

October 2023 Marine Drive Proposed Development Project



Wetland Delineation and Critical Areas Report

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Prepared for ABC Recycling

October 2023 Marine Drive Proposed Development Project

Wetland Delineation and Critical Areas Report

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ABBREVIATIONS

DGPS	Differential Geographic Positioning System
Ecology	Washington State Department of Ecology
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FAC	facultative
FACW	facultative wetland
HGM	Hydrogeomorphic (Classification system)
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland
OHWM	ordinary high water mark
PEM	palustrine emergent
PFO	palustrine forested
PHS	Priority Habitats and Species
Project	ABC Recycling Development Project
PSS	Palustrine scrub-shrub
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WCC	Whatcom County Code
WDFW	Washington Department of Fish and Wildlife

1 Introduction

ABC Recycling is collecting information for proposed development of a property located on Marine Drive in Whatcom County, Washington, Township 38 North, Range 2 East, Section 44. The Study Area consists of an approximately 18-acre portion of a larger parcel. A vicinity map is shown in Figure 1 and an aerial photograph of the Study Area is shown in Figure 2.

This Wetland Delineation and Critical Areas Report for the Marine Drive Proposed Development Project (Project) provides information regarding the presence of wetlands and streams within the property, as defined in the Whatcom County Code (WCC) Critical Areas Chapter 16.16 (Whatcom County 2020). The wetland boundaries provided in this report document the existing conditions within the Study Area and are intended to be used as part of the environmental analysis for proposed development.

In October 2020, wetland scientists from Anchor QEA, LLC, completed field studies and identified three wetlands within the Study Area (Wetlands A, B, and C). Some surface water was present within Wetland A at the time of the delineation in small depressions and a small unmaintained ditch-like feature. Ponded water was also observed to the south of Wetland A in a gravel-lined ditch along the railroad tracks, which is outside of the Study Area. Ponded water in the ditch adjacent to the railroad was not flowing. The gravel ditch did not connect to another water or culvert and it is assumed that water in the ditch infiltrates within the railroad parcel. In addition, natural resource information does not identify any stream systems within the Study Area or within 700 feet of the Study Area. Because no defined channels were observed within the Study Area outside of wetland boundaries, no delineation of channel ordinary high water marks (OHWMs) within the Study Area was performed.

The following sections describe the methods used in the field investigation and Anchor QEA's findings. Section 2 describes the Study Area, and Section 3 describes the findings of the wetland delineation. Wetland field data forms are included in Appendix A, and precipitation data are included in Appendix B. The Washington State Department of Ecology (Ecology) wetland rating forms and associated figures are included in Appendix C. Photographs of wetland features (taken in October 2020) are included in Appendix D.

1.1 Review of Existing Information

As part of the analysis to identify natural resources and critical areas in the Study Area, Anchor QEA wetland scientists reviewed the following sources of information to support field observations:

- Natural Resource Conservation Service (NRCS) Web Soil Survey (USDA 2020)
- U.S. Fish and Wildlife Service (USFWS) Wetlands Mapper for National Wetlands Inventory (NWI) map information (USFWS 2020)
- WCC (Whatcom County 2020)

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- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) maps (WDFW 2020a)
- WDFW SalmonScape website (WDFW 2020b)
- Aerial photographs, Google Earth, October 2020

2 Study Area Description

The Study Area is a rectangular-shaped parcel encompassing approximately 18 acres (Figure 2). The western third and a small portion of the eastern edge of the Study Area are undeveloped and the rest is a mix of staging area, storage, and active maintenance for shipping and receiving. Vegetation within the undeveloped portions of the Study Area includes a variety of native and non-native tree, shrub, grass, and herbaceous species associated with upland and wetland habitats. The western third of the Study Area is forested and dominated by deciduous trees with a few conifers and a dense understory of native shrubs. The eastern end of the parcel is a dense scrub-shrub habitat dominated by primarily invasive species. The developed central core of the parcel has little to no vegetation and is primarily compacted gravel, rock, and recycled crushed concrete.

Land use surrounding the Study Area is dominated by active railroad tracks to the south, a paved two lane road (Marine Drive) with sidewalks to the north, an undeveloped forested/scrub-shrub area to the west, and commercial property with a parking lot and mowed and maintained grass to the east. A property (Lehigh Cement) with industrial land use is located south of the Study Area across the railroad tracks.

2.1 Topography

The topography of the Study Area is relatively level, with higher elevation to the northwest of 101 feet and sloping gradually to the low elevation at 71 feet in the southeast extent of the parcel. There are gentle slopes in the western forested area and the eastern end but relatively no slope in the developed interior. The forested area includes a mosaic of upland hummocks and wetland depressions.

2.2 Soils

The NRCS Web Soil Survey (USDA 2020) identifies one soil series within the Study Area: Urban land– Whatcom–Labounty complex, 0% to 8% slopes. The NRCS identifies portions of the Whatcom– Labounty complex as hydric with non-hydric inclusions. Approximately half of the Study Area also has modified soils that support historical and current industrial uses of storage/staging activities. The soils are modified with crushed concrete, angular rock, and mixed grades of sand and fines.

In Section 3.2, Wetland Delineation Results, sample plot soil profiles are described for the wetlands within the Study Area. Soils data collected at each sample plot are provided in the field data forms in Appendix A. Soils observed in the sample plots were generally consistent in texture, color, and soil profile with the mapped soil series.

2.3 Hydrology

The Project is located in the Nooksack Basin Water Resource Inventory Area 1 (Ecology 2019). Hydrologic characteristics in the Study Area are influenced by regional groundwater, direct precipitation, and surface water runoff. No defined stream channels were identified within the Study Area during the investigation; however, a small ditch-like channel was observed within Wetland A. There is an unnamed SalmonScape-mapped intermittent/ephemeral stream located about 750 feet west of the Study Area. Another SalmonScape-mapped perennial stream (Little Squalicum Creek) is approximately 1,400 feet east of the Study Area (WDFW 2020b). At the time of the delineation, water was present within Wetland A in small depressions and a unmaintained ditch-like channel. .

Precipitation levels in Bellingham were above average in August but below average in September and October, as shown in the precipitation data in Appendix B.

Sample plot hydrology is described for the wetlands in Section 3.2, Wetland Delineation Results. Hydrology data collected at each sampling plot are provided in the field data forms in Appendix A.

2.4 Plant Communities and Habitats

Vegetation within the Study Area includes a variety of native and non-native tree, shrub, grass, and herbaceous species associated with upland and wetland habitat. The western third of the Study Area is dominated by a forested habitat with a dense understory of native shrubs and ferns. The eastern quarter of the Study Area is a mix of mostly native and non-native shrubs and some scattered trees. The USFWS Wetlands Mapper for NWI Map Information identifies two wetlands within the Study Area as palustrine scrub-shrub (PSS) wetland habitats (USFWS 2020). WDFW PHS maps (WDFW 2020a) also identify the same areas as freshwater wetland habitats within the Study Area. Figure 4 shows the NWI information for the Study Area.

Wetland and upland vegetation for the wetland areas is described in Section 3.2, Wetland Delineation Results. Vegetation data collected at each sampling plot are provided in the field data forms in Appendix A.

3 Wetland Delineation

On October 20 and 26, 2020, Anchor QEA wetland scientists performed a wetland delineation and wetland rating analysis of wetland habitat in the Study Area. Three wetlands (Wetlands A, B, and C) were identified and delineated. Wetland A is a narrow depressional and slope wetland system that hugs the eastern extent of the Study Area. Wetland B is a large depressional/slope wetland system located within the forested habitat in the western third of the Study Area and across the north central scrub-shrub extent of the Study Area. Wetland C is a very small isolated depressional wetland in the northwest corner of the forested Study Area.

A complete description of Wetlands A, B, and C is provided in Section 3.2, Wetland Delineation Results. Vegetation, soils, and hydrology data collected at each data plot are provided in the field data forms in Appendix A.

3.1 Methods

This section describes the methodology used to perform the wetland delineation, including the review of existing information (described in Section 1.1) and field investigation procedures. These methods are consistent with current federal and state agency requirements, as well as local (Whatcom County) jurisdiction requirements, for performing wetland delineations and identifying protective wetland buffer widths.

3.1.1 Data Collection

As specified by the WCC (Whatcom County 2020), the wetland delineation was conducted according to the methods defined in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010), and Ecology's Washington State Wetland Identification and Delineation Manual (Ecology 1997). Soil colors were classified by their numerical description, as identified on a Munsell Soil Color Chart (Munsell 1994).

The U.S. Army Corps of Engineers (USACE; Environmental Laboratory 1987) defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." The method for delineating wetlands is based on the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Hydrophytic vegetation is "the macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present." Hydric soils are "formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Wetland hydrology "encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season" (Ecology 1997). Data collection methods for each of these parameters are described in the following subsections.

A total of 14 data plots were sampled and recorded, and each sample plot was identified numerically with odd numbers representing the wetland plot and the even numbers representing the upland plot (e.g., DP-01 [Wet], DP-02 [Up], DP-03 [Wet], DP-04 [Up]). Vegetation, soils, and hydrology information were collected at each of the plots and recorded on field datasheets. Field data forms are provided in Appendix A. Wetland boundaries were determined based on plot data and visual observations of the wetland. Each wetland location, wetland boundary, and data plot location was flagged for potential survey, and recorded using a Trimble Differential Geographic Positioning System (DGPS) unit.

3.1.1.1 Vegetation

Plant species occurring in each plot were recorded on field data forms, with one data form per plot (Appendix A). Percent cover for each plant species was estimated in the plot, and dominant plant species were identified. At each plot, trees within a 30-foot radius, shrubs within a 15-foot radius, and emergents within a 3-foot radius from the center of the plot were identified and recorded. A plant indicator status, designated by USFWS (Reed 1988, 1993), was assigned to each species, and a determination was made as to whether the vegetation in the plot was hydrophytic. To meet the hydrophytic parameter, more than 50% of the dominant species, with 20% or greater cover, must have an indicator of obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC). Table 1 provides the wetland indicator status categories.

Indicator Status	Description					
Obligate Wetland (OBL)	Plant species occur almost always in wetlands (estimated probability greater than 99%) under natural conditions.					
Facultative Wetland (FACW)	Plant species usually occur in wetlands (estimated probability 67% to 99%) but are occasionally found in non-wetlands.					
Facultative (FAC)	Plant species are equally likely to occur in wetlands or non-wetlands (estimated probability 34% to 66%).					
Facultative Upland (FACU)	Plant species usually occur in non-wetlands (estimated probability 67% to 99%) but are occasionally found in wetlands.					
Obligate Upland (UPL)	Plant species occur almost always in non-wetlands (estimated probability greater than 99%) under natural conditions.					

Table 1Wetland Plant Indicator Definitions

3.1.1.2 Soils

Soils were sampled in each plot and evaluated for hydric soil indicators. Soil pits were dug to a depth of 18 inches, unless prevented by impenetrable substrate. Hydric soil indicators include low soil matrix chroma, gleying, and redoximorphic (or "redox") features. Redox features are spots of contrasting color that occur within the soil matrix (the predominant soil color). Gleyed soils are predominantly bluish, greenish, or grayish in color. Soils having a chroma of 2 or less are positive indicators of hydric soils (Environmental Laboratory 1987; USACE 2010).

3.1.1.3 Hydrology

Wetland hydrology was evaluated at each plot to determine whether it "encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season" (Ecology 1997). Field observations of saturation, inundation, and other indicators of wetland hydrology, such as water-stained leaves and drainage patterns in wetlands, were recorded.

3.1.1.4 Other Data Sources

Existing information was referenced to identify potential wetlands or site characteristics indicative of wetlands in the Study Area. The sources of reference information that supported field observations are identified in Section 1.1, Review of Existing Information.

3.1.1 Wetland Classifications

Wetland community types are discussed according to the USFWS classification developed by Cowardin et al. (1979) for use in the NWI. This system, published in 1979 by a team of USFWS scientists led by L.M. Cowardin, bases the classification of wetlands on their physical characteristics, such as the general type of vegetation in the wetland (e.g., trees, shrubs, and grass) and how much, and where, water is present in the wetland. The Cowardin system provides a classification for every known wetland type that occurs throughout the United States and, under this system, a wetland can be classified as having one or more wetland classification types. The following Cowardin community types were found during this investigation:

- **Palustrine forested (PFO):** These wetlands have at least 30% cover of woody vegetation that is more than 20 feet high.
- **Palustrine scrub-shrub (PSS):** These wetlands have at least 30% cover of woody vegetation that is less than 20 feet high.
- **Palustrine emergent (PEM):** These wetlands have erect, rooted, herbaceous vegetation present for most of the growing season in most years.

3.1.2 State Hydrogeomorphic Classification System

Scientists have come to understand that wetlands can perform functions in different ways. The way a wetland functions depends to a large degree on hydrologic and geomorphic conditions. To recognize these differences among wetlands, a way to group or classify them has been developed. This classification system, called the Hydrogeomorphic (HGM) Classification, groups wetlands into categories based on the geomorphic and hydrologic characteristics that control many functions.

The Washington State Wetland Rating System – Western Washington: 2014 Update (Hruby 2014) incorporates the HGM Classification system as part of the questionnaire for characterizing a wetland's functions. The rating system uses only the highest grouping in the classification, i.e., wetland class. Wetland classes are based on geomorphic settings, such as Riverine, Slope, Lake-fringe, or Depressional. A classification key is provided within the rating form to help identify which of the following HGM Classifications apply to the wetland: Riverine, Depressional, Slope, Lake-fringe, Tidal Fringe, or Flats.

3.1.3 Wetland Ratings

Wetland ratings were determined using the most current version of Ecology guidance in the *Washington State Wetland Rating System – Western Washington: 2014 Update* (Hruby 2014) and according to Whatcom County wetland rating criteria, as defined in the WCC (Whatcom County 2020).

The system developed by Ecology is used to differentiate wetlands based on their sensitivity to disturbance, their significance in the watershed, their rarity, ability to be replaced, and the beneficial functions they provide to society. The Ecology rating system requires the user to collect specific information about the wetland in a step-by-step process. Three major functions are analyzed (water quality improvement, hydrologic functions, and habitat). Ratings are based on a point system, where points are given if a wetland meets specific criteria related to the wetland's potential and the opportunity to provide certain benefits.

Per Ecology's rating system, wetlands are categorized according to the following criteria and to points given:

- **Category I wetlands (23 or more points)** represent a unique or rare wetland type, are more sensitive to disturbance, or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime.
- **Category II wetlands (20 to 22 points)** are difficult, though not impossible, to replace, and provide high levels of some functions.

- **Category III wetlands (16 to 19 points)** have moderate levels of functions. They have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.
- **Category IV wetlands (less than 16 points)** have the lowest levels of functions and are often heavily disturbed.

The WCC classifies wetlands into four categories (Categories I, II, III, and IV) based on the updated 2014 Ecology Wetland Rating System for Western Washington (Whatcom County 2020).

3.1.4 Wetland Functional Assessment

The functional values of wetlands were rated according to *Washington State Wetland Rating System – Western Washington: 2014 Update* (Hruby 2014). Using Ecology's system, wetlands were rated based on a point system where points were awarded to three functional value categories (water quality improvement, hydrologic functions, and habitat). Detailed scoring, based on Ecology wetland rating forms and figures, is provided in Appendix C.

3.2 Wetland Delineation Results

This section describes the methodology used to perform the wetland delineation, including the review of existing information (described in Section 1.1) and field investigation procedures.

3.2.1 Wetland A

Wetland A is an approximately 0.58-acre (25,293-square-foot) wetland with mostly PSS vegetation classes and a small area of PFO with depressional and slope HGM classes (Figure 5). Wetland A is a long, narrow system that flanks the northeast and eastern boundary of the Study Area. Due to the narrow wetland shape, habitat features associated with Wetland A are limited; four data plots were established to identify the wetland boundary in key areas that represent the overall vegetation and delineate changes in wetland shape. In addition to the four established data plots, soil and hydrology characteristics were consistently examined throughout the Study Area in both the scrub-shrub and small forested habitats to identify the wetland boundary because vegetation changes between the upland and wetland areas were often very subtle or indistinct. Photographs of Wetland A (taken in October 2020) are presented in Appendix D.

The entire boundary of Wetland A was delineated during the investigation. Wetland A includes two distinct vegetation communities: the northern 95% of the wetland, which is scrub-shrub dominated, and a small patch of forested habitat in the southeast corner. Dominant vegetation in the scrub-shrub habitat includes, Himalayan blackberry (*Rubus armeniacus*: FAC), English hawthorn (*Crataegus monogyna*: FAC), red-twigged dogwood (*Cornus sericea*: FACW), and Chinese privet (*Ligustrum sinense*: FAC). The privet was so dense in areas that no other vegetation was observed due to limited sunlight.

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Some emergent species observed in the wetland include reed canarygrass (*Phalaris arundinacea*: FACW) and field horsetail (*Equisetum arvense*: FAC).

The small forested habitat of Wetland A contained the scrub-shrub species but also paper birch (*Betula papyrifera*: FAC) and Scouler's willow (*Salix scouleriana*: FAC). The small forest had a very dense shrub understory of non-native species listed above. The small forested habitat also included a mosaic of hummocks and wetland depressions associated with an old ditch within the wetland boundary.

Dominant buffer vegetation of Wetland A included a maintained mowed lawn to the east and outside of the Study Area. Buffer to the north and south was limited due to paved roads and gravel railroad right-of-way but mostly was dominated by Himalayan blackberry and common snowberry (*Symphoricarpos albus*: FACU). The buffer to the west was more diverse and contained black cottonwood (*Populus trichocarpa*: FAC), red alder (*Alnus rubra*: FAC), Indian plum (*Oemleria cerasiformis*: FACU), and Himalayan blackberry.

Soils in the Wetland A scrub-shrub and forested habitat typically ranged from very dark gray (10YR 3/1) to gray (10YR 5/1) silty loams with redox features typically redish brown (10YR 5/6) to brown (10YR 5/3) below about 10 inches.

Soils in the adjacent forested habitat upland plots typically ranged from very dark grayish brown (10YR 3/2) to dark grayish brown (10YR 4/2) to dark brown (10YR 3/3) silty clay loams and sandy loam with no redox features within 18 inches of the surface. The soils appeared mixed and were likely placed as fill or excavated at one point.

Water was present within Wetland A at the time of the delineation in small depressions and within a small relic ditch that runs north to south. Ponded water was observed extending outside of the wetland within a gravel-lined ditch within the railroad parcel to the south. The ponded water did not connect to another waterbody and appears to infiltrate within the railroad parcel.

In the Wetland A scrub-shrub habitat, soil saturation was often within 12 inches of the surface and the water table was typically located within a few inches below saturation. In small depressions standing water was only a few inches deep, but up to 12 inches deep within the ditch that runs north to south.

Data for Wetland A were collected at four data plots: DP-01 through DP-04 (Appendix A). The wetland plots contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plots typically had indicators of hydrophytic vegetation and no hydrology, and they lacked indicators of hydric soils.

3.2.2 Wetland B

Wetland B is an approximately 4.02-acre (174,985-square-foot) wetland with a PSS and PFO vegetation class and depressional and slope HGM classes (Figure 5). The entire boundary of Wetland B was delineated within the Study Area. Wetland vegetation is dominated by paper birch, Scouler's willow, Pacific willow (*Salix lasiandra*: FACW), red-osier dogwood, twinberry (*Lonicera involucrate*: FAC), and Himalayan blackberry with some understory of piggyback plant (*Tolmiea menziesii*: FAC) field horsetail, and slough sedge (*Carex obnupta*: OBL). Photographs of Wetland B (taken in October 2020) are presented in Appendix D.

Dominant buffer vegetation of Wetland B includes red alder, Big-leaf maple (*Acer macrophyllum*: FACU) western red cedar (*Thuja plicata*: FAC), English hawthorn, Nootka rose (*Rosa nutkana*: FAC), Indian plum, snowberry, and Himalayan blackberry.

Soils consisted of very dark gray (10YR 3/1) to gray (10YR 5/1) silty loams with dark yellowish brown (10YR 5/6) redox features below about 10 inches. Soils in the upland plot were very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) silt loam with no redox features within 18 inches of the surface. Upland soils often contained crushed rock and gravel from adjacent industrial areas.

In the Wetland B data plots, soil saturation varied due to the size and slope or depressional elements of the wetland. The water table was typically located within 12 inches of the surface. In some areas no water table was found, but other hydrology indicators were present such as matted leaves, oxidized rhizospheres, and closed depressions with no vegetation, indicating frequent standing water within the wetland. In the upland data plot the only saturation was near the surface due to recent precipitation events.

Data were collected at six data plots: DP-05 through DP-12 (Appendix A). The wetland plots contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plots often had indicators of hydrophytic vegetation, but hydrology and hydric soil indicators were lacking.

3.2.3 Wetland C

Wetland C is an approximately 0.11-acre (4,577-square-foot) wetland with a PSS vegetation class and depressional HGM class (Figure 5). The entire boundary of Wetland C was delineated within the Study Area. Wetland vegetation is dominated by Scouler's willow and red-osier dogwood. The dogwood and willow were so thick that no herbaceous or emergent vegetation was observed. Photographs of Wetland C (taken in October 2020) are presented in Appendix D.

Dominant buffer vegetation of Wetland C was very similar to the buffer of Wetland B and included red alder, Big-leaf maple, paper birch, Western red cedar, Nootka rose, Indian plum, snowberry, and bracken fern (*Pteridium* aquilinum: FACU).

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Soils consisted of very dark gray (10YR 3/1) to gray (10YR 5/1) silty loams with dark yellowish brown (10YR 5/6) redox features below about 10 inches. Soils in the upland plot were very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt loam with no redox features within 18 inches of the surface.

In the Wetland C data plots, soil saturation was within 16 inches of the surface but in the middle of the wetland depression, saturation was within 4 inches of the soil surface. Wetland C is a closed depression with no emergent vegetation, indicating frequent standing water within the wetland and low light due to dense shrub-scrub habitat. In the upland data plot the only saturation was near the surface due to recent precipitation events.

Data were collected at two data plots: DP-13 and DP-14 (Appendix A). The wetland plot contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plot had indicators of hydrophytic vegetation, but hydrology and hydric soil indicators were lacking.

3.3 Regulatory Framework

Guidance from USFWS, Ecology, and Whatcom County was used to determine the wetland classifications. Information and excerpts from the specific guidance language are provided in the following subsections.

3.3.1 U.S. Fish and Wildlife Service Classification

The wetlands identified in the Study Area have been classified using the system developed by Cowardin et al. (1979) for use in the NWI. Table 2 lists the USFWS classifications for the wetlands and their connections to surface water.

Table 2

U.S. Fish and Wildlife Service Wetland Classifications

Wetland	USFWS Classification	Surface Water Connection
Wetland A	PSS	None
Wetland B	PFO, PSS	None
Wetland C	PSS	None

3.3.2 Ecology Rating, Classification, and Functions and Values Scores

Per the WCC (Whatcom County 2020), wetland ratings are determined using Ecology's *Washington State Wetlands Rating System – Western Washington: 2014 Update* (Hruby 2014). Under the 2014

Ecology wetland rating systems, Wetland A is a Category IV wetland and Wetland B and C are rated as Category III wetlands. Table 3 lists the 2014 Ecology and local (Whatcom County) wetland rating and classification.

Table 3Summary of Wetland Classes and Ratings Using Ecology 2014 Wetlands Rating Systems

Wetland	Area (acres)	HGM Classification	2014 ¹ State Rating (Ecology)	Local Rating (Whatcom County) ²
Wetland A	0.58	Slope and Depressional	IV	IV
Wetland B	4.02	Slope and Depressional	Ш	III
Wetland C	tland C 0.11 Depressional		III	III

Notes:

1. Hruby, T., 2014. *Washington State Wetlands Rating System for Western Washington: 2014 Update*. Publication No. 14-06-029. Olympia, WA: Washington State Department of Ecology.

2. Whatcom County, 2020. Whatcom County Code. Accessed Nov. 2, 2020. Available at: http://www.codepublishing.com/wa/snohomishcounty/.

For the 2014 Ecology wetland rating system (Hruby 2014), a low, moderate, or high rating is based on three functions: 1) Water Quality Improvement; 2) Hydrologic; and 3) Habitat. Within each of these three functions are three subfunction categories: 1) Site Potential; 2) Landscape Potential; and 3) Value. Each of these subfunction categories is rated as low, moderate, or high. Wetland functional values and scores for Wetlands A, B, and C under the 2014 Ecology rating system are shown in Table 4. The 2014 Ecology wetland rating forms and figures are provided in Appendix C.

Table 4

Summary of Functions and Values 2014 Wetland Rating Scores

Water Quality Wetland and Function		Hydrologic Habitat		Total Functions Score ¹	
Wetland A					
Site Potential	Moderate	Low	Low	-	
Landscape Potential	High	High	Low	-	
Value	Low	Low	Moderate	-	
Score Based on Rating ¹	6	5 4		15	
Wetland B					
Site Potential	Moderate	Moderate	Moderate	-	
Landscape Potential	High	High	Low	-	
Value	Low	Low	Moderate	-	
Score Based on Rating ¹	6	6	5	17	
Wetland C					

Wetland and Function	Water Quality Improvement	Hydrologic	Habitat	Total Functions Score ¹
Site Potential	Moderate	High	Low	-
Landscape Potential	High	Moderate	Low	-
Value	Low	Low	Moderate	-
Score Based on Rating ¹	6	6	4	16

Note:

1. Potential total score per function is 9, for a potential total score of 27.

3.4 Wetland Functional Assessment

The following subsections provide a description of the functions of Wetlands A, B, and C based on the 2014 Ecology wetland rating system.

3.4.1 Water Quality Improvement Functions

All three wetlands have the opportunity to improve water quality based on their location within a mixed heavy to light industrial environment and the presence of a railroad right-of-way to the south and industrial/commercial land use areas outside the Study Area.

Wetlands A, B, and C have a moderate function score for the "site potential" to improve water quality functions due to the lack of surface water outflows from the wetlands and the depressional nature of the wetlands, which influences their ability to trap sediments during storm events. None of the wetlands have soil characteristics that include clay or organic material, which contributes to the moderate or low function scores.

Wetlands A, B, and C all have a high function score for the "landscape potential" to support water quality functions of the site because of the potential of the surrounding land uses to generate pollutants and discharge stormwater to the wetlands. Past and active homeless encampments within and adjacent to all three wetlands contribute to the high function score.

Wetlands A, B, and C have a low function score to provide water quality improvement "value" to society because they are not located in the vicinity of aquatic resources that are on the Ecology 303(d) list or connected to a waterbody that has a Total Maximum Daily Load for the basin or subbasin. All three wetlands have a low function score because no surface water flows from the wetlands or discharges to other waterbodies outside of the Study Area.

3.4.2 Hydrologic Functions

Wetland A provides a low "site potential" for hydrologic function due to there being an unconstricted outlet but no evidence of ponding within the wetland more than 0.5 foot. Wetlands B

and C both have a high "site potential" due to not having a more constricted or no surface water outflow.

Wetlands A and B provide a high function score for "landscape potential" to improve hydrologic function due to the close proximity to development and active stormwater inputs. Wetland C has a lower "landscape potential" of moderate due to its smaller size and intact forest surrounding more than 75% of its boundary within the Study Area.

All three wetlands have low function scores to provide "value" to society because they are located in a landscape where any surface water infiltrates and does not connect to other waterbodies. Similarly, none of the wetlands are part of a regional flood control plan to maximize storage or reduce flooding downgradient from the Study Area.

3.4.3 Habitat Functions

Wetlands A and C have a low function habitat "site potential" score because they lack diversity in Cowardin classes, hydroperiods, and complexity of plant species. Wetland B has a moderate function habitat "site potential" score due to the size of the wetland, diversity of Cowardin plant classes, its complexity, and the occurrence of multiple hydroperiods.

Wetlands A, B, and C have low scores for the "landscape potential" due to the intensity of industrial and commercial development that surrounds the Study Area. There are limited patches of undisturbed habitats within a 1 kilometer of the Study Area. The characteristics of the disturbed habitats surrounding the wetlands and the land-use intensity of the surrounding area limit habitat function.

Wetlands A, B, and C have moderate habitat scores as it relates to habitat "value." All three wetlands provide habitat functions to society because of the proximity of WDFW priority habitats in the vicinity of the wetlands.

3.5 Whatcom County Wetland Buffer Guidance

Required wetland buffers have been identified according to the current WCC Chapter 16.16.630 (Whatcom County 2020). The WCC identifies minimum protective buffer widths based on the wetland category, land use intensity, and the Ecology habitat rating score, per the 2014 Ecology rating system. Wetlands A is a Category IV with an Ecology habitat rating score of 4. Wetlands B and C are both Category III wetlands with Ecology habitat rating scores of 5 and 4 points respectively.

The limits, extents, and functions of wetland buffers are defined in the Critical Areas Chapter of the WCC. Per WCC 16.16.630 A, "Wetland buffers shall be measured horizontally from a perpendicular line established by the wetland boundary based on the base buffer width identified in Table 1. Buffers shall not include areas that are functionally and effectively disconnected from the wetland by an existing, legally established road or other substantial developed surface." The central portion of the Study Area is maintained and has been cleared and regraded or filled as part of historical activities, with storage of equipment scattered throughout, as is shown as "Extent of Historically Developed Area" in Figure 5. This area consists of either compacted gravel, sand, and rock fill or regraded soils and stored equipment from past historical land use activities. Anchor QEA biologists delineated and mapped the maintained fill or regraded area using visual observation, shovel probes, documenting existing site equipment and debris, and collecting locations using a DGPS unit. The historically developed area was mapped west of Wetland A and south and east of Wetland B. The historically developed area was found to be functionally disconnected from the wetland and existing wetland buffers due to the maintained and developed surfaces. Buffers were applied to Wetlands A and B and extended to the edge of the delineated fill following the WCC 16.16.630 A.

Wetlands A and B are both adjacent to Study Area activities that are considered high land use intensity. Wetland A is a Category IV wetland with a habitat rating score of 4, which requires a 50-foot buffer be applied. Wetland B is a Category III wetland with a habitat rating score of 5, which requires a 150-foot buffer be applied due to the high land use intensity. Wetland C is unusual because the adjacent land use intensity is low due to the undisturbed forested habitat that surrounds more than 75% of the wetland. There are currently no proposed changes to the forested area adjacent to Wetland C so a buffer of 50 feet was applied to this Category III wetland. Wetland boundaries and buffers are shown in Figure 5. Table 5 summarizes WCC ratings and buffer widths based on the 2014 Ecology rating system and land use intensity.

