 = 0		
4.				FAC species x3 = <b>0</b>		
5.				FACU species x4 = 0		
Total Cover:	30			UPL species x5 = <b>0</b>		
Herb Stratum				Column Totals: 0 (A) 0 (B)		
1. Phalaris arundinacea	20	Y	FACW□	Prevalence Index = B/A =		
2. <u>Carex obnupta</u>	80	Y	©BL□			
3				Hydrophytic Vegetation Indicators:		
4				1 - Rapid Test for Hydrophytic Vegetation		
5				X 2 - Dominance Test is >50%		
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7				4 - Morphological Adaptation1 (Provide supporting		
8				data in Remarks or on a separate sheet)		
9				5 - Wetland Non-Vascular Plants <sup>1</sup>		
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
11						
Total Cover:	100					
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
1				be present, unless disturbed or problematic.		
2				Hydrophytic		
Total Cover:				Vegetation		
% Bare Ground in Herb Stratum 0 %	Cover of B	iotic Crust	0	-		
Remarks:				•		

SOIL	
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+	•

OIL								Sampling Point:	
Profile Des	scription: (Describe	to the dep	oth needed to doc	ument t	he indicato	or or co	onfirm the absence	of indicators.)	
Depth	Matrix		Re	dox Feat	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-2	10YR3/2	100					LS		
2-8	10YR3/2	80	7.5YR4/6	5	С	М	LS		
			10YR4/2	15	D	М			
Type: C=0	Concentration, D=Dep	letion, RM	=Reduced Matrix,	CS=Cove	ered or Coa	ated Sa	nd Grains. <sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.	
lydric Soi	I Indicators: (Applic	able to al	LRRs, unless oth	nerwise	noted.)		Indicators for	Problematic Hydric Soils <sup>3</sup> :	
	sol (A1)			Redox (S				2 cm Muck (A10)	
	Epipedon (A2)			d Matrix (				Red Parent Material (TF2)	
	Histic (A3)				. ,	•	t MLRA 1)	Other (Explain in Remarks)	
-	gen Sulfide (A4)	(		-	/latrix (F2)				
	ted Below Dark Surfa	ce (A11)		ed Matrix			31	f la selar a la dia ser a stationa - sa d	
	Dark Surface (A12)				face (F6)	、		s of hydrophytic vegetation and	
-	/ Muck Mineral (S1)				Surface (F7	)		d hydrology must be present,	
	/ gleyed Matrix (S4)			Depressi	ons (F8)		unies	s disturbed or problematic.	
estrictive	e Layer (if present):								
Гуре:	Refusal								
Depth (inch	nes): 6	3				1	Hydric Soil Present	t? Yes <u>x</u> No_	
(DROLOG	Y								
	ydrology Indicators:								·
	licators (any one indic ce Water (A1)	ator is suff	,	Stainad I		(0)		Secondary Indicators (2 or more requi Water-Stained Leaves (B9) (MLRA 4	
	Water Table (A2)				.eaves (B9) <b>A and 4B</b> )			4A and 4B)	ı, <b>z</b> ,
_	ation (A3)			ust (B11)			—	Drainage Patterns (B10)	
_	Marks (B1)				rates (B13)	)		Dry-Season Water Table (C2)	
	nent Deposits (B2)				e Odor (C1			Saturation Visible on Aerial Imagery	(C9
	Deposits (B3)					-	ig Roots (C3) x	Geomorphic Position (D2)	,00
	Mat or Crust (B4)				duced Iron	-	<u> </u>	Shallow Aquitard (D3)	
	Deposits (B5)				luction in P	• •	Soils (C6) x	FAC-Neutral Test (D5)	
	ce Soil Cracks (B6)				sed Plants			Raised Ant Mounds (D6) (LRR A)	
	ation Visible on Aerial	Imagery (			n Remarks)			Frost-Heave Hummocks (D7)	
	ely Vegetated Concav	•••				,	—	()	
ield Obse			<u> </u>						
	ater Present? Yes	3	No X Depth	n (inches	):				
Nater table	Present? Yes	3	No x Depth	n (inches	):				
Saturation	Present? Yes	3	No x Depth	n (inches	):		Wetland Hydro	logy Present? Yes <u>x</u> No	

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

Remarks:

(includes capillary fringe)

Wetland Hydrology Present?

Project/Site:	I-5 Woodland			City/County: Woodland/Co	owlitz	Sampling		te: Oct.15	, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	46
Investigator(s):	KB		Section, Township, R	Section, Township, Range: S13, T5N, R1W					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.9208	93394	Long: -1	22.749463652	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	PEM1A		
Are climatic / hydro	logic conditions on t	he site typical for this	s time of y	ear? Yes	Х	No	_(If no, explain ir	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)		
2.				Total Number of Dominant		
3.				Species Across All Strata: 1 (B)		
4.				Percent of Dominant Species		
Total Cover:	0			That Are OBL, FACW, or FAC:(A/B)		
Shrub Stratum				Prevalence Index Worksheet:		
1				Total % Cover of: Multiply by:		
2				OBL species x1 =0		
3				FACW species x2 = <b>0</b>		
4				FAC species x3 = 0		
5				FACU species x4 =0		
Total Cover:	0			UPL species x5 = <b>0</b>		
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)		
1. Phalaris arundinacea	100	Y	FACW	Prevalence Index = B/A =		
2						
3				Hydrophytic Vegetation Indicators:		
4				1 - Rapid Test for Hydrophytic Vegetation		
5				X 2 - Dominance Test is >50%		
6.				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7				4 - Morphological Adaptation1 (Provide supporting		
8.				data in Remarks or on a separate sheet)		
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>		
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
11.						
Total Cover:	100					
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
1				be present, unless disturbed or problematic.		
2.						
Total Cover:				Hydrophytic Vocated on		
% Bare Ground in Herb Stratum%		otic Crust	0	Vegetation           Present?         Yes x         No		
Remarks:						

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					Samplin	g Point.		
Profile Des	scription: (Describe to the dept	n needed to docume	nt the indicator	or confirm the abse	nce of indicate	ors.)		
Depth	Matrix	Redox F	eatures					
nches)	Color (moist) %	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup> Texture		Remar	rks	
0-16	10YR3/2 100			SL				_
ype: C=0	Concentration, D=Depletion, RM=	Reduced Matrix, CS=0	Covered or Coate	d Sand Grains. <sup>2</sup> Lo	cation: PL=Por	e Lining, M=Ma	trix.	
dric Soi	il Indicators: (Applicable to all L	RRs unless otherwi	ise noted )	Indicators	for Problemati	c Hydric Soils	3.	
	sol (A1)	Sandy Redo	-	maloutore	2 cm Mucl	•		
	Epipedon (A2)	Stripped Ma		-		nt Material (TF2	.)	
	Histic (A3)		ky Mineral (F1) ( <b>e</b>	xcept MLRA 1)		olain in Remark		
	ogen Sulfide (A4)	Loamy Gley	ed Matrix (F2)					
Deple	eted Below Dark Surface (A11)	Depleted Ma	atrix (F3)					
Thick	Dark Surface (A12)	Redox Dark	Surface (F6)	<sup>3</sup> Indica	ators of hydroph	nytic vegetation	and	
Sand	y Muck Mineral (S1)	Depleted Da	rk Surface (F7)	wet	land hydrology	must be presen	ıt,	
Sand	y gleyed Matrix (S4)	Redox Depr	essions (F8)	u	nless disturbed	or problematic.		
estrictive	e Layer (if present):							
ype:								
epth (inch	nes):			Hydric Soil Pres	sent?	Yes	No	Х
marks:				.,				-
DROLOG								
	lydrology Indicators:							
	dicators (any one indicator is suffic					Indicators (2 or		
	ce Water (A1)		ed Leaves (B9) (e	except		ined Leaves (B	9) ( <b>MLRA 1,</b>	2,
_ `	Water Table (A2)		2, 4A and 4B)	-	4A and			
	ation (A3)	Salt Crust (E		-	-	Patterns (B10)	(00)	
	r Marks (B1)		rtebrates (B13)	-	-	on Water Table	. ,	~~
	nent Deposits (B2)		ulfide Odor (C1)	Living Dests (00)		Visible on Aeri	•••	-9
	Deposits (B3)			Living Roots (C3)	·	nic Position (D2)	)	
	Mat or Crust (B4)		Reduced Iron (C			quitard (D3)		
	Deposits (B5)		Reduction in Plov			ral Test (D5)		
	ce Soil Cracks (B6)		tressed Plants (D	) ( <b>LKK A</b> )		t Mounds (D6)	. ,	
Inund	lation Visible on Aerial Imagery (B7	Other (Explain of the control of	ain in Remarks)	_	⊢rost-Hea	ve Hummocks (	(D7)	

Sparsely Vegetated Concave Surface (B8						
Field Observations:						
Surface Water Present?	Yes	No				

Field Observations:									
Surface Water Present?	Yes	No	Х	Depth (inches):					
Water table Present?	Yes	No	х	Depth (inches):					
Saturation Present?	Yes	No	х	Depth (inches):		Wetland Hydrology Present?	Yes	No	х
(includes capillary fringe)									
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									

Remarks:

Project/Site:	I-5 Woodland C			City/County: Woodland/Cowlitz			Sampling Date	e: <u>Oct.15,</u>	2020
Applicant/Owner:	Logan Partner	rs LLC				State: WA	Sampling Poir	nt:	47
Investigator(s):	KB			Section, Township, I	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave,	, convex	, none): <u>concave</u>	Sl	ope (%): <u>0</u>	1-3%
Subregion (LRR):	Northwest For	ests and Coast (LRR A	.) Lat:	45.9196	694571	Long: -	122.748988438	Datum:	
Soil Map Unit Name	e: Newbe	rg fine sandy loam				NWI Classification	: none		
Are climatic / hydro	logic conditions	s on the site typical for	this time of	year? Yes	Х	No	_(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstan	ces" Present? Ye	es <u>X</u> N	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	eded, explain any a	nswers in Remark	s.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland?	Yes <u>x</u> No	
Ditched portion of Wetland 5				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	100	Y	FAC□	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4.				Percent of Dominant Species
Total Cover:	100	-		That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Crataegus monogyna	30	Y	⊫FAC□	Total % Cover of: Multiply by:
2.			. <u> </u>	OBL species x1 = 0
3.				FACW species x2 = 0
4.				FAC species x3 =0
5.			·	FACU species x4 = <b>0</b>
Total Cover:	30		·	UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Ranunculus repens	10	Y	⊫FAC□	Prevalence Index = B/A =
2.				
3.		·		Hydrophytic Vegetation Indicators:
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.		· <u> </u>		3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.			•	
Total Cover:	10		·	
Woody Vine Stratum			l	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	15%	Y	FACU□	be present, unless disturbed or problematic.
2.	1070	· ·		
Total Cover:	15	·	·	Hydrophytic
% Bare Ground in Herb Stratum 80 %		iotic Cruet	0	Vegetation Present? Yes x No
% Bare Ground in Herb Stratum ov %	Cover or D	IOTIC Crust	0	Present? Yes x No

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Profile Desc	ription: (Describe	to the de	oth needed to doci	ument th	ne indicato	or or con	firm the absence of	of indicators )				
Depth	Matrix		lox Feat									
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks				
0-5	10YR3/3	100					LS					
5-16	10YR4/2	95	10YR4/4	5	С	М	LS					
							·					
·		·			·		·					
<u> </u>							·					
$^{1}$ Type: C=C	ncentration D=Der	letion RM	Reduced Matrix	S=Cove	ered or Coa	ted San	d Grains <sup>2</sup> Location	PL=Pore Lining, M=Matrix.				
1390. 0 00				0000								
Hydric Soil	Indicators: (Applic	able to al	l LRRs, unless oth	erwise r	noted.)		Indicators for P	roblematic Hydric Soils <sup>3</sup> :				
Histoso	l (A1)		x Sandy F	Redox (S	5)		2	2 cm Muck (A10)				
Histic E	pipedon (A2)		Stripped	l Matrix (	S6)		Red Parent Material (TF2)					
Black H	listic (A3)		Loamy N	Aucky M	ineral (F1)	(except	MLRA 1) (	Other (Explain in Remarks)				
Hydrog	en Sulfide (A4)		Loamy (	Gleyed M	latrix (F2)							
	ed Below Dark Surfa	ce (A11)	Deplete	-								
	ark Surface (A12)	. ,			face (F6)		<sup>3</sup> Indicators	of hydrophytic vegetation and				
Sandy Muck Mineral (S1) Depleted Dark Surface (F7)				)	wetland hydrology must be present,							
Sandy gleyed Matrix (S4) Redox Depressions (F8)					/	unless disturbed or problematic.						
	_ayer (if present):			•	. ,			·				
Type:												
Depth (inche	s):					Ну	/dric Soil Present?	? Yes <u>x</u> No				

Remarks:

#### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
X Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed So	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No	X Depth (inches):	
Water table Present? Yes No	x Depth (inches):	
Saturation Present? Yes No	x Depth (inches):	Wetland Hydrology Present? Yes x No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspections)	, if available:
Remarks:		

