APPENDIX F:

Old Brewhouse

Tumwater, Washington

Wetland and Shoreline Report

June 2015

SCJ ALLIANCE

CONSULTING SERVICES

Old Brewhouse Wetland and Shoreline Report

Project Information

Project:	**Old Brewhouse LLC Wetland and Shoreline Report**
Prepared for:	City of Tumwater Tim Smith, City of Tumwater Planning Manager Tumwater City Hall 555 Israel Road SW Tumwater, WA 98501

Reviewing Agency

Jurisdiction:	City of Tumwater

Project Representative

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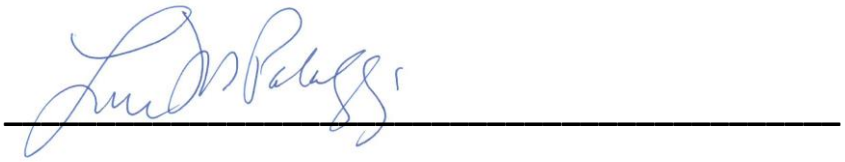
Project Reference:	SCJ # 1450.05 Path: N:\Projects\1450 Thurston EDC\1450.05 Tumwater Brewery Planned Action EIS\Wetland Shoreline and hydrology studies\Reports

Wetlands delineated in this report are considered preliminary until the jurisdictional agencies validate the wetland boundaries. Because wetlands are dynamic communities, wetland boundaries can and do change over time. The regulatory agencies typically recognize wetland delineations for a period of five years. In addition, changes in government laws, regulations and codes are bound to occur. Therefore, while the information in this report may be valuable for future work in this vicinity, this report is only applicable to the Old Brewhouse EIS Wetland Report project. This report has been prepared by or under the supervision of the following SCJ Alliance Staff.



Lisa M. Palazzi, CPSS, PWS

TABLE OF CONTENTS

Page

LIST OF FIGURES

Page

LIST OF FIGURES

Page

LIST OF APPENDICES

1. INTRODUCTION

1.1 Project Overview

The greater project site includes fifteen parcels owned by The Old Brewhouse LLC (Figure 1), but the primary subject for this wetland study is the main Old Brewhouse parcel (~17 acres, Tax Parcel Number: 78100300000), located at 3223 Boston Street SW, Tumwater, WA (S26, T18N, R2W).

For the wetland report, SCJ Alliance wetland scientists (SCJ) working with Mtn2Coast (project surveyor) was to:

a. Determine the extent of jurisdictional wetland/shoreline areas on the proposed development site;
b. Evaluate the hillside to determine if any regulated wetland areas are present;
c. Delineate shorelines, identify buffer and setback widths;
d. Identify, classify and generally locate wetlands, and prepare map of site identifying wetland locations and sizes, as well as buffer and setback widths;
e. Identify potential impacts to wetlands/shorelines associated with each development alternative;
f. Prepare wetlands/shoreline technical report (which will be included in the EIS appendices); and
g. Identify potential mitigation alternatives for wetland/shoreline impacts.

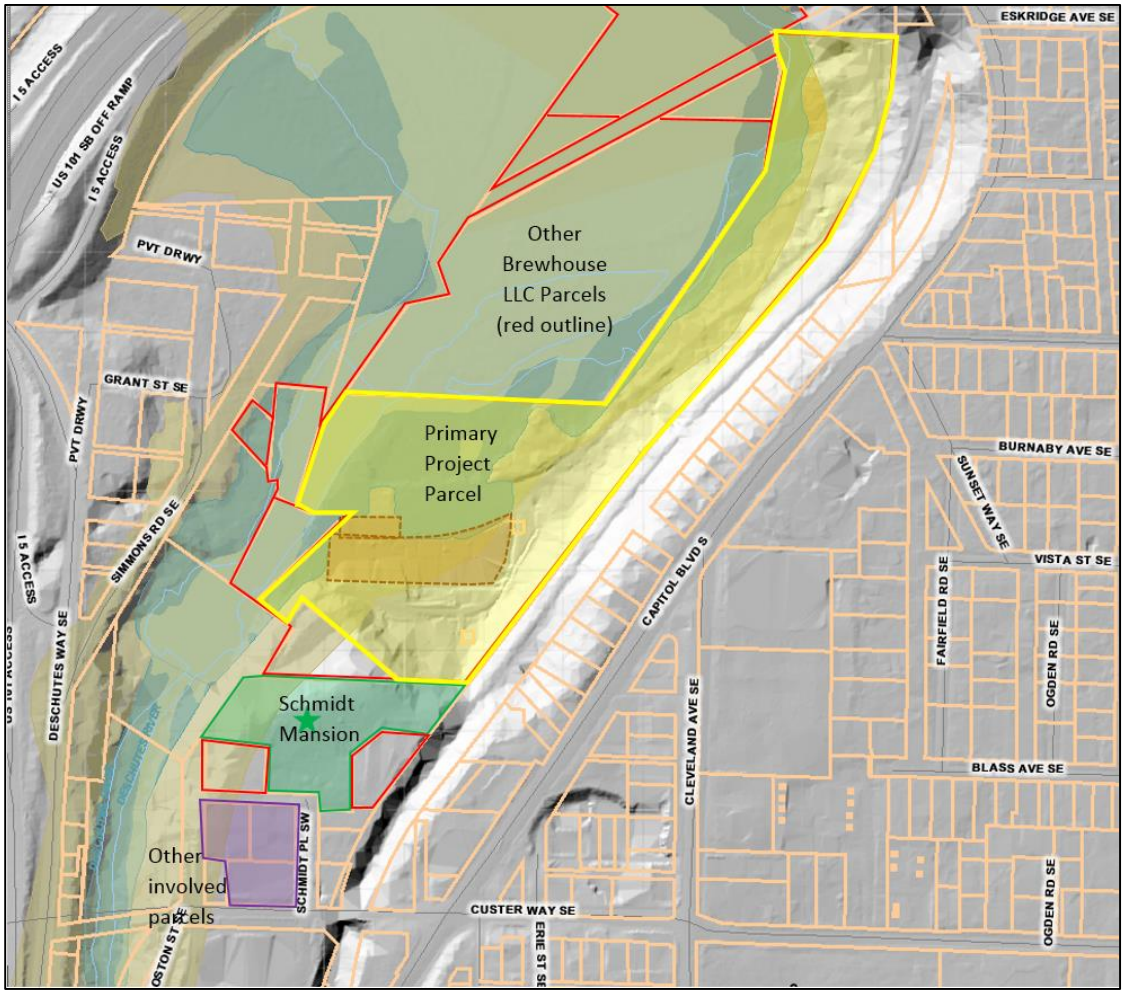


Figure 1. Project area parcels

SCJ wetland scientist, Lisa M. Palazzi, CPSS, PWS, delineated onsite wetlands on slopes to the south, east and northeast of the Old Brewhouse structures in late February, 2014. The wetland edge as well as the Ordinary High Water Mark (OHWM) on the Deschutes River to the north and west was surveyed by project surveyors. The islands in the river to the north of the site include some wetland areas, but would be regulated as part of the Deschutes River Shoreline system, and were not delineated. The islands may be evaluated and delineated separately at a later date if there are perceived conflicts between Critical Areas and Shoreline regulations, or as may be needed for mitigation.