Wetland	etland 2014 State Local Rating (Whatcom)		Ecology Habitat Rating Score	Low-Intensity Land Use Buffer Width (feet) ¹	High-Intensity Land Use Buffer Width (feet) ²
Wetland A	IV	IV	4	-	50
Wetland B		111	5	-	150
Wetland C		=	4	50	-

Table 5 Wetland Rating and Standard Buffer Widths

Note:

1. Whatcom County, 2020. Whatcom County Code. Accessed Nov. 2, 2020. Available at: https://www.codepublishing.com/WA/WhatcomCounty/

3.6 Wetland Delineation and Typing Limitations

Wetland identification is an inexact science, and differences of professional opinion occasionally occurs between trained individuals. Final determinations for wetland boundaries and typing concurrence or adjustments to these are the responsibility of the regulating resource agency. Wetlands are, by definition, transitional areas; their boundaries can be altered by changes in

hydrology or land use. In addition, the definition of jurisdictional wetlands may change. If a physical change occurs in the basin, or if 3 years pass before the proposed project is undertaken, another wetland survey should be conducted. The results and conclusions expressed herein represent Anchor QEA's professional judgment based on the information available. No other warranty, expressed or implied, is made.

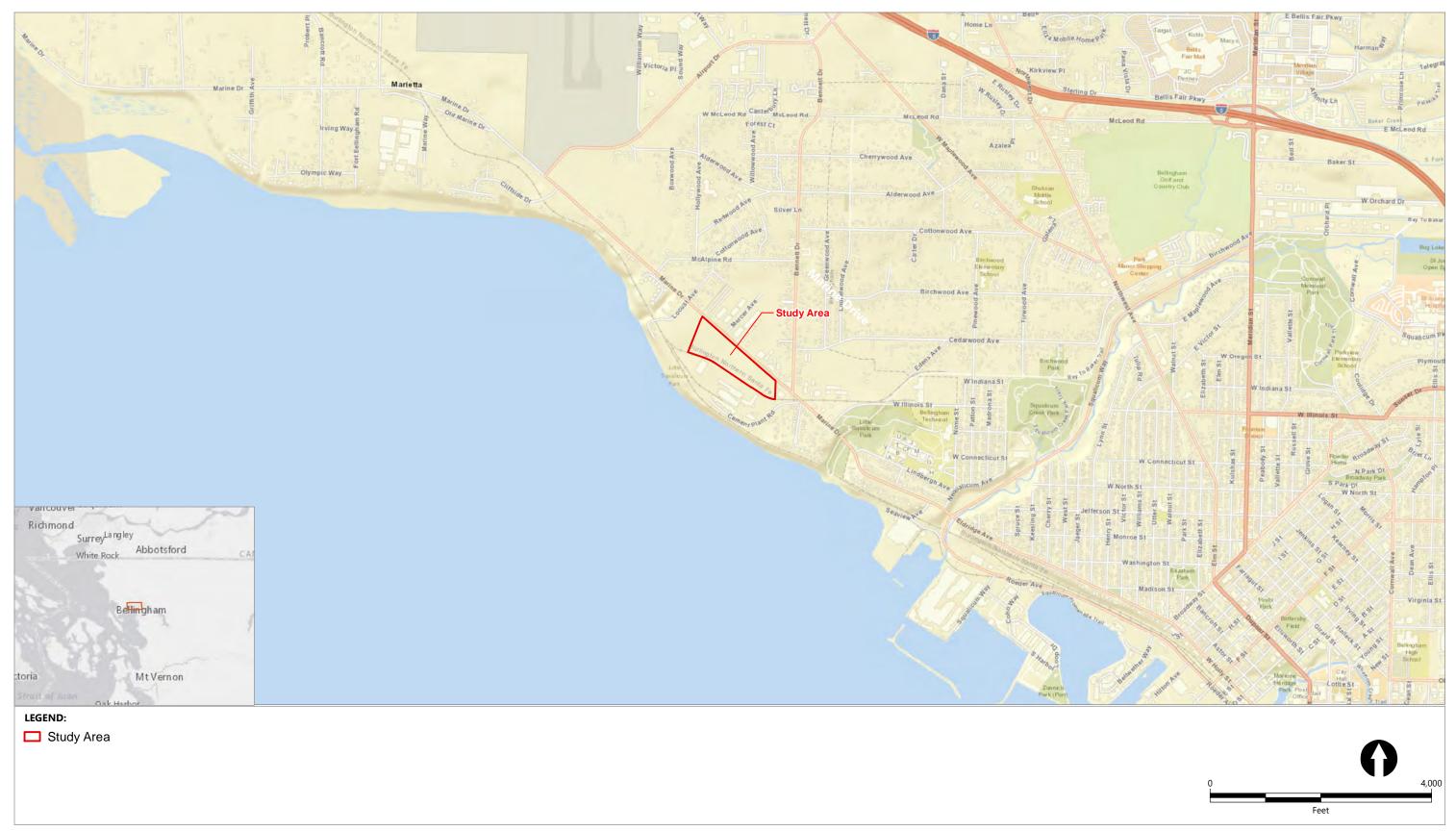
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Whatcom County, 2020. Whatcom County Code. Accessed November 2, 2020. Available at: https://www.codepublishing.com/WA/WhatcomCounty/.

Figures



Publish Date: 2020/11/10, 12:35 PM | User: jfox Filepath: \\orcas\GIS\Jobs\ABC_Recycling_2005\MarineDrive\Maps\Phase_II_EnvSamp\WetlandDelineationReport\AQ_ABC_Recycling_Fig1_VicinityMap.mxd



Figure 1 Vicinity Map Wetland Delineation and Critical Areas Report Marine Drive Proposed Development Project



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Figure 2 Aerial Overview Map



Publish Date: 2020/11/10, 12:38 PM | User: jfox Filepath: \\orcas\GIS\Jobs\ABC_Recycling_2005\MarineDrive\Maps\Phase_II_EnvSamp\WetlandDelineationReport\AQ_ABC_Recycling_Fig3_USDASoilsMap.mxd



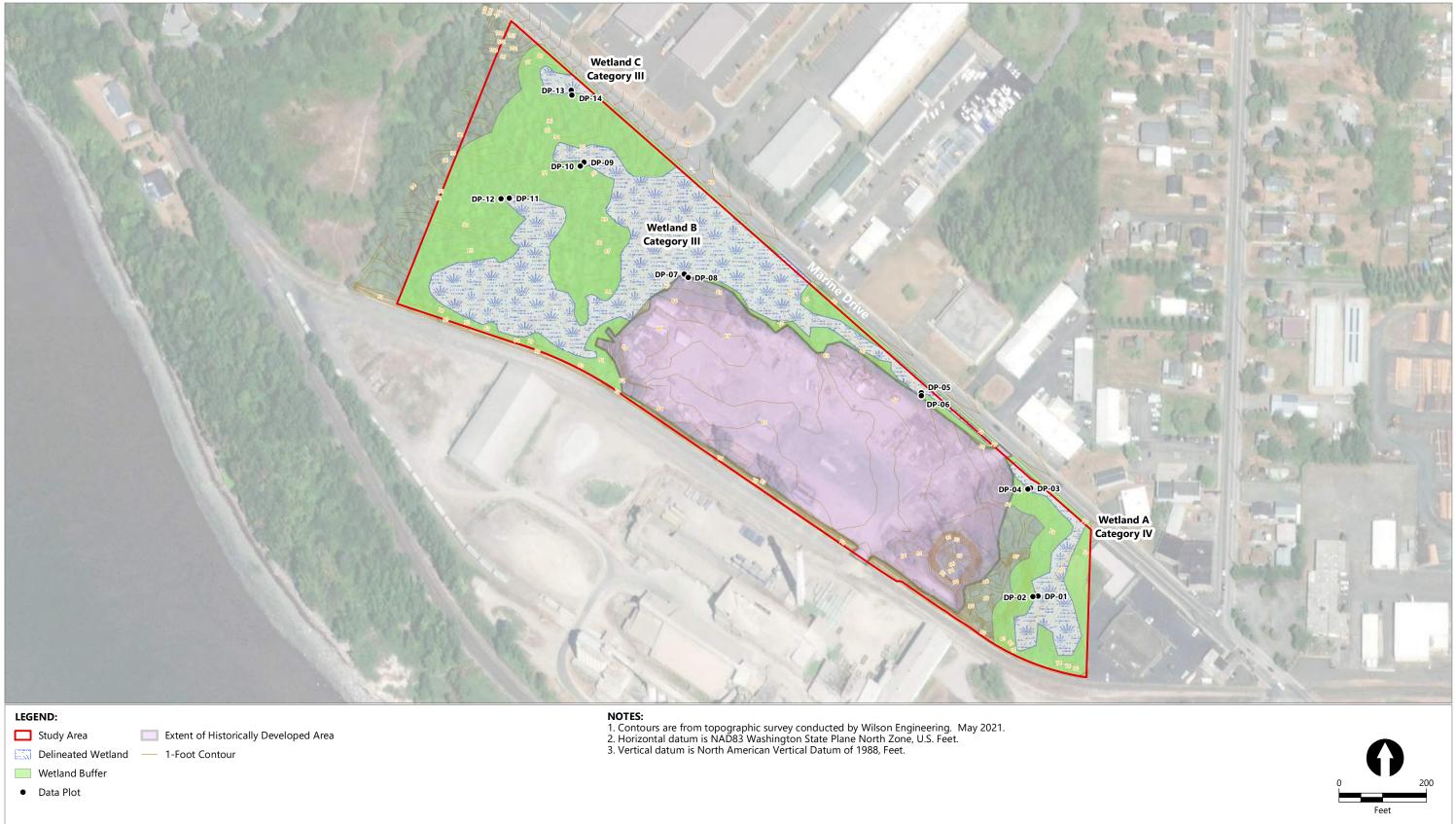
Figure 3 USDA NRCS Soils Map



Publish Date: 2020/11/10, 12:39 PM | User: jfox Filepath: \\orcas\GIS\Jobs\ABC_Recycling_2005\MarineDrive\Maps\Phase_II_EnvSamp\WetlandDelineationReport\AQ_ABC_Recycling_Fig4_NWIMap.mxd



Figure 4 **USFWS National Wetlands Inventory Map**



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Figure 5 Wetland and Wetland Buffer Delineation Map

Appendix A Field Data Forms

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

Project/Site:	Marine Drive Propo	osed Development F	Project	City/County:	Whatcom C	County			Sar	mpling Date:	Oct,	26 2020
Applicant/Owner: ABC Recycling							State: WA			Sampling Point:		P-01
Investigator(s):	Joseph R. Pursley	Section, Township, Range: <u>S44, T38</u>			38, R2E							
Landform (hillslop		Hillslope/Depress		Local relief (concave, convex,			ivex, none): Concave				Slope:	0-8%
Subregion (LRR):	Northwest Forests	· · · · · ·	-				Long:				Datum:	
Soil Map Unit Nan		 Whatcom - Labou 					NWI Cla	ssification				
-	ologic conditions on				Yes	Х				explain in Re		
Are Vegetation	, Soil									esent? Yes		No
Are Vegetation	, Soil	_, or Hydrology		naturally pro	oblematic?	(If nee	ded, exp	olain any a	answers	in Remarks.)		
SUMMARY OF	FINDINGS - A	ttach site map s	howing s	ampling p	point locat	tions, ti	ransec	ts, impo	ortant f	eatures, et	C.	
Hydrophytic Veget	tation Present?	Yes X No										
Hydric Soil Preser	nt?	Yes X No			ampled Area a Wetland?	a	Yes	Х	No		_	
Wetland Hydrolog	y Present?	Yes X No		within t	a wedana.							
Remarks: For lab	eled Data Plot location	ons and site map ple	ease see Fi	gure 5 in the	"Wetland De	elineatior	Report,	Anchor C	EA, Nov	/. 2020".		
VEGETATION												
						Demine			4.			
			Absolute	Dominant	Indicator	Domina	nce res	t worksh	eet:			
Tree Stratum	(Plot size	ə:)	% Cover	Species?	Status?			nant Spec				
1						That Are	e OBL, F	ACW, or	FAC:	3	((A)
2								Dominan				
3						Species	Across	All Strata:	_	3	((B)
4								nant Spec				
5						That Are	9 OBL, F	ACW, or	FAC:	100%	((A/B)
	<u>0</u> 20%= <u>0</u>		0		-							
Sapling/Shrub Stra)		.,				ex Works	heet:			
1. <u>Cornus sericea</u>			<u> </u>	Yes	FACW FAC		al % Co			Multiply b	<u>y:</u>	
 Crataegus moi Ligustrum sine 	<i></i>		30	<u>No</u> Yes	FAC	OBL spe FACW s		0 60	x1 = x2 =	0 120		
4.	1136			163	140	FAC spe	•	45		135		
5.						FACU s				0		
-	50 20%= 20	Total Cover:	100			UPL spe		0		0		
Herb Stratum	(Plot size					Column		105	(A)	255	((B)
1. Equisetum arv		,	5	Yes	FAC			dex = B/A	—`´ —	2.4	`	. ,
2.												
3.						Hydrop	hytic Ve	getation	Indicato	rs:		
4.							1 - Rap	oid Test fo	r Hydrop	hytic Vegetat	ion	
5						Х	2 - Don	ninance T	est is >5	0%		
6						Х	3 - Prev	valence Ir	idex is ≤	\$3.0 ¹		
7							4 - Mor	phologica	I Adapta	tion ¹ (Provide	suppor	ting
8										a separate s	heet)	
9								tland Non-				
	2.5 20%= 1		5			<u> </u>	Probler	matic Hyd	rophytic	Vegetation ¹ (I	Explain)	
Woody Vine Strate	um (Plot size)								nd hydrology	must	
1						be prese	ent, unle	ss disturb	ed or pro	oblematic.		
2						Hydrop	•					
0/ Do	re Creved in Llark C	Total Cover:		tie Cruch		Vegetat			Vaa			
	re Ground in Herb S			-		Present			Yes_	X No		
Remarks: The dog dogwood.	wood and privet scr	ub-shrub layer was	so dense th	ere was almo	ost no herb l	ayer. The	e privet h	las becom	ie vine-li	ke and is clim	bing the	;
acgircea												

Sampling	Point:	DP-01	

Profile Des	cription: (Describe	to the de	oth needed to do	cument t	he indicate	or or c	onfirm the abs	sence of indicators.)
Depth	Matrix		Re	dox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	e Remarks
0-10	10YR 3/1	100	<u>.</u>				SiL	
10-12	10YR 3/1	95	10YR 4/6	5	С	М	SiL	Bright redox concentrations, saturation
12-18	10YR 5/1	85	10YR 4/6	5	С	М	SiL	Redox in the depleted layer.
	10YR 6/3	10						
¹ Type: C=C	Concentration, D=Dep	pletion, RN	I=Reduced Matrix,	CS=Cov	ered or Co	ated S	and Grains. ² L	Location: PL=Pore Lining, M=Matrix.
								2
-	Indicators: (Applie	cable to al					Indicators	for Problematic Hydric Soils ³ :
	ol (A1)			Redox (S				2 cm Muck (A10) (LRR B)
	Epipedon (A2)		```	d Matrix (,	(Red Parent Material (TF2)
	Histic (A3) gen Sulfide (A4)				latrix (F1)	(excep	ot MLRA 1)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ted Below Dark Surfa	ace (A11)		ed Matrix				
	Dark Surface (A12)			Dark Surl			³ Indic	ators of hydrophytic vegetation and
	Muck Mineral (S1)				urface (F7))		tland hydrology must be present,
	gleyed Matrix (S4)			Depressi		·		inless disturbed or problematic.
	3 -) (-)			-	(-)			
Restrictive	Layer (if present):							
Туре:								
Depth (inch	es):					H	Hydric Soil Pre	esent? Yes X No
+					101			
Remarks: Trans	ition from dark soil al	bove 12 ind	ches to depleted la	ayer belov	v 12 inches	s was a	abrupt.	
HYDROLOG	v							
	· /drology Indicators							
-	icators (minimum on		check all that app	olv)				Secondary Indicators (2 or more required)
	e Water (A1)		X Water-	••	eaves (B9)	(exce	pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
X High V	Vater Table (A2)			4A and		,	•	4A and 4B)
	ation (A3)			ust (B11)	,			Drainage Patterns (B10)
Water	Marks (B1)		Aquatic	Inverteb	rates (B13))		Dry-Season Water Table (C2)
Sedim	ent Deposits (B2)		Hydrog	en Sulfide	e Odor (C1)		Saturation Visible on Aerial Imagery (C9)
Drift D	eposits (B3)		Oxidize	d Rhizos	pheres alor	ng Livir	ng Roots (C3)	Geomorphic Position (D2)
Algal I	Mat or Crust (B4)		Presen	ce of Rec	luced Iron ((C4)		Shallow Aquitard (D3)
Iron D	eposits (B5)		Recent	Iron Red	uction in Pl	lowed \$	Soils (C6)	FAC-Neutral Test (D5)
Surfac	e Soil Cracks (B6)		Stunted	d or Stres	sed Plants	(D1) (I	LRR A)	Raised Ant Mounds (D6) (LRR A)
Inunda	ation Visible on Aeria	I Imagery ((B7) Other (Explain ir	n Remarks)			Frost-Heave Hummocks (D7)
X Sparse	ely Vegetated Conca	ve Surface	e (B8)					
							I	
Field Obse	rvations:							
	iter Present? Ye	S	No X Depth	n (inches)):			
Water table		es X		n (inches)				
Saturation F		es X	No Depth	n (inches)	: 10		Wetland Hy	ydrology Present? Yes X No
	apillary fringe)	Tributor o		uell eerie	l shataa . s			if eveileble.
	ded Data (Unnamed						. ,	
inundation.	nce (water stained le	aves) of po	onded water in dep	pression v	vas observ	ea. In	e aogwooa root	ts seem elevated due to saturation or seasonal

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

Project/Site:	Marine Drive Propos	roject	City/County:	: Whatcom C	County			Sam	pling Date:	Oct, 26 2020	
Applicant/Owner:	er: ABC Recycling State: WA						VA	Sam	pling Point:	DP-02	
Investigator(s):	Joseph R. Pursley (A	nchor QEA, LLC)		Section	n, Township,	, Range:	S44, T38	3, R2E			
Landform (hillslope	e, terrace, etc.):	Hillslope		Local re	elief (concave	e, convex	, none): <u>C</u>	Convex			Slope: 0-8%
Subregion (LRR):	Northwest Forests an	nd Coast (LRR A)	Lat:				Long:			Da	atum:
Soil Map Unit Nam	ne: Urban land –	Whatcom - Labour	nty complex	x			NWI Clas	sification:	PSSC		
Are climatic / hydro	ologic conditions on th	e site typical for th	is time of y	ear?	Yes	Х	No		(If no, e	explain in Rer	narks)
Are Vegetation	, Soil	, or Hydrology		significantly	/ disturbed?	Are "N	Iormal Cir	cumstanc	ces" Pres	ent? Yes	XNo
Are Vegetation		, or Hydrology		naturally pro			ded, expl	ain any a	nswers ir	n Remarks.)	
SUMMARY OF	FINDINGS – Att	ach site map s	howing s	ampling	point loca	tions, t	ransect	s, impo	rtant fe	atures, etc	
Hudrophytic Vogot	ation Dragant?										
Hydrophytic Veget		Yes X No Yes No		Is the Sa	ampled Area	а	Voc		No	х	
Hydric Soil Presen			<u>х</u> х	within a	a Wetland?		165 _		_ NO	^	
Wetland Hydrology	y Present?	Yes No									
VEGETATION											
						Domina	nce Test	workshe	et.		
			Absolute	Dominant	Indicator						
Tree Stratum	(Plot size:)	% Cover	Species?	Status?		of Domin				
1. Populus balsar	nifera		15	Yes	FAC	That Are	e OBL, FA	CVV, OF F	AC:	3	(A)
2. <u>Alnus rubra</u>			10	Yes	FAC		imber of E				
3						Species	Across A	Il Strata:		4	(B)
4		<u> </u>					of Domin	•			
5		·				That Are	e OBL, FA	CW, or F	AC:	75%	(A/B)
	12.5 20%= 5		25								
Sapling/Shrub Stra)			540		nce Index		neet:		
1. <u>Rubus armenia</u>	acus	<u> </u>	15	<u>No</u>	FAC		al % Cov		—	Multiply by	<u> </u>
2. Rubus ursinus		·	5	No	FACU	OBL spe		0	x1 =	0	
 Ligustrum siner Symphoricarpo 		·	15 15	No No	FAC FACU	FAC spe	pecies	0 105	_x2 = x3 =	0 315	
 Symphoricarpo Crataegus mor 			50	<u>No</u> Yes	FACO	FAC Spe	_	40	x3 = x4 =	160	
	50 20%= 20	Total Cover:	<u> </u>	165	170	UPL spe		40	 	0	
Herb Stratum	(Plot size:		100			Column		145	(A)	475	(B)
1. Pteridium aquil		/	20	Yes	FACU		ence Inde		_ · ·	3.3	(D)
2.	mann		20	105		11070		0X = 0//(-		0.0	
3.		· ·				Hydrop	hytic Veg	etation I	ndicator	s:	
4.		· ·								ytic Vegetatio	งท
5.		·				Х		nance Te			
6.							3 - Preva	alence Ind	dex is ≤3	3.0 ¹	
7							4 - Morp	hological	Adaptati	on ¹ (Provide	supporting
0										a separate sh	
9.							5 - Wetla	and Non-	Vascular	Plants ¹	
50%=	10 20%= 4	Total Cover:	20				Problem	atic Hydro	ophytic V	egetation ¹ (E	xplain)
Woody Vine Stratu	IM (Plot size:)					ors of hydi ent, unless			d hydrology m elematic.	iust
2						Hydrop	hytic				
		Total Cover:	0			Vegetat	•				
% Bar	re Ground in Herb Stra	atum <u>80</u> % C	over of Bio	tic Crust		Present	?		Yes	X No	
Remarks: The upla	and data plot was loca	ted on a steep hills	side of folde	ed soils and	fill that did n	ot have n	ormal soil	l structure	e and dra	inage of a ste	wep slope.

		• •							nce of indicators.)	
De	pth	Matrix		Re	dox Feat	ures				
(ind	ches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
	0-6	10YR 3/2	100					SiL	wet at surface with gravel	
	6-18	10YR 4/2	50					SiL	Folded soil with sand and grav	vel
		10YR 3/2	50			·		SiL	gravel in soil	
						·				
¹ Ty	/pe: C=Coi	ncentration, D=Dep	oletion, RM	I=Reduced Matrix,	CS=Cov	vered or Co	ated Sa	nd Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.	
Hy		ndicators: (Applic	cable to al					Indicators for	or Problematic Hydric Soils ³ :	
	Histosol	()			Redox (S				2 cm Muck (A10) (LRR B)	
		pipedon (A2)			d Matrix (,			Red Parent Material (TF2)	
	Black Hi	()				lineral (F1)	(except	MLRA 1)	Very Shallow Dark Surface (TF12	2)
		en Sulfide (A4)	(•	Atrix (F2)			Other (Explain in Remarks)	
		d Below Dark Surfa ark Surface (A12)	ice (ATT)		d Matrix	(F3) face (F6)		³ Indicat	ors of hydrophytic vegetation and	
	-	· · · ·				Surface (FO)	`			
	_	Auck Mineral (S1))		ind hydrology must be present,	
	_ Sandy g	leyed Matrix (S4)		Redox I	Depressi	ons (F8)		uni	ess disturbed or problematic.	
Re	strictive	ayer (if present):								
Тур		ayer (ii present).								
	poth (inches	3):					н	dric Soil Pres	ent? Yes N	lo X
HYDR	OLOGY									
		rology Indicators:	 :							
We	etland Hyd	rology Indicators: ators (minimum one		check all that app	ly)				Secondary Indicators (2 or more re	
We	etland Hyd mary Indica Surface	ators (minimum one Water (A1)		Water-S	Stained L	eaves (B9)	excep	: MLRA	Water-Stained Leaves (B9) (MLF	
We	etland Hyd imary Indica Surface High Wa	ators (minimum one Water (A1) ater Table (A2)		Water-S 1, 2,	Stained L 4A and	4B)	excep	MLRA	Water-Stained Leaves (B9) (MLF 4A and 4B)	
We	etland Hyd imary Indica _ Surface _ High Wa _ Saturatio	ators (minimum one Water (A1) ater Table (A2) on (A3)		Water-S 1, 2, Salt Cru	Stained L 4A and ust (B11)	4B)		: MLRA	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10)	
We	etland Hyd imary Indica Surface High Wa Saturatio Water M	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1)		Water-S 1, 2, Salt Cru Aquatic	Stained L 4A and ust (B11) Inverteb	4B) rates (B13))	: MLRA	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)	RA 1, 2,
We	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		Water-S	Stained L 4A and ust (B11) Inverteb	4B) rates (B13) e Odor (C1)	-	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag	RA 1, 2,
We	etland Hyd imary Indica Surface High Wa Saturatic Water M Sedimer Drift Dep	ators (minimum one Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3)		Water-S , 2, Salt Cru Aquatic Hydroge Oxidize	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos	4B) rates (B13) e Odor (C1 pheres alor)) ng Living	• MLRA	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2)	RA 1, 2,
We Pri	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	ators (minimum one Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos ce of Rec	4B) rates (B13) e Odor (C1 pheres alor duced Iron)) ng Living (C4)	 Roots (C3)	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3)	RA 1, 2,
We	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	ators (minimum one Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P)) (C4) lowed So		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	ery (C9)
We Pri	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	<u>e required;</u>	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presene Recent Stunted	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P sed Plants) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A	ery (C9)
We Pri	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria	<u>e required;</u> I Imagery (Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (f	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	ery (C9)
We Pri	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	<u>e required;</u> I Imagery (Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (f	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P sed Plants) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A	ery (C9)
We Pri 	etland Hyd imary Indica Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	<u>e required;</u> I Imagery (Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (f	Stained L 4A and ust (B11) Inverteb en Sulfide d Rhizos ce of Rec Iron Red or Stres	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P sed Plants) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A	ery (C9)
We Pri 	etland Hyd imary Indica Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	e required; I Imagery (ve Surface	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend Recent Stunted B7) (B8)	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks)) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A	ery (C9)
Fie Su	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	e required; I Imagery (ve Surface s	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Oxidizee Recent Stunted (B7) Other (f 8(B8)	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P sed Plants n Remarks)) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A	ery (C9)
Fie Su	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observ irface Wate ater table P	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	e required; I Imagery (ve Surface s	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (B (B8) No X Depth No X Depth	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) arates (B13) e Odor (C1 pheres alor duced Iron (luction in P sed Plants n Remarks)):):) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A Frost-Heave Hummocks (D7)	RA 1, 2, ery (C9)
Fie Sau Sau	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observ Irface Wate ater table P turation Pre	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rations: er Present? Ye	e required; I Imagery (ve Surface s	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (B (B8) No X Depth No X Depth	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) arates (B13) e Odor (C1 pheres alor duced Iron (luction in P sed Plants n Remarks)):):) ng Living (C4) lowed So (D1) (Li		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A Frost-Heave Hummocks (D7)	ery (C9)
Fied Sau (ind	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Eld Observ Inface Wate ater table P Ituration Pre cludes capi	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rations: er Present? Ye esent? Ye	I Imagery (ve Surface s s	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidize Presend Recent Stunted B7) Other (feet) 0(B8) No X Depth No X Depth	A and 4A and Ist (B11) Inverteb an Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir (inches) (inches)	4B) rates (B13) e Odor (C1 pheres alor duced Iron luction in P sed Plants n Remarks)):;;) ng Living (C4) lowed So (D1) (Lf		Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A Frost-Heave Hummocks (D7)	RA 1, 2, ery (C9)
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Fie Su Wa Sa (ino Describ	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatia Sparsely etd Observ Inface Wate ater table P turation Pre cludes capi	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rations: er Present? Ye esent? Ye esent? Ye esent? Ye	e required; I Imagery (ve Surface s s Tributary g	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend Recent Stunted B7) Other (B No X Depth No X Depth No X Depth No X	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks)) ng Living (C4) lowed So (D1) (Li	Roots (C3) pils (C6) R A) Wetland Hyd	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A Frost-Heave Hummocks (D7)	RA 1, 2, ery (C9)
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Fie Su Wa Sa (ino Describ	etland Hyd imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatia Sparsely etd Observ Inface Wate ater table P turation Pre cludes capi	ators (minimum one Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca rations: er Present? Ye esent? Ye esent? Ye esent? Ye	e required; I Imagery (ve Surface s s Tributary g	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidizee Presend Recent Stunted B7) Other (B No X Depth No X Depth No X Depth No X	Stained L 4A and ust (B11) Inverteb en Sulfid d Rhizos ce of Rec Iron Red or Stres Explain ir	4B) rates (B13) e Odor (C1 pheres alor duced Iron uction in P sed Plants n Remarks)) ng Living (C4) lowed So (D1) (Li	Roots (C3) pils (C6) R A) Wetland Hyd	Water-Stained Leaves (B9) (MLF 4A and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imag Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A Frost-Heave Hummocks (D7)	RA 1, 2, ery (C9)

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

Project/Site:	Marine Drive Propos	ed Development P	roject	City/County:	Whatcom (County			Sam	pling Date:	Oct, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	pling Point:	DP-03
Investigator(s):	Joseph R. Pursley (A	Anchor QEA, LLC)		Section	n, Township,	, Range:	S44, T	38, R2E			
Landform (hillslope	e, terrace, etc.):	Road side depres	sion/ditch	Local re	elief (concave	e, convex	, none):	Concave			Slope: 0-8%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:				Long:			C	Datum:
Soil Map Unit Nam	e: Urban land –	Whatcom - Labour	nty complex	K			NWI Cla	ssificatior	: PSSC		
Are climatic / hydro	plogic conditions on th	ne site typical for th	nis time of y	ear?	Yes	Х	No		(If no, e	explain in Re	marks)
Are Vegetation	, Soil	, or Hydrology		significantly	disturbed?	Are "N	lormal C	ircumstan	ces" Pres	sent? Yes	X No
Are Vegetation	, Soil			naturally pro	oblematic?	(If nee	ded, exp	plain any a	answers ir	n Remarks.)	
-	FINDINGS - Att	-	howing s			·		-			с.
Hydrophytic Veget		Yes X No		Is the Sa	ampled Area	а					
Hydric Soil Presen		Yes X No		within a	a Wetland?		Yes	X	No		
Wetland Hydrology	/ Present?	Yes X No									
Remarks: For labe	eled Data Plot location	ns and site map ple	ease see Fi	gure 5 in the	"Wetland D	elineation	Report,	, Anchor G	EA, Nov.	2020".	
VEGETATION											
			Absolute % Cover	Dominant Species?	Indicator Status?			st worksh			
Tree Stratum	(Plot size:)						inant Spec ACW, or I			(•)
1. <u>Pinus resinosa</u>			5	Yes	<u>NI</u>					4	(A)
2 3					·			Dominan All Strata:		4	(B)
4.						Percent	of Domi	nant Spec	ies		
5								ACW, or I		100%	(A/B)
50%=	2.5 20%= 1	Total Cover:	5								
Sapling/Shrub Stra	tum (Plot size:)				Prevale	nce Ind	ex Works	heet:		
1. Cornus sericea	1		50	Yes	FACW	Tot	tal % Co	ver of:		Multiply by	y:
2. Crataegus mor	logyna		20	Yes	FAC	OBL spe	ecies	0	x1 =	0	
3. Ligustrum sine	nse		15	No	FAC	FACW s	species	50	x2 =	100	
4. Rubus armenia	cus		15	No	FAC	FAC spe	ecies	90	x3 =	270	
5						FACU s	pecies	0	x4 =	0	
50%=	50 20%= 20	Total Cover:	100			UPL spe	ecies	0	x5 =	0	
Herb Stratum	(Plot size:)				Column	Totals:	140	(A)	370	(B)
1. Equisetum arve	ense		15	Yes	FAC	Preva	ence Ind	dex = B/A	=	2.6	
2. Agrostis stolon	ifera		25	Yes	FAC						
3.						Hydrop	hytic Ve	getation	Indicator	s:	
4.							1 - Rap	oid Test fo	r Hydroph	nytic Vegetati	on
5.						Х	2 - Dor	ninance T	est is >50	1%	
6.						Х	3 - Pre	valence In	idex is ≤3	3.0 ¹	
7							4 - Mor	phologica	I Adaptati	on ¹ (Provide	supporting
8										a separate s	
9.							5 - We	tland Non-	Vascular	Plants ¹	
50%=	20 20%= 8	Total Cover:	40				Probler	matic Hyd	rophytic V	egetation1 (E	Explain)
Woody Vine Stratu	IM (Plot size:)						dric soil ai ss disturb		d hydrology i olematic.	nust
2.											
		Total Cover:	0		·	Hydrop Vegetat	-				
% Bai	e Ground in Herb Stra			tic Crust		Present			Yes	X No	
	ib-shrub layer was so										
				,							