Project/Site:	I-5 Woodland C			City/County: Woodland/Cowlitz			Sampling Da	te: Oct.15	, 2020
Applicant/Owner:	Logan Partners LLC	2			Sta		Sampling Po	int:	48
Investigator(s):	KB			Section, Township, Range: <u>S13, T5N, R1W</u>					
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.9197 <i>1</i>	18065	Long: -1	22.748941343	Datum:	
Soil Map Unit Nam	e: Newberg fin	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on tl	he site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Use scientific names.)		Species?	Status?	Number of Dominant Species		
1. Populus balsamifera	50	Y	FAC□	That Are OBL, FACW, or FAC: <b>4</b> (A)		
2.				Total Number of Dominant		
3.				Species Across All Strata: 5 (B)		
4.				Percent of Dominant Species		
Total Cover:	50			That Are OBL, FACW, or FAC:(A/B)		
Shrub Stratum				Prevalence Index Worksheet:		
1. Rubus armeniacus	30	Y	FAC□	Total % Cover of: Multiply by:		
2. Amelanchier alnifolia	20	Y	FACU	OBL species x1 = <b>0</b>		
3.				FACW species x2 = 0		
4.		· .		FAC species x3 = <b>0</b>		
5.		· .		FACU species x4 = <b>0</b>		
Total Cover:	50	<u> </u>	·	UPL species x5 = <b>0</b>		
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)		
1. Phalaris arundinacea	50	Y	FACW□			
2. Ranunculus repens	20	Y	⊫FAC□			
3				Hydrophytic Vegetation Indicators:		
4				1 - Rapid Test for Hydrophytic Vegetation		
5				X 2 - Dominance Test is >50%		
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7				4 - Morphological Adaptation1 (Provide supporting		
8				data in Remarks or on a separate sheet)		
9				5 - Wetland Non-Vascular Plants <sup>1</sup>		
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
11.						
Total Cover:	70					
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
1.				be present, unless disturbed or problematic.		
2.				Hydrophytic		
Total Cover:	Hydrophytic Vegetation					
% Bare Ground in Herb Stratum 20 %	0	Present? Yes x No				
Remarks:						

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Depth	Matrix		Red	Redox Features					
inches)	Color (moist)	%	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup> Texture	e	Remark	(S	
0-12	10YR3/3	100			SL				
			·						—
									—
ype: C=C	oncentration, D=Dep	oletion, RM=	Reduced Matrix, C	S=Covered or Coate	ed Sand Grains. <sup>2</sup> L	ocation: PL=I	Pore Lining, M=Mat	rix.	
									_
-	Indicators: (Applie	cable to all			Indicators		atic Hydric Soils <sup>3</sup>		
Histos	. ,		Sandy Redox (S5) 2 cm Muck (A10)						
	Epipedon (A2)			Matrix (S6)		_ Red Parent Material (TF2)			
	Histic (A3)			lucky Mineral (F1) ( <b>e</b>	xcept MLRA 1)	MLRA 1) Other (Explain in Remarks)			
	gen Sulfide (A4)			leyed Matrix (F2)					
Depleted Below Dark Surface (A11) Depleted Matrix (F3)									
Thick Dark Surface (A12) Redox Dark Surface (F6)				<sup>3</sup> Indicators of hydrophytic vegetation and					
Sandy Muck Mineral (S1) Depleted Dark Surface (				Dark Surface (F7)	We	wetland hydrology must be present,			
Sandy gleyed Matrix (S4) Redox Depressions (F8)					I	unless disturbed or problematic.			
estrictive	Layer (if present):								
	Refusal								
ype: Depth (inch		2			Hydric Soil Pro	esent?	Yes	No	Х

#### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)	
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Plowed Soi	ils (C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? Yes No _X	Depth (inches):	
Water table Present? Yes No x	Depth (inches):	
Saturation Present? Yes No x	Depth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well	I, aerial photos, previous inspections).	, if available:
Pomorko		
Remarks:		

Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.15	, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	49
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91978	86469	Long: -1	22.748650025	Datum:	
Soil Map Unit Name	e: Newberg fin	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on tl	he site typical for this	s time of y	ear? Yes	Х	No	(If no, explain ir	n Remarks)	1
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Crataegus monogyna	40	Y	FAC□	That Are OBL, FACW, or FAC: 3 (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
Total Cover:	40			That Are OBL, FACW, or FAC: 60% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Rubus armeniacus	40	Y	FAC□	Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 = 0
4.				FAC species x3 = 0
5.				FACU species x4 =0
Total Cover:	40	_		UPL species x5 = <b>0</b>
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	50	Y	FACW□	Prevalence Index = B/A =
2				
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				
Total Cover:	50	-		
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1. Rubus laciniatus	40%	Y	FACU□	be present, unless disturbed or problematic.
2. <u>Rubus ursinus</u>	20	Y	FACU	Hydrophytic
Total Cover:		-		Vegetation
% Bare Ground in Herb Stratum 20 %	Cover of B	iotic Crust	0	Present? Yes <u>x</u> No
Remarks:				•

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SOIL								S	Sampling Point:		49
Profile Des	scription: (Describe	to the dep	oth needed to doc	ument th	ne indicato	or or cor	nfirm the abso	ence of i	ndicators.)		
Depth	Matrix		Re	dox Featu	ures						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	•	Remar	rks	
0-16	10YR3/3	100					SL				
					·						
					·						
					·						
					•						
					•						
					•						
<sup>1</sup> Type: C=0	Concentration, D=Dep	letion, RM	=Reduced Matrix,	CS=Cove	ered or Coa	ated San	d Grains. <sup>2</sup> Lo	ocation:	PL=Pore Lining, M=Ma	ıtrix.	
,,	, , , , , , , , , , , , , , , , , , , ,	,	7						0,		
Hydric Soi	I Indicators: (Applic	able to all	LRRs, unless oth	nerwise n	noted.)		Indicators	for Prob	blematic Hydric Soils <sup>3</sup>	3:	
	sol (A1)		Sandy	Redox (S	5)			2 c	m Muck (A10)		
Histic	Epipedon (A2)		Strippe	d Matrix (	S6)			Re	d Parent Material (TF2)	)	
Black	Histic (A3)		Loamy	Mucky Mi	ineral (F1)	(except	MLRA 1)	Oth	her (Explain in Remarks	s)	
Hydro	gen Sulfide (A4)			-	latrix (F2)						
	ted Below Dark Surfa	ce (A11)		ed Matrix (							
	Dark Surface (A12)			Dark Surf	. ,				hydrophytic vegetation		
Sandy	/ Muck Mineral (S1)				urface (F7	)	we	tland hyd	drology must be presen	ıt,	
Sandy	/ gleyed Matrix (S4)		Redox	Depressio	ons (F8)		U	inless dis	sturbed or problematic.		
Restrictive	e Layer (if present):										
Type:											
Depth (inch	nes):					H	ydric Soil Pre	esent?	Yes	No	х
Remarks:											
HYDROLOG											
	ydrology Indicators:		iniant)					See	andary Indiantara (2 ar	more requir	ad)
	licators (any one indic	ator is suit			001/00 (PO)	(axaan)			ondary Indicators (2 or ater-Stained Leaves (B		
	ce Water (A1)				eaves (B9) <b>A and 4B</b> )	) (except			4A and 4B)		, <b>z</b> ,
	Water Table (A2)										
	ation (A3) r Marks (B1)			ust (B11)	rates (B13	<b>`</b>			ainage Patterns (B10) y-Season Water Table	(C2)	
	nent Deposits (B2)				e Odor (C1	,			turation Visible on Aeria	( )	C0)
	Deposits (B3)					-	g Roots (C3)		comorphic Position (D2)		(5)
	Mat or Crust (B4)				luced Iron		y 10003 (00)		allow Aquitard (D3)	,	
	Deposits (B5)				uction in P	• •	nils (C6)		C-Neutral Test (D5)		
	ce Soil Cracks (B6)				sed Plants				ised Ant Mounds (D6)		
	ation Visible on Aerial	Imagery /			Remarks				ost-Heave Hummocks (		
	ely Vegetated Concav			_лріант Ш	i i vernarkoj	,				(1)	
Field Obse Surface Wa	ervations: ater Present? Yes	3	No X Dept	n (inches)	):						
Water table				n (inches)							

Saturation Present? (includes capillary fringe)	Yes	No 2	x Depth (inch	es):	Wetland Hydrology Present?	Yes
Describe Recorded Data (stre	am dauldo	monitoring w	ull agrial photos	provious insportions)	if available:	

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

Remarks:

No \_\_\_\_

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Project/Site:	I-5 Woodland			City/County: Woodland/Co	wlitz		Sampling Da	te: Oct.15,	2020
Applicant/Owner:	Logan Partners LL	_C				State: WA	Sampling Po	int:	50
Investigator(s):	KB			Section, Township, Ra	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>concave</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.91986	6483	Long: -1	22.748169779	Datum:	
Soil Map Unit Name	e: Newberg fi	ne sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on	the site typical for thi	s time of y	/ear? Yes	Х	No	_(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	ormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remarl	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.			·	Total Number of Dominant
3.				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 100% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Salix sitchensis	80	Y	FACW	Total % Cover of: Multiply by:
2. <u>Corylus cornuta</u>	10		FACU□	OBL species x1 =0
3			·	FACW species x2 =0
4			·	FAC species x3 = 0
5				FACU species x4 = 0
Total Cover:	90			UPL species x5 = 0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Agrostis stolonifera	90	Y	FAC□	Prevalence Index = B/A =
2. Juncus effusus	5		FACW□	
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	95			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.			-	I ludvanku dia
Total Cover:			·	Hydrophytic Vegetation
	Cover of B	iotic Crust	0	
Remarks:				

Depth	Matrix		Red	dox Featu	ures			
inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR3/3	100					LS	
6-10	10YR3/2	95	7.5YR4/4	5	С	М	LS	
10-16	10YR4/2	75	10YR3/4	15	С	М		
			7.5YR4/4	10	С	М		

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

Hydric Soil Indicators: (Applicable to all LRRs, u	Inless otherwise noted.)	Indicators for Problematic Hydr	ic Soils <sup>3</sup> :		
Histosol (A1) x	Sandy Redox (S5)	2 cm Muck (A10)			
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Mater	ial (TF2)		
Black Histic (A3)	Loamy Mucky Mineral (F1) (exc	cept MLRA 1) Other (Explain in	Remarks)		
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)				
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)				
Thick Dark Surface (A12)	Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and				
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7) wetland hydrology must be present,				
Sandy gleyed Matrix (S4)	Redox Depressions (F8) unless disturbed or problematic.				
Restrictive Layer (if present):					
Туре:					
Depth (inches):		Hydric Soil Present? Yes	s <u>x</u> No		
Remarks:		•			

#### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)     MLRA 1, 2, 4A and 4B)	<b>4A and 4B</b> )
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roc	ots (C3) x Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (	(C6) x FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A	A) Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) x Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water table Present? Yes No x Depth (inches):	letter dittedeste me Desser (O
Saturation Present? Yes <u>No x</u> Depth (inches): <u>We</u> (includes capillary fringe)	etland Hydrology Present? Yes <u>x</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if a	availahla
Describe Necolueu Dala (stream gauge, monitoring weil, aenai photos, previous inspections), in a	avaliable.
Remarks:	

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Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	owlitz		Sampling Da	te: Oct.15	, 2020
Applicant/Owner:	Logan Partners LLC	2				State: WA	Sampling Po	int:	51
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>none</u>	S	Slope (%):	0-3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:	45.91987	76189	Long: -1	22.748126820	Datum:	
Soil Map Unit Name	e: Newberg fine	e sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on th	ne site typical for this	s time of y	ear? Yes	Х	No	(If no, explain in	n Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present? Y	′es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remarl	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 67% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Corylus cornuta	20	Y	FACU□	Total % Cover of: Multiply by:
2				OBL species x1 =0
3				FACW species x2 = <b>0</b>
4				FAC species x3 = 0
5				FACU species x4 =0
Total Cover:	20			UPL species x5 =0
Herb Stratum				Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	50	Y	FACW□	Prevalence Index = B/A =
2. Lotus corniculatus	50	Y	FAC□	
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.				
Total Cover:	100			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.		·		
Total Cover:		·	·	Hydrophytic Vocatation
% Bare Ground in Herb Stratum 0 %		0	Vegetation Present? Yes x No	
Remarks:				