The 2013-2014 winter had below average rainfall through early February. However, rainfall events from mid-February through May 2014 were above average. The wetland hydrology in these systems was fully developed at the time of field work. Both deciduous and herbaceous wetland vegetation were rapidly developing and actively growing.

2. METHODS

2.1 Wetland Delineation Regulations (federal and state)

Under the Washington Administrative Code (WAC) section 173-22-035, the Washington State Department of Ecology (Ecology) requires wetland identification and delineation be completed by following the approved federal wetland delineation manual and applicable regional supplements, i.e., the 1987 Corps of Engineers Wetland Delineation Manual and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010).

2.2 Wetland Rating, Classification, and Buffers

Tumwater Municipal Code defines Wetland Protection Standards in Chapter 16.28, which includes requirements for rating the wetland and making buffer width determinations based on rating score results.

When this project started, Tumwater code required that wetlands be rated according to the *Washington State Wetland Rating System for Western Washington* (Ecology Publication #04-06-025, Hruby 2004). However, a new *Washington State Wetland Rating System for Western Washington* went into effect as of January 1, 2015, and thus is used for rating the onsite wetlands for this report (Ecology Publication #14-06-029). The Rating System scores wetlands based on the functions of water quality, hydrology, and habitat. This system also assesses whether a particular wetland is more sensitive or contains rare or non-replaceable wetland characteristics.

Wetlands identified as part of this project were classified according to the USFWS Cowardin classification system (Cowardin et al. 1979) and the USACE Hydrogeomorphic (HGM) classification system (Brinson 1993).

2.3 Shoreline Regulations

The update to the City of Tumwater's Shoreline Master Program was approved by Ecology on April 4, 2014, with an effective date of April 18, 2014. The SMP "*establishes setbacks from the ordinary high water mark for different types of water oriented uses and development, establishes minimum habitat buffer widths for lakes under shoreline jurisdiction, and supports appropriate redevelopment of the former Olympia brewery properties along the lower Deschutes River and Capitol Lake".*

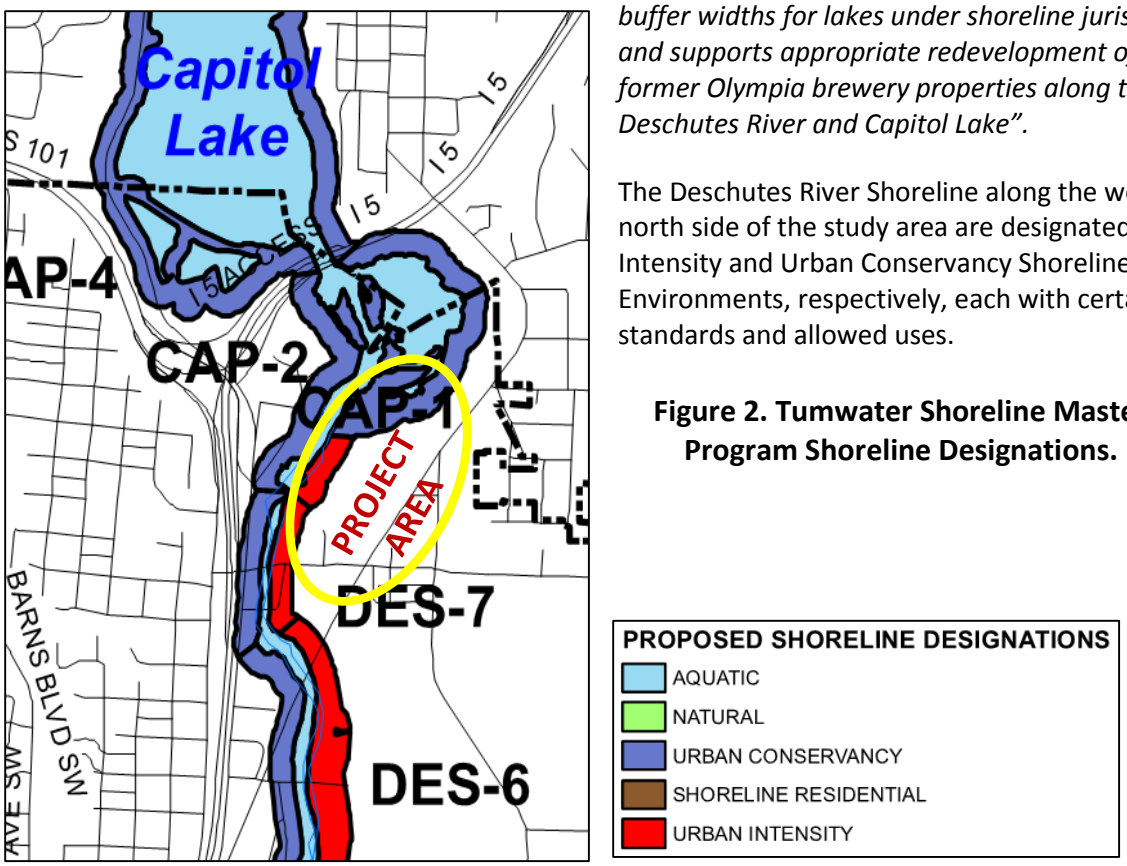


Figure 2. Tumwater Shoreline Master Program Shoreline Designations.

The Deschutes River Shoreline along the west and north side of the study area are designated as Urban Intensity and Urban Conservancy Shoreline Environments, respectively, each with certain standards and allowed uses.

2.4 Background Materials

To help determine the site conditions that might affect rating results, SCJ Alliance staff reviewed the following data sources to provide additional site information:

- Thurston County GeoData mapping system (Thurston County 2014)
- Patrick Beehler, LPS, professional survey maps for Pabst Brewing Co, 1999
- Tumwater Historical Association website (http://tumwaterhistoricalassociation.org/)
- Olympia Historical Society website (https://olympiahistory.org/)
- Olympia Tumwater Foundation website and photo collection (https://olytumfoundation.org/; hhttps://olytumfoundation.org/)
- Online photo archives from Evergreen State College (http://archives.evergreen.edu/)
- US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map (USFWS 2014)
- US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS); online Web Soil Survey, 2014
- Precipitation data (US Climate Data 2014)

- Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) Database (WDFW PHS 2014)
- WDFW SalmonScape Database (WDFW SalmonScape 2014)
- Washington State Department of Natural Resources (DNR) FPARS stream mapping system (DNR 2014)
- Google Earth historic timeline aerial photos of the project area

2.5 Marking Wetlands and Shorelines Onsite

SCJ Alliance staff, Lisa Palazzi, CPSS, PWS, carried out the onsite wetlands and shoreline delineation over a period of several days in late February, 2014. The wetlands onsite were marked using pink flagging, labeled "WETLAND DELINEATION" and numbered sequentially. Paired sample plots were dug within the existing wetlands and within adjacent upland areas, on either side of a specific numbered flag. Soils were evaluated using the Munsell Soil Chart (Munsell 2009). A map of the flagging was provided to Mtn2Coast Survey, and the wetland flag locations were professionally surveyed. Specific wetland information is provided in Section 3 of this report; wetland rating and data forms are provided in the report Appendices B (2014 Wetland Rating forms) and C (Field Data forms).