Profile Desc	ription: (Describe	e to the de	oth needed to do	cument t	he indicat	or or c	onfirm the abs	sence of indicators.)
Depth	Matrix		Re	dox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	e Remarks
0-12	10YR 3/1	100	10YR 4/6	5	С	М	SiL	OR's in upper 6 inches. Sand and gravel.
12-16	10YR 4/1	90	10YR 4/6	10	С	М	SiL	Redox concentrations, saturation
16-18	10YR 5/1	80	10YR 4/6	20	С	М	SiL	Redox in the depleted layer.
					·			
			<u> </u>		·			
			<u> </u>		·			
			<u> </u>		·			
¹ Type: $C=C$	oncentration D=De	pletion RM	=Reduced Matrix	CS=Cov	ered or Co	ated S	and Grains ² I	Location: PL=Pore Lining, M=Matrix.
1300. 0-0		piotion, rui	-Roduood main,	00-001				Location. T 2-1 of o Lining, M-Matrix.
Hydric Soil	Indicators: (Appli	cable to al	LRRs, unless ot	herwise	noted.)		Indicators	for Problematic Hydric Soils ³ :
Histoso				Redox (S				2 cm Muck (A10) (LRR B)
	Epipedon (A2)			d Matrix (•			Red Parent Material (TF2)
	listic (A3)					(excep	ot MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrog	en Sulfide (A4)		Loamy	Gleyed N	latrix (F2)			Other (Explain in Remarks)
X Deplete	ed Below Dark Surfa	ace (A11)	Deplete	d Matrix	(F3)			
Thick D	Oark Surface (A12)		Redox	Dark Surf	face (F6)		³ Indic	ators of hydrophytic vegetation and
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7)	we	tland hydrology must be present,
Sandy	gleyed Matrix (S4)		Redox	Depressio	ons (F8)		u	inless disturbed or problematic.
Restrictive	Layer (if present):							
Туре:								
Depth (inche	es):					ŀ	Hydric Soil Pre	esent? Yes X No
	ed roots in upper 6 i							
HYDROLOGY	,							
	drology Indicators							
-	cators (minimum on		check all that ann	hy)				Secondary Indicators (2 or more required)
	e Water (A1)	e required,			eaves (B9)		nt MI RA	Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			4A and				4A and 4B)
	ion (A3)			ust (B11)	4 0)			Drainage Patterns (B10)
	Marks (B1)			` '	rates (B13))		Dry-Season Water Table (C2)
	ent Deposits (B2)		`		e Odor (C1	,		Saturation Visible on Aerial Imagery (C9)
	eposits (B3)						ng Roots (C3)	Geomorphic Position (D2)
	lat or Crust (B4)				luced Iron	0	ig 10003 (00)	Shallow Aquitard (D3)
	eposits (B5)				uction in P	. ,	Soils (C6)	FAC-Neutral Test (D5)
	e Soil Cracks (B6)				sed Plants		. ,	Raised Ant Mounds (D6) (LRR A)
	tion Visible on Aeria	al Imagery (Remarks)			Frost-Heave Hummocks (D7)
	ly Vegetated Conca		· ,		i i temanoj			
	ly vegetated conte	e Oundoe	(60)					
Field Obser	vations:							
Surface Wat	er Present? Ye	es	No X Depth	n (inches)):			
Water table	Present? Ye	es X		n (inches)	-			
Saturation P	resent? Ye	es X		n (inches)	-		Wetland Hy	ydrology Present? Yes X No
(includes ca	oillary fringe)		<u> </u>	,			-	
Describe Recorde	ed Data (Unnamed	Tributary g	auge, monitoring v	vell, aeria	l photos, p	revious	s inspections), i	if available:
Remarks: Satura	ted soils at 1 inche	with slowly	filling water table t	o 16 inch	nes in pit.			
			-					

Project/Site:	Marine Drive Propos	sed Development P	roject	City/County:	Whatcom O	County			Sam	pling Date:	Oct	26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	pling Point:	[DP-04
Investigator(s):	Joseph R. Pursley (Anchor QEA, LLC)		Section	n, Township,	Range:	S44, T3	38, R2E				
Landform (hillslope	e, terrace, etc.):	terrace		Local re	lief (concave	e, convex	, none):	Convex			Slope:	0-8%
Subregion (LRR):	Northwest Forests a	ind Coast (LRR A)	Lat:				Long:			[Datum:	
Soil Map Unit Nam	ne: Urban land –	- Whatcom - Labour	nty complex	(NWI Cla	ssification:	PSSC			
Are climatic / hydro	ologic conditions on t	he site typical for th	is time of y	ear?	Yes	Х	No		(If no, o	explain in Re	emarks)
Are Vegetation	, Soil	, or Hydrology		significantly						sent? Yes		No
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	olain any a	nswers i	n Remarks.)		
SUMMARY OF	FINDINGS – Att	tach site map s	howing s	ampling p	point loca	tions, t	ransec	ts, impo	rtant fe	eatures, e	tc.	
Hydrophytic Veget	ation Present?	Yes No	х									
Hydric Soil Presen		Yes No	<u>x</u>		ampled Area	а	Yes		No	х		
Wetland Hydrolog		Yes No	<u> </u>	within a	a Wetland?						-	
, i chana i ly a chog	,											
VEGETATION												
Trop Chrotum		-	Absolute % Cover	Dominant Species?	Indicator Status?			t workshe nant Speci				
Tree Stratum 1.	(Plot size:							ACW, or F		2		(A)
2 3								Dominant All Strata:		5		(B)
4.						Percent	of Domi	nant Speci	es –			
5.								ACW, or F		40%		(A/B)
50%=	0_20%=_0	Total Cover:	0									
Sapling/Shrub Stra	atum (Plot size:)				Prevale	nce Inde	ex Worksh	eet:			
1. Rubus armenia			45	Yes	FAC		al % Co			Multiply b	y:	
2. Rubus ursinus			10	No	FACU	OBL spe	-	0	_x1 =	0		
3. Crataegus mor	0,		20	Yes	FAC	FACW s	•	0	_x2 =	0		
4. Symphoricarpo	os albus		25	Yes	FACU	FAC spe	-	65	_x3 =	195		
5	50 20% 20	Total Cover:	100			FACU s UPL spe	-	75 0	X4 =	<u>300</u> 0		
	= <u>50</u> 20%= <u>20</u>	-		ANKED VAL	LIES	•	-	-	x5 =	495		(P)
<u>Herb Stratum</u> 1. Pteridium aquii	(Plot size:)	20	Yes	FACU	Column	-	140 lex = B/A =	_(A)	3.5		(B)
2. Hypericum per			20	Yes	FACU	Tieva	ence inc	iex – D/A -		5.5		
3.	loidtain	<u> </u>	20	100		Hydrop	hvtic Ve	getation l	ndicator	s:		
4.							•	-		vtic Vegetat	ion	
							•	ninance Te		, ,		
6.							3 - Prev	valence Ind	lex is ≤	3.0 ¹		
7.							4 - Mor	phological	Adaptati	ion ¹ (Provide	suppo	orting
8							data	in Remar	ks or on	a separate s	sheet)	0
9							5 - Wet	land Non-	/ascular	Plants ¹		
50%=	20 20%= 8	-	40				Probler	natic Hydro	ophytic \	/egetation ¹ (Explain	i)
Woody Vine Stratu	um (Plot size:	:)						dric soil an ss disturbe		d hydrology plematic.	must	
2.						Hydrop	hytic					
		Total Cover:	0			Vegetat	-					
% Ba	re Ground in Herb Str	ratum <u>60</u> % C	over of Bio	tic Crust		Present	?		Yes	No	Х	
Remarks: The upla	and vegetation shows	s signs of frequent of	disturbance	by adjacent	land use ac	tivities.						

Profile De	scription: (Describe	e to the dept	h needed to doc	ument t	he indicato	or or c	onfirm the abs	ence of indicators.)		
Depth	Matrix		Red	dox Feat	ures					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	ł	Remarks	
0-14	10YR 4/3	100					SiL	50% rock and	d coarse sand	
14-18	10YR 4/2	30					SiL	Less rock in s	soil	
	10YR 4/3	70					SiL			
¹ Type: C=	Concentration, D=De	pletion, RM=	Reduced Matrix,	CS=Cov	ered or Coa	ated S	and Grains. ² L	ocation: PL=Pore Lir	ing, M=Matrix.	
Hydric Sc	il Indicators: (Appli	cable to all L	_RRs, unless otł	nerwise	noted.)		Indicators	for Problematic Hyd	ric Soils ³ :	
Histo	osol (A1)		Sandy R	edox (S	5)			2 cm Muck (A10) (LRR B)	
Histi	c Epipedon (A2)		Stripped	Matrix (S6)		-	Red Parent Mate	erial (TF2)	
Blac	k Histic (A3)		Loamy M	Aucky M	ineral (F1)	(excep	ot MLRA 1)	Very Shallow Da	ark Surface (TF12)	
Hydr	ogen Sulfide (A4)		Loamy (Gleyed M	latrix (F2)		-	Other (Explain ir	ו Remarks)	
Depl	eted Below Dark Surfa	ace (A11)	Depleter	d Matrix	(F3)					
Thicl	Contraction (A12)		Redox D	ark Surf	ace (F6)		³ Indica	ators of hydrophytic v	egetation and	
Sand	ly Muck Mineral (S1)		Depleter	d Dark S	urface (F7)		wet	tland hydrology must l	be present,	
Sano	ly gleyed Matrix (S4)		Redox D	Depressio	ons (F8)		u	nless disturbed or pro	blematic.	
Restrictiv	e Layer (if present):									
Type:	,									
Depth (inc	hes):					1	Hydric Soil Pre	sent? Y	es No	х
• •	·						-			
HYDROLOG	NV									
	י ז Hydrology Indicators									
	dicators (minimum on		heck all that ann	V)				Secondary Indica	tors (2 or more requ	uired)
	ace Water (A1)	e required, e			eaves (B9)	(exce	nt MI RA		eaves (B9) (MLRA	,
	Water Table (A2)			4A and	. ,	(CAUC		4A and 4B)		., _,
*	ration (A3)		Salt Cru		- D)		-	Drainage Patter	ns (B10)	
	er Marks (B1)			. ,	rates (B13)		-	Dry-Season Wa		
	ment Deposits (B2)		·		e Odor (C1)		-		le on Aerial Imagery	(C9)
	Deposits (B3)		· · ·		. ,		ng Roots (C3)	Geomorphic Pos	0,	(00)
	Mat or Crust (B4)			•	luced Iron (•	.g (00)	Shallow Aquitare		
0	Deposits (B5)				uction in Pl		Soils (C6)	FAC-Neutral Tes		
	ace Soil Cracks (B6)				sed Plants		. ,		nds (D6) (LRR A)	
	dation Visible on Aeria	al Imagery (B			Remarks)	(= -) (-		Frost-Heave Hu		
	sely Vegetated Conca				i rtoinanto)		-			
Field Obs	ervations:									
Surface W	ater Present? Ye	es N	lo X Depth	(inches)	:					
Water tab	le Present? Ye	es N	lo X Depth	(inches)	:					
Saturation	Present? Ye	es N	lo X Depth	(inches)	:		Wetland Hy	drology Present?	Yes No	Х
(includes of	capillary fringe)									
Describe Reco	rded Data (Unnamed	Tributary gau	ige, monitoring w	ell, aeria	ll photos, pr	revious	s inspections), it	f available:		
Remarks: The	soil surface was mois	t due to recei	nt rain events.							

Project/Site:	Marine Drive Propo	sed Development	Project	City/County:	Whatcom	County			Sam	pling Date:	Oct, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	pling Point:	DP-05
Investigator(s):	Joseph R. Pursley	(Anchor QEA, LLC))	Section	n, Township	, Range:	S44, T	38, R2E			
Landform (hillslope	e, terrace, etc.):	Narrow depression	on	Local re	lief (concav	e, convex	, none):	Concave			Slope: 0-8%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:				Long:			D	atum:
Soil Map Unit Nam	ne: Urban land -	- Whatcom - Labou	unty comple	x			NWI Cla	ssification	n: PSSC		
Are climatic / hydro	ologic conditions on	the site typical for t	this time of y	ear?	Yes	Х	No		(If no,	explain in Re	marks)
Are Vegetation	, Soil	, or Hydrology		significantly	disturbed?	Are "N	lormal C	ircumstar	nces" Pres	sent? Yes	XNo
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	ded, exp	plain any a	answers i	n Remarks.)	
SUMMARY OF	FINDINGS – At	tach site map	showing s	ampling p	point loca	tions, ti	ansec	ts, impo	ortant fe	eatures, et).
Hudrophytic Veget	ation Dropont?										
Hydrophytic Veget Hydric Soil Presen		Yes X No Yes X No		Is the Sa	ampled Are	a	Yes	х	No		
Wetland Hydrology		Yes X No		within a	a Wetland?		103		_ 10_		
wettand Tydrolog	y Flesent:										
VEGETATION											
						Domina		tworksh	oot:		
			Absolute	Dominant	Indicator	Domina	nce res	st worksh	eet:		
Tree Stratum	(Plot size	:)	% Cover	Species?	Status?			inant Spe			
1						That Are	e OBL, F	ACW, or	FAC:	6	(A)
2.								Dominan			
3						Species	Across	All Strata		6	(B)
4.								nant Spee			<i></i>
5						That Are	9 OBL, F	ACW, or	FAC:	100%	(A/B)
50%=		Total Cover	: 0			Duranta			h (-		
Sapling/Shrub Stra)	20	Vaa	FACW			ex Works	neet:	Multiply by	
 <u>Cornus sericea</u> Crataegus mor 		·	<u>20</u> 20	Yes Yes	FAC	OBL spe	al % Co	0 0	x1 =	Multiply by 0	/
3. Rubus armenia			40	Yes	FAC	FACW s		45		90	
4. Salix scouleria			20	Yes	FAC	FAC spe	•	95		285	
5.		<u> </u>				FACU s		0		0	
-	50 20%= 20	Total Cover	: 100			UPL spe		0	x5 =	0	
Herb Stratum	(Plot size			ANKED VAL	UES	Column		140	(A)	375	(B)
1. Equisetum arve		,	15	Yes	FAC			dex = B/A	_ · · _	2.7	()
2. Phalaris arund			25	Yes	FACW						
3.						Hydrop	hytic Ve	getation	Indicator	s:	
4.							1 - Rap	oid Test fo	r Hydroph	nytic Vegetati	on
5.						Х	2 - Don	ninance T	est is >50)%	
6						Х	3 - Pre	valence Ir	ndex is ≤	3.0 ¹	
7							4 - Mor	phologica	I Adaptat	ion ¹ (Provide	supporting
8										a separate sl	neet)
9								tland Non			
	20 20%= 8	Total Cover	: 40			<u> </u>				/egetation ¹ (E	• •
Woody Vine Stratu	um (Plot size	:)								d hydrology r	nust
1						be prese	ent, unle	ss disturb	ed or prol	blematic.	
2						Hydrop	•				
% Ba	re Ground in Herb St	Total Cover tratum <u>60</u> % (tic Crust		Vegetat Present			Yes_	X No	
Remarks: Recent	hydrology increase a	ppears to have kill	ed Red alde	r (Alnus rubr	a) in the dat	t plot area	l.				

Profile Desc	cription: (Describe	e to the de	pth needed to do	cument t	he indicat	or or c	onfirm the abs	sence of indicators.)	
Depth	Matrix		Re	dox Feat	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	9	Remarks
0-10	10YR 3/1						SiL	Some angula	ar gravel in soil.
10-14	10YR 3/1	95	10YR 4/6	5	С	М	SiL	Redox conce	entrations and saturation
14-18	10YR 5/1	85	10YR 4/6	15	С	М	SCL	Redox bright	in depleted layer
			·		·				
					·				
·					·				
	oncentration D-De	nletion RM				2 hate	and Grains ²	Location: PL=Pore Li	aing M-Matrix
Type. 0=0				00-000					ing, m=matrix.
Hvdric Soil	Indicators: (Appli	cable to al	I LRRs. unless ot	herwise	noted.)		Indicators	for Problematic Hyd	tric Soils ³ :
Histoso				Redox (S				2 cm Muck (A10	
	Epipedon (A2)			d Matrix (•			Red Parent Mat	
	Histic (A3)					(excer	ot MLRA 1)		ark Surface (TF12)
	en Sulfide (A4)				latrix (F2)		,	Other (Explain i	
· ·	ed Below Dark Surfa	ace (A11)		d Matrix				、 .	
	Dark Surface (A12)		X Redox I	Dark Surf	ace (F6)		³ Indic	ators of hydrophytic v	egetation and
Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7))	we	tland hydrology must	be present,
Sandy	gleyed Matrix (S4)			Depressi			u	nless disturbed or pro	blematic.
Restrictive	Layer (if present):								
Туре:									
Depth (inche	es):					1	Hydric Soil Pre	esent? Y	es <u>X</u> No
	ocks below 16 inch								
HYDROLOGY	,								
Wetland Hy	drology Indicators	:							
Primary Indi	cators (minimum on	e required;	check all that app	ly)				Secondary Indica	ators (2 or more required)
Surface	e Water (A1)		Water-S	Stained L	eaves (B9)) (exce	pt MLRA	Water-Stained I	_eaves (B9) (MLRA 1, 2,
X High W	/ater Table (A2)		1, 2,	4A and	4B)			4A and 4B)	
X Saturat	tion (A3)		Salt Cru	ust (B11)				Drainage Patter	ns (B10)
Water	Marks (B1)		Aquatic	Inverteb	rates (B13))		Dry-Season Wa	ter Table (C2)
Sedime	ent Deposits (B2)		Hydroge	en Sulfide	e Odor (C1)		Saturation Visib	le on Aerial Imagery (C9)
Drift De	eposits (B3)		Oxidize	d Rhizos	pheres alo	ng Livir	ng Roots (C3)	Geomorphic Po	sition (D2)
Algal M	lat or Crust (B4)		Presend	ce of Rec	luced Iron	(C4)		Shallow Aquitar	d (D3)
Iron De	eposits (B5)		Recent	Iron Red	uction in P	lowed	Soils (C6)	FAC-Neutral Te	st (D5)
Surface	e Soil Cracks (B6)		Stunted	or Stres	sed Plants	(D1) (I	LRR A)	Raised Ant Mou	ınds (D6) (LRR A)
Inunda	tion Visible on Aeria	al Imagery ((B7) Other (B	Explain ir	n Remarks))		Frost-Heave Hu	mmocks (D7)
Sparse	ly Vegetated Conca	ave Surface	e (B8)						
E : 11 O							T		
Field Obser				<i>(</i> ; , , , , , , , , , , , , , , , , , , ,					
Surface Wat			·	(inches)					
Water table				(inches)	-				V V N
Saturation P		es <u>X</u>	No Depth	(inches)	: 10		Wetland Hy	/drology Present?	Yes X No
	pillary fringe)	Tributory			l nhotoo n	roviour		foucilable	
	ed Data (Unnamed				li priotos, p	revious	s inspections), i	l avallable:	
Remarks: Narfow	v swale between sid	ewark and	aujacent industrial	nii area.					

Project/Site:	Marine Drive Prope	osed Development I	Project	City/County:	Whatcom	County			Sam	npling Da	ate: O	oct, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	npling Po	oint:	DP-06
Investigator(s):	Joseph R. Pursley	(Anchor QEA, LLC))	Section	n, Township	, Range:	S44, T3	38, R2E				
Landform (hillslope	e, terrace, etc.):	Hillslope/terrace		Local re	lief (concave	e, convex	, none):	Convex			Slope	e: 0-8%
Subregion (LRR):	Northwest Forests	and Coast (LRR A)	Lat:				Long:				Datun	n:
Soil Map Unit Nam	ne: Urban land	- Whatcom - Labou	unty complex	x			NWI Cla	ssificatior	n: PSSC			
Are climatic / hydro	ologic conditions on	the site typical for t	his time of y	/ear?	Yes	Х	No		(If no,	explain i	in Remark	<s)< td=""></s)<>
Are Vegetation	, Soil	, or Hydrology		significantly	/ disturbed?	Are "N	lormal C	ircumstar	nces" Pres	sent?	Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	olain any a	answers i	n Remai	rks.)	
SUMMARY OF	FINDINGS – A	ttach site map s	showing s	sampling I	point loca	itions, t	ransec	ts, impo	ortant fe	eatures	s, etc.	
l hadron ha din Monord		No.	v									
Hydrophytic Veget		Yes No		Is the Sa	ampled Are	а	Vaa		No	v		
Hydric Soil Presen		Yes No		within a	a Wetland?		Yes		No	Х		
Wetland Hydrolog	y Present?	Yes <u>No</u>	<u> </u>									
	eled Data Plot locati	ions and site map pl	lease see Fi	gure 2 in the	e "Wetland V	'erificatior	and No	n-Compe	nsatory N	litigation	ı Plan".	
VEGETATION						-						
Tree Stratum	(Plot siz	e:)	Absolute % Cover	Dominant Species?	Indicator Status?	Number	of Domi	t worksh nant Spec ACW, or	cies		_	
1											3	(A)
2 3								Dominan All Strata:			5	(B)
4.				·		Percent	of Domi	nant Spec	cies —			_ ` `
5.								ACW, or		6	0%	(A/B)
50%=	0 20%= 0	Total Cover	: 0									_
Sapling/Shrub Stra	atum (Plot siz	e:)				Prevale	nce Inde	ex Works	heet:			
1. Rubus armenia	acus		45	Yes	FAC	Tot	al % Co	ver of:		Multi	ply by:	
2. Rosa nutkana			15	No	FAC	OBL spe	ecies	0	x1 =		0	
3. Crataegus mor	nogyna		20	Yes	FAC	FACW s	pecies	0	x2 =		0	
4. Symphoricarpo	os albus		15	No	FACU	FAC spe	ecies	110	x3 =	3	30	
5						FACU s	pecies	50	x4 =	2	200	
	47.5 20%= 19	Total Cover	: 95			UPL spe	ecies	0	x5 =		0	
Herb Stratum	(Plot siz	e:)	CHECK R	ANKED VAL	UES	Column	Totals:	160	(A)	5	30	(B)
1. Pteridium aqui	linum		5	No	FACU	Preva	ence Inc	dex = B/A	=	3.3		
2. Hypericum per	foratum		15	Yes	FACU							
3. Festuca rubra			30	Yes	FAC	Hydrop	hytic Ve	getation	Indicator	's:		
4. Jacobaea vulg	aris		15	Yes	FACU		•	id Test fo	• •		getation	
5 6.						<u> </u>		ninance T valence Ir				
-											ovide supp	n o stin a
8.											ate sheet)	
9.								land Non-		•	,	/
	= 32.5 20%= 13	Total Cover	: 65								on ¹ (Expla	ain)
Woody Vine Stratu				ANKED VAL	UES		ors of hyd		nd wetlan	id hydrol	logy must	,
2.						Hydrop	hvtic					
% Po	re Ground in Harb S	Total Cover Stratum 35 % (tic Crust		Vegetat	ion		Yes	х	No	
		vs signs of frequent		-	land use se		•		103	~		<u></u>
itemarks. The upic	and vegetation show		usubance	by aujacent								

Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) "Indicators of hydrophytic vegetation and wetland hydrology must be present, Bandy Gleyed Matrix (S4) "Pepleted Dark Surface (F6) "Indicators of hydrophytic vegetation and wetland hydrology must be present, Redox Depressions (F8) Sandy gleyed Matrix (S4) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:	% Color (moist) % Type ¹ Loc ² Texture Remarks 70	Profile Description: (Describe to the depth	needed to document th	e indicator or	confirm the abse	ence of indicators.)
0-18 10YR 4/3 70 SIL 50% rock and coarse sand 10YR 4/2 30 No sand or rock 11Ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils* Hydric Soil Indicators: Sandy Redox (SS) 2 cm Muck (A10) (LRR B) Histics Epipedin (A2) Sindp Redox (SS) Red Parent Material (TF2) Block Histic (A3) Loarny Mucky Mineral (F1) (except MLRA 1) Other (Explain in Remarks) Oppleted Balow Dark Surface (A11) Depleted Matrix (F3) *Indicators of hydrophytic vegetation and wetland hydrology must be present. Sandy Redox Dark Surface (F1) Redox Dark Surface (F7) wetland hydrology must be present. Sandy Redox Mark Surface (F1) Loarny Mucky Mineral (F1) wetser (A11) Depleted Dark Surface (F7) Restrictive Layer (If present): Type: Primary Indicators (Ininimum one reguined; check all that apply) ***** Surface KB1) Aquatic Invertebrates (B1) Parage Patiense (B10) Parage Patiense (B10) Parage Patiense (B10) Surface KB1) Aquatic Invertebrates (B13) Dotted RinSureberes along Lining Rob	70	Depth Matrix	Redox Featu			
Image: Solid Sectors (Argeneration) No sand or rock Image: Solid Indicators: Image: Solid Sectors (Argeneration) Indicators (or Problematic Hydric Solids) Hiddool (A1) Sandy Redox (S6) Indicators (or Problematic Hydric Solids) Hiddool (A2) Stripped Matrix (S6) Red Paren (Matrial (TF2) Black Histic (A3) Loamy Mudxy Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF Hydrogen Suffice (A4) Loamy Mudxy Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF) Thick Dark Surface (A12) Redox Dark Surface (F6) Indicators of hydrophylic vegetation and hydrology must be present, wetland hydrology must be present, wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Mydric Soil Present? Yes	30	(inches) Color (moist) % (Color (moist) %	Type ¹ Lo	c ² Texture	Remarks
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(includes capillary fringe) cribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:	I Tributary gauge, monitoring well, aerial photos, previous inspections), if available:					
cribe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:			X Depth (inches):		Wetland Hy	drology Present? Yes No X
narks: The soil surface was moist due to recent rain events	st due to recent rain events		-	pnotos, previo	us inspections), if	available:
		narks: The soil surface was moist due to recent	rain events			