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Profile Des	cription: (Describe	to the depth r	eeded to doc	ument th	e indicato	or or con	firm the absence of	indicators.)		
Depth	Matrix		Re	dox Featu	ures					
(inches)	Color (moist)	% C	olor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-16	10YR3/3	100					SL			
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM=Re	duced Matrix,	CS=Cove	ered or Coa	ited Sand	Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix	κ.	
Hydric Soil	Indicators: (Applic	able to all LRI	Rs, unless oth	nerwise n	oted.)		Indicators for Pro	oblematic Hydric Soils <sup>3</sup> :		
Histos	ol (A1)		Sandy I	Redox (S	5)		2	cm Muck (A10)		
Histic I	Epipedon (A2)		Strippe	d Matrix (	S6)		R	ed Parent Material (TF2)		
Black I	Histic (A3)		Loamy	Mucky Mi	neral (F1)	(except l	MLRA 1) O	ther (Explain in Remarks)		
Hydrog	gen Sulfide (A4)		Loamy	Gleyed M	latrix (F2)					
Deplet	ed Below Dark Surfa	ce (A11)	Deplete	d Matrix (	(F3)					
Thick I	Dark Surface (A12)		Redox	Dark Surf	ace (F6)		<sup>3</sup> Indicators of	f hydrophytic vegetation ar	nd	
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7)	)	wetland hy	/drology must be present,		
Sandy	gleyed Matrix (S4)		Redox	Depressio	ons (F8)		unless d	isturbed or problematic.		
Restrictive	Layer (if present):									
Туре:			_							
Depth (inche	es):		_			Hy	dric Soil Present?	Yes	No_	х
Remarks:										
1										
HYDROLOGY										
•	drology Indicators:									
	cators (any one indic	ator is sufficier						condary Indicators (2 or me		
	e Water (A1)				eaves (B9)	(except	W	/ater-Stained Leaves (B9)	(MLRA 1	, 2,
	/ater Table (A2)				A and 4B)			4A and 4B)		
Satura	tion (A3)		Salt Cru	ust (B11)			D	rainage 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)

Inundation Visible on Sparsely Vegetated C			(	Other (Explain in Remarks)	Frost-Heave Hur	mmocks (D7)
Field Observations:						
Surface Water Present?	Yes	No	Х	Depth (inches):		
Water table Present?	Yes	No	Х	Depth (inches):		
Saturation Present?	Yes	No	Х	Depth (inches):	Wetland Hydrology Present?	Yes
(includes capillary fringe)						

Aquatic Invertebrates (B13)

Hydrogen Sulfide Odor (C1)

Presence of Reduced Iron (C4)

Oxidized Rhizospheres along Living Roots (C3)

Recent Iron Reduction in Plowed Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

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

Remarks:

Water Marks (B1)

Drift Deposits (B3)

Iron Deposits (B5)

Sediment Deposits (B2)

Algal Mat or Crust (B4)

Surface Soil Cracks (B6)

No\_

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Project/Site:	I-5 Woodland		(	City/County: Woodland/Co	wlitz		Sampling Da	ate: Oct.15	, 2020
Applicant/Owner:	Logan Partners LL	С				State: WA	Sampling Po	oint:	52
Investigator(s):	KB			Section, Township, R	ange:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, o	convex	, none): <u>concave</u>		Slope (%):	0-3%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:	45.91993	30373	Long: -1	22.747739824	Datum:	
Soil Map Unit Name	e: Newberg fir	ne sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on	the site typical for thi	is time of y	ear? Yes	Х	No	(If no, explain i	n Remarks)	1
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstanc	es" Present?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remar	ks.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	100	Y	FAC	That Are OBL, FACW, or FAC: <b>4</b> (A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4.				Percent of Dominant Species
Total Cover:	100			That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Cornus sericea	40	Y	FACW	Total % Cover of: Multiply by:
				OBL species         x1 =         0
				FACW species x2 =0
1				FAC species $x3 = 0$
5		·		FACU species X4 = 0
Total Cover:	40			UPL species $x5 = 0$
Herb Stratum				Column Totals: 0 (A) 0 (B)
1. Phalaris arundinacea	10	Y	FACW□	Prevalence Index = B/A =(3)
2. Juncus effusus		·	FACW	
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				X 2 - Dominance Test is >50%
				$3$ - Prevalence Index is $\leq 3.0^{1}$
7				4 - Morphological Adaptation1 (Provide supporting
				data in Remarks or on a separate sheet)
				5 - Wetland Non-Vascular Plants <sup>1</sup>
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10 11.		·		
Total Cover:	30	·		
Woody Vine Stratum	- 30			1 mail and an a fill which and shaddle walk and a second
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.		·		
		·		Hydrophytic
Total Cover:	Vegetation			
% Bare Ground in Herb Stratum 60 %	Cover of B	IOUC Crust	0	Present?         Yes         No
Remarks:				

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SOIL								Sampling Point:	Ę
Profile De	scription: (Describe	to the de	pth needed to doc	ument t	he indicate	or or co	nfirm the absend	ce of indicators.)	
Depth	Matrix			dox Feat					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks	
0-16	10YR5/2	75	7.5YR4/6	25	C	M	S		
								_	
			······································				_		
Type: C=	Concentration, D=Dep	letion, RM		CS=Cove	ered or Coa	ated Sar	nd Grains. <sup>2</sup> Loca	tion: PL=Pore Lining, M=Matrix.	
••									
-	il Indicators: (Applic	able to al			-		Indicators for	r Problematic Hydric Soils <sup>3</sup> :	
	sol (A1)			Redox (S				2 cm Muck (A10)	
	Epipedon (A2)			d Matrix				Red Parent Material (TF2)	
	Histic (A3)			-	lineral (F1)	(except	t MLRA 1)	Other (Explain in Remarks)	
-	ogen Sulfide (A4)			•	/latrix (F2)				
-	eted Below Dark Surface	ce (A11)		d Matrix			-		
	Dark Surface (A12)				face (F6)			ors of hydrophytic vegetation and	
	y Muck Mineral (S1)		Deplete	d Dark S	Surface (F7	)	wetlar	nd hydrology must be present,	
Sand	y gleyed Matrix (S4)		Redox I	Depressi	ons (F8)		unle	ess disturbed or problematic.	
lestrictive	e Layer (if present):								
ype:									
Depth (inch	nes):					н	ydric Soil Prese	nt? Yes x	No
marks:									
DROLOG	Y								
Vetland H	ydrology Indicators:								
	dicators (any one indic	ator is suf	ficient)					Secondary Indicators (2 or more	required)
	ce Water (A1)			Stained L	eaves (B9)	) (excep	ot	Water-Stained Leaves (B9) (MI	
	Water Table (A2)				A and 4B)			4A and 4B)	
	ation (A3)			ust (B11)				Drainage Patterns (B10)	
	r Marks (B1)				orates (B13	<b>`</b>		Dry-Season Water Table (C2)	
	nent Deposits (B2)				e Odor (C1			Saturation Visible on Aerial Ima	aary (CQ)
	Deposits (B3)					-	g Roots (C3)	Geomorphic Position (D2)	igery (00)
	Mat or Crust (B4)				duced Iron	-	g 10003 (00)	Shallow Aquitard (D3)	
						( )			
	Deposits (B5)				luction in P			FAC-Neutral Test (D5)	•
	ce Soil Cracks (B6)	Imene (			sed Plants			Raised Ant Mounds (D6) (LRR	A)
	ation Visible on Aerial			=xpiain ir	n Remarks)	)		Frost-Heave Hummocks (D7)	
	ely Vegetated Concav	e Surface	e (B8)				•		
Field Obse				<i>.</i>					
	ater Present? Yes Present? Yes			n (inches n (inches					
Saturation				i (inches			Wetland Hvdr	ology Present? Yes x	No
	apillary fringe)		<u> </u>	(					
	corded Data (stream g	auge, mor	nitoring well, aerial p	ohotos, p	previous ins	pections	s), if available:		
	-								
marks:									

Project/Site:	I-5 Woodland C		City/County: Woodland/Co	wlitz		Sampling Dat	te: Oct.15	2020	
Applicant/Owner:	Logan Partners LLC				State:		Sampling Poi	nt:	53
Investigator(s):	КВ			Section, Township, Ra	Section, Township, Range: S13, T5N, R1W				
Landform (hillslope	, terrace, etc.):	terrace		Local relief (concave, c	convex	, none): <u>none</u>	S	lope (%):	0-3%
Subregion (LRR):	Northwest Forests and Coast (LRR A)			45.91995	53493	Long: -1	22.747731027	Datum:	
Soil Map Unit Name	e: Newberg f	ine sandy loam				NWI Classification:	none		
Are climatic / hydro	logic conditions on	the site typical for thi	s time of y	vear? Yes	Х	No	(If no, explain in	Remarks)	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	lormal Circumstanc	es" Present? Y	es X	No
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any ar	nswers in Remark	(s.)	

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

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
1. Populus balsamifera	100	Y	FAC□	That Are OBL, FACW, or FAC:3(A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4.				Percent of Dominant Species
Total Cover	100	- -		That Are OBL, FACW, or FAC:(A/B)
Shrub Stratum				Prevalence Index Worksheet:
1. Crataegus monogyna	25	Y	FAC□	Total % Cover of: Multiply by:
2.				OBL species x1 = 0
3.				FACW species x2 = <b>0</b>
4.				FAC species x3 = <b>0</b>
5.		·	·	FACU species x4 =0
Total Cover	25			UPL species x5 = <b>0</b>
Herb Stratum		-		Column Totals: <b>0</b> (A) <b>0</b> (B)
1. Phalaris arundinacea	70	Y	FACW□	
2.		·		
3.				Hydrophytic Vegetation Indicators:
4.			·	1 - Rapid Test for Hydrophytic Vegetation
5.				X 2 - Dominance Test is >50%
6.				$3 - Prevalence Index is \leq 3.0^1$
7.				4 - Morphological Adaptation1 (Provide supporting
				data in Remarks or on a separate sheet)
0			·	5 - Wetland Non-Vascular Plants <sup>1</sup>
9 10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
4.4				
Total Cover	70			
Woody Vine Stratum		-		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2.		·		
z Total Cover		·	·	Hydrophytic
% Bare Ground in Herb Stratum 0 %	0	Vegetation           0         Present?         Yes x         No		
Remarks: 30% leaf litter				I

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|--|

ches) Color (moist) %	Color (moist) % Type <sup>1</sup> L	oc <sup>2</sup> Texture	Remarks
0-16 10YR3/3 100		SL	
pe: C=Concentration, D=Depletion, RM=F	Reduced Matrix, CS=Covered or Coated	Sand Grains. <sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.
dric Soil Indicators: (Applicable to all L	RRs, unless otherwise noted.)	Indicators for I	Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)		2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)		Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) ( <b>ex</b>	cept MLRA 1)	Other (Explain in Remarks)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)		
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	2	
Thick Dark Surface (A12)	Redox Dark Surface (F6)		s of hydrophytic vegetation and
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7)		hydrology must be present,
Sandy gleyed Matrix (S4)	Redox Depressions (F8)	uniess	s disturbed or problematic.
strictive Layer (if present):			
		Hydria Sail Bracont	
pth (inches):		Hydric Soil Present	? Yes No
rpe: epth (inches): arks:		Hydric Soil Present	? Yes No
epth (inches):		Hydric Soil Present	? Yes <u>No</u>
pth (inches):		Hydric Soil Present	? Yes No
pth (inches):		Hydric Soil Present	? Yes No
pth (inches): arks: ROLOGY		Hydric Soil Present	? YesNo
pth (inches): arks: ROLOGY etland Hydrology Indicators:			
pth (inches): arks: ROLOGY tland Hydrology Indicators: mary Indicators (any one indicator is suffici		<u>s</u>	Secondary Indicators (2 or more required
oth (inches): arks: ROLOGY tland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1)	Water-Stained Leaves (B9) (ex	<u>s</u>	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b>
oth (inches): arks: ROLOGY tland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (ex MLRA 1, 2, 4A and 4B)	<u>s</u>	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B)
pth (inches): arks: ROLOGY tland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (ex MLRA 1, 2, 4A and 4B) Salt Crust (B11)	<u>s</u>	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1, 2 4A and 4B) Drainage Patterns (B10)
pth (inches): arks: ROLOGY tland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	<u>s</u>	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2)
pth (inches): arks: ROLOGY etland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)		Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
pth (inches): arks: ROLOGY ttland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L	.iving Roots (C3)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
pth (inches): arks: ROLOGY ttland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9) (ex MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4	.iving Roots (C3)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3)
pth (inches): arks: ROLOGY teland Hydrology Indicators: mary Indicators (any one indicator is suffici 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)	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe	.iving Roots (C3)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
pth (inches): arks: ROLOGY ttland Hydrology Indicators: mary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plower Stunted or Stressed Plants (D1)	.iving Roots (C3)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3)
pth (inches):	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe Stunted or Stressed Plants (D1 Other (Explain in Remarks)	.iving Roots (C3)	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)
Particle       Particle         arks:       Particle         arks:       Particle         Barbon Market       Particle         Barbon Market	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe Stunted or Stressed Plants (D1 Other (Explain in Remarks)	.iving Roots (C3)	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)
pth (inches):	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe Stunted or Stressed Plants (D1 Other (Explain in Remarks) 88) 0 X Depth (inches):	.iving Roots (C3)	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)
pth (inches):	Water-Stained Leaves (B9) (e) MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe Stunted or Stressed Plants (D1 Other (Explain in Remarks) 88) 0 X Depth (inches): Depth (inches):	scept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
pth (inches):	Water-Stained Leaves (B9) (ex MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plowe Stunted or Stressed Plants (D1 Other (Explain in Remarks) 88) 0 X Depth (inches): Depth (inches):	.iving Roots (C3)	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
pth (inches):	Water-Stained Leaves (B9) (ex MLRA 1, 2, 4A and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along L Presence of Reduced Iron (C4 Recent Iron Reduction in Plower Stunted or Stressed Plants (D1 Other (Explain in Remarks) 88) O X Depth (inches): Depth (inches): Depth (inches):	scept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> <b>4A and 4B</b> ) 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)

Project/Site:	I-5 Woodland			City/County: Woodland/C	owlitz		Sampling Date:	Oct.15, 2	020
Applicant/Owner:	Logan Partner	rs LLC				State: WA	Sampling Point	•	54
Investigator(s):	KB			Section, Township, F	Range:	S13, T5N, R1W			
Landform (hillslope	, terrace, etc.):	ditch		Local relief (concave,	convex	, none): <u>none</u>	Slo	pe (%): <u>0-</u> ;	3%
Subregion (LRR):	Northwest For	ests and Coast (LRR A	) Lat:	45.9197	786308	Long: -	122.749199779	Datum:	
Soil Map Unit Name	e: Newbe	rg fine sandy loam				NWI Classification	: none		
Are climatic / hydro	logic conditions	s on the site typical for	this time of	year? Yes	Х	No	(If no, explain in R	(emarks	
Are Vegetation	, Soil	, or Hydrology		significantly disturbed?	Are "N	Iormal Circumstan	ces" Present? Yes	s <u>X</u> No	)
Are Vegetation	, Soil	, or Hydrology		naturally problematic?	(If nee	ded, explain any a	inswers in Remarks	.)	