3. FINDINGS

3.1 Project Description

The **Thurston Economic Development Council** is working with the City of Tumwater and property owners, carrying out a study to define development options for the Old Brewhouse and associated parcels north of Custer Avenue. This report provides information on wetlands, shorelines and hydrology that may impact site redevelopment options from a design and/or regulatory standpoint, in relation the three Alternatives being assessed through a Planned Action EIS process. Please refer to the EIS report for detailed descriptions. Brief summary descriptions are provided below.

The three Alternatives are:

Alternative 1 (No Action)—Assumes continuation of existing development trends, site redevelopment would occur, without adoption of a planned action ordinance.

Alternative 2 (Moderate Development Intensity)--Includes redevelopment of existing buildings, the re-building of two demolished structures plus a new-build structure for parking.

Alternative 3 (Maximum Development Intensity)—Includes the same development as Alternative 2 plus another new-build structure for mixed-use. The parking structure is greater in size to accommodate additional needed parking

The Old Brewhouse site as well as the associated Olympia Brewery properties to the south have been the subject of several different research and development studies over the past 10-15 years. Survey maps produced by Patrick Beehler, PLS in 1999—which include his 1999 survey work compiled with older baseline work—were used as a base map for most of these studies. The Mtn2Coast (M2C) professional survey of SCJ's wetland delineation flagging for this project was adapted to create wetland maps below, and references the Beehler map baseline.

SCJ Alliance was to identify the Deschutes River Shoreline boundary (to the north and west) as well as to delineate and rate wetlands (to the south and east) of the Old Olympia Brewhouse. To ensure that this

information is as precise as possible within a historic site use context, SCJ used a wide range of data gathered from review of soil maps, historic aerial photos, survey maps, geology maps, hydrology maps, and fish and wildlife maps as well as other assorted site information that had been gathered by others.

3.1.1 Site History: Effects on Wetland Development Conditions

The wetlands associated with the Old Brewhouse parcel (to the south and east) as well as the Deschutes River shoreline (to the north and west) are significantly affected by historic development impacts onsite and upslope, starting as early as approximately 1890, as well as by changes in the downstream river system, brought on by construction of the I-5 bridge (circa 1956) and construction of the upslope railroad (circa 1891). A railroad spur that extended from the upslope railroad to the Brewery forms the base of a dirt road along the northeastern toeslope today (discussed in greater detail below).

In the late 1800s, Leopold Schmidt of Butte, MT purchased the property where the Old Brewhouse is currently situated from an existing tannery business (Figure 3). His primary reason for purchasing the property was due to the presence of a prolific artesian spring with excellent water quality. The tannery site had road access from the bluff above, but also from the river. The current road access is presumed to be in a similar location as the road originally used for the tannery; it curves down the steep slope around the end of basalt cliffs that form a narrow chute in the Deschutes River between the Old Brewhouse site and the upper Tumwater Falls to the south.

Figure 3. Showing tannery and residence that were on Brewery site when purchased by Schmidt in 1895.

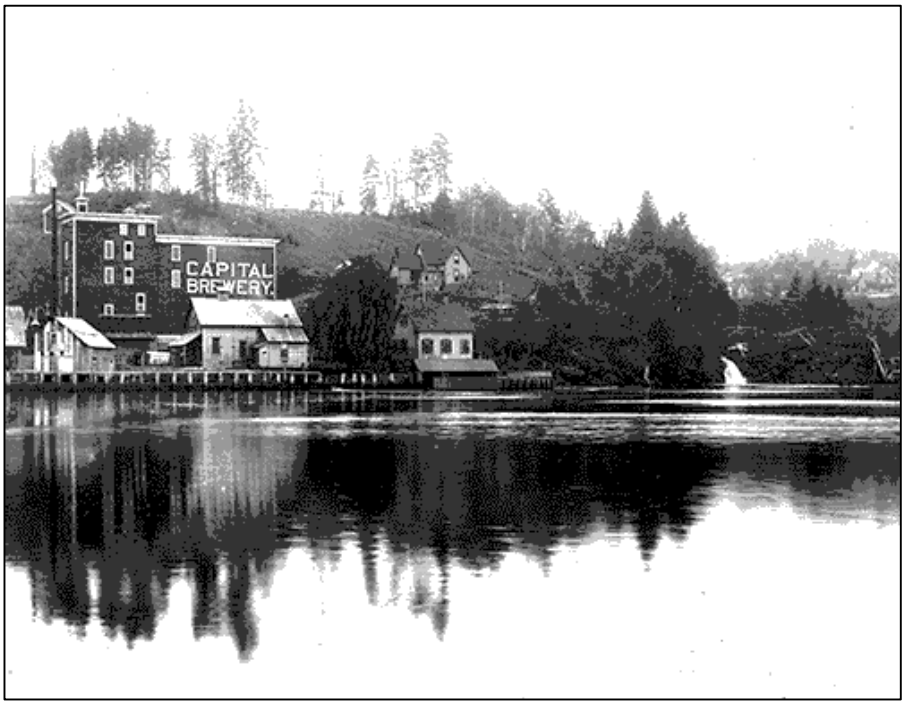


Figure 4. Original Capital Brewery building, from 1896.

Schmidt expanded the buildable area around the original tannery by bringing in fill, and initially built the Capital Brewery onsite in 1896 (Figure 4). By 1902, the name was changed to Olympia Brewing Company. In 1906, the building fill pad was expanded further, and the Capital Brewery building was replaced by the brick structures that persist onsite to present (Figure 5). Aside from the current brick and concrete buildings, there were many wooden structures onsite along the water and on the hillside behind the Brewery to the south (documented in Tumwater Historical Society photos).