1. Salix scouleriana 30 Yes FAC That Are OBL, FACW, or FAC: 3 (A) 2. Betula papyrifera 25 Yes FAC Total Number of Dominant Species Across All Strata: 3 (B) 3.	Project/Site:	Marine Drive Propos	sed Development P	roject	City/County:	Whatcom C	County			Sampling	Date:	Oct, 2	26 2020
Landform (Nilsiopi, terrace, ret.): Narrow degression Loai relief (concave, convex, none): Concave Stops Datum: Soid Map Unit Name: Urban tand – Whatcom : Labounty complex VesX No (Tree problem in Remarks) Ave Vogetation, Soid, or Hydrology naturally problematic? Wres No (Tree problem in Remarks) Ave Vogetation, Soid, or Hydrology naturally problematic? (If needed. oxplain any answers in Remarks) Ave Vogetation, Soid, or Hydrology naturally problematic? (If needed. oxplain any answers in Remarks) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc	Applicant/Owner:	ABC Recycling						State:	WA	Sampling	Point:	DI	P-07
Subreigen LRR: Northeset Forests and Casat LLRR AL. Lar. Lorg Darum: Subreigen LRR: Water Mathematic Large LLRR AL. Large LLRR AL. No Control Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks) Are Vogetation . Sol . of Hydrology maturally oblighted? Xer Warmal Circumstance? Present? No SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vagetation Present? Yes X No Hydrophytic Vagetation Present? Yes X No within a Vietland? Yes X No Remarks: For labeled Data Piot locations and site map please see Figure 5 in the "Wetland Delineation Report, Anchor QEA, Nov. 2020". Yes X No VEGETATION Aboutes Dominant Species That Are DBL, FACW, or FAC 3 (A) 2. Bott page/fride 30 Yes FAC Total Number of Dominant Species (A) 3. Give accularing 10 Yes FAC Total Number of Dominant Species (A)<	Investigator(s):	Joseph R. Pursley (Anchor QEA, LLC)		Section	n, Township,	Range:	S44, T	38, R2E	_			
Sol Map Uthan land – Whatcurty complex NVI Classification : SSIC Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks) Are offending . Soil . of Hydrology isignificantly disturde? Are "Normal Circumstances" Present? No SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophylic Vegitation Present? Yes X No Hydrophylic Vegitation Present? Yes X No Wetland Hydrology Present? Yes X No Yes X No Is the Sampled Area within a Wetland? Yes X No VECETATION ////////////////////////////////////	Landform (hillslope	e, terrace, etc.):	Narrow depression	n	Local re	lief (concave	e, convex	, none):	Concave		S	lope:	0-8%
Are climatic / hydrologic cordinance in the set sprince for this time of year? Yes No [If no explain in Remarks] Are Vagetation . Soil . or Hydrology significanty disturbed? Are 'Normal Circumstances' Present? Yes No Are Vagetation . Soil . or Hydrology maturally problemati? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vagetation Present? Yes X No Hydrophytic Vagetation Present? Yes X No Westand Hydrology Present? Yes X No Yes Yes No [If needed, explain any answers in Remarks.] VEGETATION Is the Sampled Area within a Westand Delineation Report, Anchor GEA, Nov. 2020'. VEGETATION No No [If needed, explain any answers in Remarks.] 1. Satiz accountainane (Plot size:) No [If needed, explain any answers in Remarks.] 1. Satiz accountainane (Plot size:) No Total Number of Dominant Species 1. Satiz accountainane 10 No FAC No Total Number of Dominant Species	Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	-			Long:			Da	atum:	
Are Vegetation Soli or Hydrology ispificantly disturbed? Are Normal Circumstance? Present? Yes X_No SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X_No Vestand Hydrology Is the Sampled Area within a Wetland? Yes X_No Wetland Hydrology Present? Yes X_No Is the Sampled Area within a Wetland? Yes X_No Wetland Hydrology Present? Yes X_No Is the Sampled Area within a Wetland? Yes X_No Wetland Hydrology Present? Yes X_No No	Soil Map Unit Nam	ne: Urban land -	Whatcom - Labour	nty complex	(NWI Cla	assification:	PSSC		_	
Are Vegetation	Are climatic / hydr	ologic conditions on t	he site typical for th	is time of y	ear?	Yes	Х	No		(If no, explai	n in Ren	narks)	
Are Vegetation	-	•	••	-		disturbed?	Are "N	lormal C	Circumstand				٩v
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Hydrophytic Vegetation Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: For labeled Data Plot locations and site map please see Figure 5 in the "Wetland Delineation Report, Anchor QEA, Nov. 2020". VEGETATION VEGETATION Is also scouleriana Prevalence Test worksheet: No 225 Yes 2. 225 Yes 5. 50%= 27.5 20%= 11 Total Cover: 55. 5. 50%= 27.5 20%= 11 Total Cover: 55. 7. Ado total Status 10 7. No 7.5 8. 10 No FAC 7. Total Cover: 55. 100 x3 = 000 7. 10 No FAC 7. Total Cover: 55. No FAC 7. Total Cover: 55. No FAC 7. Total Cover: 55. No FAC 7. 2. Checkramkobucr	•												
Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Remarks: For labeled Data Plot locations and site map please see Figure 5 in the 'Wetland Delineation Report, Anchor QEA, Nov. 2020'. Ves X No VEGETATION Opminant Indicator Status? Dominant Species Time Are OBL, FACU, or FAC: 3 (A) 1. Satis scouleriane 25 Yes FAC Total Area OBL, FACU, or FAC: 3 (A) 2. Detula papyrifera 25 Yes FAC Total Area OBL, FACU, or FAC: 3 (A) 3. 50%= 27.5 20%= 11 Total Cover: 55 Total Xe OBL, FACU, or FAC: 100% (AB) Provalence index worksheet: 10 No FAC Total Xe OBL, FACU, or FAC: 3 (A) 2. Catages monogyna 10 No FAC Secles Arross All Strata: 3 (B) 2. Catages monogyna 10 No FAC Species 0 X1 = 0	SUMMARY OF		_				tions, tr	ansec	ts. impo	rtant featur	es, etc		
Hydro Soil Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Remarks: For labeled Data Plot locations and site map please see Figure 5 in the "Wetland Delineation Report, Anchor QEA, Nov. 2020". No				<u> </u>			,		<u></u>		,		
Hydro: Soil Present? Yes X No Remarks: For labeled Data Plot locations and site map please see Figure 5 in the "Welland Delineation Report, Anchor QEA, Nov. 2020". VEGETATION VEGETATION VEGETATION Vers X Absolute Dominant Modeling apprifere 30 2. 25 3. 25 Solve 27.5 Solve 27.5 Solve 10 No FAC 1. Corrus services 40 2. Catala papyrifere 30 3. (A) Total Nomber of Dominant Solve 27.5 2. Catala papyrifere 30 3. (A) Total Cover 5. Solve 27.5 2. Catala services 40 2. Catala services 40 3. Rubus armeniacus 5 4. Lonicera involucata 15 5. Solve 27.5 2. Catalaegus monogyna 10 1. Corrus services 3.4 2. Cortus equice 0 Yes	Hydrophytic Veget	tation Present?	Yes X No										
Wetland Hydrology Present? Yes X No Remarks: For labeled Data Plot locations and site map please see Figure 5 in the "Wetland Delineation Report, Anchor QEA, Nov. 2020".			Yes X No			•	a	Yes	х	No			
Answer Answer Answer Description VEGETATION Absolute Dominant Indicator Tree Stratum (Plot size:) Absolute Dominant Indicator 30 Yes FAC Number of Dominant Species That Are OBL, FACW, or FAC:					within a	a wetland?							
VEGETATION The Stratum (Plot size:) Absolute Dominant Indicator 1. Salix scouleriana 30 Yes FAC 2. Betula papyrifera 25 Yes FAC 30 Yes FAC 5	, , ,												
Tree Stratum (Plot size:) Absolute % Cover Dominant Species? Indicator Status? Dominant Species That Are OBL, FACW, or FAC:3 (A) 2. Betula papyrifera 25 Yes FAC Total Number of Dominant Species That Are OBL, FACW, or FAC:3 (A) 3.	Remarks: For lab	eled Data Plot locatio	ns and site map ple	ease see Fig	gure 5 in the	"Wetland De	elineation	Report	, Anchor Q	EA, Nov. 2020)".		
Image: Stratum (Plot size:) Absolute Species? Dominant Species? Dominant Species That Are OBL, FACW, or FAC:													
Image: Stratum (Plot size:) Absolute Species? Dominant Species? Dominant Species That Are OBL, FACW, or FAC:													
Image: Stratum (Plot size:) Absolute Species? Dominant Species? Dominant Species That Are OBL, FACW, or FAC:													
Absolute Dominant Indicator 1. Salix scouleriana 30 Yes FAC 2. Betula papyrifera 32 Yes FAC 3.	VEGETATION												
Absolute Dominant Indicator 1. Salix scouleriana 30 Yes FAC 2. Betula papyrifera 32 Yes FAC 3.							Domina	nce Tes	st workshe	et:			
Tree Statuting (Plot size:)													
1. data scutariana 30 1es 1/3 2. Betula papyrifera 25 Yes FAC 3. 25 Yes FAC 5. 50%= 27.5 20%= 11 Total Cover: 55 5. 50%= 27.5 20%= 11 Total Cover: 55 5. 50%= 27.5 20%= 11 Total Cover: 55 5. 2. 740 Yes FACW 7. Contass sericea 40 Yes FACW 7. Contass sericea 10 No FAC 7. Contass sericea 10 No FAC 7. Contass sericea 10 No FAC 8. 5 No FAC FAC Species 10 x3 = 300 5. Salix scouleriana 15 No FAC FAC Species 0 x4 = 0 10. Visitis scouleriana 15 No FAC FAC Species 0 x4 = 0 10. Visitis scouleriana 15 No FAC FAC Species 0 x4 =	Tree Stratum	(Plot size)	% Cover	Species?	Status?							
3.	1. Salix scouleria	na		30	Yes	FAC	That Are	OBL, F	-ACVV, OF F	AC:	3	(A)
4.	2. Betula papyrife	era		25	Yes	FAC							
5.	3						Species	Across	All Strata:	. <u> </u>	3	(B)
50%= 27.5 20%= 11 Total Cover: FAC Sapling/Shrub Stratum (Plot size:) 40 Yes FACW 1. Corrus sericea 40 Yes FACW 3. Rubus ameniacus 5 No FAC 3. Rubus ameniacus 5 No FAC 5. Salix scouleriana 15 No FAC 5. Sol%= 42.5 20%= 17 Total Cover: 85 Column Totals: 140 385 UPL species 0 x4 = 0 1. Column Totals: 140 (A) 3800 (B) 1. Column Totals: 140 (A) 3800 (B) 1. Column Totals: 140 (A) 3800 (B) 1. Prevalence Index es D/A = 2.7 2.7 2.7 2. Column Totals: 140 (A) 3800 (B) 1. Rapid Test for Hydrophytic Veg	4												
Sapling/Shrub Stratum (Plot size:) 1. Cornus sericea 40 Yes FACW 2. Cartategus monogyna 10 No FAC 3. Rubus armeniacus 5 No FAC OBL species 0 x1 = 0 4. Lonicera involucrata 15 No FAC FAC species 0 x4 = 0 5 Salix scouleriana 15 No FAC FAC species 0 x4 = 0 5 Salix scouleriana 15 No FAC FAC species 0 x4 = 0 11 Sobs= 42.5 20%= 17 Total Ocover: 85 UPL species 0 x5 = 0 Column Totals: 140 (A) 380 (B) 1.	5						That Are	e OBL, F	FACW, or F	AC:	100%	(A/B)
1. Cornus sericea 40 Yes FACW Total % Cover of: Multiply by: 2. Crataegus monogyna 10 No FAC OBL species 0 x1 = 0 3. Rubus armeniacus 5 No FAC FAC species 10 x1 = 0 5. Salix scouleriana 15 No FAC FAC species 10 x4 = 0 5. Salix scouleriana 15 No FAC FACU species 0 x4 = 0 11 Chicer anivolucrata 15 No FAC FACU species 0 x4 = 0 11 Chicer anivolucrata 15 No FAC FACU species 0 x4 = 0 12 Chicer anivolucrata 15 No FAC Species 0 x5 = 0 1 Provalence Index = B/A = 2.7 Column Totals: 140 (A) 380 (B) 1 Rapid Test for Hydrophytic Vegetation Mictators: 1 1 Rapid Test for Hydrophytic Vegetation 5 Salix Salix	50%=	27.5 20%= 11	Total Cover:	55									
2. Crataegus monogyna 10 No FAC OBL species 0 x1 = 0 3. Rubus armeniacus 5 No FAC FACW species 40 x2 = 80 4. Lonicera involucrata 15 No FAC FAC species 100 x3 = 300 5. Salix scouleriana 15 No FAC FAC species 0 x4 = 0 10 No FAC FAC species 0 x4 = 0 0 x3 = 300 x4 = 0 0 x3 = 300 (B) prevalum 0 0 x3 = 300 (B) 0 y4 = 0 y4 = 0 y4 = 0 </td <td>Sapling/Shrub Stra</td> <td>atum (Plot size</td> <td>)</td> <td></td> <td></td> <td></td> <td>Prevale</td> <td>nce Ind</td> <td>ex Worksh</td> <td>neet:</td> <td></td> <td></td> <td></td>	Sapling/Shrub Stra	atum (Plot size)				Prevale	nce Ind	ex Worksh	neet:			
3. Rubus armeniacus 5 No FAC FACW species 40 x2 = 80 4. Lonicera involucrata 15 No FAC FAC species 100 x3 = 300 5. Salix scouleriana 15 No FAC FAC FAC species 0 x4 = 0 50%= 42.5 20%= 17 Total Cover: 85 UPL species 0 x5 = 0 1.	1. Cornus sericea	3		40	Yes	FACW	Tot	al % Co	over of:	Mu	ultiply by	:	
4. Lonicera involucrata 15 No FAC FAC species 100 x3 = 300 5. Salix scouleriana 15 No FAC FAC uspecies 0 x4 = 0 50% = 42.5 20% = 17 Total Cover: 85 UPL species 0 x5 = 0 1.					No	FAC	OBL spe	ecies	0	_x1 =	0		
5. Salix scouleriana 15 No FAC FACU species 0 x4 = 0 Herb Stratum (Plot size:) CHECK RANKED VALUES UPL species 0 x5 = 0 1.	3. Rubus armenia	acus		5	No	FAC	FACW s	pecies	40	_x2 =	80		
50%= 42.5 20%= 17 Total Cover: 85 UPL species 0 x5 = 0 Herb Stratum (Plot size:) CHECK RANKED VALUES UPL species 0 x5 = 0 380 (B) 1.	4. Lonicera involu	ıcrata		15	No	FAC	FAC spe	ecies	100	x3 =	300		
Herb Stratum (Plot size:) CHECK RANKED VALUES Column Totals: 140 (A) 380 (B) 1.	5. Salix scouleria	na		15	No	FAC	FACU s	pecies	0	x4 =	0		
1. Prevalence Index = B/A =	50%=	42.5 20%= 17	Total Cover:	85			UPL spe	ecies	0	x5 =	0		
2.	Herb Stratum	(Plot size)	CHECK R/	ANKED VAL	UES	Column	Totals:	140	(A)	380	(B)
3.							Preva	ence In	dex = B/A =	=2	.7		
4.	-						L b columnation	hudia Va	and at land	- dia atawa .			
5. X 2 - Dominance Test is >50% 6. X 3 - Prevalence Index is ≤3.0 ¹ 7. - 4 - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) 8. - - 9. - 5 - Wetland Non-Vascular Plants ¹ 50%= 0 20%= 0 20%= 0 1. - - 2. - - % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Present? Yes X							пушор	-	-		/		
6.											egetatio	'n	
7.	-												
8.							<u> </u>						
9 5 - Wetland Non-Vascular Plants ¹ 50%= 0 20%= 0 Total Cover: 0 Problematic Hydrophytic Vegetation ¹ (Explain) <u>Woody Vine Stratum</u> (Plot size:) 1 2 % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Hydrophytic Vegetation % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Yes X No													ing
50%= 0 20%= 0 Total Cover: 0 Woody Vine Stratum (Plot size:) 1 1 1. 2. % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust . .	-									•		eet)	
Woody Vine Stratum (Plot size:) 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 1.	· · · · · · · · · · · · · · · · · · ·												
1. be present, unless disturbed or problematic. 2.			-	0									
2 Total Cover: Hydrophytic % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Present? YesX No	4		·′									iust	
Total Cover: O Hydrophytic % Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Vegetation Present? Yes X No							•						
% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Present? Yes X No	Z		Total Cover:										
	0/ Pa	re Ground in Hark St			tic Cruct		-			Voc V	No		
Remarks: Dense shrubs prevent the herb layer from developing.					lic Crust		Fresen	1					
	Remarks: Dense s	shrubs prevent the he	rb layer from devel	oping.									

Depth Matrix Redox Features (inches) Color (moist) % Type1 Loc2 Texture Remarks 0-12 10YR 3/1 90 10YR 4/6 15 C M SiL Some angular gravel in soil. 12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation
0-12 10YR 3/1 90 10YR 4/6 10 C M SiL Some angular gravel in soil. 12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation 12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation 12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation 12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation 12-18 10YR 5/1 85 35 10YR 5/1 Science 10 10 10 10 10 10 10 10 10 11 10 10 10 11 10 11 10 10 10 10 10 10 10 10 10 10 11 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10<
12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation "12-18 10YR 5/1 85 10YR 4/6 15 C M SCL Redox in depleted soil, saturation "1 10
Image: Secondary Indicators: Image: Secondary Indicators: Primary Indicators (A1) Image: Secondary Indicators (B9) Image: Secondary Indicators: Image: Secondary Indicators (B9) Image: Secondary Indicators (S1) Image: Secondary Indicators (S1) Sufface Water (A1) Image: Secondary Indicators (S1) Image: Secondary Indicators (S1) Image: Secondary Indicators (S2 or more required) I
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) (LRR B) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Thick Dark Surface (A12) X Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depleted soils at 12 inches with water at 16 inches. HyDroLOGY X Water Stained Leaves (B9) (except MLRA Water-Stained Leaves (2 or more required; Check all that apply) Surface Water (A1) X Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (2 or more required; Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) Surface Water (A1) X Water-Stained Leaves (B9) (except MLRA Thick bar (B11) Water Table (A2) 1, 2, 4A and 4B)
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Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redx (S5) 2 cm Muck (A10) (LRR B) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loarny Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loarny Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Thick Dark Surface (A12) X Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy gleyed Matrix (S4) Depleted Dark Surface (F7) wetland hydrology must be present, sandy gleyed Matrix (S4) Type:
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) (LRR B) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Thick Dark Surface (A12) X Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depleted soils at 12 inches with water at 16 inches. HyDroLOGY X Water Stained Leaves (B9) (except MLRA Water-Stained Leaves (2 or more required; Check all that apply) Surface Water (A1) X Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (2 or more required; Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) Surface Water (A1) X Water-Stained Leaves (B9) (except MLRA Thick bar (B11) Water Table (A2) 1, 2, 4A and 4B)
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Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) (LRR B) Histo Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Depleted Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) X Sandy Muck Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) (LRR B) Histo Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Depleted Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) X Sandy Muck Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
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Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Sindicators of hydrophytic vegetation and Sandy Muck Mineral (S1) Depleted Dark Surface (F6) ³ 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. Permarks: Depleted soils at 12 inches with water at 16 inches. Hydric Soil Present? Yes_X No Remarks: Depleted soils at 12 inches with water at 16 inches. 1, 2, 4A and 4B) Secondary Indicators (2 or more required graver (B9) (MLRA 1, 2, 4A and 4B) Secondary Indicators (C2 or more required graver (B1)) X High Water Table (A2) 1, 2, 4A and 4B) Dirainage Patterns (B10) Dirainage Patterns (B10) Dirainage Patterns (B10) Dirainage Patterns (B10) Diry-Season Water Table (C2)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Muck Mineral (S1) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
Image: Depleted Below Dark Surface (A11) Depleted Matrix (F3) Image: Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Muck Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
Image: Secondary Indicators X Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
Sandy Muck Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:
Sandy gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:
Restrictive Layer (if present): Type: Depth (inches): Memarks: Depleted soils at 12 inches with water at 16 inches. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum one required; check all that apply) Surface Water (A1) X X High Water Table (A2) X 1, 2, 4A and 4B) X Saturation (A3) Water Marks (B1) Aquatic Invertebrates (B13)
Type:
Depth (inches): Hydric Soil Present? Yes X No Remarks: Depleted soils at 12 inches with water at 16 inches. Remarks: Depleted soils at 12 inches with water at 16 inches. Remarks: Depleted soils at 12 inches with water at 16 inches. Remarks: Depleted soils at 12 inches with water at 16 inches. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (2 or more required) Primary Indicators (minimum one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) X Water-Stained Leaves (B9) (except MLRA X High Water Table (A2) 1, 2, 4A and 4B) Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) X Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2)
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X Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2)
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 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 X No Depth (inches): 16
Saturation Present? Yes X No Depth (inches): 12 Wetland Hydrology Present? Yes X No
(includes capillary fringe)
(includes capillary fringe) Describe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:
(includes capillary fringe) Describe Recorded Data (Unnamed Tributary gauge, monitoring well, aerial photos, previous inspections), if available:
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Project/Site:	Marine Drive Propo	osed Development	t Project	City/County:	Whatcom	County			Sam	pling Da	ate: (Oct, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	pling Po	oint:	DP-08
Investigator(s):	Joseph R. Pursley	(Anchor QEA, LLC	C)	Section	n, Township	, Range:	S44, T3	38, R2E				
Landform (hillslope	e, terrace, etc.):	Hillslope/terrace	е	Local re	lief (concave	e, convex	, none):	Convex			Slo	pe: 0-8%
Subregion (LRR):	Northwest Forests	and Coast (LRR A	A) Lat:				Long:				Datu	ım:
Soil Map Unit Nam	ne: Urban land	- Whatcom - Labo	ounty complex	х			NWI Cla	ssificatior	: PSSC			
•	ologic conditions on				Yes	Х	No		(If no, e	explain i	n Rema	rks)
Are Vegetation	, Soil			significantly		Are "N	lormal C	ircumstar	ces" Pres	sent?	Yes 📝	<u>×</u> No
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	olain any a	answers ir	n Remai	rks.)	
SUMMARY OF	FINDINGS - A	ttach site map	showings	sampling I	point loca	tions, t	ransec	ts, impo	ortant fe	eatures	s, etc.	
Hydrophytic Veget	tation Present?	Yes N	lo X									
Hydric Soil Preser		Yes N			ampled Are		Yes		No	х		
Wetland Hydrolog		Yes N		within a	a Wetland?							
Wolland Hydrolog	y r rooont:	1001	<u> </u>									
VEGETATION												
						Domina	nce Tes	t worksh	eet:			
			Absolute	Dominant	Indicator							
Tree Stratum	(Plot size	e:)	% Cover	Species?	Status?			nant Speo ACW, or				
1											2	(A)
2								Dominan All Strata:				(5)
3.									<u> </u>		4	(B)
4 5.								nant Spec		5	0%	(A/D)
550%=	- 0 20%= 0	Total Cove	er: 0	·		That Are	OBL, F	ACW, or	-AC:	5	U 70	(A/B)
Sapling/Shrub Stra			u. <u>v</u>			Prevale	nce Inde	ex Works	heet:			
1. Rubus armenia		/	25	Yes	FAC		al % Cov			Multi	ply by:	
2. Rosa nutkana			25	Yes	FAC	OBL spe		0	x1 =		0	
3. Rubus ursinus			10	No	FAC	FACW s	pecies	0	x2 =		0	
4. Symphoricarpo	os albus		10	No	FACU	FAC spe	ecies	60	x3 =	1	80	
5.						FACU s	pecies	40	x4 =	1	60	
50%=	<u> </u>	Total Cove	er: 70			UPL spe	-	0	x5 =		0	
Herb Stratum	(Plot size	e:)	CHECK R.	ANKED VAL		Column	Totals:	100	_(A)		40	(B)
1. Jacobaea vulg			15	Yes	FACU	Preva	ence Ind	dex = B/A	=	3.4		
2. Hypericum per	foratum		15	Yes	FACU							
3						Hydrop	•	getation				
4.				·			•	id Test fo			getation	
5 6.								ninance T valence Ir				
				·								
8.				· <u> </u>				phologica ι in Rema				
9.								land Non-		•		,,,,
50%=	= 15 20%= 6	Total Cove	er: 30				Problen	natic Hyd	rophytic V	/egetatio	on ¹ (Exp	lain)
Woody Vine Strate		e:)						dric soil a ss disturb				st
2.						Hydrop	hvtic	-	-	-	-	
		Total Cove	er: 0			Vegetat	-					
% Ba	re Ground in Herb S	tratum 70 %	6 Cover of Bio	otic Crust		Present	?		Yes		No	x
Remarks: The upla	and vegetation show	s signs of frequer	nt disturbance	and is withir	n 15 feet of s	stored and	d staged	shipping	container	s.		

Profil	e Des	cription: (Descri	be to the de	pth needed to	document	the indicat	tor or c	onfirm the abs	sence of indic	ators.)		
Depth		Matrix			Redox Fea	atures						
(inche	s)	Color (moist)	%	Color (moist	:) %	Type ¹	Loc ²	2 Texture	9	Remar	ks	
0-1	8	10YR 6/3	100					LS	Rock	, and debris in soi		
¹ Type:	C=C	oncentration, D=D	epletion, RN	I=Reduced Ma	trix, CS=Co	vered or Co	bated S	and Grains. ² L	Location: PL=	Pore Lining, M=M	atrix.	
										-		
-		Indicators: (App	licable to al					Indicators		atic Hydric Soils ³		
		ol (A1)			dy Redox (uck (A10) (LRR B)		
		Epipedon (A2)			oped Matrix		,			ent Material (TF2)		
		Histic (A3)				. ,	· ·	pt MLRA 1)		allow Dark Surfac		
		gen Sulfide (A4) ed Below Dark Su	face (111)		leted Matrix	Matrix (F2)				xplain in Remarks	5)	
		Dark Surface (A12			lox Dark Su			³ Indic	ators of hydro	phytic vegetation	and	
		Muck Mineral (S1				Surface (F7	')			y must be presen		
	-	gleyed Matrix (S4			lox Depress)			d or problematic.	ι,	
`	Januy	gleyeu Matrix (34)		ION Depiess			ŭ		d of problematic.		
Restr	ictive	Layer (if present)	:									
Type:			,									
Depth	(inch	es):					1	Hydric Soil Pre	esent?	Yes	No	х
HYDROL	-0G`	(
Wetla	nd Hy	drology Indicato	'S:									
Prima	ry Ind	cators (minimum o	one required;		112/					y Indicators (2 or		
5	Surfac	e Water (A1)				Leaves (B9) (exce	pt MLRA	Water-S	tained Leaves (B	9) (MLRA 1,	2,
	-	/ater Table (A2)		1	I, 2, 4A and	I 4B)				nd 4B)		
		tion (A3)			Crust (B11	,				e Patterns (B10)		
		Marks (B1)				brates (B13				son Water Table		
		ent Deposits (B2)			-	de Odor (C1				on Visible on Aeria		C9)
		eposits (B3)					-	ng Roots (C3)		phic Position (D2)		
	-	Mat or Crust (B4)				duced Iron	. ,	0.11.(00)		Aquitard (D3)		
		eposits (B5)				duction in P		. ,		utral Test (D5)		
		e Soil Cracks (B6) ition Visible on Ae				ssed Plants		LKK A)		Ant Mounds (D6) (,	
		ely Vegetated Con	0,	· · ·	ei (Explain	in Remarks)			eave Hummocks ((10	
`	sparse	ely vegetated Con		; (D0)								
Field	Obse	vations:										
			res	No X D	epth (inches	s):						
Water	table	Present?	/es		epth (inches							
Satura	ation F	resent?	/es		epth (inches	·		Wetland Hy	ydrology Pres	ent? Yes	No	х
(includ	des ca	pillary fringe)										
Describe R	Record	ed Data (Unname	d Tributary g	auge, monitorii	ng well, aeri	ial photos, p	previou	s inspections), i	if available:			
Remarks:	The so	oil surface was mo	ist due to rec	ent rain events	s but no oth	er hydrolog	y obsei	rved.				

Project/Site:	Marine Drive Propose	ed Development P	roject	City/County:	Whatcom C	County			Sampling	Date:	Oct, 26 2	2020
Applicant/Owner:	ABC Recycling						State:	WA	Sampling	Point:	DP-09	Э
Investigator(s):	Joseph R. Pursley (A	nchor QEA, LLC)		Section	n, Township,	Range:	S44, T	38, R2E				
Landform (hillslope	e, terrace, etc.):	slop/depression m	iosaic	Local re	lief (concave	e, convex	, none):	Concave		SI	ope: 0-	-8%
Subregion (LRR):	Northwest Forests an	d Coast (LRR A)	Lat:				Long:			Da	tum:	
Soil Map Unit Nam	ne: Urban land –	Whatcom - Labour	nty complex	(NWI Cla	ssification:	PSSC			
Are climatic / hydro	ologic conditions on th	••	-		Yes	Х	No		(If no, explai			
Are Vegetation	, Soil			significantly		Are "N	Iormal C	ircumstanc	ces" Present?	Yes	X No	
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	ded, exp	plain any ai	nswers in Ren	narks.)		
	FINDINGS – Atta	ach site man s	howing s	ampling r	oint locat	tions ti	ansoc	ts imnoi	rtant foatur	as atc		
			nowing 3				ansee	<u>(3, 111)</u>		03, 010		
Hydrophytic Veget	ation Present?	Yes X No										
Hydric Soil Presen	it?	Yes X No			ampled Area a Wetland?	3	Yes	Х	No			
Wetland Hydrolog	y Present?	Yes X No		within a	a wettanu:							
			<u> </u>									
Remarks: For lab	eled Data Plot location	s and site map ple	ease see Fig	gure 5 in the	"Wetland De	elineation	Report,	, Anchor QI	EA, Nov. 2020)".		
VECETATION												
VEGETATION					I							
			Absolute	Dominant	Indicator	Domina	nce Tes	st workshe	et:			
T OL I		`	% Cover	Species?	Indicator Status?	Numbor	of Domi	inant Speci	ioc			
Tree Stratum	(Plot size:)						ACW, or F		2	(4)	
1. Salix scouleria		· ·	15	Yes	FAC FAC					3	(A)	
 Betula papyrife 3. 	la		25	Yes	FAC			Dominant All Strata:		3	(B)	
						•				3	(D)	
4 5.		<u> </u>						nant Speci ACW, or F		100%	(A/B))
	20 20%= 8	Total Cover:	40			mat Ait	, ODL, I		AU	100 /0	(/\'D))
Sapling/Shrub Stra			-10		Ī	Prevale	nce Ind	ex Worksh	eet:			
1. Cornus sericea	` -	,	55	Yes	FACW		al % Co			ultiply by:		
2. Salix scouleria			10	No	FAC	OBL spe		0	x1 =	0		
3. Lonicera involu	ıcrata		15	No	FAC	FACW s	species	55	x2 =	110		
4.						FAC spe	ecies	65	x3 =	195		
5.						FACU s	pecies	0	x4 =	0		
50%=	40 20%= 16	Total Cover:	80			UPL spe	ecies	0	x5 =	0		
Herb Stratum	(Plot size:)				Column	Totals:	120	(A)	305	(B)	
1						Preva	ence Ind	dex = B/A =	=2	2.5		
2												
3						Hydrop	-	getation Ir				
4									Hydrophytic \	/egetatio	า	
5						<u> </u>			est is >50%			
6						<u>X</u>			dex is $\leq 3.0^1$			
7									Adaptation ¹ (F			
		· .							ks or on a sep √ascular Plant		et)	
9	0 000/ 0	Tatal Osuan										
	0 20% = 0	Total Cover:	0			1			ophytic Vegeta			
Woody Vine Stratu)							d wetland hyd d or problema		JSt	
2.						•						
<u> </u>		Total Cover:	0			Hydrop Vegetat						
% Ba	re Ground in Herb Stra			tic Crust		Present			Yes X	No		
	shrubs prevent the her										<u> </u>	
. tomanto. Dense s			-F									

DP-09

Profile Desc	ription: (Descri	be to the de	oth needed to do	cument t	he indicat	or or co	nfirm the absen	ce of indicators.)
Depth	Matrix		R	edox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 3/1	100					SiL	
10-14	10YR 3/1	95	10YR 4/6	5	С	М	SiL	Bright redox concentrations, saturation
14-18	10YR 5/1	85	10YR 4/6	5	С	М	SiL	Redox in the depleted layer.
	101110/1							
			-	·			· · ·	
¹ Type: C=C	oncentration, D=D	epletion, RN	=Reduced Matrix	, CS=Cov	ered or Co	ated Sa	nd Grains. ² Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to al	LRRs. unless o	therwise	noted.)		Indicators for	r Problematic Hydric Soils ³ :
Histoso				Redox (S				2 cm Muck (A10) (LRR B)
	pipedon (A2)			ed Matrix (Red Parent Material (TF2)
	listic (A3)			`	ineral (F1)	(except	MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrog	en Sulfide (A4)				latrix (F2)		·	Other (Explain in Remarks)
Deplete	ed Below Dark Su	rface (A11)		ed Matrix				
Thick D	ark Surface (A12)	X Redox	Dark Surf	face (F6)		³ Indicato	rs of hydrophytic vegetation and
Sandy	Muck Mineral (S1)	Deplet	ed Dark S	urface (F7)	wetlan	nd hydrology must be present,
Sandy	gleyed Matrix (S4)	Redox	Depressio	ons (F8)		unle	ss disturbed or problematic.
Restrictive	Layer (if present):						
Туре:								
Depth (inche	s):					H	ydric Soil Prese	nt? Yes <u>X</u> No
	drology Indicato							
·	cators (minimum o	one required;		• •				Secondary Indicators (2 or more required)
	e Water (A1)		X Water-) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
0	ater Table (A2)		•	, 4A and	4B)			4A and 4B)
	ion (A3)			ust (B11)				Drainage Patterns (B10)
	Marks (B1)		·		rates (B13	,		Dry-Season Water Table (C2)
	ent Deposits (B2)		, .	•	e Odor (C1	,		Saturation Visible on Aerial Imagery (C9)
	posits (B3)						g Roots (C3)	Geomorphic Position (D2)
	at or Crust (B4)				luced Iron	` '		Shallow Aquitard (D3)
	posits (B5)				uction in P		. ,	FAC-Neutral Test (D5)
	Soil Cracks (B6)				sed Plants			Raised Ant Mounds (D6) (LRR A)
	ion Visible on Ae ly Vegetated Con	0,1	·	Explain in	n Remarks)			Frost-Heave Hummocks (D7)
Field Obser	vatione							
Surface Wat				h (inches)				
Water table		Yes <u>X</u>		h (inches) h (inches)				
Saturation P		res <u>x</u> Yes X	'	h (inches)			Wetland Hydr	ology Present? Yes X No
(includes cap		<u> </u>		(. 10			
	ed Data (Unname	d Tributary o	auge, monitoring	well, aeria	l photos r	revious	inspections) if a	vailable:
	•							at 16 inches BGS.
		,						
S Army Corps o	f Engineers						W	estern Mountains, Valleys and Coast - Version 2