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No	x x x	Is the Sampled Area within a Wetland?	Yes	No	<u>x</u>
Plot placed in bottom of upland ditch							

	Absolute	Dominant	Indicator	Dominance Test worksheet:
T <u>ree Stratum</u> (Use scientific names.) 1.	% Cover	Species?	Status?	Number of Dominant SpeciesThat Are OBL, FACW, or FAC:2(A)
2.				Total Number of Dominant
3.				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
Total Cover:	0			That Are OBL, FACW, or FAC: 50% (A/B)
Shrub Stratum				Prevalence Index Worksheet:
. Corylus cornuta	30	Y	FACU□	Total % Cover of: Multiply by:
2. Rubus armeniacus	80	Y	⊫FAC□	OBL species x1 =0
3				FACW species x2 = 0
ł				FAC species x3 =0
5				FACU species x4 = 0
Total Cover:	110			UPL species x5 = 0
Herb Stratum				Column Totals: 0 (A) 0 (B)
. Phalaris arundinacea	20	Y	FACW□	
2.				
3.				Hydrophytic Vegetation Indicators:
l				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
i				3 - Prevalence Index is ≤3.0 <sup>1</sup>
				4 - Morphological Adaptation1 (Provide supporting
				data in Remarks or on a separate sheet)
).				5 - Wetland Non-Vascular Plants <sup>1</sup>
0				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1.				
Total Cover:	20			
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
. Rubus ursinus	30%	Y	FACU□	
2.				Hydrophytic
Total Cover:				Vegetation
% Bare Ground in Herb Stratum 50 %	Cover of B	iotic Crust	0	-
Remarks:				

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Profile Desc	cription: (Describe	to the de	pth needed to doc	ument th	ne indicato	or or con	firm the absence of indi	cators.)
Depth	Matrix		Red	dox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16	10YR3/3	100					L	

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Red	duced Matrix, CS=Covered or Coated	Sand Grains. <sup>2</sup> Location: PL=P	ore Lining, M=Ma	atrix.	
Hydric Soil Indicators: (Applicable to all LRF	Rs, unless otherwise noted.)	Indicators for Problema	tic Hydric Soils	3	
Histosol (A1)	Sandy Redox (S5)	2 cm Mu	ck (A10)		
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Par	ent Material (TF2	2)	
Black Histic (A3)	Loamy Mucky Mineral (F1) (ex	cept MLRA 1) Other (E	xplain in Remark	(s)	
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)				
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)				
Thick Dark Surface (A12)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydro	phytic vegetation	and	
Sandy Muck Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrolog	y must be preser	nt,	
Sandy gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbe	d or problematic.		
Restrictive Layer (if present):					
Туре:					
Depth (inches):		Hydric Soil Present?	Yes	No	х
Remarks:		1			

#### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)MLRA 1, 2, 4A and 4B)	4A and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3	B) Geomorphic Position (D2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	
Field Observations:	
Surface Water Present? Yes No _X Depth (inches):	
Water table Present? Yes No x Depth (inches):	
	Hydrology Present? Yes No x
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if availab	ıle:
Remarks:	
INCIDAINS.	

# APPENIDIX D. WETLAND RATING FORMS

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL-1 Date of site visit: 10/15/2020 Rated by K Biafora \_\_\_\_\_ Trained by Ecology?X Yes \_\_\_\_ No Date of training 2015

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

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI, 2020

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

# 1. Category of wetland based on FUNCTIONS

**Category I** – Total score = 23 - 27

**Category II** – Total score = 20 - 22

**Category III** – Total score = 16 - 19

X Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
					Circle t	the ap	propi	riate ra	tings	
Site Potential	Н	M	L	Н	M	L	Н	M	L	
Landscape Potential	Н	М	L	Н	Μ	L	Н	M	L	
Value	Н	Μ	L	Н	M	L	Н	Μ	L	TOTAI
Score Based on										
Ratings	4			5			5			14

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M

7 = H, H, L7 = H, M, M6 = H, M, L6 = M, M, M5 = H,L,L 5 = M,M,L 4 = M, L, L

3 = L,L,L

'AL

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC		EGORY	
Estuarine	I II		
Wetland of High Conservation Value	Ι		
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon		II	
Interdunal		III IV	
None of the above	Х		

# Maps and figures required to answer questions correctly for Western Washington

## **Depressional Wetlands**

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

#### Riverine Wetlands

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

#### Lake Fringe Wetlands

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

## Slope Wetlands

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

# HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

**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?
  - <u>X</u> The wetland is on a slope (*slope can be very gradual*).
  - X 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,
  - <u>X</u> The water leaves the wetland **without being impounded**.

NO - go to 5

**YES** – The wetland class is **Slope** 

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
  - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.
  - \_\_\_\_The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>1</u>

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

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

SLOPE WETLANDS		
Water Quality Functions - Indicators that the site function	s to improve water quality	
S 1.0. Does the site have the potential to improve water quality?		
5 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertice 100 ft of horizontal distance)	al drop in elevation for every	
Slope is 1% or less	points = 3	
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	3
5 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NR</i>	CS definitions): Yes = 3 No = 0	0
5 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:		
Choose the points appropriate for the description that best fits the plants in the have trouble seeing the soil surface (>75% cover), and uncut means not grazed o than 6 in.		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	6
Does not meet any of the criteria above for plants	points = 0	6
Total for S 1 Add	the points in the boxes above	9
Rating of Site Potential If score is: 12 = H X 6-11 = M 0-5 = L	Record the rating on	the first pag
S 2.0. Does the landscape have the potential to support the water quality func	tion of the site?	-
5 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses the set $10^{-1}$	nat generate pollutants?	
	Yes = 1 No = 0	0
5 2.2. Are there other sources of pollutants coming into the wetland that are not listed	in question S 2.1?	
Other sources	Yes = 1 No = 0	0
Fotal for S 2 Add	the points in the boxes above	0
Rating of Landscape Potential If score is: <u>1-2 = M X</u> 0 = L	Record the rating on	the first na

S 3.0. Is the water quality improvement provided by the site valuab	le to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, ri 303(d) list?	ver, lake, or marine water that is on the Yes = 1 No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue on the 303(d) list.	e? At least one aquatic resource in the basin is Yes = 1 No = 0	0
S 3.3. Has the site been identified in a watershed or local plan as importan if there is a TMDL for the basin in which unit is found.	t for maintaining water quality? <i>Answer YES</i> Yes = 2 No = 0	0
Total for S 3	Add the points in the boxes above	0
	- 1.1	

Rating of Value If score is: 2-4 = H 1 = M X = 0 = L

Record the rating on the first page

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream ere	osion
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	-
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	1
<b>Rating of Site Potential</b> If score is: $X = M = 0 = L$ Record the rating of	1 the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0

Rating of Landscape Potential If score is: 1 = M X 0 = L

Record the rating on the first page

0

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or	
natural resources (e.g., houses or salmon redds)points = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1No flooding problems anywhere downstreampoints = 0	1
S 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	
Total for S 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

NOTES and FIELD OBSERVATIONS:

<b>TABITAT FUNCTIONS</b> - India	ators that site functions to p	rovide important habitat	
1.0. Does the site have the po	•		
I 1.1. Structure of plant communit	y: Indicators are Cowardin classes (	and strata within the Forested class. Check the	
Cowardin plant classes in the	e wetland. Up to 10 patches may be	e 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	
<u>X</u> Emergent		3 structures: points = 2	
	re shrubs have > 30% cover)	2 structures: points = 1	
<u>X</u> Forested (areas where t	rees have > 30% cover)	1 structure: points = 0	
If the unit has a Foreste	-		
	B out of 5 strata (canopy, sub-cano ithin the Forested polygon	py, shrubs, herbaceous, moss/ground-cover)	4
1.2. Hydroperiods			
	imes (hydroperiods) present within nd or ¼ ac to count ( <i>see text for de</i> s	n the wetland. The water regime has to cover scriptions of hydroperiods).	
Permanently flooded or		4 or more types present: points = 3	
<u>X</u> Seasonally flooded or ir		3 types present: points = 2	
<u>X</u> Occasionally flooded or	inundated	2 types present: points = 1	
X_Saturated only		1 type present: points = 0	
Permanently flowing st	eam or river in, or adjacent to, the	e wetland	
Seasonally flowing stream	am in, or adjacent to, the wetland		
Lake Fringe wetland		2 points	
Freshwater tidal wetla	nd	2 points	2
I 1.3. Richness of plant species			
	pecies in the wetland that cover at	least 10 ft <sup>2</sup>	
-	-	the size threshold and you do not have to name	
	-	s, purple loosestrife, Canadian thistle	
If you counted: > 19 species		points = 2	
5 - 19 specie	25	points = 1	
< 5 species		points = 0	1
1 1.4. Interspersion of habitats			
Decide from the diagrams be	low whether interspersion among	Cowardin plants classes (described in H 1.1), or	
•	· ·	mudflats) is high, moderate, low, or none. <i>If you</i>	
have four or more plant clas	ses or three classes and open water	r, the rating is always high.	
News			
None = 0 points	Low = 1 point	Moderate = 2 points	
	~		
All three diagrams			
All three diagrams In this row are <b>HIGH</b> = 3points			

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) <b>and/or</b> 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)	
X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i>	
Invasive plants cover less than 25% of the wetland area in every stratum of plants ( <i>see H 1.1 for list of strata</i> )	1
Total for H 1 Add the points in the boxes above	11

 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).		
<i>Calculate:</i> % undisturbed habitat <u>3</u> + [(% moderate and low intensity land uses)/2] <u>23</u> = _	26%	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	2
< 10% of 1 km Polygon	points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
<i>Calculate:</i> % undisturbed habitat $26 + [(\% \text{ moderate and low intensity land uses})/2] 15 = \frac{1}{2}$	41%	
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 poi	nts = (- 2)	
≤ 50% of 1 km Polygon is high intensity	points = 0	0
Total for H 2 Add the points in the box	kes above	3
Rating of Landscape Potential If score is:4-6 = HX 1-3 = M< 1 = L Record th	e rating on t	he first page

Rating of Landscape Potential if score is: $4-6 = H$ $-\frac{1}{2} = M$ $-\frac{1}{2} = L$	Record the rating on tr	ie jirst page
H 3.0. Is the habitat provided by the site valuable to society?		
<ul> <li>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose on that applies to the wetland being rated.</li> <li>Site meets ANY of the following criteria:</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the s</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natura</li> <li>It has been categorized as an important habitat site in a local or regional comprehensity Shoreline Master Plan, or in a watershed plan</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	points = 2 state or federal lists) al Resources	0
Site does not meet any of the criteria above Rating of Value If score is: 2 = H1 = M _X_0 = L	Record the rating on a	the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

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

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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?	Cat. I
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)	Cat. I
— 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	Cat. II
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	1
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	Cat. I
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	1
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or	
more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> No – Go to <b>SC 3.2</b>	
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 <b>SC 3.3</b> No = <b>Is not a bog</b>	
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	<b>6</b> -1 1
plant species in Table 4 are present, the wetland is a bog.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b>If you answer YES you will still need to rate</b> <b>the wetland based on its functions.</b>	
— 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.	
<ul> <li>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).</li> </ul>	
Yes = Category I No = Not a forested wetland for this section	Cat. I
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)	Cat. I
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	Cat. II
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-	Cut. 11
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
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	
<b>you answer yes you will still need to rate the wetland based on its habitat functions.</b> In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	Cat I
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
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 = <b>Category I</b> No – Go to <b>SC 6.2</b>	Cat. II
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 = <b>Category II</b> No – Go to <b>SC 6.3</b>	Cat. III
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	Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL 2 Date of site visit: \_\_\_\_\_

Rated by K Biafora \_\_\_\_\_ Trained by Ecology? Yes \_\_\_ No Date of training \_\_\_\_\_

**HGM Class used for rating** Depression Wetland has multiple HGM classes? Y X N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI</u>, 2020

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>X</u> or special characteristics\_\_\_)

# 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

**Category II** – Total score = 20 - 22

**Category III** – Total score = 16 - 19

X Category IV – Total score = 9 - 15

FUNCTION		nprov ter Q	/ing uality	H	ydrolo	ogic		Habita	at	
					Circle	the ap	propr	iate ra	tings	
Site Potential	Н	M	L	H	М	L	Н	Μ	L	
Landscape Potential	Н	Μ	L	Н	Μ	L	Н	M	L	
Value	Н	М	L	Н	M	L	Н	Μ	L	TOTA
Score Based on Ratings	4			6			4			14

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H 8 = H,H,M 7 - HHH

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	Ι	II	
Interdunal	I II	III IV	
None of the above			

# Maps and figures required to answer questions correctly for Western Washington

# **Depressional Wetlands**

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

#### Riverine Wetlands

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

### Lake Fringe Wetlands

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

## Slope Wetlands

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

# HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

NO – Saltwater Tidal Fringe (Estuarine) 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.