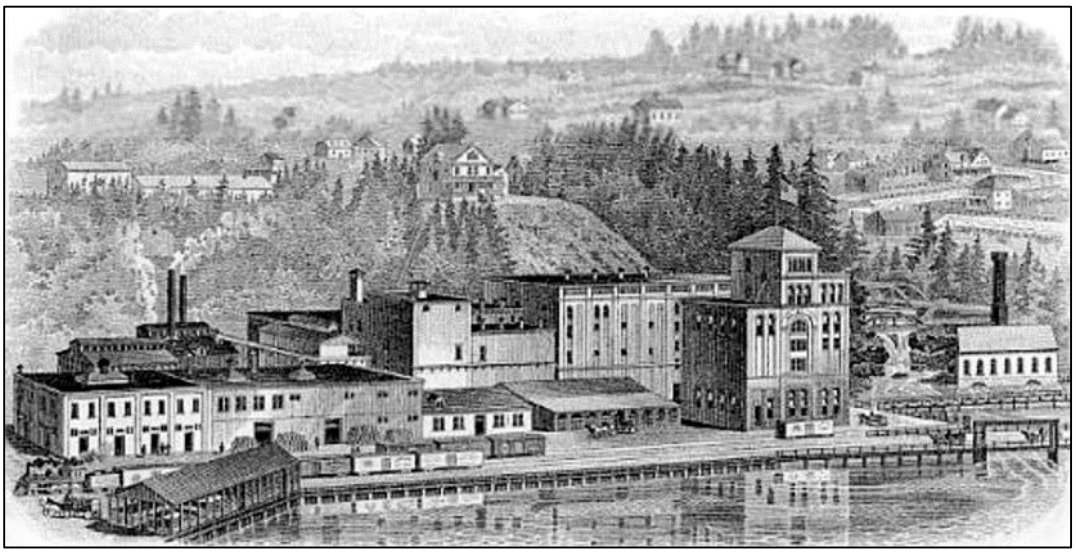


Figure 5. Olympia Brewery complex, built in 1906.

To allow for construction of the supporting buildings and roads, seeps and springs on the hillsides to the south and east of the Brewery site were captured and diverted around the east end of the site in roadside ditches, and in a deep concrete-lined trench that currently wraps around the foundation on the east side of the warehouse building (Figure 6).

Figure 6. Roadside ditches and open foundation drains that capture and divert water around the east side of the Brewery building complex.

Historic photographs (Figures 7 and 8) show that in the early 1900s, the river to the north was open water with no sand bars or islands. There were many wooden docks and buildings for water-side access along the north edge of the site. These photos also show many additional wood-framed buildings and structures onsite both to the north and to the south of the existing brick structures, as well as two different bridges across the Deschutes River: the main bridge on wooden piles crossed from the NW corner of the site to what is now the Tumwater Historical Park; a second, smaller bridge crossed from there to the opposite shore of the Deschutes River, ending approximately where the east end of the I-5 bridge exists today.

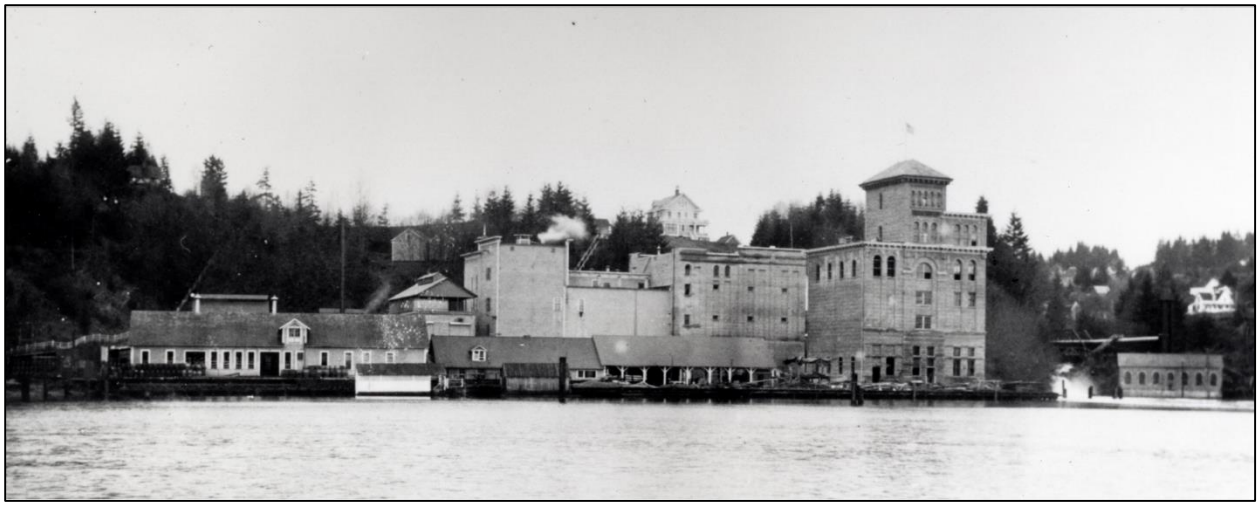


Figure 8. View of the Brewery site in the early 1900s from the north, showing open water with no islands or sand bars in the river north of the Olympia Brewery complex.

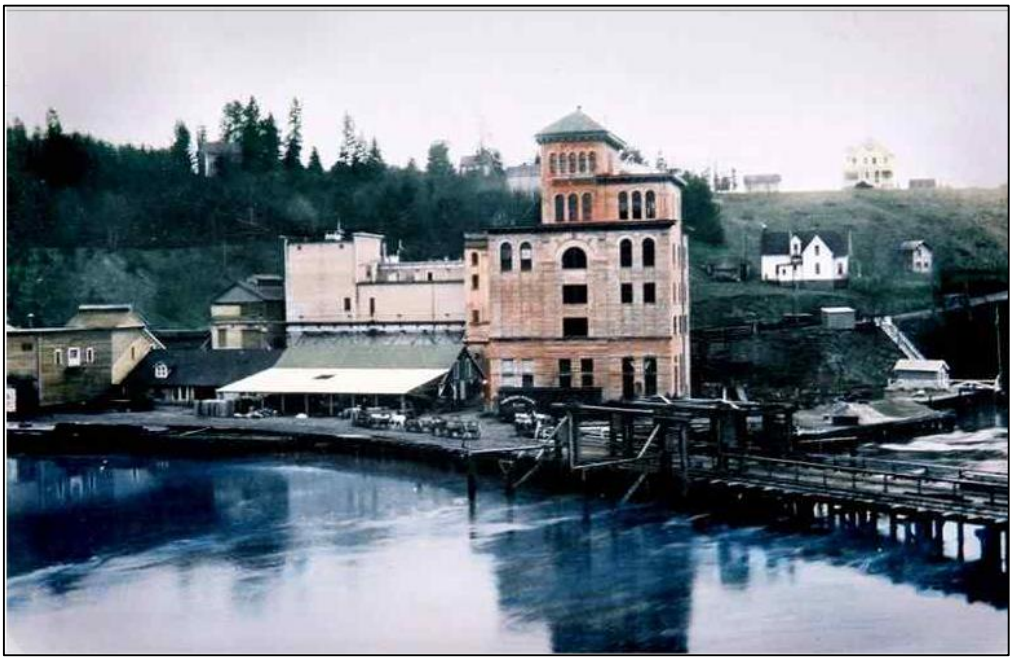


Figure 7. Photo from early 1900s showing bridge crossing the Deschutes River as well as other wooden structures associated with the Brewhouse complex.

By 1919, the City had constructed a concrete bridge crossing at 4th Avenue, which limited river traffic to the Brewery site. This inevitably had the effect of redirecting site access from the river for delivery and shipping to use of surface roads and railroads.