Project/Site:	Marine Drive Prop	osed Developmen	t Project	City/County:	Whatcom	County			Sam	pling Date:	Oct	, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Sam	pling Point:	[DP-10
Investigator(s):	Joseph R. Pursley	(Anchor QEA, LL	C)	Section	n, Township	, Range:	S44, T3	8, R2E				
Landform (hillslope	e, terrace, etc.):	Hillslope/terrac	e	Local re	lief (concav	e, convex	, none):	Convex			Slope:	0-8%
Subregion (LRR):	Northwest Forests	and Coast (LRR A	A) Lat:				Long:			[Datum:	
Soil Map Unit Nam	ne: Urban land	- Whatcom - Lab	ounty complex	x			NWI Clas	ssification	: PSSC			
Are climatic / hydro	ologic conditions on	the site typical for	r this time of y	ear?	Yes	Х	No		(If no, e	explain in Re	marks)
Are Vegetation	, Soil	, or Hydrology		significantly	disturbed?	Are "N	lormal Ci	rcumstan	ces" Pres	sent? Yes	Х	No
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	lain any a	inswers ir	n Remarks.)		
SUMMARY OF	FINDINGS – A	ttach site map	showing s	ampling	point loca	itions, t	ransect	ts, impo	ortant fe	eatures, e	c.	
Hydrophytic Veget			lo <u>X</u> lo X	Is the Sa	ampled Are	а	Yes		No	x		
Hydric Soil Presen				within a	a Wetland?		165			^	-	
Wetland Hydrology	y Present?	Yes N	lo X									
VEGETATION												
						Domina	nce Test	t workshe	eet.			
			Absolute	Dominant	Indicator	Domine		Worksin				
Tree Stratum	(Plot siz	e:)	% Cover	Species?	Status?			hant Spec				
1. Acer macrophy	llum		20	Yes	FACU	That Are	e OBL, F/	ACW, or F	-AC:	3		(A)
2. <u>Thuja plicata</u>			20	Yes	FAC			Dominant				
3. Betula papyrife	era		15	Yes	FAC	Species	Across A	All Strata:		6		(B)
4								nant Spec				
5						That Are	e OBL, F/	ACW, or I	FAC:	50%		(A/B)
	27.5 20%= 11											
Sapling/Shrub Stra		ie:)						x Works	heet:			
1. <u>Symphoricarpo</u>	os albus		45	Yes	FACU		tal % Cov			Multiply b	y:	-
 <u>Rosa nutkana</u> Cornus sericea 			<u>25</u> 10	Yes No	FAC FAC	OBL sp FACW s		0	x1 = x2 =	0		-
4.			10		170	FAC sp		70		210		-
5.						FACU s	-	85		340		-
	40 20%= 16	Total Cove	er: 80			UPL spe	-	0	x5 =	0		-
Herb Stratum	(Plot siz					Column	-	155	(A)	550		(B)
1. Pteridium aquil			20	Yes	FACU		-	ex = B/A	=	3.5		_ ` `
2.												-
3.						Hydrop	hytic Ve	getation I	ndicator	s:		
4							1 - Rapi	d Test for	r Hydroph	ytic Vegetat	ion	
5								inance To				
6							3 - Prev	alence In	dex is ≤3	3.0 ¹		
7										on ¹ (Provide		orting
8										a separate s	heet)	
9								and Non-				`
	<u>10</u> 20%= <u>4</u>		er: 20			1				egetation ¹ (1)
Woody Vine Stratu								fric soil ar		d hydrology	must	
1 2.						•				dematic.		
Z		Total Cove	er: 0			Hydrop	•					
% Bai	re Ground in Herb S			tic Crust		Vegetat Present			Yes	No	х	
	and vegetation scru			-	Bracken fern							
		2 0										

Profile De	scription: (Descri	be to the dep	oth needed to doc	ument t	he indicate	or or c	onfirm the abs	sence of indica	ators.)		
Depth	Matrix		Re	dox Feat	ures						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	e	Rema	rks	
0-12	10YR 3/2	100					SiL	coarse	e roots		
12-18	10YR 3/1	100					SiL	moist	soil, not saturate	ed	
	<u> </u>										
¹ Type: C=	Concentration, D=D	Depletion, RM	=Reduced Matrix,	CS=Cov	ered or Co	ated S	and Grains. ² L	ocation: PL=F	ore Lining, M=N	latrix.	
										3	
-	il Indicators: (App	licable to all					Indicators		tic Hydric Soils		
	sol (A1) c Epipedon (A2)			Redox (S d Matrix (ck (A10) (LRR B ent Material (TF2	-	
	K Histic (A3)				,		ot MLRA 1)		llow Dark Surfac	,	
	ogen Sulfide (A4)				fatrix (F2)	(CAUC)			plain in Remark		
	eted Below Dark Su	rface (A11)		d Matrix						-)	
·	A Dark Surface (A12	,			face (F6)		³ Indic	ators of hydrop	hytic vegetation	and	
Sand	ly Muck Mineral (S1)	Deplete	d Dark S	urface (F7))	we	tland hydrology	must be preser	nt,	
Sand	ly gleyed Matrix (S4)		Depressi			u	nless disturbed	d or problematic.		
Restrictiv	e Layer (if present):									
Туре:											
Depth (inc	hes):						Hydric Soil Pre	esent?	Yes	No	X
	soil below 12 inches										
HYDROLOG	SY										
	lydrology Indicato	rs:									
	dicators (minimum o		check all that app	ly)				Secondary	Indicators (2 or	more requi	ired)
Surfa	ace Water (A1)		Water-S	Stained L	eaves (B9)	(exce	pt MLRA	Water-St	ained Leaves (B	9) (MLRA 1	1, 2,
High	Water Table (A2)		1, 2,	4A and	4B)			4A an	d 4B)		
Satu	ration (A3)		Salt Cru	ıst (B11)				Drainage	Patterns (B10)		
Wate	er Marks (B1)		Aquatic	Inverteb	rates (B13))		Dry-Seas	on Water Table	(C2)	
Sedir	ment Deposits (B2)		Hydroge	en Sulfide	e Odor (C1)		Saturatio	n Visible on Aer	al Imagery	(C9)
	Deposits (B3)					-	ng Roots (C3)		hic Position (D2)	
	Mat or Crust (B4)				luced Iron	. ,			Aquitard (D3)		
	Deposits (B5)				uction in Pl		. ,		tral Test (D5)		
	ace Soil Cracks (B6)				sed Plants	. , .	LRR A)		nt Mounds (D6)	. ,	
	dation Visible on Ae	0,0	· (Explain ir	n Remarks)			Frost-He	ave Hummocks	(D7)	
Spar	sely Vegetated Con	cave Surface	(B8)								
Field Obs	ervations:										
		Yes	No X Depth	(inches)):						
Water tabl	e Present?	Yes		(inches)							
Saturation	Present?	Yes		(inches)			Wetland Hy	drology Pres	ent? Yes	No	х
(includes d	capillary fringe)						-		_		
Describe Reco	rded Data (Unname	d Tributary ga	auge, monitoring w	vell, aeria	l photos, p	revious	s inspections), i	f available:			
Remarks: The	soil surface was mo	ist due to rec	ent rain events.								

Project/Site:	Marine Drive Propos	sed Development P	roject	City/County:	Whatcom C	County			Samp	ling Date:	Oct, 26 2020
Applicant/Owner:	ABC Recycling						State:	WA	Samp	ling Point:	DP-11
Investigator(s):	Joseph R. Pursley (A	Anchor QEA, LLC)		Section	n, Township,	Range:	S44, T3	38, R2E			
Landform (hillslope	e, terrace, etc.):	slop/depression m	nosaic	Local re	elief (concave	, convex	, none):	Concave		S	lope: 0-8%
Subregion (LRR):	Northwest Forests a	nd Coast (LRR A)	Lat:	_			Long:			Da	atum:
Soil Map Unit Nam	ne: Urban land –	Whatcom - Labour	nty complex	(NWI Cla	ssification	PSSC		
Are climatic / hydr	ologic conditions on tl	he site typical for th	is time of y	ear?	Yes	Х	No		(If no, ex	plain in Ren	narks)
Are Vegetation	, Soil	, or Hydrology		significantly	disturbed?	Are "N	lormal C	ircumstan	ces" Prese	ent? Yes	X No
Are Vegetation	, Soil			naturally pro		(If nee	eded, exp	olain any a	nswers in	Remarks.)	
-											
SUMMARY OF	FINDINGS – Att	ach site map s	howing s	ampling p	point locat	tions, ti	ransec	ts, impo	rtant fea	tures, etc	
Hydrophytic Veget	ation Present?	Yes X No									
Hydric Soil Preser	it?	Yes X No			ampled Area a Wetland?	1	Yes	х	No		
Wetland Hydrolog	y Present?	Yes X No		within t	a mediana.						
Remarks: For lab	eled Data Plot location	ns and site map ple	ease see Fig	gure 5 in the	"Wetland De	elineatior	n Report,	Anchor Q	EA, Nov. 2	2020".	
VEGETATION											
			Absolute	Dominant	Indicator	Domina	ince Tes	t workshe	et:		
Tree Stratum	(Plot size:)	% Cover	Species?	Status?	Number	of Domi	inant Spec	ies		
1. Salix scouleria	,)	5	No	FAC			ACW, or F		3	(A)
2. Betula papyrife			30	Yes	FAC	Total Nu	umber of	Dominant		5	(A)
3.	ia			103				All Strata:		3	(B)
4.		<u> </u>			·					5	(B)
4 5.					·			nant Speci ACW, or F		100%	(A/B)
	17.5 20%= 7	Total Cover:	35		·	mat Ait	BODL, I	AC10, 011	AC	10070	(A(B)
Sapling/Shrub Stra					F	Provalo	nce Inde	ex Worksh	heet.		
1. Cornus sericea		/	50	Yes	FACW		tal % Co		leet.	Multiply by	
2. Lonicera involu		·	20	Yes	FAC	OBL spe		0	x1 =	0	
3.			20	100		FACW s		50		100	
4.						FAC spe	•	55		165	
5.					·	FACU s		0		0	
	35 20%= 14	Total Cover:	70		·	UPL spe		0	x5 =	0	
Herb Stratum	(Plot size:	-				Column		105	(A)	265	(B)
1.	(/						dex = B/A =	_`´	2.5	()
2.										-	
3.						Hydrop	hytic Ve	getation I	ndicators:	:	
4.							-	-		tic Vegetatio	on
5.						x		ninance Te		-	
6.						x	3 - Prev	valence In	dexis ≤3.	0 ¹	
-										n ¹ (Provide s	supporting
8.										separate sh	
9.		·						tland Non-'			,
50%=	0 20%= 0	Total Cover:	0				Probler	matic Hvdr	ophytic Ve	getation ¹ (E	xplain)
Woody Vine Stratu						¹ Indicate		•		hydrology m	
1.								ss disturbe			uor
2.					·						
		Total Cover:	0		·	Hydrop Vegetat	-				
% Ba	re Ground in Herb Str		over of Bio	tic Crust		Present			Yes	X No	
	shrubs prevent the he										
Temarka. Dense s		is ayer noni develo	oping.								

Profile Des	cription: (Describ	e to the de	oth needed to a	locument t	the indicat	or or co	nfirm the abse	ence of indicators.)
Depth	Matrix		I	Redox Feat	tures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 3/1	100					SiL	Coarse roots
8-13	10YR 3/1	95	10YR 4/6	5	С	М	SiL	Bright redox concentrations, saturation
13-18	10YR 5/1	85	10YR 4/6	5	С	М	SCL	Redox in the depleted layer.
			101111.00					
·								
·					. <u> </u>			
					<u> </u>			
					<u> </u>			
¹ Type: C=C	oncentration, D=D	epletion, RM	=Reduced Matr	ix. CS=Cov	/ered or Co	ated Sa	nd Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.
.)po. e e		oprotion, i th	nouced man					
Hydric Soil	Indicators: (Appl	icable to al	LRRs, unless	otherwise	noted.)		Indicators f	or Problematic Hydric Soils ³ :
Histoso	ol (A1)		Sand	y Redox (S	5)			2 cm Muck (A10) (LRR B)
Histic I	Epipedon (A2)		Stripp	bed Matrix	(S6)		_	Red Parent Material (TF2)
Black I	Histic (A3)		Loam	ny Mucky M	lineral (F1)	(except	MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrog	en Sulfide (A4)		Loam	y Gleyed N	Matrix (F2)		_	Other (Explain in Remarks)
Deplet	ed Below Dark Sur	face (A11)	Deple	eted Matrix	(F3)			
Thick [Dark Surface (A12)		X Redo	x Dark Sur	face (F6)		³ Indica	tors of hydrophytic vegetation and
Sandy	Muck Mineral (S1)		Deple	eted Dark S	Surface (F7)	wetla	and hydrology must be present,
Sandy	gleyed Matrix (S4)		Redo	x Depressi	ons (F8)		un	less disturbed or problematic.
	Layer (if present)	:						
Туре:								
Depth (inche	es):					н	ydric Soil Pres	ent? Yes X No
HYDROLOG	,							
Wetland Hy	drology Indicator	S:						
Primary Indi	cators (minimum o	ne required;						Secondary Indicators (2 or more required)
Surfac	e Water (A1)		X Wate	r-Stained L	eaves (B9)) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
	/ater Table (A2)		-	2, 4A and	,		—	4A and 4B)
	tion (A3)			Crust (B11)			—	Drainage Patterns (B10)
	Marks (B1)				orates (B13		_	Dry-Season Water Table (C2)
	ent Deposits (B2)			•	e Odor (C1			Saturation Visible on Aerial Imagery (C9)
	eposits (B3)				-	-	g Roots (C3)	Geomorphic Position (D2)
	lat or Crust (B4)				duced Iron	• •		Shallow Aquitard (D3)
	eposits (B5)				luction in P		. ,	FAC-Neutral Test (D5)
	e Soil Cracks (B6)				sed Plants		KK A)	Raised Ant Mounds (D6) (LRR A)
	tion Visible on Aeri		·	r (Explain Ir	n Remarks))	—	Frost-Heave Hummocks (D7)
	ly Vegetated Conc	ave Sunace	(DO)					
Field Obser	vations:							
Surface Wat		es	No X De	oth (inches):			
Water table		es X		oth (inches				
Saturation P	resent? Y	es X	No De	oth (inches): 8		Wetland Hyd	Irology Present? Yes X No
(includes ca	pillary fringe)							
Describe Record	ed Data (Unnamed	l Tributary g	auge, monitoring	g well, aeria	al photos, p	revious	inspections), if	available:
Remarks: Deplet	ed layer was dense	e. Hydrology	was flowing in a	at 13 inches	s over depl	eted lay	er. Water poole	d at 16 inches BGS.

Project/Site:	Marine Drive Propo	sed Development P	Project	City/County:	Whatcom (County			San	npling Date:	Oct, 26 20)20
Applicant/Owner:	ABC Recycling		State: WA						San	npling Point:	DP-12	
Investigator(s):	Joseph R. Pursley (Anchor QEA, LLC)		Section	n, Township,	, Range:	S44, T3	38, R2E				
Landform (hillslop	e, terrace, etc.):	Hillslope		Local re	lief (concave	e, convex	, none):	Convex			Slope: 0-8	3%
Subregion (LRR):	Northwest Forests a	and Coast (LRR A)	Lat:				Long:			D	atum:	
Soil Map Unit Nan	ne: Urban land -	- Whatcom - Labour	nty complex	K			NWI Cla	ssification	: PSSC			
Are climatic / hydr	ologic conditions on t	he site typical for th	nis time of y	ear?	Yes	Х	No		(If no,	explain in Re	marks)	
Are Vegetation	, Soil	, or Hydrology				Are "N	Iormal C	ircumstar	ices" Pre	sent? Yes	X No	
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	olain any a	answers i	n Remarks.)		
SUMMARY OF	Findings – At	tach site map s	howing s	ampling p	point loca	tions, t	ransec	ts, impo	ortant f	eatures, et	с.	
Hydrophytic Vege	tation Present?	Yes No	x									
Hydric Soil Preser		Yes No	<u> </u>		ampled Are		Yes		No	х		
Wetland Hydrolog		Yes No	<u> </u>	within a	a Wetland?							
Wolland Hydrolog		100110										
VEGETATION												
						Domina	nco Tos	t worksh	oot.			
			Absolute	Dominant	Indicator							
Tree Stratum	(Plot size	:)	% Cover	Species?	Status?			inant Spe				
1. Betula papyrife	era		20	Yes	FAC	That Are	OBL, F	ACW, or	FAC:	2	(A)	
2								Dominan				
3.						Species	ACTOSS	All Strata:		4	(B)	
4				<u> </u>				nant Spec				
5	40 00% 4	Tatal Oawar				That Are	OBL, F	ACW, or	FAC:	50%	(A/B)	
	= 10 20% = 4	-	20			Brovala	noo Inde	ex Works	haati			
Sapling/Shrub Stra 1. Symphoricarpo		:)	50	Yes	FACU		al % Co		neet.	Multiply by		
2. Rosa nutkana			10	No	FAC	OBL spe		0		0	<u>/</u>	
3. Cornus sericea			20	Yes	FAC	FACW s	-	0		0		
4.	-					FAC spe		50	x3 =	150		
5.						FACU s	-	80	x4 =	320		
50%=	= 40 20%= 16	Total Cover:	80			UPL spe	-	0	x5 =	0		
Herb Stratum	(Plot size	:)				Column	Totals:	130	(A)	470	(B)	
1. Pteridium aqui	ilinum		30	Yes	FACU	Preva	ence Inc	dex = B/A	=	3.6		
2.												
3						Hydrop	hytic Ve	getation	Indicator	'S:		
4										hytic Vegetati	on	
5								ninance T				
-								valence Ir				
										ion ¹ (Provide		
								a in Rema tland Non-		a separate sl	neet)	
9	= 15 20%= 6	Total Cover:	30							/egetation ¹ (E		
Woody Vine Strat		_				¹ Indicate		-				
								ss disturb		id hydrology r blematic.	nusi	
2.												
		Total Cover:	0			Hydrop Vegetat	•					
% Ba	re Ground in Herb St		over of Bio	tic Crust		Present			Yes	No	х	
Remarks: The upl	and vegetation scrub	-shrub layer was ve	ry dense wi	th only tall B	Bracken fern	in the he	rb layer.					
F.	5			,			,					

Pro	file Des	cription: (Desc	ribe to the de	oth needed to do	cument t	he indicate	or or co	onfirm the abse	ence of indicators.)
Dep	oth	Matri	ix	Re	dox Feat	ures			
(inc	hes)	Color (moist	t) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
C)-10	10YR 3/2	100					SiL	coarse roots
1	0-18	10YR 3/1	100					SiL	dense soil, very few roots.
								_	
						·			
	<u> </u>					·			
·						·			
¹ Tyr		oncentration D-	-Depletion RM	-Reduced Matrix			ated Sa	nd Grains ² Lo	ocation: PL=Pore Lining, M=Matrix.
i yr	<i>.</i> 0–0				00-000				
Hvd	Iric Soil	Indicators: (Ar	policable to al	LRRs, unless ot	herwise	noted.)		Indicators f	or Problematic Hydric Soils ³ :
,.	Histos				Redox (S				2 cm Muck (A10) (LRR B)
		Epipedon (A2)			d Matrix (-		—	Red Parent Material (TF2)
		Histic (A3)		```		ineral (F1)	(except	MLRA 1)	Very Shallow Dark Surface (TF12)
		gen Sulfide (A4)			-	latrix (F2)	• •	, <u> </u>	Other (Explain in Remarks)
		ed Below Dark S	Surface (A11)		d Matrix	. ,		_	
	•	Dark Surface (A1	()		Dark Surf			³ Indica	tors of hydrophytic vegetation and
	Sandy	Muck Mineral (S	51)	Deplete	d Dark S	urface (F7))	wetla	and hydrology must be present,
		gleyed Matrix (S			Depressio		,		less disturbed or problematic.
—		9.0,000,000,000				()			
Res	trictive	Layer (if preser	nt):						
Тур	e:								
Dep	th (inch	es):					н	ydric Soil Pres	ent? Yes No X
								-	
Remarks	s: The so	oil below 10 inche	es was very de	nse but had no Ol	R's or red	lox.			
HYDRO	OLOG	1							
Wet	tland Hy	drology Indicat	ors:						
Prin	nary Ind	icators (minimum	n one required;	check all that app	ly)				Secondary Indicators (2 or more required)
	Surfac	e Water (A1)		Water-	Stained L	eaves (B9)) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
	High V	Vater Table (A2)		1, 2,	4A and	4B)		_	4A and 4B)
	Satura	tion (A3)		Salt Cru	ust (B11)			_	Drainage Patterns (B10)
	Water	Marks (B1)		Aquatic	Inverteb	rates (B13))		Dry-Season Water Table (C2)
	Sedim	ent Deposits (B2	2)	Hydrog	en Sulfide	e Odor (C1)		Saturation Visible on Aerial Imagery (C9)
	Drift D	eposits (B3)		Oxidize	d Rhizos	pheres alor	ng Livin	g Roots (C3)	Geomorphic Position (D2)
	Algal N	Mat or Crust (B4)		Presen	ce of Rec	luced Iron	(C4)	_	Shallow Aquitard (D3)
_	-	eposits (B5)		Recent	Iron Red	uction in P	lowed S	oils (C6)	FAC-Neutral Test (D5)
	Surfac	e Soil Cracks (B	6)	Stunted	l or Stres	sed Plants	(D1) (L	RR A)	Raised Ant Mounds (D6) (LRR A)
		ation Visible on A	•	B7) Other (Explain in	Remarks))	· -	Frost-Heave Hummocks (D7)
		ely Vegetated Co			•	,		_	
	•	, ,							
Fiel	d Obse	rvations:							
Sur	face Wa	ter Present?	Yes	No X Depth	n (inches)):			
Wat	ter table	Present?	Yes	No X Depth	n (inches)):			
Satu	uration F	Present?	Yes	No X Depth	n (inches)):		Wetland Hyd	Irology Present? Yes No X
(inc	ludes ca	pillary fringe)							
Describe	Record	led Data (Unnam	ned Tributary g	auge, monitoring v	vell, aeria	l photos, p	revious	inspections), if	available:
Remarks	s: The so	oil surface was m	noist due to rec	ent rain events.					

Project/Site:	Marine Drive P	roposed De	evelopment P	roject	City/County:	Whatcom (County			Sam	pling Date:	Oct, 2	26 2020
Applicant/Owner:	ABC Recycling							State:	WA	Sam	pling Point:	D	P-13
Investigator(s):	Joseph R. Purs	sley (Ancho	or QEA, LLC)		Section	n, Township,	, Range:	S44, T	38, R2E				
Landform (hillslop	e, terrace, etc.):	close	ed depressior	n	Local re	lief (concave	e, convex	, none):	Concave	1		Slope:	0-8%
Subregion (LRR):	Northwest Fore	ests and Co	oast (LRR A)	Lat:				Long:			C	Datum:	
Soil Map Unit Nam	ne: Urban la	and – Wha	tcom - Labou	nty complex	K			NWI Cla	ssificatio	n: PSSC			
Are climatic / hydr	ologic conditions	s on the site	e typical for th	nis time of y	ear?	Yes	Х	No		(If no, e	explain in Re	marks)	
Are Vegetation	, Soil	, or l	Hydrology		significantly	disturbed?	Are "N	lormal C	ircumstar	nces" Pres	ent? Yes	<u> </u>	<u>اه ا</u>
Are Vegetation	, Soil	, or l	Hydrology		naturally pro	oblematic?	(If nee	ded, exp	plain any	answers ir	n Remarks.)		
SUMMARY OF	FINDINGS -	Attach	site map s	howing s	ampling p	point locat	tions, ti	ansec	ts, impo	ortant fe	atures, et	с.	
			X N										
Hydrophytic Veget		Yes	X No		Is the Sa	ampled Area	a	Vaa	v	No			
Hydric Soil Preser		Yes	X No		within a	a Wetland?		Yes	<u> </u>	No			
Wetland Hydrolog	y Present?	Yes	X No										
Remarks: For lab	eled Data Plot Ic	cations an	d site map ple	ase see Fi	gure 5 in the	"Wetland D	elineatior	Report,	Anchor (QEA, Nov.	2020".		
					guio o in the	Wolland D	onnoador	ritoport,		x = <i>i</i> , i	2020 .		
VEGETATION													
				Absolute	Dominant	Indicator	Domina	nce Tes	st worksh	eet:			
Tree Stratum	(Plot	size:)	% Cover	Species?	Status?	Number	of Domi	inant Spe	cies			
1.	(110)	. 5126.)						ACW, or		2	((A)
2.							Total Nu	umber of	Dominar			(~)
3.									All Strata		2	((B)
							-			<u> </u>	2	(0)
4 5.									nant Spe ACW, or		100%	((A/B)
5	0 20%=	0	Total Cover:	0			That Are	UDL, F		FAC	100 /6	(къ)
Sapling/Shrub Stra		size:				-	Broyalo	nco Ind	ex Works	hoot:			
1. Cornus sericea		. 5126.)	50	Yes	FACW		tal % Co		meet.	Multiply b		
2. Lonicera involu				10	No	FAC	OBL spe		0	x1 =	Multiply by 0	<u>y.</u>	
3. Salix scouleria				30	Yes	FAC	FACW s		50		100		
4.	na				163		FAC spe	•	40		120		
5.							FACU s				0		
	45 20%=	18	Total Cover:	90			UPL spe		0	x5 =	0		
Herb Stratum		size:					Column		90	(A)	220	((B)
1.	(110)	. 5126.)						dex = B/A	`´	2.4	(0)
2.							Tieva				2.7		
3.							Hydron	hvtic Ve	detation	Indicators	s.		
4.								-	-		ytic Vegetati	ion	
5.							X			est is >50		on	
6.							<u>x</u>			ndex is ≤3			
-											on ¹ (Provide	ourrord	ting
8.											a separate s		ang
9.										-Vascular	•		
	0 20%=	0	Total Cover:	0							egetation ¹ (E	=xplain)	
Woody Vine Strate		size:)								d hydrology i		
1.	(****		/							ed or prob		nuot	
2.							•						
			Total Cover:	0			Hydrop Vegetat	•					
% Ba	re Ground in He	rb Stratum			tic Crust		Present			Yes	X No		
Remarks: Dense s						oning							
Temarka. Dellae S	and close	a aepiessi	on prevent (n	e nero laye		շխուց.							

Profile Des	cription: (Describe	to the dep	oth needed to do	cument t	he indicat	or or co	onfirm the abse	nce of indicators.)
Depth	Matrix		R	edox Feat	ures		_	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/1	100					SiL	Coarse roots
6-12	10YR 3/1	90	10YR 4/6	10	С	М	SiL	Bright redox concentrations, saturation
12-18	10YR 5/1	85	10YR 4/6	15	С	М	SCL	Redox in the depleted layer.
¹ Type: C=C	oncentration, D=Der	oletion, RM	=Reduced Matrix	, CS=Cov	ered or Co	ated Sa	nd Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	cable to al					Indicators for	or Problematic Hydric Soils ³ :
Histos	()			Redox (S	,		_	2 cm Muck (A10) (LRR B)
	Epipedon (A2)			ed Matrix (,	<u> </u>	Red Parent Material (TF2)
	Histic (A3)			,	ineral (F1) 1atrix (F2)	· •	MLRA 1)	Very Shallow Dark Surface (TF12)
	jen Sulfide (A4) ed Below Dark Surfa	οce (Δ11)		ed Matrix	. ,		—	Other (Explain in Remarks)
	Dark Surface (A12)			Dark Surf			³ Indicat	tors of hydrophytic vegetation and
	Muck Mineral (S1)				urface (F7))		and hydrology must be present,
	gleyed Matrix (S4)			Depressio		/		less disturbed or problematic.
	g.c) cu mann (c i)			20010000				
Restrictive	Layer (if present):							
Туре:								
Depth (inche	es):					н	ydric Soil Pres	ent? Yes <u>X</u> No
HYDROLOG	1							
•	drology Indicators							
	cators (minimum on	e required;		• •				Secondary Indicators (2 or more required)
	e Water (A1)		X Water-) (excep	t MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
	/ater Table (A2)		-	, 4A and	4B)			4A and 4B)
	tion (A3) Morke (B1)			ust (B11)	rotoo (P12)	`		Drainage Patterns (B10) Dry-Season Water Table (C2)
	Marks (B1) ent Deposits (B2)				rates (B13) e Odor (C1			Saturation Visible on Aerial Imagery (C9)
	eposits (B3)						g Roots (C3)	Geomorphic Position (D2)
	Mat or Crust (B4)				luced Iron	-		Shallow Aquitard (D3)
	eposits (B5)				uction in P	. ,	oils (C6)	FAC-Neutral Test (D5)
	e Soil Cracks (B6)				sed Plants		. ,	Raised Ant Mounds (D6) (LRR A)
	tion Visible on Aeria	l Imagery (Remarks)		· _	Frost-Heave Hummocks (D7)
Sparse	ely Vegetated Conca	ve Surface	(B8)				_	_
Field Obser	vations:							
Surface Wa	ter Present? Ye	s	No X Dept	h (inches)):			
Water table	Present? Ye	s <u>X</u>	No Dept	h (inches)	: 16			
Saturation F (includes ca	Present? Ye pillary fringe)	s <u>X</u>	No Dept	h (inches)	: 8		Wetland Hyd	Irology Present? Yes X No
	ed Data (Unnamed	Tributary g	auge, monitoring	well, aeria	l photos, p	revious	inspections), if a	available:
Remarks: Deplet	ed layer was dense.	Hydrology	was flowing in at	12 inches	over depl	eted lay	er. Water pooled	d at 16 inches BGS.
			-					

Project/Site:	Marine Drive Prop	osed Development	Project	y: Whatcom County					oling Date:	Oct, 2	26 2020	
Applicant/Owner:	ABC Recycling						State:	WA	Samp	oling Point:	DF	P-14
Investigator(s):	Joseph R. Pursley	(Anchor QEA, LLC	2)	Section	n, Township	, Range:	S44, T3	38, R2E				
Landform (hillslope	e, terrace, etc.):	Hillslope/terrace)	Local re	lief (concav	e, convex	, none):	Convex		5	Slope:	0-8%
Subregion (LRR):	Northwest Forests	and Coast (LRR A) Lat:				Long:			Da	atum:	
Soil Map Unit Nam	ne: Urban land	I – Whatcom - Labo	ounty complex	x			NWI Cla	ssification	PSSC			
Are climatic / hydr	ologic conditions or	n the site typical for	this time of y	ear?	Yes	Х	No		_(If no, e	xplain in Rer	narks)	
Are Vegetation	, Soil			significantly	disturbed?	Are "N	lormal C	ircumstand	ces" Pres	ent? Yes	<u>X</u> N	10
Are Vegetation	, Soil	, or Hydrology		naturally pro	oblematic?	(If nee	eded, exp	olain any a	nswers in	Remarks.)		
SUMMARY OF	FINDINGS - A	ttach site map	showing s	ampling	point loca	ations, t	ransec	ts, impo	rtant fe	atures, etc).	
Hydrophytic Veget		Yes No		Is the Sa	ampled Are	a	Vaa		Na	v		
Hydric Soil Preser		Yes No		within a	a Wetland?		Yes		No	X		
Wetland Hydrolog	y Present?	Yes <u>No</u>	5 <u> </u>									
Remarks: For lab	eled Data Plot locat	ions and site map p	blease see Fi	gure 2 in the	"Wetland ∖	/erificatior	n and No	n-Compen	isatory Mi	tigation Plan	'. 	
			Absolute	Dominant	Indicator	Domina	nce Tes	t workshe	et:			
Tree Stratum	(Plot siz	70 .)	% Cover	Species?	Status?	Number	of Domi	nant Spec	ies			
1. Acer macrophy)	10	Yes	FACU			ACW, or F		3	6	A)
2. Betula papyrife			20	Yes	FAC	Total Ni	umber of	Dominant		0	(/	, i)
3.	, a							All Strata:		6	(1	B)
4.						Porcont	of Domi	nant Snaai		-	(_,
5.								nant Speci ACW, or F		50%	G	A/B)
	= 15 20%= 6	Total Cove	r: 30			indi / it	, UDL, 11				((2)
Sapling/Shrub Stra						Prevale	nce Inde	ex Worksh	neet:			
1. Symphoricarpo		·/	45	Yes	FACU		tal % Cov			Multiply by		
2. Cornus sericea			25	Yes	FACW	OBL spe		0	x1 =	0		
3. Rubus armenia			20	Yes	FAC	FACW s	-	25	x2 =	50		
4.						FAC spe	-	40	x3 =	120		
5.						FACU s	-	65	x4 =	260		
50%=	45 20%= 18	3 Total Cove	r: 90			UPL spe	ecies	0	x5 =	0		
Herb Stratum	(Plot siz	:e:)				Column	Totals:	130	(A)	430])	B)
1. Pteridium aqui	linum		10	Yes	FACU	Preva	lence Ind	lex = B/A =	=	3.3		
2												
3						Hydrop	hytic Ve	getation I	ndicators	:		
4							1 - Rap	id Test for	Hydrophy	tic Vegetatio	วท	
5							2 - Dom	ninance Te	est is >50%	%		
6.							3 - Pre\	alence Ind	dex is ≤3	.0 ¹		
7		<u> </u>					4 - Mor	phological	Adaptatio	on ¹ (Provide	support	ing
8										separate sh	eet)	
9								land Non-				
50%=			r: <u>10</u>			<u> </u>				egetation ¹ (E	• •	
Woody Vine Stratu	um (Plot siz	:e:)								l hydrology n	nust	
1						be prese	ent, unles	ss disturbe	d or prob	lematic.		
2						Hydrop	•					
0/ D-	na Ona un dia Ulark (Total Cove		1		Vegetat			X	N	v	
	re Ground in Herb S			-		Present			Yes	No	X	
Remarks: The upla	and vegetation scru	b-shrub layer was v	very dense wi	ith only tall B	Bracken fern	in the he	rb layer.					