## **YES - Freshwater Tidal Fringe**

Wetland name or number 2\_\_\_\_

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

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

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

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

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

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	
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	
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the basin in which the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	0
Rating of ValueIf score is: $2-4 = H$ $1 = M$ $X_0 = L$ Record the rating on the first page	<u> </u>

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowingpoints = 0	4	
D 4.2. <u>Depth of storage during wet periods:</u> <i>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.</i>		
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	7	
Marks of ponding less than 0.5 ft (6 in) points = 0	1	
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
The area of the basin is less than 10 times the area of the unit points = 5		
The area of the basin is 10 to 100 times the area of the unit points = 3		
The area of the basin is more than 100 times the area of the unit points = 0	3	
Entire wetland is in the Flats class points = 5	0	
Total for D 4     Add the points in the boxes above	14	
Rating of Site Potential If score is: X 12-16 = H6-11 = M0-5 = L Record the rating on the	first page	
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	0	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0	
Total for D 5Add the points in the boxes above	0	
Rating of Landscape Potential If score is: $3 = H$ 1 or $2 = M$ $\chi_0 = L$ Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>.</li> <li>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):</li> </ul>		
<ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> </ul>		
• Surface flooding problems are in a sub-basin farther down-gradient. points = 1		
Flooding from groundwater is an issue in the sub-basin. points = 1		
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the		
water stored by the wetland cannot reach areas that flood. <i>Explain why</i> points = 0		
There are no problems with flooding downstream of the wetland. 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		
Total for D 6 Add the points in the boxes above	1	
<b>Rating of Value</b> If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page	

	These questions apply to we	tlands of all HGM classes.	
HABITAT FUNCTIONS - Ind	icators that site functions to p	provide important habitat	
H 1.0. Does the site have the p	otential to provide habitat?		
Cowardin plant classes in t	ne wetland. Up to 10 patches may l	and strata within the Forested class. Check the be combined for each class to meet the threshold . Add the number of structures checked. 4 structures or more: points = 4	
X Emergent		3 structures: points = 2	
	ere shrubs have > 30% cover)	2 structures: points = 1	
Forested (areas where	trees have > 30% cover)	1 structure: points = 0	
If the unit has a Fores	ted class, check if:		
	3 out of 5 strata (canopy, sub-cano vithin the Forested polygon	opy, shrubs, herbaceous, moss/ground-cover)	0
H 1.2. Hydroperiods			
more than 10% of the wetl	and or ¼ ac to count (see text for de	in the wetland. The water regime has to cover escriptions of hydroperiods).	
X_Permanently flooded		4 or more types present: points = 3	
X Seasonally flooded or		3 types present: points = 2	
Occasionally flooded of	or inundated	2 types present: points = 1	
Saturated only		1 type present: points = 0	
	tream or river in, or adjacent to, th	e wetland	
	eam in, or adjacent to, the wetland		
Lake Fringe wetland	_	2 points	
Freshwater tidal wetl	and	2 points	1
Different patches of the same the species. <b>Do not incluc</b> If you counted: > 19 specie	<b>le Eurasian milfoil, reed canarygra</b> s	et the size threshold and you do not have to name <b>ss, purple loosestrife, Canadian thistle</b> points = 2	
5 - 19 spec		points = 1	0
< 5 species	5	points = 0	
the classes and unvegetate		g Cowardin plants classes (described in H 1.1), or mudflats) is high, moderate, low, or none. <i>If you</i> er, the rating is always high.	
	$\bigcirc$		
None = 0 points	Low = 1 point	Moderate = 2 points	
All three diagrams in this row are <b>HIGH</b> = 3points			1
			1

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> 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 <i>(structures for egg-laying by amphibians)</i>	
Invasive plants cover less than 25% of the wetland area in every stratum of plants ( <i>see H 1.1 for list of strata</i> )	1
Total for H 1Add the points in the boxes above	3

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 fu	inctions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland uni	•	
<i>Calculate:</i> % undisturbed habitat <u>3</u> + [(% moderate and low If total accessible habitat is:	intensity land uses)/2] $23 = \frac{26}{3}$ %	
> $\frac{1}{3}$ (33.3%) of 1 km Polygon	points = 3	
20-33% of 1 km Polygon	points = 3 points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat <u>26</u> + [(% moderate and low	intensity land uses)/2] <u>15</u> = <u>41</u> %	
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	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)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	U
Total for H 2	Add the points in the boxes above	3
Rating of Landscape Potential If score is: A-6 = H X 1-3 = M < 1 =	Record the rating on	the first nage

Rating of Landscape Potential If score is: \_\_\_\_4-6 = H X\_\_\_1-3 = M \_\_\_\_<1 = L

Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the</li> </ul>	e state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Nature</li> </ul>	ural Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehen</li> </ul>	sive 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	0
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

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

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

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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?	Cat. I
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)	Cat. I
— 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	Cat. II
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	1
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	Cat. I
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	1
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or	
more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> No – Go to <b>SC 3.2</b>	
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 <b>SC 3.3</b> No = <b>Is not a bog</b>	
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	<b>6</b> -1 1
plant species in Table 4 are present, the wetland is a bog.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands					
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA					
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate					
the wetland based on its functions.					
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered concerning with a species of the species of th					
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	Cat. I				
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)	Cat. I				
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	Cat. I				
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).	Cat. II				
— 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 <sup>2</sup> )					
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:					
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	Cat I				
<ul> <li>— Grayland-Westport: Lands west of SK 103</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>					
$Yes - Go to SC 6.1 \qquad No = not an interdunal wetland for rating$					
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	Cat. II				
for the three aspects of function)? Yes = <b>Category I</b> No – Go to <b>SC 6.2</b>					
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	Cat. III				
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	Cat. IV				
Category of wetland based on Special Characteristics					
If you answered No for all types, enter "Not Applicable" on Summary Form					

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL 3 Date of site visit: 10/15/2020

Rated by K Biafora Trained by Ecology?X Yes No Date of training 2015

**HGM Class used for rating** Depression Wetland has multiple HGM classes? Y X N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI</u>, 2020

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>X</u> or special characteristics\_\_\_)

# 1. Category of wetland based on FUNCTIONS

\_\_\_\_Category I – Total score = 23 - 27

**Category II** – Total score = 20 - 22

Category III – Total score = 16 - 19

X Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality		Hydrologic			Habitat				
Circle the appropriate ratings										
Site Potential	Н	M	L	Н	М	L	Н	Μ	L	
Landscape Potential	Н	М	L	Н	М	L	Н	M	L	
Value	Н	Μ	L	Н	M	L	Н	Μ	L	TOT
Score Based on										
Ratings	4			4			4			12

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

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

3 = L,L,L

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

# Maps and figures required to answer questions correctly for Western Washington

#### **Depressional Wetlands**

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

#### **Riverine Wetlands**

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

#### Lake Fringe Wetlands

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

#### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

NO – Saltwater Tidal Fringe (Estuarine) 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.

#### **YES - Freshwater Tidal Fringe**

Wetland name or number <u>3</u>

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

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

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

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

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

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

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine w 303(d) list?	vater that is on the 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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining wat <i>if there is a TMDL for the basin in which the unit is found</i> )?	er quality ( <i>answer YES</i> Yes = 2 No = 0	0
Total for D 3 Add the points	s in the boxes above	0
Rating of Value       If score is:       2-4 = H       I = M       X 0 = L       Record the rate	ing on the first page	-

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

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	
<u>X</u> 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	0
Freshwater tidal wetland 2 points	<u><del>1</del></u>
H 1.3. Richness of plant species	
Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .	
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	0
<5 species points = 0	•
H 1.4. Interspersion of habitats	
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open water, the rating is always high</i> .	
None = 0 pointsLow = 1 pointModerate = 2 points	
All three diagrams in this row are <b>HIGH</b> = 3points	0

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) <b>and/or</b> 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 <i>(structures for egg-laying by amphibians)</i>			
Invasive plants cover less than 25% of the wetland area in every stratum of plants ( <i>see H 1.1 for list of strata</i> )	0		
Total for H 1Add the points in the boxes above	4	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	e site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat $3 + [(\% moderate and low intensity land u$	uses)/2] <u>23_</u> =%	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (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	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat 26_+ [(% moderate and low intensity land u	uses)/2] <u>15</u> = <u>41</u> %	
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	1
Undisturbed habitat < 10% of 1 km Polygon	points = 0	I
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	U
Total for H 2 Add the p	oints in the boxes above	3
Rating of Landscape Potential If score is:4-6 = H X1-3 = M<1 = L	Record the rating on t	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	2
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists	)
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $X_0 = L$ Record the rating	on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>3</u>

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	
than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25)	Cat. I
— 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	Cat. II
contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category I</b>	
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	Cat. I
Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3	cut. I
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	
<b>NOTE:</b> 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	Cat. I
plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b>If you answer YES you will still need to rate</b>	
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.	
<ul> <li>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).</li> </ul>	
Yes = Category I No = Not a forested wetland for this section	Cat. I
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)	Cat. I
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— 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 <sup>2</sup> )	
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:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Crawland Westport: Lands west of SR 105</li> </ul>	Cat I
<ul> <li>Grayland-Westport: Lands west of SR 105</li> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
- Ocean shores-copans. 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 = <b>Category I</b> No – Go to <b>SC 6.2</b>	Cat. II
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	Cat. III
Yes = <b>Category II</b> No – Go to <b>SC 6.3</b> 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?	Cut
Yes = Category III No = Category IV	Cat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

## **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL 4 Date of site visit: 10/15/2020

Rated by K Biafora Trained by Ecology?X Yes \_\_\_\_No Date of training 2015

**HGM Class used for rating** Depression Wetland has multiple HGM classes? Y X N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI</u>, 2020

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>X</u> or special characteristics\_\_\_)

### 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_Category I – Total score = 23 - 27

\_\_\_\_Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

X \_Category IV – Total score = 9 - 15

FUNCTION		mprov ater Q	/ing uality	H	ydrolo	ogic		Habita	at	
	Circle the appropriate ratings									
Site Potential	Н	M	L	Н	М	L	Н	Μ	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M	L	
Value	Н	М	L	Н	M	L	Н	Μ	L	тоти
Score Based on Ratings	5				5		4			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

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	Ι		
Bog	I		
Mature Forest	I		
Old Growth Forest	Ι		
Coastal Lagoon	Ι	II	
Interdunal	I II	III IV	
None of the above			

# Maps and figures required to answer questions correctly for Western Washington

#### **Depressional Wetlands**

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

#### **Riverine Wetlands**

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

#### Lake Fringe Wetlands

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

#### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

**NO – Saltwater Tidal Fringe (Estuarine)** 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). Type text here

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.