Prohibition also started in 1919, effectively shutting down beer brewing operations until Prohibition ended in 1932. The Brewery buildings by the river's edge were used for other purposes during Prohibition, but were never again used for beer brewing operations. After Prohibition ended in 1932, Schmidt rebuilt the brewery operations upslope, away from the river, to update infrastructure and to take full advantage of the need for expanded and direct road and railroad access.

The I-5 Bridge, spanning the Deschutes River about ½ mile north of the Old Brewery property, was built in 1956, and rehabilitated in 1988. The fill pads added to support the bridge on both sides of the river narrowed the channel and changed the ability of the river to flush sediment (Figure 9). In addition, logging and clearing upstream as Tumwater developed rapidly during the 1900s may have resulted in higher sediment loads in the river.

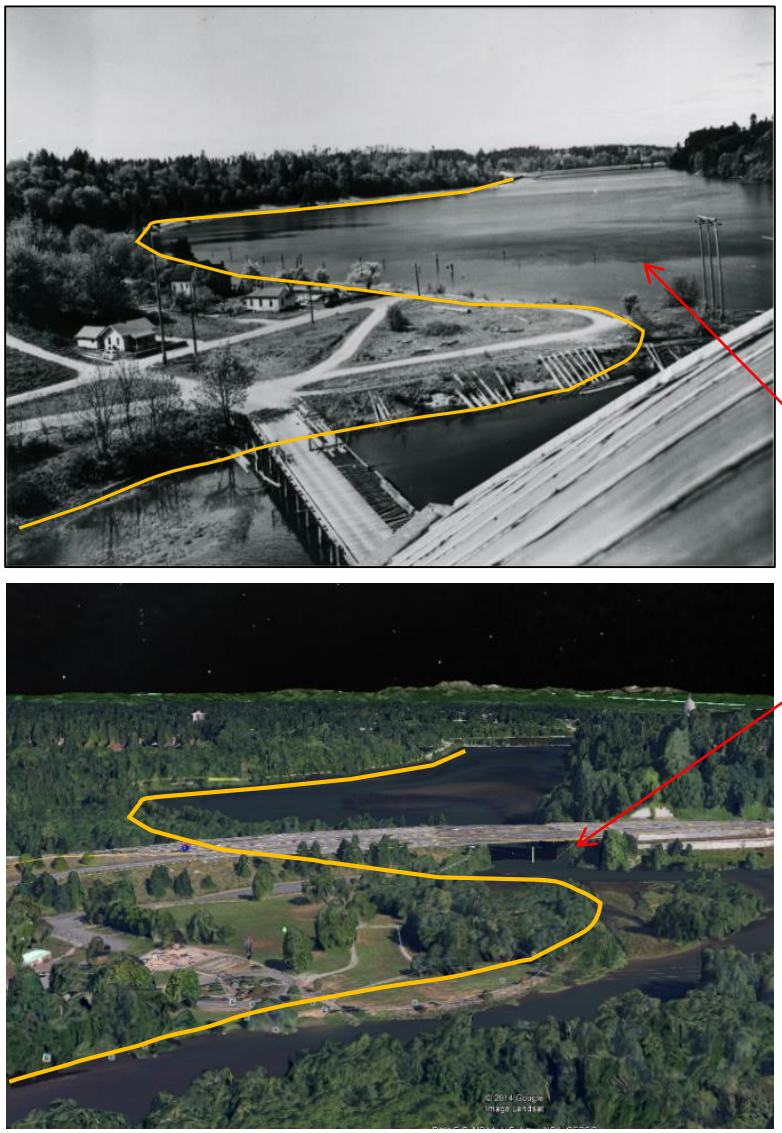


Figure 9. The yellow line shows the original shoreline shape – comparing a historic photo from the early 1900s with an oblique Google Earth photo from 2013. Note the wider Deschutes River channel in photo above, prior to construction of the I-5 Bridge (below), as well as sand bars in the current photo around the tip of what is now the Tumwater Historic Park. There are also sand bar islands along the eastern shore of the Deschutes that developed after the I-5 Bridge was constructed.

As a result of these impacts, over the years, sediment carried downstream in the Deschutes River has accumulated in a series of sand bars north of the Old Brewery site, mostly along the eastern side of the Deschutes River, but also around the northern edge of what is now Tumwater Historical Park (Figure 10). The northern sand bar edges are still active and affected by seasonal flows, with obvious changes in their shape and channels visible in Google Earth aerial photos, which date back to 1990. Most of the central sand bar surfaces are vegetated with trees and shrubs tolerant of periodic flooding; thus the sand bars have developed into islands, despite their perimeters being periodically eroded and reshaped by the river.

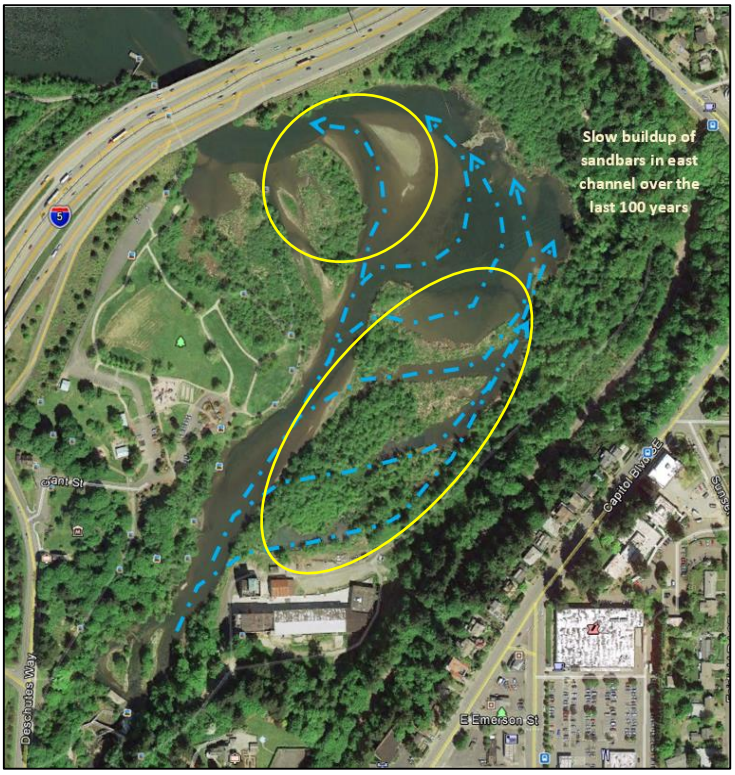


Figure 10. Showing sand bar islands in the area north of the Old Brewhouse site created by flow channel eddies (in blue dashed lines) formed by the I-5 Bridge constriction.