Pr	ofile Des	cription: (Describ	e to the dep	oth needed to do	cument t	he indicate	or or c	onfirm the abs	sence of indi	cators.)			
De	epth	Matrix		Re	dox Feat	ures							
(in	iches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture)	Rema	rks		
<u> </u>	0-8	10YR 3/3	100					SiL	coars	se roots			
	8-18	10YR 3/2	100					SiL	mois	t soil, not saturate	ed		
			<u> </u>										
			·			· ·							
				<u> </u>		·							
			·			·							
			·			·							
¹ T		Concentration, D=De	enletion PM	-Reduced Matrix		ored or Co	atod S	and Grains ²	ocation: PL -	-Pore Lining M-N	Actrix		
	ype. 0–0		spielion, rum		00-000					-i ore Lining, M=N	natrix.		
H	dric Soi	Indicators: (Appl	icable to all	LRRs. unless ot	herwise	noted.)		Indicators	for Problem	atic Hydric Soils	3		
		ol (A1)			Redox (S	-				uck (A10) (LRR E			
	_	Epipedon (A2)			d Matrix (,		-		rent Material (TF2	-		
		Histic (A3)			`		excer	ot MLRA 1)		allow Dark Surfac	,		
		gen Sulfide (A4)				latrix (F2)		· · ·		Explain in Remark			
		ted Below Dark Sur	face (A11)		d Matrix						,		
	Thick	Dark Surface (A12)		Redox	Dark Surf	ace (F6)		³ Indic	ators of hydro	ophytic vegetation	and		
	 Sandy	Muck Mineral (S1)		Deplete	d Dark S	urface (F7))	wei	tland hydrolog	gy must be preser	nt,		
	Sandy	gleyed Matrix (S4)		Redox	Depressio	ons (F8)		u	nless disturbe	ed or problematic.			
Re	estrictive	Layer (if present):	:										
Ту	vpe:												
De	epth (inch	es):					ł	Hydric Soil Pre	esent?	Yes	No	Х	
Remar	ks: The s	oil below 12 inches	was dark an	d moist but not sa	turated a	nd it had no	o redo	х.					
		_											
	ROLOG												
	•	drology Indicator											
Pr	-	icators (minimum o	ne required;		• ·	(= -)				ry Indicators (2 or			
	_	e Water (A1)				eaves (B9)	(exce	pt MLRA		Stained Leaves (E	39) (MLRA 1	, 2,	
	_	Vater Table (A2)			4A and	4B)				and 4B)			
		ation (A3)			ust (B11)					ge Patterns (B10)			
		Marks (B1)		·		rates (B13)				ason Water Table			
		ent Deposits (B2)		, , ,		e Odor (C1)	,			ion Visible on Aer	0,0	(C9)	
	Drift D	eposits (B3)					-	ng Roots (C3)	Geomo	rphic Position (D2	2)		
		Mat or Crust (B4)				luced Iron (` '			/ Aquitard (D3)			
	Iron D	eposits (B5)				uction in Pl		. ,	FAC-Ne	eutral Test (D5)			
	Surfac	e Soil Cracks (B6)		Stunted	l or Stres	sed Plants	(D1) (I	LRR A)	Raised	Ant Mounds (D6)	(LRR A)		
	Inunda	ation Visible on Aeri	al Imagery (B7) Other (I	Explain in	Remarks)			Frost-H	eave Hummocks	(D7)		
	Spars	ely Vegetated Conc	ave Surface	(B8)									
		rvations:											
			'es		n (inches)								
			'es		(inches)								
	Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X												
		apillary fringe)											
		led Data (Unnamed			vell, aeria	il photos, pi	revious	s inspections), i	t available:				
Remar	ks: The s	oil surface was mois	st due to rec	ent rain events.									

Appendix B Precipitation Data

Marine Drive Wetland Delineation - Precipitation Data

January 2020 – Oct 2020

AgACIS			Co	ору (CSV	Excel	PDF	Print
WETS Station: BELLINGHAM NTL AP, WA								
Requested years: 2000 - 2020								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	46.2	33.8	40.0	4.46	3.48	5.15	12	-
Feb	47.8	33.5	40.6	2.78	2.17	3.21	8	+
Mar	51.8	36.9	44.3	3.54	2.68	4.13	11	-
Apr	57.0	40.8	48.9	2.63	1.85	3.12	8	-
May	63.2	46.1	54.6	2.24	1.39	2.71	6	-
Jun	67.4	51.1	59.2	1.55	1.03	1.86	5	+
Jul	72.4	54.4	63.4	0.69	0.32	0.84	2	-
Aug	72.8	54.1	63.4	1.04	0.32	1.23	3	-
Sep	67.5	49.1	58.3	2.19	1.59	2.61	6	-
Oct	58.4	42.9	50.6	3.88	2.53	4.66	9	
Nov	50.6	37.4	44.0	4.84	3.66	5.64	11	-
Dec	44.9	33.5	39.2	-	-	-	-	*
Annual:								
Average	58.3	42.8	50.5	-	-	-		-
Total	-	-					-	-

STATS TABLE - total precipitation (inches)												
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	7.02	3.94	2.96	1.43	3.08	2.05	0.86	1.28	2.19	3.50		

Sources:

AgACIS (Agricultural Applied Climate Information System), 2020. Bellingham International Airport: Monthly Summarized Precipitation. Accessed Nov. 2, 2020. Available at: <u>http://agacis.rcc-acis.org/</u> AgACIS, 2020. WETS Table: Bellingham International Airport, WA, 1999 to 2019. Agricultural Applied Climate Information System. Accessed Nov. 2, 2020. Available at: <u>http://agacis.rcc-acis.org/</u>

Appendix C Ecology Wetland Ratings Forms and Figures

Wetland A Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A (Marine Drive, Whatcom Co.) Date of site visit: 10/20/2020Rated by Joseph R. Pursley Trained by Ecology? Yes No Date of training 06/2015 HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

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

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		Н	Μ		
Landscape Potential	H	Μ	L	H	Μ	L	Н	Μ		
Value	Н	Μ		Н	Μ		Н	M	L	ΤΟΤΑ
Score Based on Ratings		6			5			4		15

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

5 = H,H,H = H,H,M = H,H,L = F,M,M = H,M,L = F,M,M = F,M,M = F,L,L = F,L = F,L,L = F,L = F,L,L = F,L = F,

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value		Ι
Bog		Ι
Mature Forest		Ι
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 dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

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

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

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

•NO – go to 2

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

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

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 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).

•N0 – 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,

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

ONO – 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. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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

The overbank flooding occurs at least once every 2 years.

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

• 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 outlet).	
points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2	1
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 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 > 1/2 of area points = 3	5
Wetland has persistent, ungrazed plants > ¹ / ₁₀ of area points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is > 1/2 total area of wetland points = 4	0
Area seasonally ponded is > ¼ total area of wetland points = 2	
Area seasonally ponded is < ¼ total area of wetland points = 0	
Total for D 1Add the points in the boxes above	6

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?				
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1		
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1		
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0		
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source <u>Homeless encampment</u> (human and domestic animal waste).	ions D 2.1-D 2.3? Yes = 1 No = 0	1		
Total for D 2 Add the points	s in the boxes above	3		

Rating of Landscape Potential If score is: $\boxed{\times}$ 3 or 4 = H $\boxed{1}$ 1 or 2 = M $\boxed{0}$ = 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, rive 303(d) list?	r, lake, or marine w	rater 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 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 3	Add the points	in the boxes above	0		
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $\times 0 = L$	Record the rat	ing on the first page			

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DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: 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	0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of 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	3	
Total for D 4Add the points in the boxes above	3	
Rating of Site Potential If score is: 12-16 = H 6-11 = M 30-5 = L Record the rating on the	first page	
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1	
Total for D 5Add the points in the boxes above	3	
Rating of Landscape Potential If score is: \boxed{X} 3 = H $\boxed{1}$ 1 or 2 = M $\boxed{0}$ = L Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
 D 6.1. <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. Do not add points</i>. <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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> <u>Wetland drains</u> to gravel points = 0 There are no problems with flooding downstream of the wetland. 	0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0	
Total for D 6 Add the points in the boxes above	0	
Rating of Value If score is: $\Box 2-4 = H \Box 1 = M \Xi 0 = L$ Record the rating on the firs		

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover $>^{3}/_{4}$ area of wetland points = 8		
Depressions cover > 1/2 area of wetland points = 4		
Depressions present but cover < ½ area of wetland points = 2		
No depressions present points = 0		
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin classes)		
Trees or shrubs $> 2/3$ area of the wetland points = 8		
Trees or shrubs $> 1/3$ area of the wetland points = 6		
Herbaceous plants (> 6 in high) $> ^{2}/_{3}$ area of the wetland points = 6		
Herbaceous plants (> 6 in high) > $^{1}/_{3}$ area of the wetland points = 3		
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland points = 0		
Total for R 1 Add the points in the boxes above		
Rating of Site Potential If score is: \square 12-16 = H \square 6-11 = M \square 0-5 = LRecord the rating of the state of	on the first page	
R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0		
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0		
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0		
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0		
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources Yes = 1 No = 0		
Total for R 2 Add the points in the boxes above		
Rating of Landscape Potential If score is: $3-6 = H$ $1 \text{ or } 2 = M$ $0 = L$ Record the rating of the ratio of the ratio of the rating of the ratio of the rat	on the first page	
R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi)	
Yes = 1 No = 0		
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0		
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which the unit is found) Yes = 2 No = 0		
Total for R 3 Add the points in the boxes above		

Total for R 3

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

Record the rating on the first page

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS			
Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion			
R 4.0. Does the site have the potential to reduce flooding and erosion?			
R 4.1. Characteristics of the overbank storage the wetland provides:	of the flow and the width of the		
Estimate the average width of the wetland perpendicular to the direction stream or river channel (distance between banks). Calculate the ratio: (a			
width of stream between banks).	verage whath of wethink/(uverage		
If the ratio is more than 20	points = 9		
If the ratio is 10-20	points = 6		
If the ratio is 5-<10	points = 4		
If the ratio is 1-<5	points = 2		
If the ratio is < 1	points = 1		
R 4.2. Characteristics of plants that slow down water velocities during floods: Tr	reat large woody debris as forest or		
shrub. Choose the points appropriate for the best description (polygons no			
height. These are <u>NOT Cowardin</u> classes).			
Forest or shrub for $>^{1}/_{3}$ area OR emergent plants $>^{2}/_{3}$ area	points = 7		
Forest or shrub for $> 1/_{10}$ area OR emergent plants $> 1/_{3}$ area	points = 4		
Plants do not meet above criteria	points = 0		
Total for R 4	Add the points in the boxes above		
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L	Record the rating on th	ne first page	
R 5.0. Does the landscape have the potential to support the hydrologic fu	unctions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1		
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0		
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1		
Total for R 5	Add the points in the boxes above		
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L	Record the rating on th	ne first page	
R 6.0. Are the hydrologic functions provided by the site valuable to societ	ty?		
R 6.1. Distance to the nearest areas downstream that have flooding problems?			
Choose the description that best fits the site.			
The sub-basin immediately down-gradient of the wetland has flooding pro	oblems that result in damage to		
human or natural resources (e.g., houses or salmon redds)	points = 2		
Surface flooding problems are in a sub-basin farther down-gradient	points = 1		
No flooding problems anywhere downstream	points = 0		
R 6.2. Has the site been identified as important for flood storage or flood convey	vance in a regional flood control plan?		
	Yes = 2 No = 0		
Total for R 6	Add the points in the boxes above		
Rating of Value If score is: 2-4 = H 1 = M 0 = L	Record the rating on th	ne first page	

LAKE FRINGE WETLANDS		
Water Quality Functions - Indicators that the site functions	to improve water quality	
L 1.0. Does the site have the potential to improve water quality?		
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes):		
Plants are more than 33 ft (10 m) wide	points = 6	
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3	
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description t points, and do not include any open water in your estimate of coverage. The her the dominant form or as an understory in a shrub or forest community. <i>These are</i> of cover is total cover in the unit, but it can be in patches. Herbaceous does not include	baceous plants can be either e not Cowardin classes. Area	
Cover of herbaceous plants is >90% of the vegetated area	points = 6	
Cover of herbaceous plants is $>^2/_3$ of the vegetated area	points = 4	
Cover of herbaceous plants is $>^{1}/_{3}$ of the vegetated area	points = 3	
Other plants that are not aquatic bed > $^{2}/_{3}$ unit	points = 3	
Other plants that are not aquatic bed in $> \frac{1}{3}$ vegetated area	points = 1	
Aquatic bed plants and open water cover $> 2/3$ of the unit	points = 0	
Total for L 1 Add t	he points in the boxes above	
Rating of Site Potential If score is: 8-12 = H 4-7 = M 0-3 = L	Record the rating on the first page	

L 2.0. Does the landscape have the potential to support the water quality function of the site?		
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?		
	Yes = 1 No = 0	
L 2.3. Does the lake have problems with algal blooms or excessive plant growth s	such as milfoil? Yes = 1 No = 0	
Total for L 2	Add the points in the boxes above	
Rating of Landscape Potential: If score is: 2 or 3 = H 1 = M 0 = L	Record the rating on the first page	

L 3.0. Is the water quality improvement provided by the site valuab	le to society?	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one 303(d) list)?	e aquatic resource in the basin is on the Yes = 1 No = 0	
L 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 lake or basin in which the unit is found. Yes = 2 No = 0		
Total for L 3	Add the points in the boxes above	
Pating of Value of source is: $\square 2.4 - 11$ $\square 1 - M$ $\square 0 - 1$	Decard the rating on the	a first page

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

Record the rating on the first page

LAKE FRINGE WETLANDS		
Hydrologic Functions - Indicators that the wetland unit functions to red	uce shoreline erosi	on
L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not in Choose the highest scoring description that matches conditions in the wetland.	clude Aquatic bed):	
>¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide >¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 6 points = 4	
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4 points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed) Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 2 points = 0	
	points – 0	
Rating of Site Potential: If score is: 6 = M 6 = M	Record the rating on t	he first page

L 5.0. Does the landscape have the potential to support the hydrologic functions of the site?						
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0					
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0					
Total for L 5	Add the points in the boxes above					
Rating of Landscape Potential If score is: $\Box 2 = H$ $\Box 1 = M$ $\Box 0 = L$ Record the rating on the first page						
L 6.0. Are the hydrologic functions provided by the site valuable to society?						

L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.				
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit				
	points = 2			
There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1			
Other resources that could be impacted by erosion	points = 1			
There are no resources that can be impacted by erosion along the shores of the unit	points = 0			
Rating of Value: If score is: $2 = H$ $1 = M$ $0 = L$	Record the rating on a	the first page		

NOTES and FIELD OBSERVATIONS:

SLOPE WETLANDS Water Quality Functions - Indicators that the site functions to improve 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 dr 100 ft of horizontal distance)	op 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				
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS de	efinitions): Yes = 3 No = 0				
S 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 wet have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mo than 6 in.	-				
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6				
Dense, uncut, herbaceous plants > $\frac{1}{2}$ of area	points = 3				
Dense, woody, plants > $\frac{1}{2}$ of area	points = 2				
Dense, uncut, herbaceous plants > ¼ of area	points = 1				
Does not meet any of the criteria above for plants	points = 0				
Total for S 1 Add the points in the boxes above					
Rating of Site Potential If score is: \Box 12 = H \Box 6-11 = M \Box 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 of the site?					
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that g	generate pollutants? Yes = 1 No = 0				
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in c	uestion S 2.1?				
Other sources	Yes = 1 No = 0				
Total for S 2 Add the	points in the boxes above				
Rating of Landscape Potential If score is: 1-2 = M 0 = L	Rating of Landscape Potential If score is: 1-2 = M 0 = L Record the rating on the first p				
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 mar 303(d) list?	ine water that is on the Yes = 1 No = 0				
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one as on the 303(d) list.	quatic resource in the basin is Yes = 1 No = 0				
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining <i>if there is a TMDL for the basin in which unit is found</i> .	g water quality? <i>Answer YES</i> Yes = 2 No = 0				
Total for S 3 Add the	points in the boxes above				

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

Record the rating on the first page

Wetland name or number _____

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce floor	ding 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 for the description that best fits conditions in the wetland. <i>Stems of plants should be thick in), or dense enough, to remain erect during surface flows.</i>	
Dense, uncut, rigid plants cover > 90% of the area of the wetland	points = 1
All other conditions	points = 0
Rating of Site Potential If score is: $\Box 1 = M \Box 0 = L$	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 g	generate excess
surface runoff?	Yes = 1 No = 0
Rating of Landscape Potential If score is: 1 = M 1 = M 1 = L	Record the rating on 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 dar	mage to human or
natural resources (e.g., houses or salmon redds)	points = 2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1
No flooding problems anywhere downstream	points = 0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a region	nal flood control plan?
	Yes = 2 No = 0
Total for S 6 Add the point	ts in the boxes above
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $0 = L$	Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

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 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, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon 1	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 (<i>see text for descriptions of hydroperiods</i>).	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species 5 - 19 species <pre></pre>	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <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 All three diagrams in this row are HIGH = 3points H 1.4. Interspersion of habitats Decide from the diagrams in this row are HIGH = 3points	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.		
X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).		
X Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	2	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are		
permanently or seasonally inundated (structures for egg-laying by amphibians)		
Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		
Total for H 1Add the points in the boxes above	5	
Rating of Site Potential If score is: \Box 15-18 = H \Box 7-14 = M \boxtimes 0-6 = LRecord the rating on the		
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		

H 2.0. Does the landscape have the potential to support the ha		
H 2.1. Accessible habitat (include only habitat that directly abuts wetl	land unit).	
Calculate: 2 % undisturbed habitat 4 + [(% moderate a	and low intensity land uses)/2] $2 = 5\%$	
If total accessible habitat is:		
> ¹ / ₃ (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
<i>Calculate:</i> 43 % undisturbed habitat 4 + [(% moderate a	and low intensity land uses)/2] $2 = 47\%$	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	I
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1
Pating of Landscape Potential If score is: $\Box 4.6 - H$ $\Box 1.3 - M$	X < 1 - I Record the rating on the	o first naa

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

Record the rating on the first page

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

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.

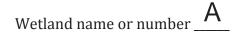
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
 With a salinity greater than 0.5 ppt OYes –Go to SC 1.1 ONO= Not an estuarine wetland 	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
OYes = Category I ONo - 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)	OCat. I
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Ũ
mowed grassland.	Cat. II
— The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	Cat. I
Conservation Value? OYes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Ocatin
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 ONO = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Over a Go to SC 3.3 ONO – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? (Yes = Is a Category I bog ()NO - Go to SC 3.4	
cover of plant species listed in Table 4? NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	OCat. 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?	
$\bigcirc Yes = Is a Category I bog \bigcirc No = Is not a bog$	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions.	
 Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. 	
 Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	OCat. 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)	OCat. I
$\bigcirc Yes - Go to SC 5.1 \bigcirc No = Not a wetland in a coastal lagoon$	
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-	Ŭ
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category I	
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 Crawland Westport: Londo west of SR 105 	OCat I
 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of <u>S</u>R 115 and SR 109 	Ocari
\bigcirc Yes – Go to SC 6.1 \bigcirc 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)? OYes = Category I • No – Go to SC 6.2	OCat. 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 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?	OCat. III
Yes = Category III • No = Category IV	OCat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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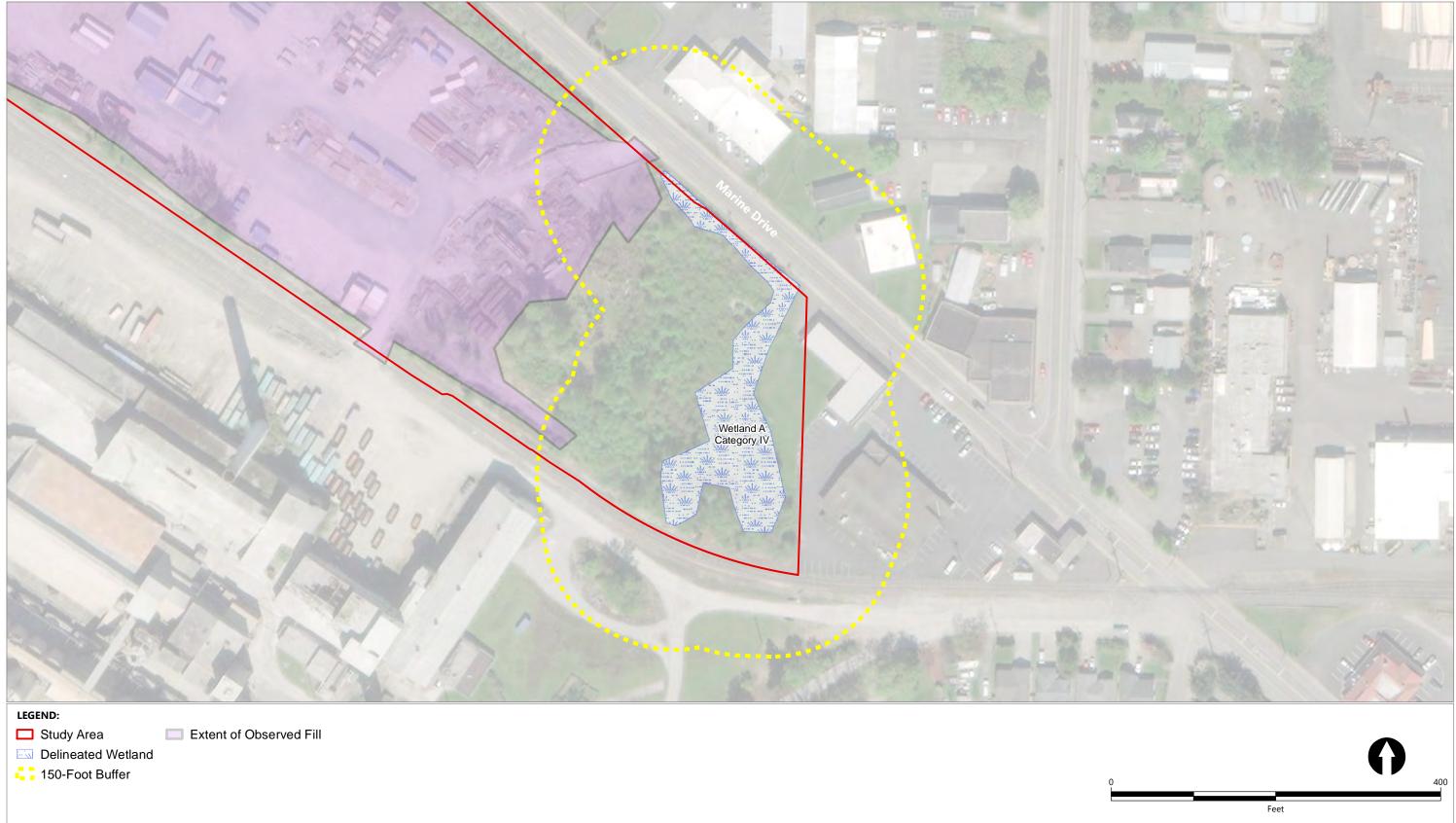
Figure 1 Wetland A Cowardin Classification Map



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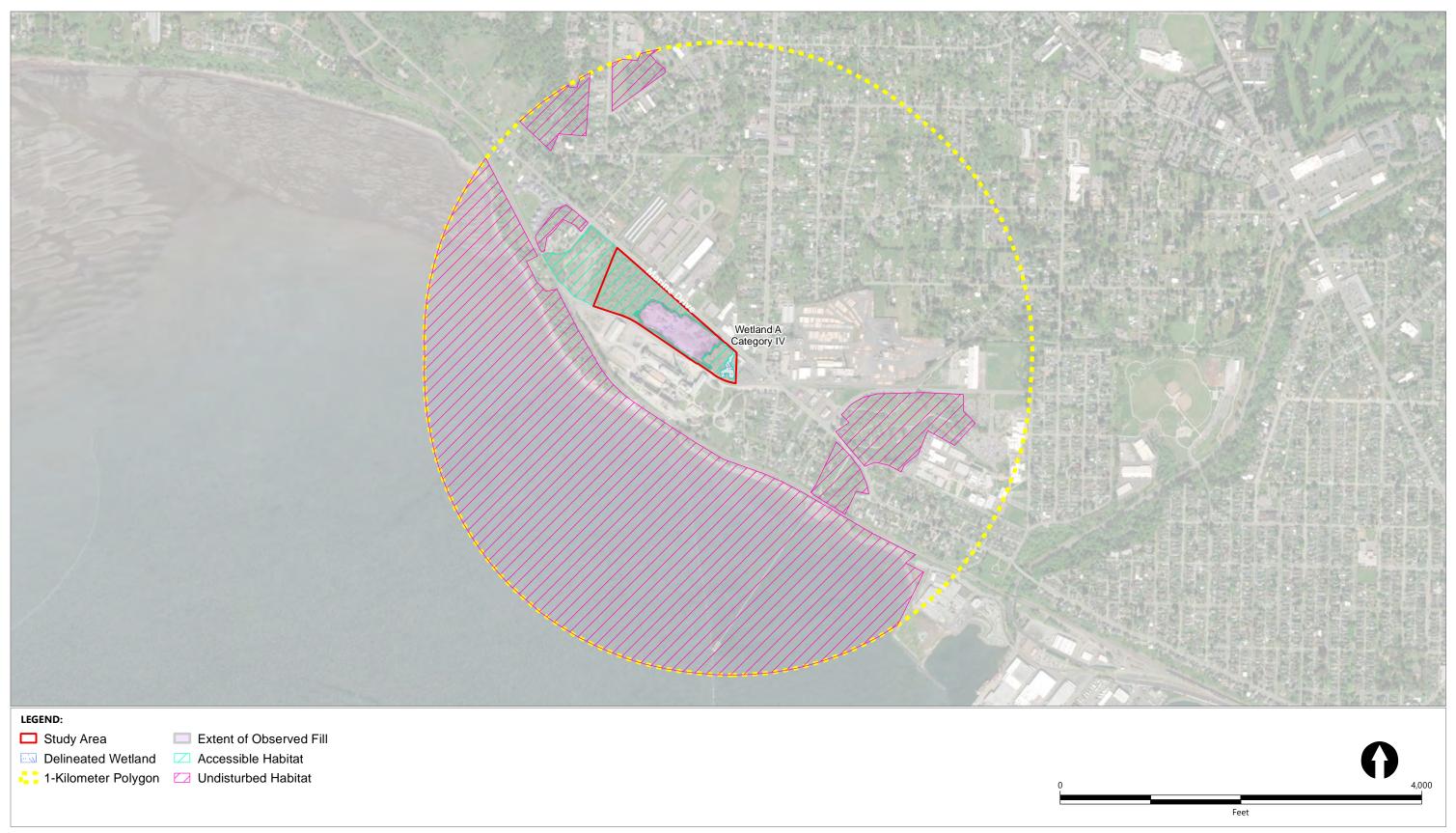
Figure 2 Wetland A Hydroperiods Map