#### **YES - Freshwater Tidal Fringe**

Wetland name or number <u>4</u>

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

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

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve 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 o po	outlet). pints = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing ou po	itlet. pints = 2	
	pints = 1 pints = 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	4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Coward	in classes):	
Wetland has persistent, ungrazed, plants > 95% of area po	pints = 5	
	pints = 3	
	pints = 1	~
Wetland has persistent, ungrazed plants <1/10 of area po	pints = 0	5
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 po	pints = 4	
Area seasonally ponded is > ¼ total area of wetland po	pints = 2	0
Area seasonally ponded is < ¼ total area of wetland po	pints = 0	5
Total for D 1Add the points in the boxe	es above	8

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

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

**Rating of Landscape Potential** If score is: **3 or 4 = H** 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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the basin in which the unit is found</i> )? Yes = 2 No = 0	0
Total for D 3Add the points in the boxes above	0
Rating of ValueIf score is: $2-4 = H$ $1 = M$ $X_0 = L$ Record the rating on the first page	

п

DEPRESSIONAL AND FLATS WETLANDS				
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation				
D 4.0. Does the site have the potential to reduce flooding and erosion?				
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4			
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0			
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	0			
Total for D 4Add the points in the boxes above	4			
Rating of Site Potential If score is:12-16 = H $6-11 = M$ 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 5Add the points in the boxes above	2			
Rating of Landscape Potential       If score is:3 = H1 or 2 = M0 = L       Record the rating on the	first page			
D 6.0. Are the hydrologic functions provided by the site valuable to society?				
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):</li> </ul>				
<ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> </ul>				
Flooding from groundwater is an issue in the sub-basin.points = 1The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> points = 0				
There are no problems with flooding downstream of the wetland. points = 0	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			
<b>Rating of Value</b> If score is: $2-4 = H \times 1 = M = 0 = L$ Record the rating on the	first page			

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or % ac to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 2 types present: points = 1 X. Saturated only 1 type 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 Seasonally flowing stream in, or adjacent to, the wetland Permanently flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 13. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . 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 So points = 0 14. 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.	These questions apply to wetlan		
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 % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.		ride important habitat	-
Covardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of K ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. 		strata within the Forested class. Check the	
of X ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed Aquatic bed Aquatic bed Aguatic b			
Aquatic bed 4 structures or more: points = 4 A Emergent 3 structures: points = 1 Forested (areas where trees have > 30% cover) 1 structure: 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 a Out of S strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) 1 that each cover 20% within the Forested polygon 12. 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 % a cto count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 2 types present: points = 1 X. Saturated only 1 flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points = 1 13. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . 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 Eurosian milfoil, reed canarygrass, purple loosestrife, Canadian thiste If you counted: > 19 species Secies points = 0 14. 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, the rating is always high. Moderate = 2 points 14. Here diagrams there diagrams there diagrams there diagrams there diagrams there diagrams there of points If we classer or three classes and open water, the rating is always high. Moderate = 2 points The classes or three classes and open water, the rating is always high. Moderate = 2 points The classes or three classes and open water, the rating is always high. There diagrams this row		-	
X       Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1	Aquatic bed	4 structures or more: points = 4	
Forested (areas where trees have > 30% cover)     I 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     Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover     more than 10% of the wetland or % ac to count (see text for descriptions of hydroperiods).     Permanently flooded or inundated         4 or more types present: points = 3     Seasonally flooded or inundated         2 types present: points = 1     X. Saturated only     The Forewet all wetland     Seasonally flooded or inundated         2 types present: points = 0     Permanently flowing stream or river in, or adjacent to, the wetland     Seasonally flooded point species in the wetland that cover at least 10 ft <sup>2</sup> .     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 Eurosian milfoil, teed canarygrass, purple loosestrife, Canadian thiste     If you counted: >19 species         points = 1         S species         points = 1         S species         points = 1         S species         points = 0     }         Seasonally flooded or include Eurosian milfoil, teed canarygrass, purple loosestrife, Canadian thiste     If you counted: >19 species         points = 1         S species         points = 1         S species         points = 1         S species         points = 0         Seasonally flowed present increases and 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.         Moderate = 2 points         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.         Mode	X_Emergent	3 structures: points = 2	
If the unit has a Forested class, check if:       1         The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)       1         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 = 1       2 types present: points = 1         X. Saturated only       1 type present: points = 0       1 type present: points = 0         Permanently flowing stream or river in, or adjacent to, the wetland       2 points       1         Seasonally flowing stream or river in, or adjacent to, the wetland       2 points       1         Seasonally flowing stream or river in, or adjacent to, the wetland       2 points       1         Seasonally flowing stream or river in, or adjacent to, the wetland       2 points       1         Lake Fringe wetland       2 points       1       1         J. Richness of plant species       combined to meet the size threshold and you do not have to name the species. Do not include Eurosian miffoll, reed canarygrass, purple loosestrife, Canadian thistle       1         If you counted: > 19 species       points = 1       1         < 5 species	X Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1	
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that each cover 20% within the Forested polygon       1.2. Hydroperiods         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 % ac to count (see text for descriptions of hydroperiods).	If the unit has a Forested class, check if:		
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Lake Fringe wetland       2 points       1         I.3. Richness of plant species       Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .       1         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       1         If you counted: > 19 species       points = 2       5 - 19 species       points = 1          5 - 19 species       points = 0       1         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.         Mone = 0 points       Low = 1 point       Moderate = 2 points         three diagrams this row       Up = 1 point       Image: Comparison of high the species in th		etland	
Freshwater tidal wetland       2 points       1         1.3. Richness of plant species       Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .       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       points = 2         If you counted: > 19 species       points = 1       1         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         three diagrams this row       Image: Comparison of the second provide the second provid			
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Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . 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 1.4. 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 three diagrams this row and the diagrams the points area of the points are of the points area of the points are points are of the point area of the point area of the point area of the points area of the points area of the points area of the points area of the point are	1.3. Richness of plant species		
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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			
5 - 19 species       points = 1       points = 0       1         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. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i> Image: Comparise of the classes or three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes of three classes of three classes of three classes and open water, the rating is always high.       Image: Comparise of the classes of three classes of three classes of the classes of the classes of three classes of the c	the species. Do not include Eurasian milfoil, reed canarygrass, p	urple loosestrife, Canadian thistle	
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<ul> <li>&lt; 5 species points = 0</li> <li>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. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i> <li>None = 0 points</li> <li>Low = 1 point</li> <li>Low = 1 point</li> <li>Moderate = 2 points</li> </li></ul>	5 - 19 species	points = 1	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points three diagrams this row a WIGH = 3 point	< 5 species	points = 0	-
the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i>	1.4. Interspersion of habitats		
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three diagrams this row			
this row	None = 0 points Low = 1 point	Moderate = 2 points	
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a HIGH - 2 noints			
			1

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> 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 <i>(structures for egg-laying by amphibians)</i>	
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 1Add the points in the boxes above	4

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M X\_0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the	site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
<i>Calculate:</i> % undisturbed habitat $3 + [(\% \text{ moderate and low intensity land } u)]$	uses)/2] <u>23_</u> = <u>26</u> %	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (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	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat <u>26</u> + [(% moderate and low intensity land u	uses)/2] <u>15_</u> =41%	
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	1
Undisturbed habitat < 10% of 1 km Polygon	points = 0	I
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	U
Total for H 2 Add the po	oints in the boxes above	3
Rating of Landscape Potential If score is:4-6 = H X1-3 = M<1 = L	Record the rating on t	the first page

Rating of Landscape Potential	If score is:	4-6 = H	<u>X</u>	_1-3 = IVI	<1=

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

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number 4\_\_\_\_\_

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	
than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25)	Cat. I
— 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	Cat. II
contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category I</b>	
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	Cat. I
Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3	cat. I
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	
<b>NOTE:</b> 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	Cat. I
plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
<ul> <li>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).</li> </ul>	
Yes = Category I No = Not a forested wetland for this section	Cat. I
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)	Cat. I
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	<b>C</b> -1 <b>I</b>
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mouved graceland	
mowed grassland. — The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
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:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	<b>.</b>
<ul> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	Cat I
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes Co to SC 51 No – not on interduced wetland for ration	
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	Cat. II
for the three aspects of function)? Yes = <b>Category I</b> No – Go to <b>SC 6.2</b>	
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 = <b>Category II</b> No – Go to <b>SC 6.3</b>	Cat. III
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	
	Cat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

## **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL-5 Date of site visit: 10/15/2020 Rated by K Biafora Trained by Ecology?X Yes \_\_\_\_No Date of training\_\_\_\_\_

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

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI, 2020

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

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

**Category II** – Total score = 20 - 22

**Category III** – Total score = 16 - 19

X Category IV – Total score = 9 - 15

FUNCTION		mprov Iter Q	/ing uality	H	ydrolo	ogic		Habita	ət	
					Circle	the ap	propr	iate ra	tings	
Site Potential	Н	M	L	Н	М	L	Н	Μ	L	
Landscape Potential	Н	M	L	Н	М	L	Н	M	L	
Value	Н	М	L	Н	M	L	Н	Μ	L	TOTAL
Score Based on										
Ratings	5				4		4			13

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M

6 = H, M, L6 = M, M, M

AL

5 = H,L,L5 = 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	Ι			
Bog	I			
Mature Forest	I			
Old Growth Forest	I			
Coastal Lagoon	Ι	II		
Interdunal	I II	III IV		
None of the above	х			

# Maps and figures required to answer questions correctly for Western Washington

#### **Depressional Wetlands**

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

#### Riverine Wetlands

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

#### Lake Fringe Wetlands

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

#### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

NO – Saltwater Tidal Fringe (Estuarine) 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?
  - <u>X</u> The wetland is on a slope (*slope can be very gradual*).
  - X 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,
  - <u>X</u> 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.

#### **YES – Freshwater Tidal Fringe**

Wetland name or number \_\_\_5\_\_\_

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

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

SLOPE WETLANDS		
Water Quality Functions - Indicators that the site functions to in	mprove water quality	
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop 100 ft of horizontal distance)	o in elevation for every	
Slope is 1% or less	points = 3	
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	3
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS defi	nitions): Yes = 3 No = 0	
Choose the points appropriate for the description that best fits the plants in the wetla have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mow than 6 in.		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	3
Does not meet any of the criteria above for plants	points = 0	3
Total for S 1Add the point	pints in the boxes above	6
Rating of Site Potential If score is: $12 = H \times 6-11 = M = 0-5 = L$	Record the rating on	the first page
S 2.0. Does the landscape have the potential to support the water quality function o	f the site?	-
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that ger	nerate pollutants?	
	Yes = 1 No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in que	estion S 2.1?	
Other sources	Yes = 1 No = 0	0
Total for S 2 Add the po	pints in the boxes above	1

Rating of Landscape Potential If score is: X\_1-2 = M \_\_\_0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 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
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	0
S 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 unit is found. Yes = 2 No = 0	0
Total for S 3Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page

SLOPE WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion		
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	-	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > <sup>1</sup> / <sub>8</sub> in), or dense enough, to remain erect during surface flows.		
Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1		
All other conditions points = 0	0	
<b>Rating of Site Potential</b> If score is: $1 = M \times 0 = L$ Record the rating of <b>Site Potential</b> Record the rating of <b>Site Potential</b> Record the rating of <b>Site Potential</b> If score is: $1 = M \times 0 = L$	n the first page	
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	0	
Rating of Landscape Potential If score is: $1 = M$ $\chi_0 = L$ Record the rating of	n the first page	
S 6.0. Are the hydrologic functions provided by the site valuable to society?		
S 6.1. Distance to the nearest areas downstream that have flooding problems:		
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or		

	, , , , , , , , , , , , , , , , , , , ,	5	
nat	ural resources (e.g., houses or salmon redds)	points = 2	
Sur	ace flooding problems are in a sub-basin farther down-gradient	points = 1	
No	flooding problems anywhere downstream	points = 0	1
S 6.2. Has	the site been identified as important for flood storage or flood conveyance in a regi	ional flood control plan?	
		Yes = 2 No = 0	0
Total for S	6 Add the po	ints 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

NOTES and FIELD OBSERVATIONS:

These questions apply to wetland		
<b>IABITAT FUNCTIONS</b> - Indicators that site functions to provide	de important habitat	
1.0. Does the site have the potential to provide habitat?		
H 1.1. Structure of plant community: <i>Indicators are Cowardin classes and s</i> Cowardin plant classes in the wetland. <i>Up to 10 patches may be com</i> of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add a	nbined for each class to meet the threshold	
Aquatic bed	4 structures or more: points = 4	
X Emergent	3 structures: points = 2	
X 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, sh that each cover 20% within the Forested polygon	nrubs, herbaceous, moss/ground-cover)	1
1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count ( <i>see text for descript</i>	0	
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 wetle	land	
Seasonally flowing stream in, or adjacent to, the wetland		
Lake Fringe wetland	2 points	
Freshwater tidal wetland	2 points	1
1 1.3. Richness of plant species		
Count the number of plant species in the wetland that cover at least	$\pm 10  \mathrm{ft}^2$	
Different patches of the same species can be combined to meet the s		
the species. <b>Do not include Eurasian milfoil, reed canarygrass, pu</b>	-	
If you counted: > 19 species	points = 2	
5 - 19 species	points = 1	
< 5 species	points = 0	1
1.4. Interspersion of habitats	points – o	•
Decide from the diagrams below whether interspersion among Cow the classes and unvegetated areas (can include open water or mudfl have four or more plant classes or three classes and open water, the	lats) is high, moderate, low, or none. If you	
None = 0 points Low = 1 point	Moderate = 2 points	
All three diagrams n this row		
re HIGH = 3points		1

Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> 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)	
X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i>	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	1
tal 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	e site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat <u>3</u> + [(% moderate and low intensity land	uses)/2] <u>23</u> = _26%	
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	2
< 10% of 1 km Polygon	points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
<i>Calculate:</i> % undisturbed habitat <u>26</u> + [(% moderate and low intensity land	uses)/2] <u>15</u> = <u>41</u> %	
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)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	U
Total for H 2 Add the p	points in the boxes above	3
Rating of Landscape Potential If score is:4-6 = HX_1-3 = M< 1 = L	Record the rating on t	he 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 on	ly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the s	tate or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natura</li> </ul>	l Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive</li> </ul>	ve 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