3.1.2 Current Hydrology Conditions Onsite

Onsite hydrology is currently controlled by the adjacent river, by seasonal stormwater runoff from upslope areas, and from groundwater seeps and springs emanating from sideslopes to the south and northeast. As described above, the Old Brewhouse building complex is built on a fill pad east of the river, directly downstream from where the Deschutes River channel widens below the narrow basalt chute that forms Tumwater Falls. Under current conditions, there are Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS) wetlands on the steep slopes to the south and northeast of the Brewery complex; the main channel of the Deschutes River defines the western edge of the fill pad; and sand bar islands within the river define the north edge of the fill pad.

Hydrology for the sideslope wetland systems emanates from hillside slopes 10-20 feet higher in elevation than the river surface—from groundwater seeps and springs. On the slope south of the Brewery complex, this water may come from year-round artesian flow. The duration of seep and spring activity has not been verified, but will be an important factor in future site development and design alternatives.

The current fill pad surface is only a few feet higher than the river surface elevation under normal conditions. During high water events observed in February 2014, when SCJ was carrying out onsite wetland and hydrology assessments, the river surface rose to within one foot elevation of the main

parking lot surface. There are no significant dikes or flood prevention structures onsite along the western side of the project area (the main Deschutes River channel). There is a minor, discontinuous berm along the northern side of the fill pad that is not expected to be effective for flood control. During 100 year flood events, the parking lot is mapped as being flooded up to the building foundations at between 10-12 feet elevation (GeoData elevation contours, Figure 11).

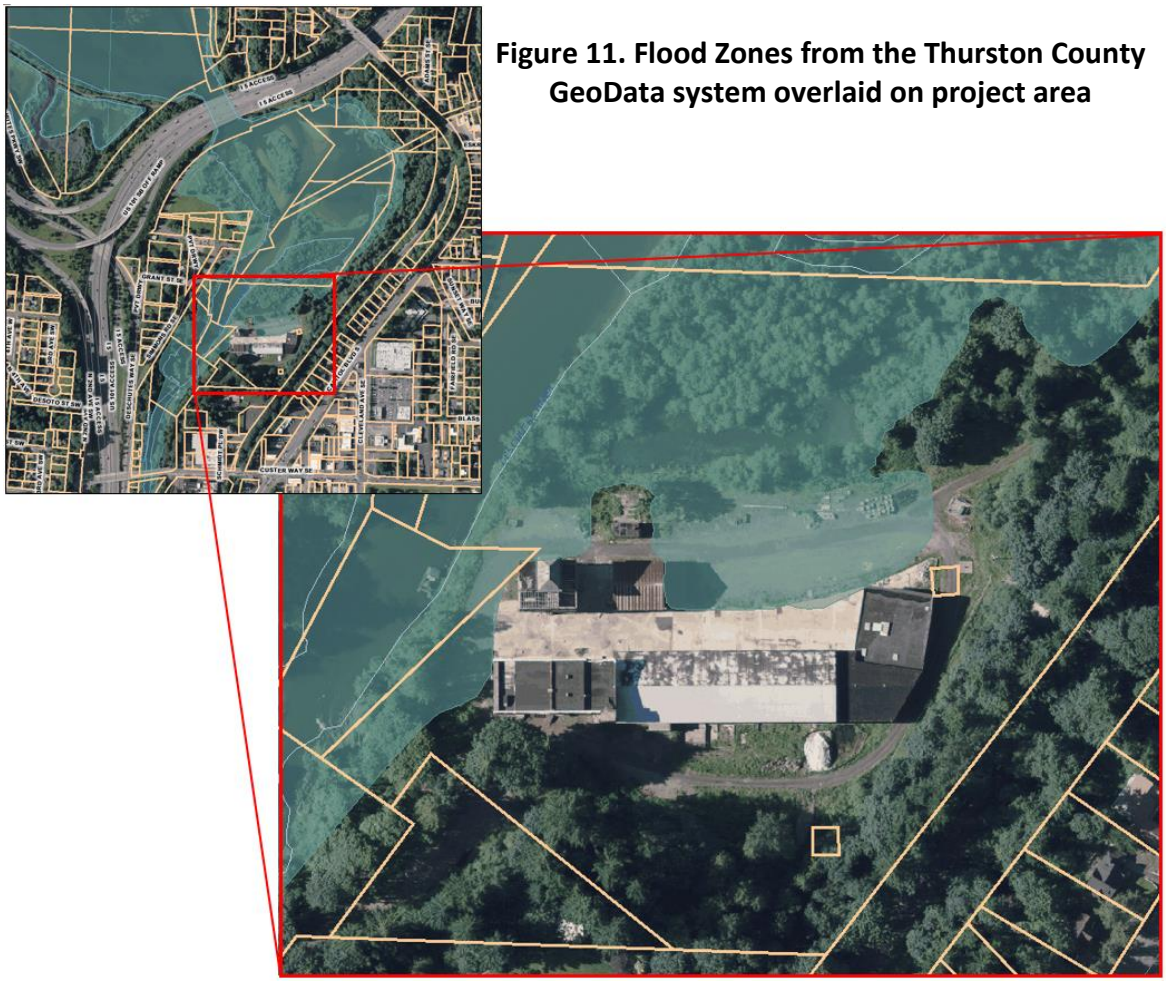


Figure 11. Flood Zones from the Thurston County GeoData system overlaid on project area

Recent emergency repairs of the toeslope roadside ditches south of the Brewery warehouse ensured that water from the southern slope wetland drained to the old ditches and drains in place around the south and east side of the building and access road rather than toward the old historic buildings. However, additional engineering and design work will be required to expand road width to meet code requirements and to provide access adequate to meet current building and safety regulations.

3.2 SCJ Wetland Delineation Results

Two wetland systems were delineated and surveyed on the project site (Figure 12). Wetland A is located on the sideslope south of the Old Brewhouse, downslope of the Schmidt Mansion. Wetland B is located on the sideslope northeast of the Old Brewhouse, between the upper Union Pacific railroad tracks and the Deschutes River. The slope is bisected by an old railroad spur road, which forms the western edge of Wetland B. Areas west of the road are also wetland, but are formed by hydrology from the Deschutes River system. These wetlands include the sand bar islands in the Deschutes, which were not delineated separately, as they are part of the Deschutes River Shoreline system, and the regulatory edge is the Ordinary High Water mark of the River.

Only areas within 300 feet of the main Brewhouse fill pad were delineated in Wetland B. However, that wetland system continues to the north for several hundred feet along the sideslope below Capital Blvd.