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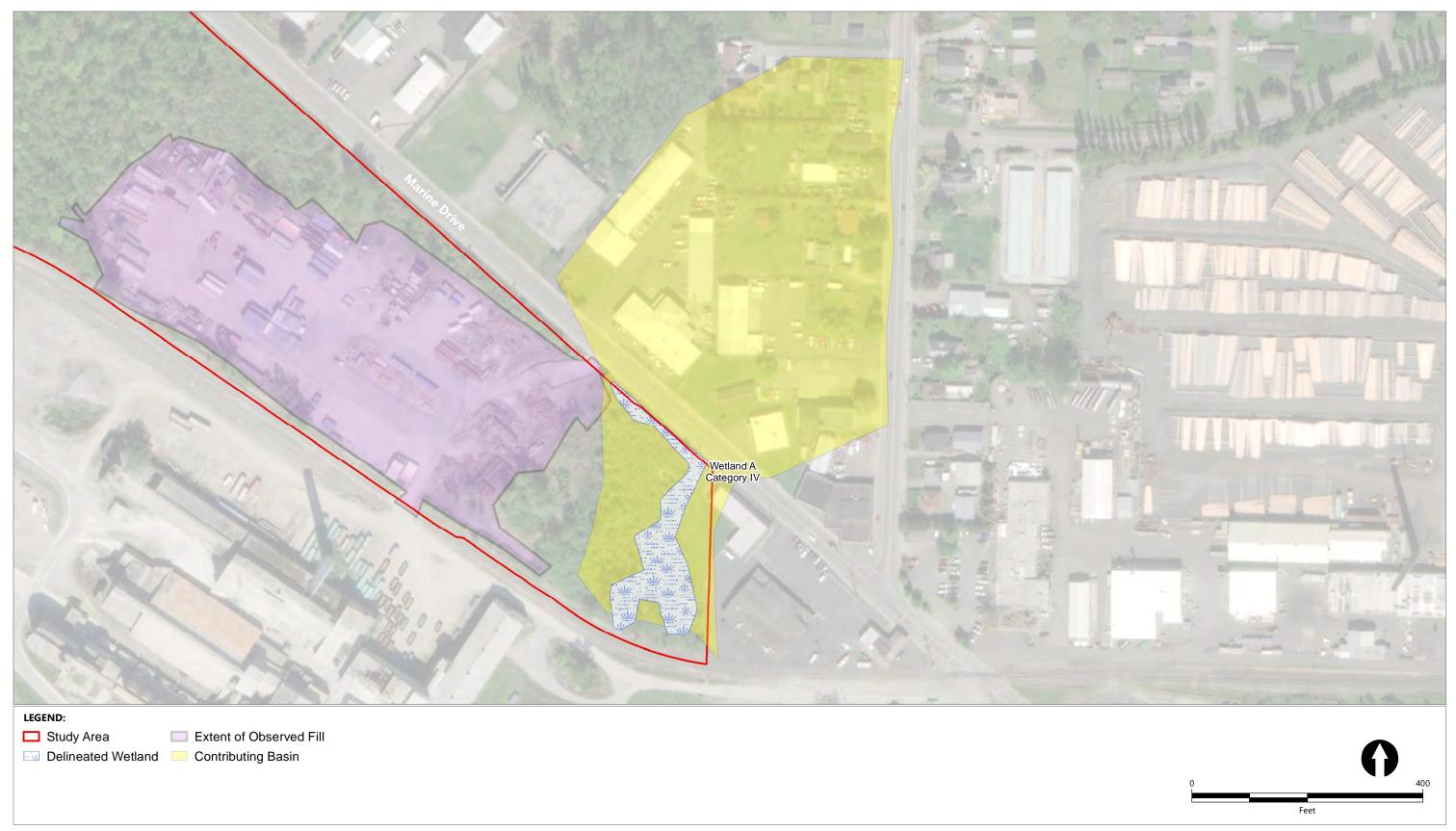
Figure 3 Wetland A 150-Foot Buffer Map



Publish Date: 2020/11/10, 1:17 PM | User: jfox Filepath: \\orcas\GIS\Jobs\ABC_Recycling_2005\MarineDrive\Maps\Phase_II_EnvSamp\WetlandDelineationReport\WetlandRatingFigures\AQ_ABC_Recycling_Fig4_1Km_PolygonMap.mxd



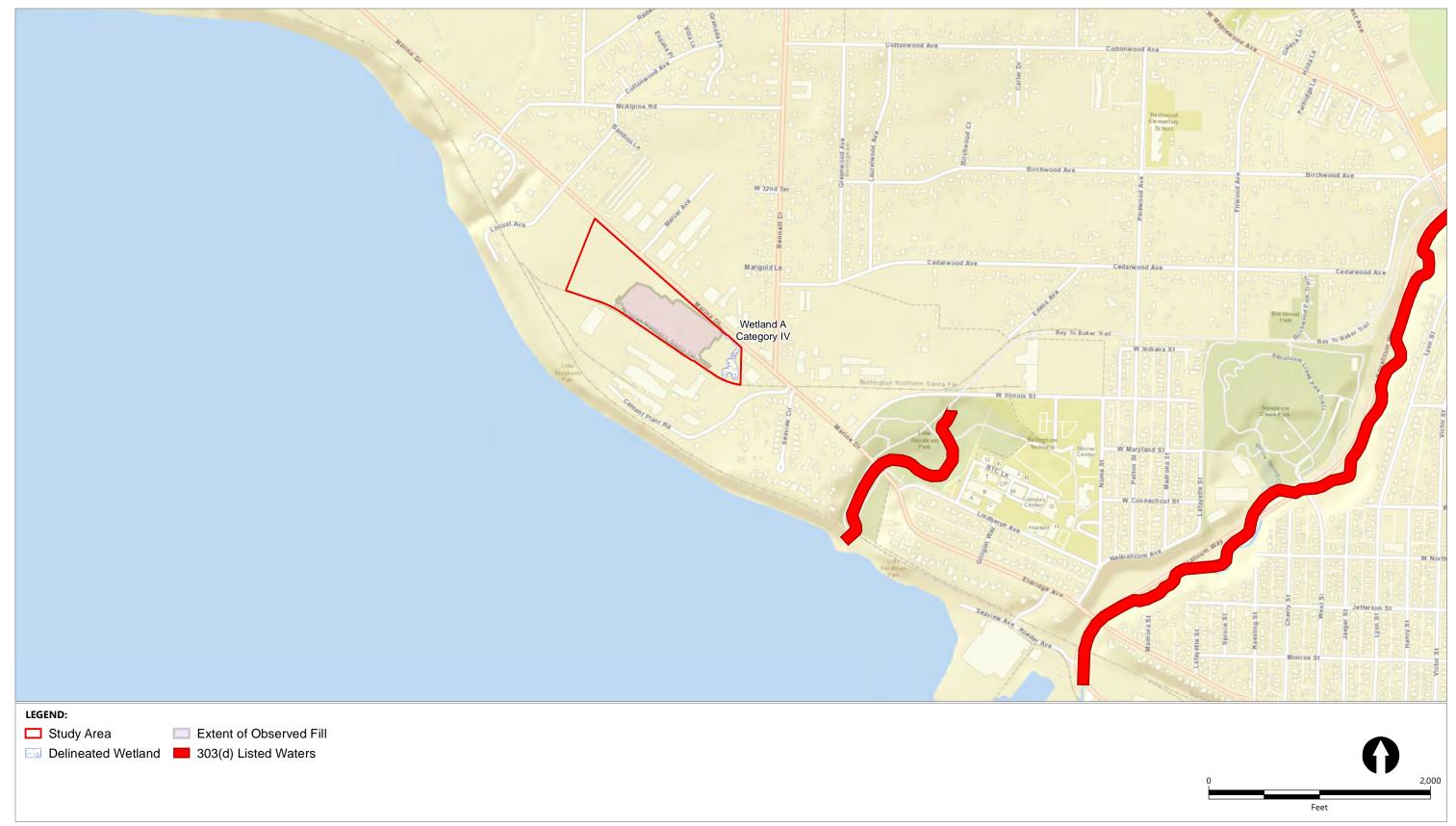
Figure 4 Wetland A 1-Kilometer Polygon Map



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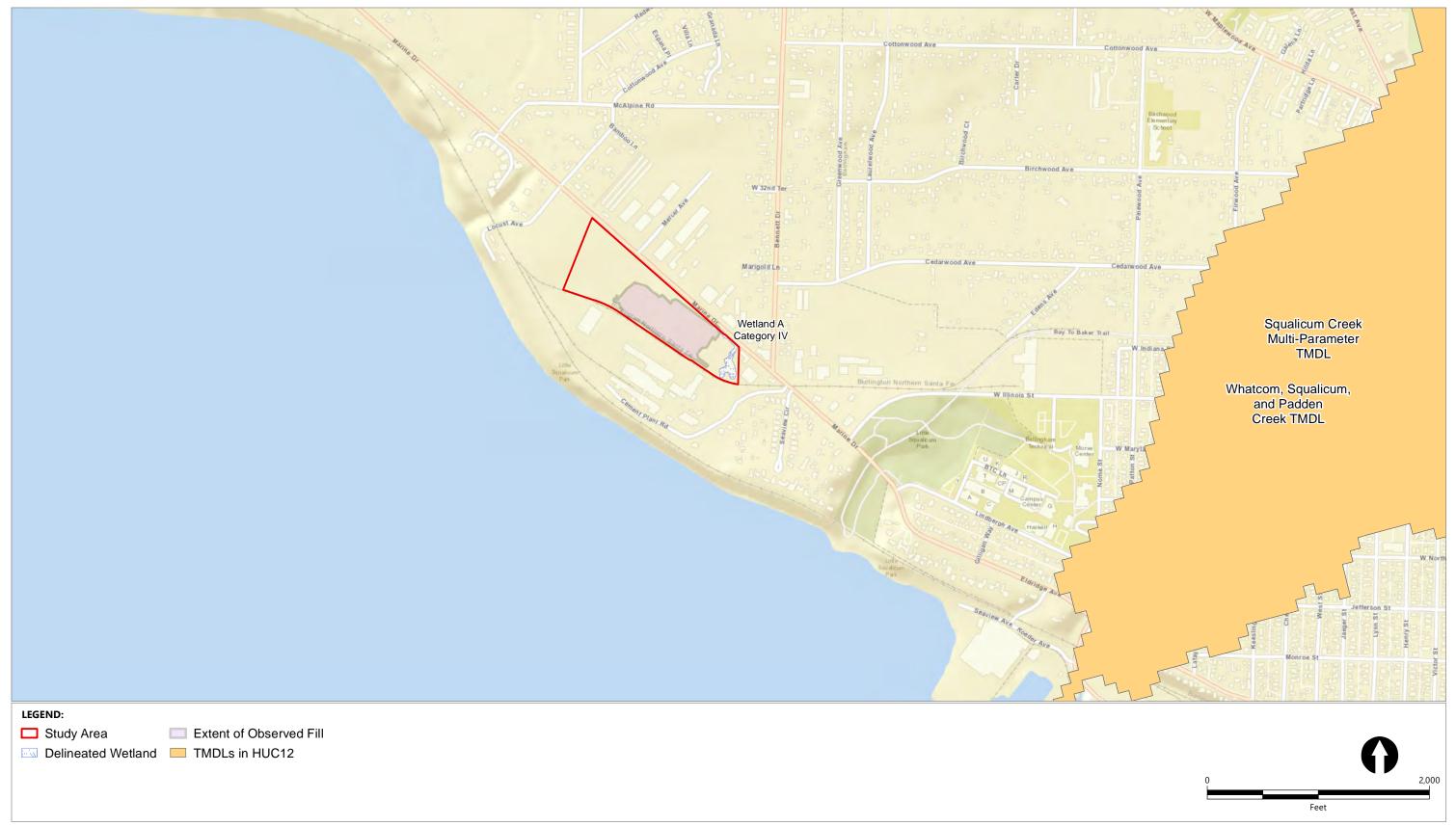
Figure 5 Wetland A Contributing Basin Map



Publish Date: 2020/11/10, 1:31 PM | User: jfox Filepath: \\orcas\GIS\Jobs\ABC_Recycling_2005\MarineDrive\Maps\Phase_II_EnvSamp\WetlandDelineationReport\WetlandRatingFigures\AQ_ABC_Recycling_Fig6_303dListMap.mxd



Figure 6 Wetland A 303(d) Listed Waters Map



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Figure 7 Wetland A TMDLs by Basin Map

Wetland B Rating Forms

RATING SUMMARY – Western Washington

 Name of wetland (or ID #):
 Wetland B (Marine Drive, Whatcom Co.)
 Date of site visit:
 10/20/2020

 Rated by Joseph R. Pursley
 Trained by Ecology? Yes No Date of training 06/2015

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

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

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

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
					Circle	the ap	propi	riate ra	itings	
Site Potential	Н	M	L	Н	M	L	Н	M	L	1
Landscape Potential	H	Μ	L	H	Μ	L	Н	М		
Value	Н	Μ		Н	Μ		Н	M	L	тоти
Score Based on Ratings	6				6			5		17

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

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

3 = L,L,L

AL

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	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	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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

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

•NO – go to 2

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

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

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).

•N0 – 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,

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

ONO – 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. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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

• 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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (r Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 g outlet. points = 2	3
 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions). Yes 	points = 1 $points = 1$ $s = 4 No = 0$	0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cow Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > ¹ / ₁₀ of area Wetland has persistent, ungrazed plants < ¹ / ₁₀ of area		5
D 1.4. <u>Characteristics of seasonal ponding or inundation</u> : <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is < ½ total area of wetland	points = 4 points = 2 points = 0	0
Total for D 1Add the points in the b	oxes above	8

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in ques Source <u>Homeless encampment</u> waste and debris.	tions D 2.1-D 2.3? Yes = 1 No = 0	1
Total for D 2 Add the point	ts in the boxes above	3

Rating of Landscape Potential If score is: $\boxed{\times}$ 3 or 4 = H $\boxed{1}$ 1 or 2 = M $\boxed{0}$ = 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 303(d) list?	r, lake, or marine w	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 t	he 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 3	Add the point	s in the boxes above	0
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $\times 0 = L$	Record the rat	ing on the first page	

n

DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing 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	3	
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	3	
Total for D 4 Add the points in the boxes above	10	
Rating of Site Potential If score is: 12-16 = H Image: 6-11 = M Image: 0-5 = L Record the rating on the	first page	
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1	
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1	
Total for D 5Add the points in the boxes above	3	
Rating of Landscape Potential If score is: \boxed{X} 3 = H $\boxed{1}$ 1 or 2 = M $\boxed{0}$ = L Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
 D 6.1. <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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> No evidence of outflow points = 0 There are no problems with flooding downstream of the wetland. 	0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0	
Total for D 6 Add the points in the boxes above	0	
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $2 - 4 = H$ $0 = L$ Record the rating on the	first page	

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a	a flooding event:	
Depressions cover $>^{3}/_{4}$ area of wetland	points = 8	
Depressions cover > $\frac{1}{2}$ area of wetland	points = 4	
Depressions present but cover < ½ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardir	n classes)	
Trees or shrubs $> 2/3$ area of the wetland	points = 8	
Trees or shrubs $> 1/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $^{2}/_{3}$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $^{1}/_{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1 Add the points in the boxes above		
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L	Record the rating on t	he first page
R 2.0. Does the landscape have the potential to support the water quality function of t	he site?	
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0	
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0	
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that within the last 5 years?	have been clearcut Yes = 1 No = 0	
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in quest Other sources	tions R 2.1-R 2.4 Yes = 1 No = 0	
Total for R 2 Add the poin	ts in the boxes above	
Rating of Landscape Potential If score is: 3-6 = H 1 or 2 = M 0 = L	Record the rating on t	he first page
R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drain	ns to one within 1 mi?	
	Yes = 1 No = 0	
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or patho	gens? Yes = 1 No = 0	
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining wa		
YES if there is a TMDL for the drainage in which the unit is found)	Yes = 2 No = 0	
Total for R 3 Add the poin	ts in the boxes above	

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

Record the rating on the first page

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion		
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides:		
Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the		
stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average		
width of stream between banks).		
If the ratio is more than 20 points = 9		
If the ratio is 10-20points = 6If the ratio is 5-<10		
If the ratio is 5-<10points = 4If the ratio is 1-<5		
If the ratio is < 1 points = 1		
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or		
shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person		
height. These are <u>NOT Cowardin</u> classes).		
Forest or shrub for $>^1/_3$ area OR emergent plants $>^2/_3$ area points = 7		
Forest or shrub for $> 1/_{10}$ area OR emergent plants $> 1/_3$ area points = 4		
Plants do not meet above criteria points = 0		
Total for R 4 Add the points in the boxes above		
Rating of Site Potential If score is: \Box 12-16 = H \Box 6-11 = M \Box 0-5 = LRecord the rating on the second s	the first page	
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	-	
R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1		
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 No = 0		
R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 No = 1		
Total for R 5Add the points in the boxes above		
Rating of Landscape Potential If score is: $\boxed{3} = H$ $\boxed{1}$ or $2 = M$ $\boxed{0} = L$ Record the rating on a	the first page	
R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems?		
Choose the description that best fits the site.		
The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to		
human or natural resources (e.g., houses or salmon redds) points = 2		
Surface flooding problems are in a sub-basin farther down-gradient points = 1		
No flooding problems anywhere downstream points = 0		
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2 No = 0		
Total for R 6Add the points in the boxes above		
Rating of ValueIf score is: $2 - 4 = H$ I = M0 = LRecord the rating on a	the first page	

LAKE FRINGE WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
L 1.0. Does the site have the potential to improve water quality?		
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes):		
Plants are more than 33 ft (10 m) wide	points = 6	
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3	
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that re points, and do not include any open water in your estimate of coverage. The herbaceo the dominant form or as an understory in a shrub or forest community. <i>These are not of cover is total cover in the unit, but it can be in patches. Herbaceous does not include</i>	us plants can be either Cowardin classes. Area	
Cover of herbaceous plants is >90% of the vegetated area	points = 6	
Cover of herbaceous plants is $>^2/_3$ of the vegetated area	points = 4	
Cover of herbaceous plants is $>^1/_3$ of the vegetated area	points = 3	
Other plants that are not aquatic bed > $^{2}/_{3}$ unit	points = 3	
Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area	points = 1	
Aquatic bed plants and open water cover > $^{2}/_{3}$ of the unit	points = 0	
Total for L 1Add the poi	nts in the boxes above	
Rating of Site Potential If score is: 8-12 = H 4-7 = M 0-3 = L	Record the rating on the first	t page

L 2.0. Does the landscape have the potential to support the water quality function of the site?		
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?		
	Yes = 1 No = 0	
L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfo	oil? Yes = 1 No = 0	
Total for L 2 Add the po	pints in the boxes above	
Rating of Landscape Potential: If score is: 2 or 3 = H 1 = M 0 = L	Record the rating on th	e first page

L 3.0. Is the water quality improvement provided by the site valuable	to society?	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one a 303(d) list)?	quatic resource in the basin is on the Yes = 1 No = 0	
L 3.3. Has the site been identified in a watershed or local plan as important f if there is a TMDL for the lake or basin in which the unit is found.	or maintaining water quality? Answer YES Yes = 2 No = 0	
Total for L 3	Add the points in the boxes above	
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $0 = L$	Record the rating on th	ne first page

LAKE FRINGE WETLANDS		
Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion		
L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not <i>Choose the highest scoring description that matches conditions in the wetland.</i>	include Aquatic bed):	
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 6	
> ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2	
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0	
Rating of Site Potential: If score is: 6 = M 0-5 = L	Record the rating on the first page	
L 5.0. Does the landscape have the potential to support the hydrologic functions of the	e site?	
L 5.1. Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0		
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance? Yes = 1 No = 0		
Total for L 5Add the point	ts in the boxes above	
Rating of Landscape Potential If score is: $2 = H$ $1 = M$ $0 = L$ Record the rating on the first page		
L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.		
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit		
	points = 2	
There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1	
Other resources that could be impacted by erosion	points = 1	
There are no resources that can be impacted by erosion along the shores of the unit	points = 0	
Rating of Value: If score is: 2 = H 1 = M 0 = L	Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

SLOPE WETLANDS		
Water Quality Functions - Indicators that the site functions to improve 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 100 ft of horizontal distance)	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	
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (us	se NRCS definitions): Yes = 3 No = 0	
S 1.3. Characteristics of the plants in the wetland that trap sediments and polluta	ants:	
Choose the points appropriate for the description that best fits the plants have trouble seeing the soil surface (>75% cover), and uncut means not gro 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	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	
Rating of Site Potential If score is: \Box 12 = H \Box 6-11 = M \Box 0-5 = L Record the rating on the first page		the first page
S 2.0. Does the landscape have the potential to support the water quality	function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land σ	uses that generate pollutants? Yes = 1 No = 0	
S 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	
Total for S 2	Add the points in the boxes above	
Rating of Landscape Potential If score is: 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 s	ociety?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lal 303(d) list?	ke, or marine water that is on the Yes = 1 No = 0	
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At le on the 303(d) list.	east one aquatic resource in the basin is Yes = 1 No = 0	
S 3.3. Has the site been identified in a watershed or local plan as important for m if there is a TMDL for the basin in which unit is found.	naintaining water quality? Answer YES Yes = 2 No = 0	
Total for S 3	Add the points in the boxes above	

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

Record the rating on the first page

Wetland name or number _____

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce floor	ding 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 for the description that best fits conditions in the wetland. <i>Stems of plants should be thic in), or dense enough, to remain erect during surface flows.</i>	
Dense, uncut, rigid plants cover > 90% of the area of the wetland	points = 1
All other conditions	points = 0
Rating of Site Potential If score is: $\Box 1 = M \Box 0 = L$	Record the rating on the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the	e site?
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that g surface runoff?	generate excess Yes = 1 No = 0
Rating of Landscape Potential If score is: $\Box 1 = M$ $\Box 0 = L$ Record the rating on the first potential	
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 dar	mage to human or
natural resources (e.g., houses or salmon redds)	points = 2
Surface flooding problems are in a sub-basin farther down-gradient	points = 1
No flooding problems anywhere downstream	points = 0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a region	nal flood control plan? Yes = 2 No = 0
Total for S 6 Add the point	ts in the boxes above
Rating of Value If score is: $2-4 = H$ $1 = M$ $0 = L$	Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

	ply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site fur H 1.0. Does the site have the potential to provide h	
H 1.1. Structure of plant community: Indicators are Cown Cowardin plant classes in the wetland. Up to 10 pc of ¼ ac or more than 10% of the unit if it is smaller Aquatic bed Emergent X Scrub-shrub (areas where shrubs have > 30% X Forested (areas where trees have > 30% cove If the unit has a Forested class, check if:	rdin classes and strata within the Forested class. Check the tches may be combined for each class to meet the threshold than 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 cover) 2 structures: points = 1 r) 1 structure: points = 0 by, sub-canopy, shrubs, herbaceous, moss/ground-cover)
H 1.2. Hydroperiods	resent within the wetland. The water regime has to cover e text for descriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 acent to, the wetland
	that cover at least 10 ft ² . <i>ined to meet the size threshold and you do not have to name</i> I canarygrass, purple loosestrife, Canadian thistle points = 2 points = 1 points = 0
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspe	rsion among Cowardin plants classes (described in H 1.1), or en water or mudflats) is high, moderate, low, or none. <i>If you</i>

Wetland name or number B

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
X_Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	3
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)	
Total for H 1Add the points in the boxes above	8
Rating of Site Potential If score is: \Box 15-18 = H $$ 7-14 = M \Box 0-6 = LRecord 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: 2 % undisturbed habitat 2 + [(% moderate and low int	tensity land uses)/2] $1 = 3\%$	
If total accessible habitat is:		
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: 48 % undisturbed habitat 2 + [(% moderate and low int	tensity land uses)/2] <u>1</u> = <u>49</u> %	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	I
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1
Rating of Landscape Potential If score is: $\Box 4.6 = H$ $\Box 1.3 = M$ $\boxtimes < 1 = L$	Record the rating on th	e first naac

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M 2 < 1 = L

Record the rating on the first page

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

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

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.

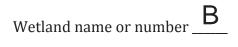
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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 Ores – Go to SC 1.1 One – Not an estuarine wetland SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-1512 Ores = Category I Ore to SC 1.1 Ores = Category I Ore to SC 1.1 Ores = Category I Ore to SC 1.1 Ores = Category I Ores = Category	Wetland Type	Category
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 (Ves – Go to SC 1.1 (No= Not an estuarine wetland SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-511? Or - Go to SC 1.2 (State Wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland unit at least 1 ac in size and meets at least two of the following three conditions. — The wetland sufficient equation of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? SC 2.2. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? — Miter//www1.dnr.wa.gov/hn/pr/efdexi/dataseer//winhowetlands.pdf — Miter//www1.dnr.wa.gov/nh/pr/efdexi/dataseer//winhowetlands.pdf — Miter//www1.dnr.wa.gov/nh/pr/efdexi/dataseer//winhowetlands.pdf — Miter Passor mucks, that are least no a Bake or pond? SC 3.1. Does an area within the wetland with the S/T/R as a Wetland of High Conservation Value? SC 3.2. Does an area within the wetland unit have organic soils end regater on sucks, that are least and is in dree prome of the first 32 in of the soil profile? — SC 3.3. ONo = Not a WHCV SC 3.4. Bogs Does the wetland unit have organic soils, either peats or mucks, that are leasts than 16 in deep ore b	Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
 The dominant water regime is tidal, 		
 Vegetated, and With a salinity greater than 0.5 ppt (res -Go to SC 1.1 () No= Not an estuarine wetland SC 11. 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. 1) (Cat. 1) SC 12. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least K of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. The wetland is at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. (Cat. II) (Cat. III) (Cat. III)		
 — With a salinity greater than 0.5 ppt		
SC 1.1. is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Cat. 1 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? No - Go to SC 1.2 Cat. 1 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? Ocat. 1 Cat. 1		
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Cat. 1 Ores = Category 1 No - Go to SC 1.2 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?		
 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. (WHCV) SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? (Yes = Go to SC 2.2) (No = Go to SC 2.3) SC 2.2. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.odf Yes = Cotagory I (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, 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 = Is a Category I bog (No - Go to SC 3.4) 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 are present, the wetland is a bog. SC 3.4. Is an area with peats or muck have the formations, either peats or mucks, that are less than 3.0 and the plant species listed in Table 4	Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	OCat. I
than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? 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.gdf (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? SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key</i> <i>below. If you answer</i> YES you will still need to rate the wetland based on its fjunctions. SC 3.1. Does an area within the wetland unit have organic soil, 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 = 6 to SC 3.2 SC 3.3. Does an area within the wetland unit have organic soil, either peats or mucks, that are less than 16 in deep opond? (Yes = Go to SC 3.3 (No = 6 to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgep	SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
 At least % of the landward edge of the wetland has a 100 f buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Cat. 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 (In No – Go to SC 2.3 (In No – Not a WHCV) SC 2.3. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes – Contact WNHP/WDNR and go to SC 2.4 (In No – Not a WHCV) SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value? Yes – Contact WNHP/WDNR and go to SC 2.4 (In 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 soils, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? SC 3.3. 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 bo a lake or pond? SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? 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 aspe		OCat. I
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species (or combination of species) instea in rable 4 provide more than 30% of the cover under the canopy?		
Yes = Is a Category I bog No = Is not a bog		

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
 Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	OCat. 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)	OCat. 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-	0
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category I	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
 Long Beach Peninsula: Lands west of SR 103 	
— Grayland-Westport: Lands west of SR 105	OCat I
 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	OCat. II
for the three aspects of function)? \bigcirc Yes = Category I (•)No – Go to SC 6.2	Ŭ
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
$\bigcirc Yes = Category II \bigcirc No - Go to SC 6.3$	OCat. 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	
	OCat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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Figure 1 Wetland B Cowardin Classification Map



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Figure 2 Wetland B Hydroperiods Map



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Figure 3 Wetland B 150-Foot Buffer Map



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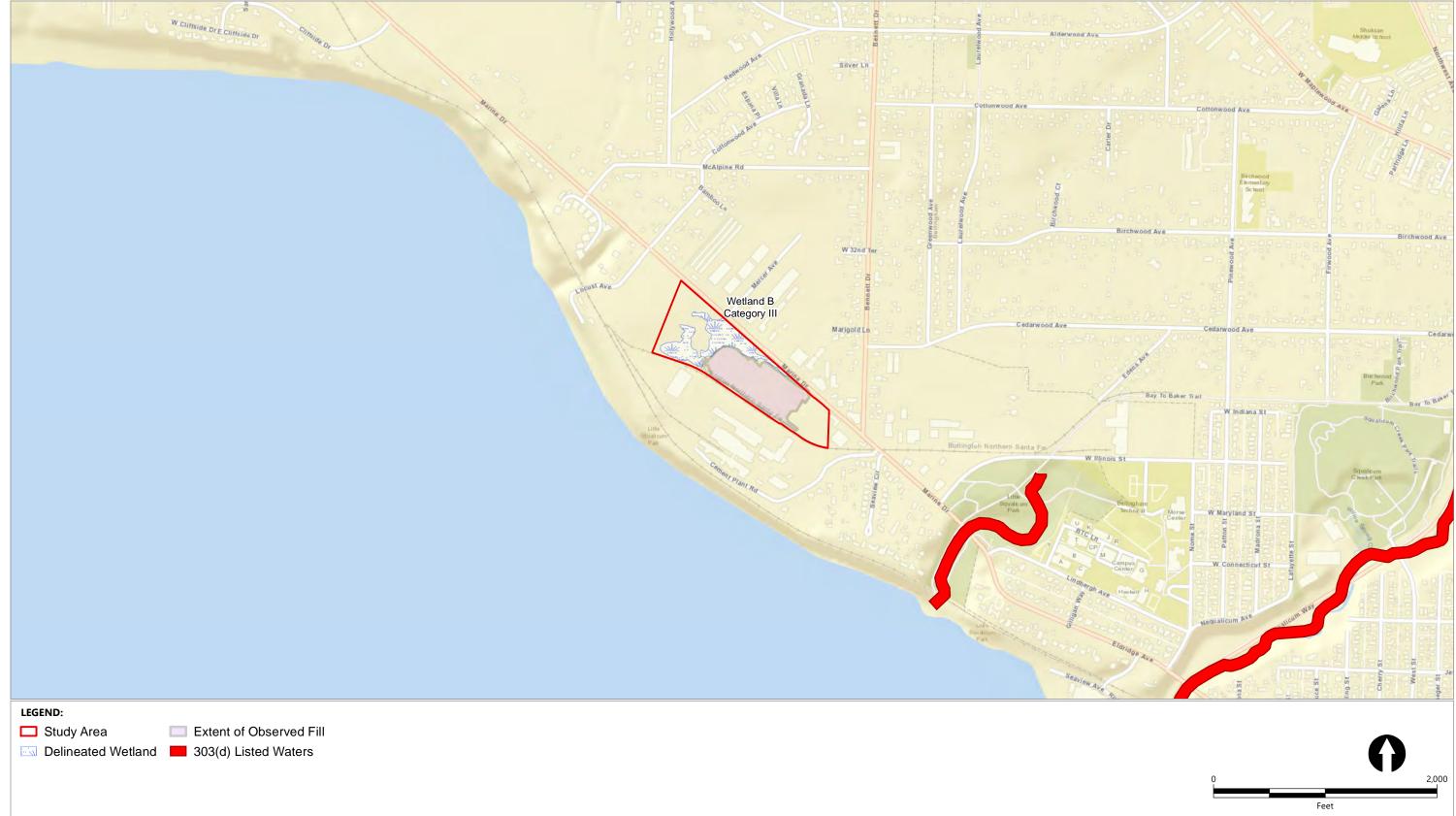
Figure 4 Wetland B 1-Kilometer Polygon Map