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

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

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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?	Cat. I
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	Cat. I
than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25)	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mouved grassland	
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or	Cat. II
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	Cat. I
Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3	Cat. I
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 <b>SC 3.3</b> No – Go to <b>SC 3.2</b>	
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 <b>SC 3.3</b> No = <b>Is not a bog</b> 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	
<b>NOTE:</b> 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.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands		
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA		
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate		
the wetland based on its functions.		
— <b>Old-growth forests</b> (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. — <b>Mature forests</b> (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	Cat. I	
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)	Cat. I	
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon		
SC 5.1. Does the wetland meet all of the following three conditions?		
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	Cat. II	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mouved grassland		
mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )		
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		
<ul> <li>Grayland-Westport: Lands west of SR 105</li> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	Cat I	
<ul> <li>— Grayiand-Westport: Lands west of SR 103</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>		
- Ocean Shores-Copans. Lands west of SK 113 and SK 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	Cat. II	
for the three aspects of function)? Yes = <b>Category I</b> No – Go to <b>SC 6.2</b>		
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	Cat. III	
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?		
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV		
Yes = <b>Category III</b> No = <b>Category IV</b>	Cat. IV	

## **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL 6 Date of site visit: 10/15/2020

Rated by K Biafora Trained by Ecology? X Yes No Date of training  $\frac{2015}{100}$ 

**HGM Class used for rating** Depression Wetland has multiple HGM classes? Y X N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI</u>, 2020

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>X</u> or special characteristics\_\_\_)

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

**Category II** – Total score = 20 - 22

\_\_\_\_\_Category III – Total score = 16 - 19

X Category IV – Total score = 9 - 15

FUNCTION		mprov nter Q	/ing uality	H	ydrolo	ogic		Habita	ət	
					Circle	the ap	propr	iate ra	tings	
Site Potential	Н	M	L	Н	М	L	Н	Μ	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M	L	
Value	Н	Μ	L	Н	M	L	Н	Μ	L	тот
Score Based on Ratings	5				5		4			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

AL

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

# Maps and figures required to answer questions correctly for Western Washington

#### **Depressional Wetlands**

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

#### **Riverine Wetlands**

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

#### Lake Fringe Wetlands

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

#### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

NO – Saltwater Tidal Fringe (Estuarine) 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.

#### **YES - Freshwater Tidal Fringe**

Wetland name or number \_6\_\_\_

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

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

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water qua	lity
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	-
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 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points	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 0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin cla	sses):
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 5
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 0
Area seasonally ponded is < ¼ total area of wetland points	
Total for D 1Add the points in the boxes about	ove 8

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	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? SourceYes = 1 No = 0	0
Total for D 2Add 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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the basin in which the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	0
Rating of ValueIf score is: $2-4 = H$ $1 = M$ $X_0 = L$ Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS				
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion			
D 4.0. Does the site have the potential to reduce flooding and erosion?				
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4			
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0			
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	0			
Total for D 4 Add the points in the boxes above	4			
<b>Rating of Site Potential</b> If score is: $12-16 = H$ 6-11 = M X0-5 = 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 5Add the points in the boxes above	2			
Rating of Landscape Potential       If score is:3 = H1 or 2 = M0 = L       Record the rating on the	first page			
D 6.0. Are the hydrologic functions provided by the site valuable to society?	_			
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):</li> </ul>				
• Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2				
<ul> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>Plooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> </ul>				
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> points = 0	4			
There are no problems with flooding downstream of the wetland. points = 0	I			
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			

These questions apply to wetlan		
HABITAT FUNCTIONS - Indicators that site functions to prov H 1.0. Does the site have the potential to provide habitat?	ide important habitat	-
H 1.1. Structure of plant community: <i>Indicators are Cowardin classes and</i> Cowardin plant classes in the wetland. <i>Up to 10 patches may be co</i>		
of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add	-	
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:		
The Forested class has 3 out of 5 strata (canopy, sub-canopy,	shrubs, herbaceous, moss/ground-cover)	<u> </u>
that each cover 20% within the Forested polygon		0
I 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within th	e wetland. The water regime has to cover	
more than 10% of the wetland or ¼ ac to count (see text for description of the section of the se	ptions 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 we	etland	
Seasonally flowing stream in, or adjacent to, the wetland		
Lake Fringe wetland	2 points	
Freshwater tidal wetland	2 points	0
1.3. Richness of plant species		
Count the number of plant species in the wetland that cover at lea	st 10 ft <sup>2</sup> .	
Different patches of the same species can be combined to meet the		
the species. Do not include Eurasian milfoil, reed canarygrass, p	-	
If you counted: > 19 species	points = 2	
5 - 19 species	points = 1	1
< 5 species	points = 0	1
I 1.4. Interspersion of habitats		
Decide from the diagrams below whether interspersion among Co	wardin plants classes (described in H 1.1), or	
the classes and unvegetated areas (can include open water or muc		
have four or more plant classes or three classes and open water, th	ne rating is always high.	
None = 0 points Low = 1 point	<b>Moderate</b> = 2 points	
-		
All three diagrams ( All three		
re HIGH = 3points		
		0

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) <b>and/or</b> 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 <i>(structures for egg-laying by amphibians)</i>	
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 1Add the points in the boxes above	2

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** <u>X</u> **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 <u>3</u> + [(% moderate and low intensity land uses)/2	2] <u>23</u> = <u>26</u> %	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (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	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: % undisturbed habitat <u>26</u> + [(% moderate and low intensity land uses)/2	2] <u>15_</u> =41%	
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	1
Undisturbed habitat < 10% of 1 km Polygon	points = 0	I
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	0
Total for H 2 Add the points in	n the boxes above	3
Rating of Landscape Potential If score is:4-6 = H X1-3 = M<1 = L R	ecord the rating on t	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? Choo that applies to the wetland being rated.	se only the highest score	
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on</li> </ul>	the state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of N</li> <li>It has been categorized as an important habitat site in a local or regional compret</li> </ul>		
<ul> <li>It has been categorized as an important habitat site in a local or regional compret Shoreline Master Plan, or in a watershed plan</li> </ul>	iensive plan, in a	
Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	0
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

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

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

#### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	
than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25)	Cat. I
— 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.	Cat. II
— The wetland has at least two of the following features: tidal channels, depressions with open water, or	Cat. II
contiguous freshwater wetlands. Yes = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	1
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	Cat. I
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	1
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 <b>SC 3.3</b> No = <b>Is not a bog</b>	
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	Cat
plant species in Table 4 are present, the wetland is a bog.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands		
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>		
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.		
<ul> <li>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).</li> </ul>		
Yes = Category I No = Not a forested wetland for this section	Cat. I	
SC 5.0. Wetlands in Coastal Lagoons		
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?		
<ul> <li>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</li> </ul>		
— 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)	Cat. I	
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon		
SC 5.1. Does the wetland meet all of the following three conditions?		
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II	
— 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 <sup>2</sup> )		
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		
<b>you answer yes you will still need to rate the wetland based on its habitat functions.</b> In practical terms that means the following geographic areas:		
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>		
— Grayland-Westport: Lands west of SR 105	Cat I	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>		
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 = <b>Category I</b> No – Go to <b>SC 6.2</b>	Cat. II	
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	Cat. III	
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	Cat. IV	
Category of wetland based on Special Characteristics		
If you answered No for all types, enter "Not Applicable" on Summary Form		

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WL-7 Date of site visit: 10/15/2020 Rated by K Biafora Trained by Ecology?X Yes \_\_\_\_No Date of training\_\_\_\_\_

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

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI, 2020

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

#### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

**Category II** – Total score = 20 - 22

**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	Н	M	L	Н	Μ	L	Н	Μ	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M	L	
Value	Н	М	L	Н	M	L	Н	Μ	L	TOTAL
Score Based on										
Ratings	5			5			4			14

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H,H,L 7 = H, M, M

6 = H, M, L6 = M.M.M

4 = M, L, L3 = 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	Ι	II		
Interdunal	III	III IV		
None of the above	x			

# Maps and figures required to answer questions correctly for Western Washington

#### Depressional Wetlands

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

#### **Riverine Wetlands**

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

#### Lake Fringe Wetlands

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

#### Slope Wetlands

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

# HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

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

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

**NO – Saltwater Tidal Fringe (Estuarine)** 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?
  - <u>X</u> The wetland is on a slope (*slope can be very gradual*).
  - X 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,
  - <u>X</u> 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.

#### **YES – Freshwater Tidal Fringe**

Wetland name or number \_\_7\_\_\_\_

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

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

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 100 ft of horizontal distance)	1 ft vertical drop in elevation for every	
Slope is 1% or less	points = 3	
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	2
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organ	ic (use NRCS definitions): Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and portugate for the description that best fits the plants thave trouble seeing the soil surface (>75% cover), and uncut means not than 6 in.	ants in the wetland. Dense means you	
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	6
Does not meet any of the criteria above for plants	points = 0	6
Total for S 1	Add the points in the boxes above	8
<b>Rating of Site Potential</b> If score is: $12 = H \times 6-11 = M = 0-5 = L$ S 2.0. Does the landscape have the potential to support the water qu	Record the rating on ality function of the site?	the first p
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in I	and uses that generate pollutants? Yes = 1 No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are		
		1

**Rating of Landscape Potential** If score is:  $X_1-2 = M _0 = L$ 

Other sources

Total for S 2

Record the rating on the first page

Yes = 1 No = 0

Add the points in the boxes above

0

1

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 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
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	0
S 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 unit is found. Yes = 2 No = 0	0
Total for S 3Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M X = 0 = L

Record the rating on the first page

SLOPE WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion		
S 4.0. Does the site have the potential to reduce flooding and stream erosion?		
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points a for the description that best fits conditions in the wetland. Stems of plants should be thick enough (in in), or dense enough, to remain erect during surface flows.		
	points = 1	
	points = 0	0
<b>Rating of Site Potential</b> If score is: $1 = M \times X = 0 = L$ Record	the rating on	the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate ex	cess	
surface runoff? Yes =	1 No = 0	1
<b>Rating of Landscape Potential</b> If score is: $X_1 = M_0 = L$ Record the rating on the second term se		the first page
S 6.0. Are the hydrologic functions provided by the site valuable to society?		
S 6.1. Distance to the nearest areas downstream that have flooding problems:		
The sub-basin immediately down-gradient of site has flooding problems that result in damage to hu	man or	
	points = 2	
	points = 1	1
	points = 0	•
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood co	ontrol plan?	

Total for S C

Total for S 6

Rating of Value If score is: \_\_\_2-4 = H \_\_X\_1 = M \_\_\_0 = L

Record the rating on the first page

Yes = 2 No = 0

Add the points in the boxes above

0

1

NOTES and FIELD OBSERVATIONS:

JADITAT ELINICTIONS Indicators that site tupstions t	vetlands of all HGM classes.
<b>HABITAT FUNCTIONS</b> - Indicators that site functions t I 1.0. Does the site have the potential to provide habitat?	
+ 1.1. Structure of plant community: Indicators are Cowardin clas	ses and strata within the Forested class. Check the
Cowardin plant classes in the wetland. Up to 10 patches ma	
of ¼ ac or more than 10% of the unit if it is smaller than 2.5	
Aquatic bed	4 structures or more: points = 4
<u>X</u> 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-c that each cover 20% within the Forested polygon	anopy, shrubs, herbaceous, moss/ground-cover) 0
1.2. Hydroperiods	
Check the types of water regimes (hydroperiods) present w more than 10% of the wetland or ¼ ac to count ( <i>see text for</i>	5
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,	
Seasonally flowing stream in, or adjacent to, the wetla	
Lake Fringe wetland	2 points
Freshwater tidal wetland	2 points 1
1 1.3. Richness of plant species	
Count the number of plant species in the wetland that cover	er at least 10 ft <sup>2</sup> .
Different patches of the same species can be combined to n	
the species. Do not include Eurasian milfoil, reed canaryg	
If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0 1
1.4. Interspersion of habitats	
Decide from the diagrams below whether interspersion am	
the classes and unvegetated areas (can include open water	
have four or more plant classes or three classes and open w	vater, the rating is always high.
()	
$\bigcirc  (\bigcirc)$	
None = 0 points Low = 1 point	Moderate = 2 points
None = 0 points Low = 1 point	Moderate = 2 points
None = 0 points Low = 1 point	Moderate = 2 points
	Moderate = 2 points
All three diagrams	
None = 0 points All three diagrams in this row are HIGH = 3points	