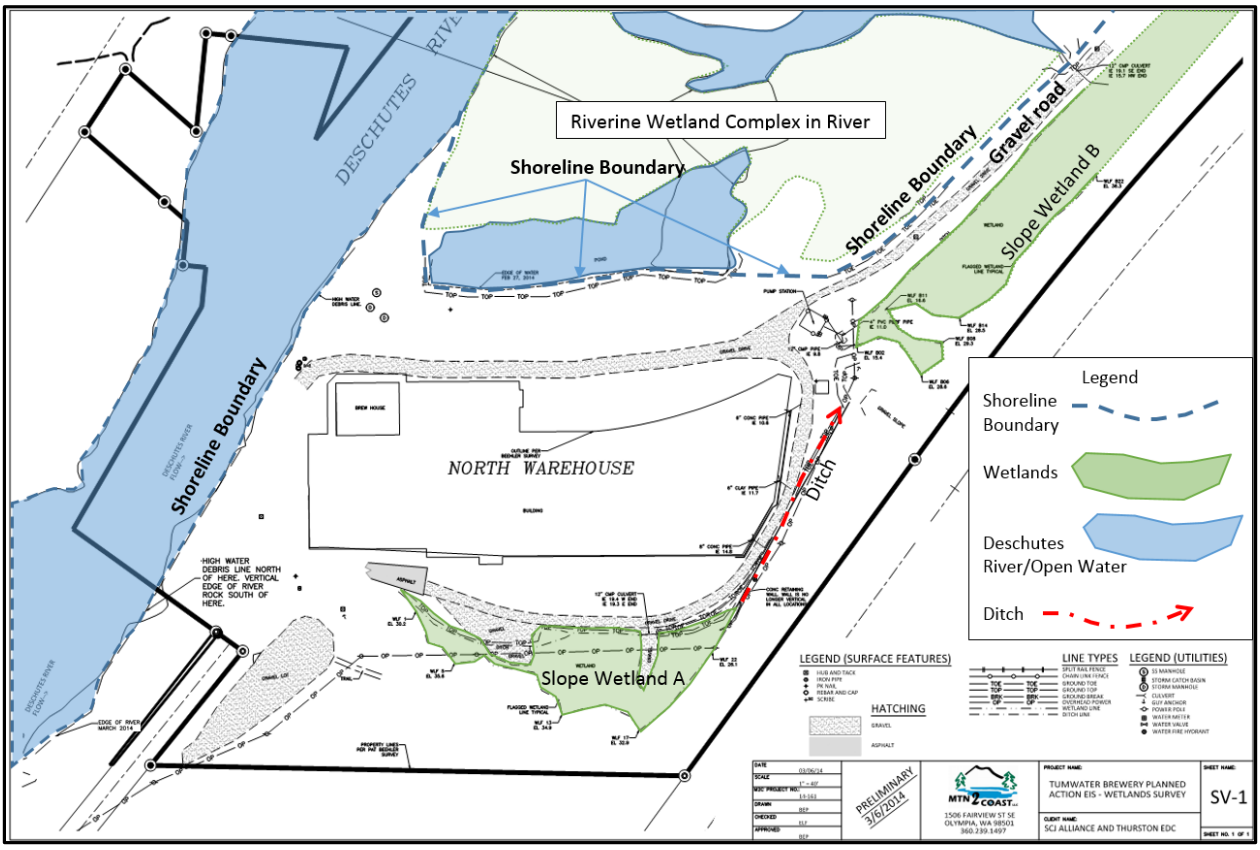


Figure 12. Adapted from Mtn2Coast survey map; showing location of Deschutes River Shoreline boundary as well as location and boundaries of Wetlands A and B.

3.2.1 Wetland A Description

Wetland A is classified as a "Slope" wetland (Hydrogeomorphic [HGM] Classification System), and as a Palustrine Emergent (PEM)/ Palustrine Scrub-Shrub (PSS) wetland (Cowardin Classification system). This

wetland is severely disturbed from impacts of development over the past 100+ years. It is partially filled at the downslope edge from road and drainage impacts, and contains a variety of debris and scrap metal from previous development, as well as tires, pipes, pump and machinery parts, and fill pads (Figure 13).

Figure 13. Wetland A at toeslope road fill edge (above) and looking upslope (below) through Wetland A and into the upslope forested buffer.

The source of ***Hydrology*** for Wetland A is from sideslope seeps, including at least two concentrated springs emanating from the slope about 12-15 feet higher in elevation relative to the downslope wetland edge. The downslope edge is defined by fills from the site access road and associated parking areas. The toeslope flows are captured in a roadside ditch, and diverted around the east side of the Old Brewhouse access road, eventually draining through culverts below the fill pad to the Deschutes River channel from a currently unknown outlet location.

The area around the Old Brewhouse has many artesian springs, some of which were developed and used as a water source for the brewing operations. The eastern of the two Wetland A sideslope springs may be from a partially developed or abandoned artesian spring, as there are old pipes and apparent pump remnants on the ground in the vicinity, as well as other standpipes nearby, downslope. Flow from that spring during the February 2014 field delineation was significant, enough to create channelized flow downslope around an existing fill pad in the wetland.

The ***Vegetation*** community in Wetland A was relatively simple and contained many seral stage plant species, reflecting the previously described and documented disturbed condition. The herbaceous vegetation was dominated by ***Cardamine angulata*** (angled bittercress) and ***Ranunculus repens*** (creeping buttercup), interspersed with ***Athyrium filix-femina*** (lady fern), ***Urtica dioica*** (stinging nettles) and ***Equisetum arvense*** (common horsetail). The scrub-shrub vegetation community within the wetland was dominated by ***Rubus spectabilis*** (salmonberry) and ***Alnus rubra*** (red alder) saplings. ***Hedera helix*** (English ivy) grows around the wetland edges, but was more common (almost 100% groundcover) in forested upland areas farther upslope.

The upland plant community in the buffer on the slope above Wetland A and downslope from the Schmidt mansion was dominated by English ivy in the understory, but included ***Oemleria cerasiformis*** (Indian plum) and ***Sambucus*** (elderberry) shrub species, and ***Pseudotsuga menziesii*** (Douglas-fir), ***Acer macrophyllum*** (bigleaf maple), ***Thuja plicata*** (western redcedar), and ***Alnus rubra*** (red alder) tree species.

The ***Soils*** in the wetland were severely disturbed gravelly and sandy fills. However, despite being on a slope (which often results in oxygenated wetland soil conditions), soils showed evidence of long-duration saturation and anaerobic conditions near the surface, such as low chroma matrix color in the upper 12 inches with distinct redoxymorphic features, indicating alternating periods of anaerobic and aerobic conditions. The soils met Hydric Soil Indicator A11 and S5 in different areas.

3.2.2 Wetland B Description

Similar to Wetland A, this wetland shows evidence of severe disturbance from historic land uses. It is affected by the upslope railroad fill from the east and is partially filled and bisected by an old spur railroad to the west. Some of the steep fill slopes farther north below the main railroad (which is still actively used) are unstable, showing evidence of shallow surface soil erosion and slippage, which must be repaired to avoid damage to the railroad tracks.

Only the southern portions of Wetland B within 300 feet of the main Brewhouse complex were delineated and surveyed, but the wetland system continues to the north along the sideslope at a similar elevation for several hundred feet. The southern portion of Wetland B (closest to the Brewery site) is trapped upslope (East) of the old gravel road fill, previously a railroad spur, which once provided service access to the site from the main railroad track upslope (Figure 14).