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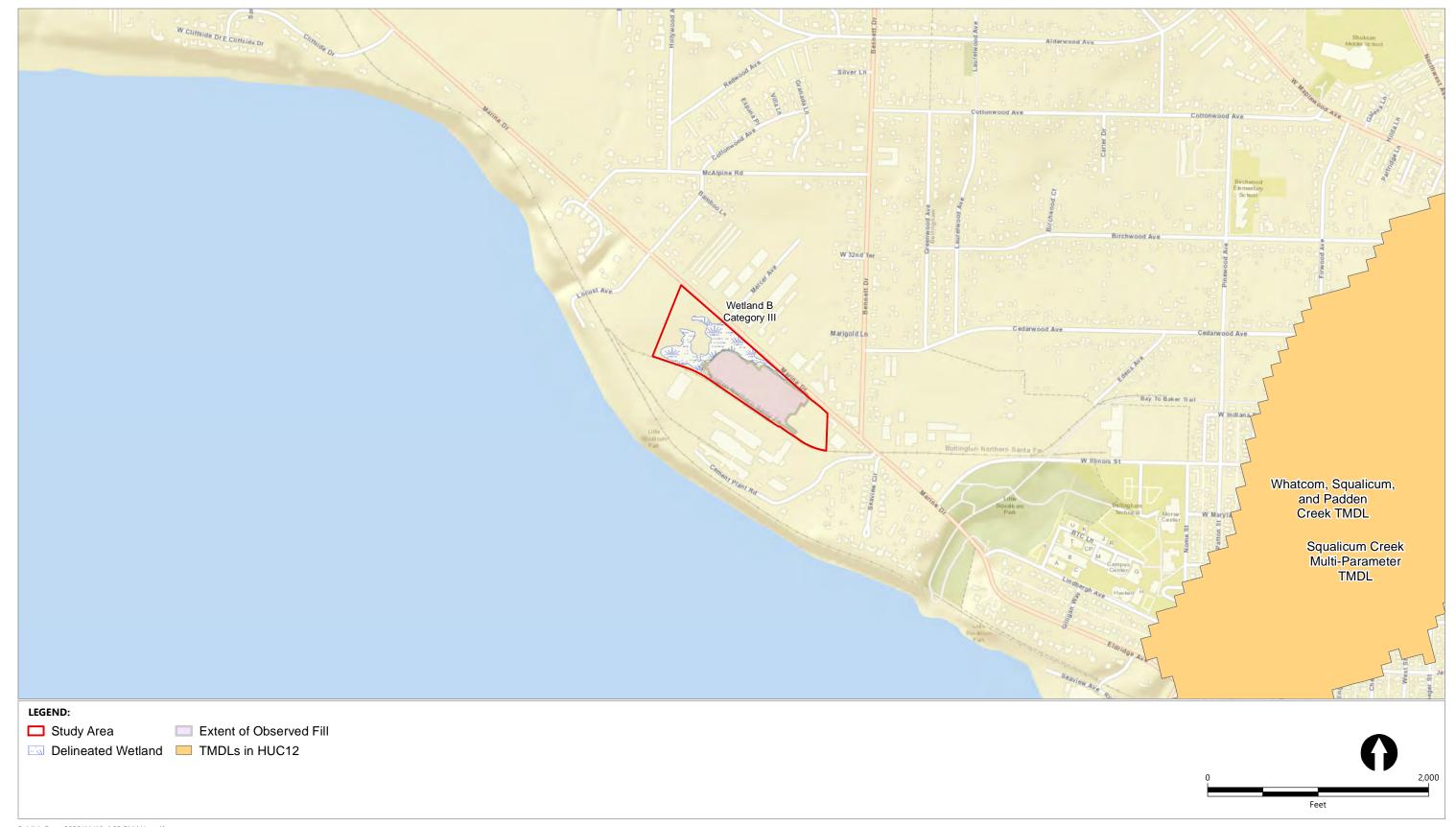
Figure 5 Wetland B Contributing Basin Map



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Figure 6 Wetland B 303(d) Listed Waters Map



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Figure 7 Wetland B TMDLs by Basin Map

Wetland C Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C (Marine Drive, Lehigh Cement) Date of site visit: 10/20/2020Rated by Joseph R. Pursley Trained by Ecology? Yes No Date of training 06/2015 HGM Class used for rating Depressional 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 Google Earth

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

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

X Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improvin Water Qua	-	Ну	drol	ogic		Habita	at	
			(Circle	the ap	oropi	riate ra	itings	
Site Potential	H M L		H	Μ	L	Н	Μ	L	
Landscape Potential	H M L		Η	M	L	Н	Μ	L	
Value	нмс	\mathbf{O}	Н	Μ		Н	M	L	TOTAL
Score Based on Ratings	6			6			4		16

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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	Н 2.1, Н 2.2, Н 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	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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

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

•NO – go to 2

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

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

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).
- •N0 go to 4

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

4. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

____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. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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

• 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	r 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 c	outlet).	
r r	oints = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing ou		3
	oints = 2	
	oints = 1	
	oints = 1	-
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> 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	din classes):	
Wetland has persistent, ungrazed, plants > 95% of area po	oints = 5	
	oints = 3	5
	oints = 1	
Wetland has persistent, ungrazed plants <1/10 of area po	oints = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > ½ total area of wetland po	oints = 4	2
Area seasonally ponded is > ¼ total area of wetland po	oints = 2	
Area seasonally ponded is < ¼ total area of wetland po	oints = 0	
Total for D 1 Add the points in the boxe	es above	10

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in quest Source <u>Active and historic</u> homeless encampments (human waste and garbage)	tions D 2.1-D 2.3? Yes = 1 No = 0	1
Total for D 2 Add the point	s in the boxes above	3

Rating of Landscape Potential If score is: $\boxed{\times}$ 3 or 4 = H $\boxed{1}$ 1 or 2 = M $\boxed{0}$ = 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, rive 303(d) list?	r, lake, or marine w	rater 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 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 3	Add the points	in the boxes above	0
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $\times 0 = L$	Record the rat	ing on the first page	

Г

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 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	3			
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	5			
Total for D 4Add the points in the boxes above	12			
Rating of Site PotentialIf score is: \square 12-16 = H \square 6-11 = M \square 0-5 = LRecord the rating on the	first page			
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?				
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1			
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1			
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0			
Total for D 5Add the points in the boxes above	2			
Rating of Landscape Potential If score is: $\boxed{3} = H$ $\boxed{\times} 1$ or $2 = M$ $\boxed{0} = L$ Record the rating on the	first page			
D 6.0. Are the hydrologic functions provided by the site valuable to society?				
 D 6.1. <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. 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):</i> Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> <u>Wetland is a closed</u> points = 0 	0			
There are no problems with flooding downstream of the wetland. points = 0				
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0			
Total for D 6 Add the points in the boxes above	0			
Rating of Value If score is: $\Box 2-4 = H \Box 1 = M \boxtimes 0 = L$ Record the rating on the	first page			

RIVERINE AND FRESHWATER TIDAL FRINGE WE		
Water Quality Functions - Indicators that the site functions to im	prove water quality	
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during	-	
Depressions cover $>^{3}/_{4}$ area of wetland	points = 8	
Depressions cover > $\frac{1}{2}$ area of wetland	points = 4	
Depressions present but cover < $\frac{1}{2}$ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Coward	•	
Trees or shrubs $> \frac{2}{3}$ area of the wetland	points = 8	
Trees or shrubs $> 1/3$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $\frac{2}{3}$ area of the wetland	points = 6	
Herbaceous plants (> 6 in high) > $\frac{1}{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland	points = 0	
Total for R 1Add the points in the boxes above		
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L	Record the rating on t	he first page
R 2.0. Does the landscape have the potential to support the water quality function of	the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0	
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0	
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests tha within the last 5 years?	t have been clearcut Yes = 1 No = 0	
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in que	stions R 2.1-R 2.4	
Other sources	Yes = 1 No = 0	
Total for R 2 Add the poi	nts in the boxes above	
Rating of Landscape Potential If score is: 3-6 = H 1 or 2 = M 0 = L	Record the rating on t	he first page
R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that dra	ins to one within 1 mi?	
	Yes = 1 No = 0	
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or path	ogens? Yes = 1 No = 0	
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining w	ater quality? (answer	
YES if there is a TMDL for the drainage in which the unit is found)	Yes = 2 No = 0	

Total for R 3

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

Record the rating on the first page

Add the points in the boxes above

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion		
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides:		
Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the		
stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average		
width of stream between banks).		
If the ratio is more than 20 points = 9		
If the ratio is 10-20 points = 6		
If the ratio is 5-<10 points = 4		
If the ratio is 1-<5 points = 2		
If the ratio is < 1 points = 1		
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or		
shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person		
height. These are <u>NOT Cowardin</u> classes).		
Forest or shrub for $>^{1}/_{3}$ area OR emergent plants $>^{2}/_{3}$ area points = 7		
Forest or shrub for $> 1/10$ area OR emergent plants $> 1/3$ area points = 4		
Plants do not meet above criteria points = 0	_	
Total for R 4Add the points in the boxes above		
Rating of Site Potential If score is: \Box 12-16 = H \Box 6-11 = M \Box 0-5 = L Record the rating on	the first page	
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1		
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 No = 0		
R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 No = 1		
Total for R 5Add the points in the boxes above		
Rating of Landscape Potential If score is: $3 = H$ $1 \text{ or } 2 = M$ $0 = L$ Record the rating on	the first page	
R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems?		
Choose the description that best fits the site.		
The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to		
human or natural resources (e.g., houses or salmon redds) points = 2		
Surface flooding problems are in a sub-basin farther down-gradient points = 1		
No flooding problems anywhere downstream points = 0		
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2 No = 0		
Total for R 6 Add the points in the boxes above		

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

Record the rating on the first page

LAKE FRINGE WETLANDS	
Water Quality Functions - Indicators that the site functions to	o improve water quality
L 1.0. Does the site have the potential to improve water quality?	
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes):	
Plants are more than 33 ft (10 m) wide	points = 6
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1
Plants are less than 6 ft wide	points = 0
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description th points, and do not include any open water in your estimate of coverage. The herb the dominant form or as an understory in a shrub or forest community. <i>These are of cover is total cover in the unit, but it can be in patches. Herbaceous does not include</i>	aceous plants can be either not Cowardin classes. Area
Cover of herbaceous plants is >90% of the vegetated area	points = 6
Cover of herbaceous plants is $>^2/_3$ of the vegetated area	points = 4
Cover of herbaceous plants is $>^{1}/_{3}$ of the vegetated area	points = 3
Other plants that are not aquatic bed > $^{2}/_{3}$ unit	points = 3
Other plants that are not aquatic bed in $> 1/3$ vegetated area	points = 1
Aquatic bed plants and open water cover > $^{2}/_{3}$ of the unit	points = 0
Total for L 1 Add the	e points in the boxes above
Rating of Site Potential If score is: 8-12 = H 4-7 = M 0-3 = L	Record the rating on the first page

L 2.0. Does the landscape have the potential to support the water quality function of the site?	
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	
	Yes = 1 No = 0
L 2.3. Does the lake have problems with algal blooms or excessive plant growth s	such as milfoil? Yes = 1 No = 0
Total for L 2	Add the points in the boxes above
Rating of Landscape Potential: If score is: 2 or 3 = H 1 = M 0 = L	Record the rating on the first page

L 3.0. Is the water quality improvement provided by the site valuable	to society?	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one a 303(d) list)?	quatic resource in the basin is on the Yes = 1 No = 0	
L 3.3. Has the site been identified in a watershed or local plan as important f if there is a TMDL for the lake or basin in which the unit is found.	or maintaining water quality? Answer YES Yes = 2 No = 0	
Total for L 3	Add the points in the boxes above	
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $0 = L$	Record the rating on th	ne first page

LAKE FRINGE WETLANDS		
Hydrologic Functions - Indicators that the wetland unit functions to rec	luce shoreline erosi	on
L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not in <i>Choose the highest scoring description that matches conditions in the wetland.</i>	clude Aquatic bed):	
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 6	
> ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2	
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0	
Rating of Site Potential: If score is: 6 = M 6 = L	Record the rating on t	he first page
L 5.0. Does the landscape have the potential to support the hydrologic functions of the	site?	

L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	
Total for L 5	Add the points in the boxes above	
Rating of Landscape Potential If score is: 2 = H 1 = M 0 = L	Record the rating on th	e first page

L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resources the one with the highest score.	ource is present,	
There are human structures or old growth/mature forests within 25 ft of OHWM of the sho	ore in the unit	
	points = 2	
There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1	
Other resources that could be impacted by erosion	points = 1	
There are no resources that can be impacted by erosion along the shores of the unit	points = 0	
Rating of Value: If score is: $2 = H$ $1 = M$ $0 = L$	Record the rating on the	first page

NOTES and FIELD OBSERVATIONS:

SLOPE WETLANDS Water Quality Functions - Indicators that the site functions to improve 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 a 100 ft of horizontal distance)	frop 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	
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS of	definitions): Yes = 3 No = 0	
S 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 we have trouble seeing the soil surface (>75% cover), and uncut means not grazed or n 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	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1 Add the	e points in the boxes above	
Rating of Site Potential If score is: \Box 12 = H \Box 6-11 = M \Box 0-5 = L Record the rating on the first page		the first page
S 2.0. Does the landscape have the potential to support the water quality function	n of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that	generate pollutants? Yes = 1 No = 0	
S 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	
Total for S 2 Add the	e points in the boxes above	
Rating of Landscape Potential If score is: 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		
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one of on the 303(d) list.	aquatic resource in the basin is Yes = 1 No = 0	
S 3.3. Has the site been identified in a watershed or local plan as important for maintainin <i>if there is a TMDL for the basin in which unit is found.</i>	ng water quality? Answer YES Yes = 2 No = 0	
Total for S 3 Add the	e points in the boxes above	

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

Record the rating on the first page

SLOPE WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flood	ling and stream orosion
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 for the description that best fits conditions in the wetland. Stems of plants should be thick in), or dense enough, to remain erect during surface flows. Dense, uncut, rigid plants cover > 90% of the area of the wetland All other conditions 	
Rating of Site Potential If score is: 1 = M 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 ge surface runoff?	enerate excess Yes = 1 No = 0
Rating of Landscape Potential If score is: 1 = M 1 = M 0 = L	Record the rating on 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 dan	-
natural resources (e.g., houses or salmon redds) Surface flooding problems are in a sub-basin farther down-gradient No flooding problems anywhere downstream	points = 2 points = 1 points = 0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a region	al flood control plan? Yes = 2 No = 0
Total for S 6 Add the point	s in the boxes above
Rating of Value If score is: $2 - 4 = H$ $1 = M$ $0 = L$	Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

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 bedAquatic bedAtructures or more: points = 4 Emergent3 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, 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).	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species 5 - 19 species <pre></pre>	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <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 All three diagrams in this row are HIGH = 3points Points = 0 Decide from the diagrams Decide from the diagrams	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.	
X Large, downed, woody debris within the wetland (> 4 in diameter and	6 ft long).	
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhangin	ng plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at leas	st 33 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or might beaver or	uskrat for denning (> 30 degree	2
slope) OR signs of recent beaver activity are present (cut shrubs or tre where wood is exposed)	ees that have not yet weathered	
At least ¼ ac of thin-stemmed persistent plants or woody branches are	e present in areas that are	
permanently or seasonally inundated (structures for egg-laying by an		
X Invasive plants cover less than 25% of the wetland area in every stratu strata)	Im of plants (see H 1.1 for list of	
Total for H 1	Add the points in the boxes above	5
Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L	Record the rating on the	ne first page
H 2.0. Does the landscape have the potential to support the habitat function	ons of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		

H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).			
Calculate: 3 % undisturbed habitat 4 + [(% moderate and low intensity land use	es)/2]_2_=5%		
If total accessible habitat is:			
> ¹ / ₃ (33.3%) of 1 km Polygon	points = 3	0	
20-33% of 1 km Polygon	points = 2		
10-19% of 1 km Polygon	points = 1		
< 10% of 1 km Polygon	points = 0		
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.			
Calculate: 44 % undisturbed habitat 4 + [(% moderate and low intensity land use	es)/2]_2_=46_%		
Undisturbed habitat > 50% of Polygon	points = 3	1	
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	I	
Undisturbed habitat 10-50% and > 3 patches	points = 1		
Undisturbed habitat < 10% of 1 km Polygon	points = 0		
H 2.3. Land use intensity in 1 km Polygon: If			
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2	
≤ 50% of 1 km Polygon is high intensity	points = 0		
Total for H 2 Add the point	nts in the boxes above	-1	
Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < < 1 = L Record the rating on the		ne first page	

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

WDFW Priority Habitats

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

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

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **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.

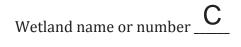
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>C</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 OYes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? OYes = Category I ONO - Go to SC 1.2	OCat. 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)	OCat. 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	OCat. II
contiguous freshwater wetlands.	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? $Ves - Go to SC 2.2 ONO - Go to SC 2.3$	OCat. 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? \bigcirc Yes – Go to SC 3.3 \bigcirc 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? O Yes = Is a Category I bog O No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	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 the wetland based on its functions.</i>	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
 Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
O Yes = Category I O No = Not a forested wetland for this section	OCat. 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) Yes – Go to SC 5.1 ONO = Not a wetland in a coastal lagoon	OCat. 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).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category I	
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 Crawland Westport: Londo west of SR 105 	
 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of <u>S</u>R 115 and SR 109 	Ocari
$\bigcirc Yes - Go to SC 6.1 \bigcirc No = not an interdunal wetland for rating$	
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)? OYes = Category I • No – Go to SC 6.2	OCat. 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? \bigcirc Yes = Category II \bigcirc No – Go to SC 6.3	OCat. 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 \bigcirc No = Category IV	OCat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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Figure 1 Wetland C Cowardin Classification Map



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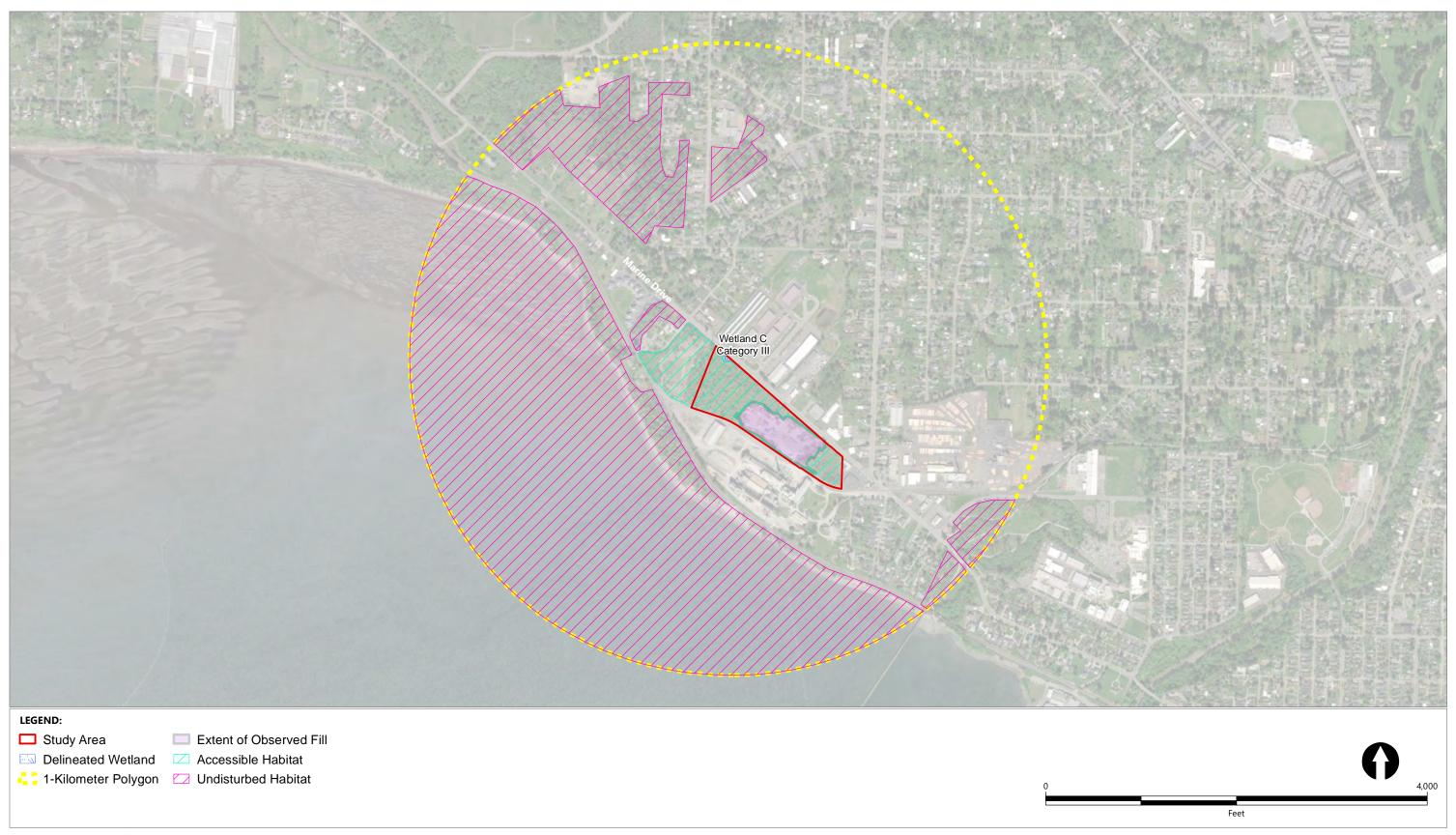
Figure 2 Wetland C Hydroperiods Map



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Figure 3 Wetland C 150-Foot Buffer Map



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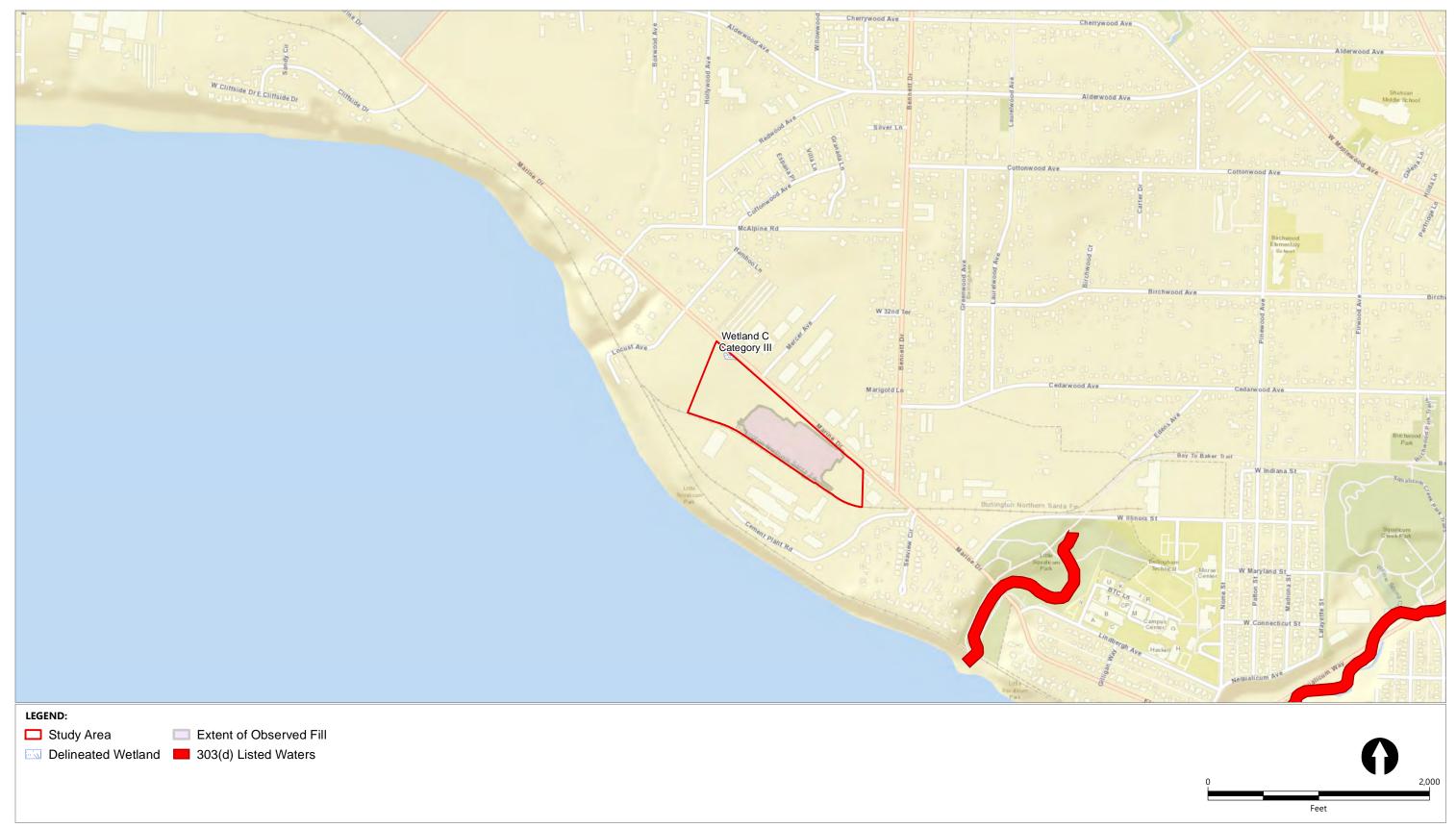
Figure 4 Wetland C 1-Kilometer Polygon Map



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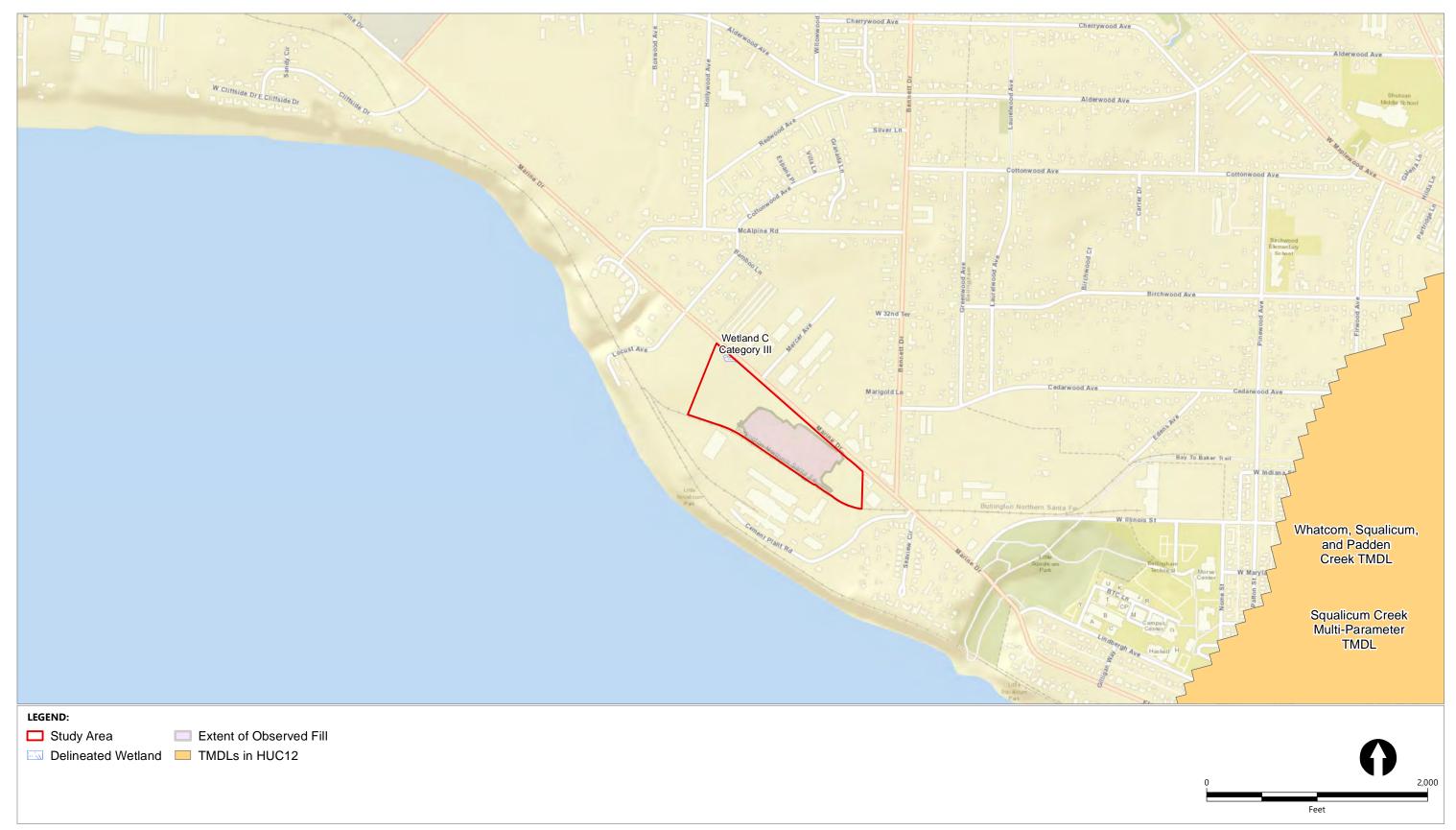
Figure 5 Wetland C Contributing Basin Map



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Figure 6 Wetland C 303(d) Listed Waters Map

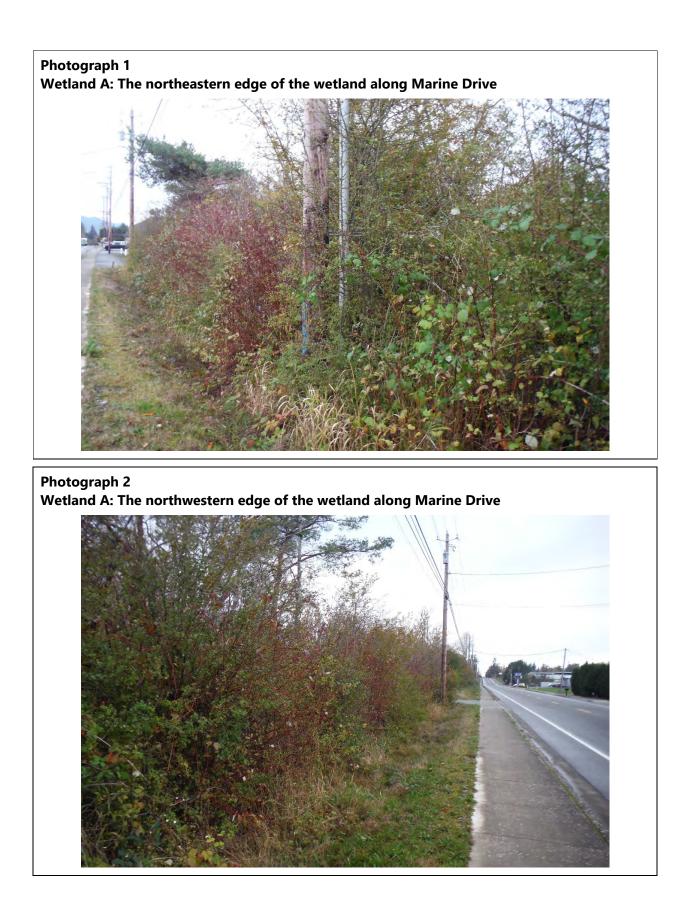


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Figure 7 Wetland C TMDLs by Basin Map

Appendix D Photographs





Wetland A: Thick canopy of Red-twigged dogwood (*Cornus sericea*) within the wetland boundary