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) <b>and/or</b> 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 <i>(structures for egg-laying by amphibians)</i>	
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 1Add 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).		
<i>Calculate:</i> % undisturbed habitat $3 + [(\% \text{ moderate and low intensity land uses})/2] 23$	<u>}</u> = <u>26</u> %	
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	2
< 10% of 1 km Polygon	points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
<i>Calculate:</i> % undisturbed habitat $26 + [(\% \text{ moderate and low intensity land uses})/2] 15$	<u>5</u> = <u>41</u> %	
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)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	U
Total for H 2 Add the points in the	e boxes above	3
Rating of Landscape Potential If score is:4-6 = HX _1-3 = M< 1 = L Recor	d the rating on t	he 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 o	nly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the	state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natu</li> </ul>	ral Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehens</li> </ul>	sive 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	0
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

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and
  Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report –
  see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

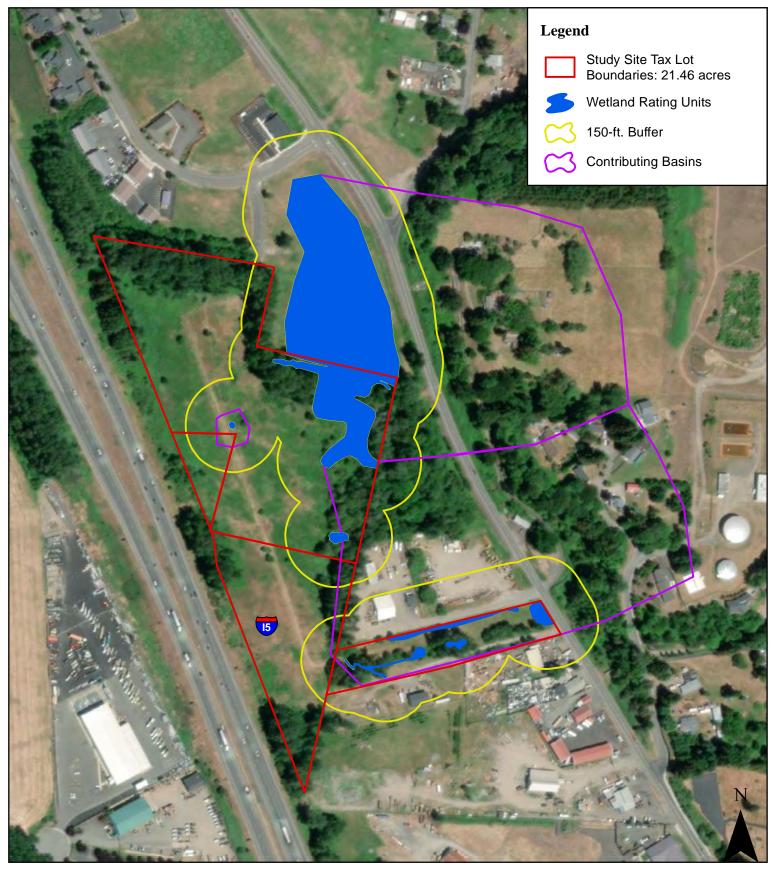
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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

#### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category						
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.							
SC 1.0. Estuarine wetlands							
Does the wetland meet the following criteria for Estuarine wetlands?							
— The dominant water regime is tidal,							
— Vegetated, and							
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	-						
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 = <b>Category I</b> No - Go to <b>SC 1.2</b>							
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.	Cat. II						
— The wetland has at least two of the following features: tidal channels, depressions with open water, or	Cat. II						
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	Cat. I						
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							
<i>below.</i> If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or							
more of the first 32 in of the soil profile? 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 <b>SC 3.3</b> No = <b>Is not a bog</b>							
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 = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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.	Cat. I						
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						
<ul> <li>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA</li> <li>Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></li> <li>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.</li> </ul>						
Yes = Category I No = Not a forested wetland for this section	Cat. I					
SC 5.0. Wetlands in Coastal Lagoons						
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
<ul> <li>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</li> </ul>						
— 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)	Cat. I					
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon						
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less						
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II					
— 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 <sup>2</sup> )						
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						
<b>you answer yes you will still need to rate the wetland based on its habitat functions.</b> In practical terms that means the following geographic areas:						
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>						
— Grayland-Westport: Lands west of SR 105	Cat I					
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>						
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 = <b>Category I</b> No – Go to <b>SC 6.2</b>	Cat. II					
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	Cat. III					
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						
Yes = Category III No = Category IV	Cat. IV					
Category of wetland based on Special Characteristics						
If you answered No for all types, enter "Not Applicable" on Summary Form						



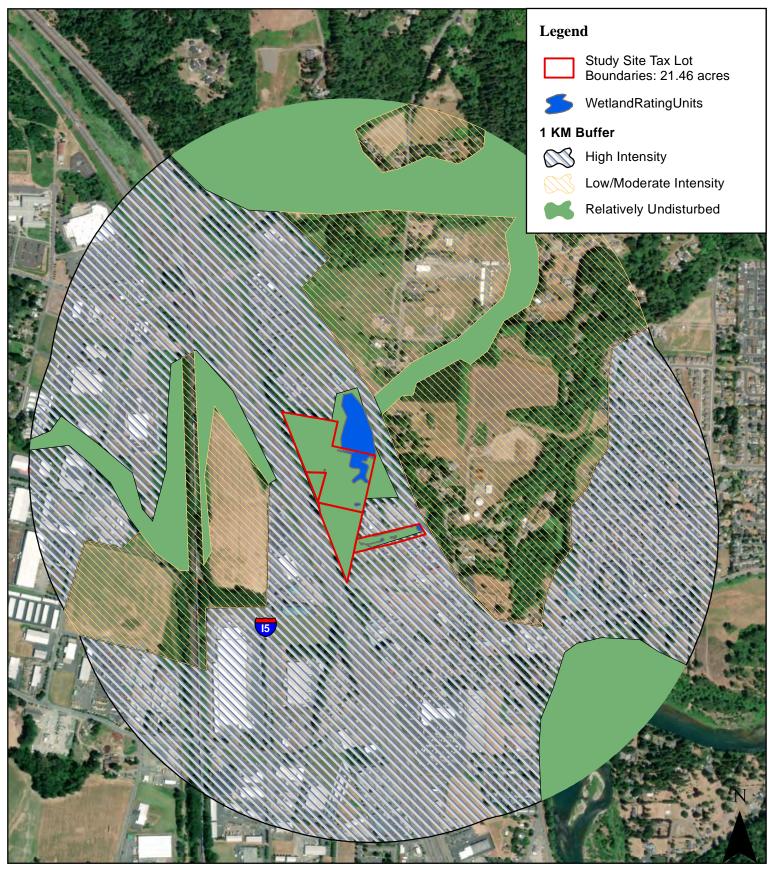
Date: 2/28/2022

Data Source: ESRI, 2021; Cowlitz County GIS Dept., 2019 Appendix D. Wetland Rating Map -150-ft. Buffer and Contributing Basins



Woodland Project Site: S&A # 2818

0 100 200 400 Feet



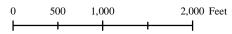
Date: 2/28/2022

Data Source: ESRI, 2021; Cowlitz County GIS Dept., 2019

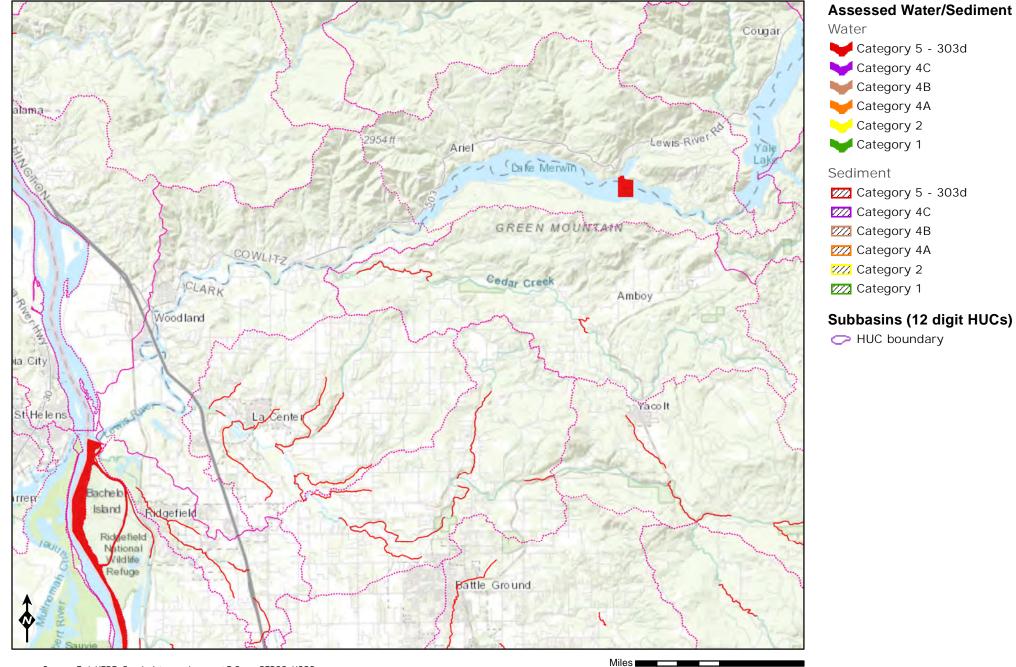
# Appendix D. Wetland Rating Map -1 KM Buffer



### Woodland Project Site: S&A # 2818



## 303(d) Listed Waters



2

4

8

0

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and





#### Washington State Water Quality Assessment 303(d)/305(b) List

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Approved WQ Assessment Candidate List Contact Us WQ Atlas

Search Results - 6 Matched Listings											
6532	17080002000150	Water	Total Dissolved Gas	4B	LEWIS RIVER	27 - Lewis	Lewis River Hydropower Project 4B	6532			
6533	17080002005764	Water	Total Dissolved Gas	4B	SWIFT CREEK #2 POWER CANAL	27 - Lewis	Lewis River Hydropower Project 4B	6533			
6535	46122A2F6	Water	Total Dissolved Gas	4B	LEWIS RIVER	27 - Lewis	Lewis River Hydropower Project 4B	6535			
6542	17080002018508	Water	Total Dissolved Gas	4B	LEWIS RIVER	27 - Lewis	Lewis River Hydropower Project 4B	6542			
7812	170800030900_01_08	Water	Total Dissolved Gas	4A	COLUMBIA RIVER	27 - Lewis	Lower Columbia River TDG TMDL	7812			
8785	170800030900_01_08	Water	Dioxin	4A	COLUMBIA RIVER	27 - Lewis	Columbia River Basin Dioxin TMDL	8785			
	6532 6533 6535 6542 7812	653217080002000150653317080002005764653546122A2F66542170800020185087812170800030900_01_08	653217080002000150Water653317080002005764Water653546122A2F6Water654217080002018508Water7812170800030900_01_08Water	6532         17080002000150         Water         Total Dissolved Gas           6533         17080002005764         Water         Total Dissolved Gas           6535         46122A2F6         Water         Total Dissolved Gas           6542         17080002018508         Water         Total Dissolved Gas           7812         170800030900_01_08         Water         Total Dissolved Gas	ListingIDAU IDMediumParameterCategory653217080002000150WaterTotal Dissolved Gas4B653317080002005764WaterTotal Dissolved Gas4B653546122A2F6WaterTotal Dissolved Gas4B654217080002018508WaterTotal Dissolved Gas4B7812170800030900_01_08WaterTotal Dissolved Gas4A	ListingIDAU IDMediumParameterCategoryWaterbody Name653217080002000150WaterTotal Dissolved Gas4BLEWIS RIVER653317080002005764WaterTotal Dissolved Gas4BSWIFT CREEK #2 POWER CANAL653546122A2F6WaterTotal Dissolved Gas4BLEWIS RIVER654217080002018508WaterTotal Dissolved Gas4BLEWIS RIVER7812170800030900_01_08WaterTotal Dissolved Gas4ACOLUMBIA RIVER	ListingIDAU IDMediumParameterCategoryWaterbody NameWRIA653217080002000150WaterTotal Dissolved Gas4BLEWIS RIVER27 - Lewis653317080002005764WaterTotal Dissolved Gas4BSWIFT CREEK #2 POWER CANAL27 - Lewis653546122A2F6WaterTotal Dissolved Gas4BLEWIS RIVER27 - Lewis654217080002018508WaterTotal Dissolved Gas4BLEWIS RIVER27 - Lewis7812170800030900_01_08WaterTotal Dissolved Gas4ACOLUMBIA RIVER27 - Lewis	ListingIDAU IDMediumParameterCategoryWaterbody NameWRIAWQ Improvement Project65321708000200150WaterTotal Dissolved Gas4BLEWIS RIVER27 - LewisLewis River Hydropower Project 4B653317080002005764WaterTotal Dissolved Gas4BSWIFT CREEK #2 POWER CANAL27 - LewisLewis River Hydropower Project 4B653546122A2F6WaterTotal Dissolved Gas4BLEWIS RIVER27 - LewisLewis River Hydropower Project 4B654217080002018508WaterTotal Dissolved Gas4BLEWIS RIVER27 - LewisLewis River Hydropower Project 4B781217080003090_01_08WaterTotal Dissolved Gas4ACOLUMBIA RIVER27 - LewisLower Columbia River TDG TMDL			

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