Water from this portion of Wetland B drains to the Deschutes River Shoreline in ditches, and through culverts below the spur road and fill pad at two locations. Wetland hydrology farther north drains through another culvert below the spur road fill, located about 325 feet north of the Brewery building complex (more detail below).

Figure 14. Old railroad spur is now a gravel road extending from the northeast corner of the Brewery complex along the hillside to the north, bisecting Wetland B.

Wetland B is classified as a Slope wetland (HGM Classification), and as a Palustrine Emergent (PEM)/ Palustrine Scrub-Shrub (PSS) wetland (Cowardin Classification) within the areas delineated, but is assumed to have some Palustrine Forested (PFO) areas farther north along the sideslope. Similar to Wetland A, the source of ***Hydrology*** for Wetland B is from sideslope seeps and springs (Figure 15 and 16), including at least three concentrated springs with associated stream channels emanating from the slope about 15 feet higher than the wetland toeslope. The toeslope in this part of Wetland B is defined by a ditch running along the upslope side of the old gravel spur road, described above. The roadside ditch captures most of the flow from Wetland B within the first 300 feet of wetland, and flows southwest to a culvert near the pump station (at the NE corner of the main fill pad), which presumably sends the flow to the Deschutes Shoreline. Another major spring farther north along the slope drains through another culvert under the road about 325 feet north of the northeast fill pad corner. The area upslope of this spring is actively eroding.

The ***Vegetation*** community in Wetland B is similar to that of Wetland A, but with more variability, as this wetland includes some flatter areas at the toeslope. Thus, in addition to those plants listed above for Wetland A, Wetland B also contains ***Lysichiton americanus*** (western skunk cabbage), ***Typha latifolia*** (broadleaf cattail), and ***Phalaris arundinacea*** (reed canarygrass). The upslope buffers are dominated by ***Rubus armeniacus*** (Himalayan blackberry), ***Alnus rubra*** (red alder) and ***Acer macrophyllum*** (bigleaf maple).

Figure 16. Wetland B, fill pad remnant below railroad, with sideslope spring stream eroding and down cutting through the old fill.

Figure 15. Looking downslope toward ditch (blue line) at spur road; seeps sheet-flowing down hillside (yellow lines).

The ***Soils*** are unstable across most of the upper sideslope in and above Wetland B, either eroding from impacts of seeps and springs or slipping from over-steepened slopes along the west side of the railroad tracks upslope. The soils at the toeslope showed indications of long duration saturation and reducing conditions (Hydric Soils Indicators A11 and F6), but the unstable and eroding upper slope soils met the Hydric Soil definition primarily from being saturated to the surface continuously over several weeks in the growing season.

3.3 Wetland Rating Results

Under current City of Tumwater regulations, the onsite wetlands would be rated applying the recently updated 2014 Western Washington Wetland Rating System. The Washington State Dept. of Ecology published a new rating system that is in effect as of January 1, 2015. The new rating system often results in different rating results (Category classification) and different standard buffer widths, as the new scoring system is based on a maximum score of 27 points rather than 100 points in the 2004 system.

The City of Tumwater has not yet formally adopted the new rating system, nor has it adopted a new standard wetland buffering protocol. It is anticipated that their code will incorporate this new standard in 2016. Until that time, any wetland reports reviewed by Ecology must be rated using the 2014 rating system, but preliminary buffers maybe inferred through a conversion of the 2004 wetland buffer tables. It should be noted that these preliminary buffers may change once Tumwater formally adopts the new standard, but any redevelopment of the Old Brewhouse property is expected to impact buffers regardless of width. Thus mitigation options would not be significantly different with different buffer widths.

Preliminary guidance for conversion of the old standard buffer tables to new tables are available from Ecology. For purposes of this report, the preliminary 2014 Wetland Rating System buffer conversion Alternative 3 is used: **Width Based on Wetland Category, Intensity of Impacts, Wetland Functions, or Special Characteristics** from Appendix 8-C, **Guidance on Widths of Buffers and Ratios for Compensatory Mitigation for Use with the Western Washington Wetland Rating System** (June 2014).

3.3.1 Wetland A Rating and Buffer Results (2014 Rating System -- Preliminary)

Wetland A scored a total of 16 points (out of 27 possible) – a low Category III wetland. It scored 6 (out of 9 possible) points for Water Quality Improvement Functions; 5 (out of 9 possible) points for Hydrologic Functions (flood control); and 5 points (out of 9 possible) for Habitat Functions. In all three categories, the wetland scored Moderate to Low for Site and Landscape *Potential*, but scored High for *Value*, due mostly to being close to other important habitats.

Applying modified draft Table 8C-5 (**Width of buffers needed to protect Category III wetlands in western Washington)**—a Category III wetland with a High Intensity proposed Land Use and with a Habitat score of 5-7 points, the standard buffer is 150 feet. Under the 2004 Wetland Rating System and buffering rules defined in current City of Tumwater code, Wetland A would be a Category III system with an 80 foot wide buffer.

3.3.2 Wetland B Rating and Buffer Results (2014 Rating System -- Preliminary)

Wetland B scored a total of 23 points (out of 27 possible) – a low Category I wetland. It scored 8 (out of 9 possible) points for Water Quality Improvement Functions; 8 (out of 9 possible) points for Hydrologic

Functions (flood control); and 7 points (out of 9 possible) for Habitat Functions. In all three categories, the wetland mostly scored Moderate to High for Site and Landscape *Potential and Value*, due mostly to being close to other important habitats – specifically, the Deschutes River system.

Applying modified draft Table 8C-7 (**Width of buffers needed to protect Category I wetlands in western Washington)**—a Category I wetland with a High Intensity proposed Land Use and with a Habitat score of 5-7 points, the standard buffer is 150 feet. Under the 2004 rating system and buffering rules, the wetland would be a Category II system with a 150 ft buffer.

3.4 Shoreline and Other Critical Areas Regulations

3.4.1 Tumwater Shoreline Master Program

The Deschutes River is a Shoreline of the State. In the Tumwater Shoreline Master Program, the Deschutes River Shoreline west and south of the project area is designated "Urban Intensity", extending from the site, south to the end of the greater Brewery District (the north end of the Tumwater Golf Course). The Shoreline to the north of the Brewery fill pad, which includes the sand bar islands (described above), is designated "Urban Conservancy," and that designation extends north up both sides of Capitol Lake. The water within the River is designated "Aquatic".

The Shoreline Zone includes all lands within 200 feet of the Deschutes River's Ordinary High Water Mark, as well as those portions of the 100-year floodplain within 200 feet of the floodway, and nearby wetlands that influence or are influenced by the River.

Urban Conservancy areas are to be managed using the following policies from the Tumwater Shoreline Master Program:

> *1. Uses that preserve the natural character of the area or promote preservation of open space, floodplain or sensitive lands either directly or over the long term should be the primary uses allowed. Uses that result in restoration of ecological functions should be allowed if the use is otherwise compatible with the purpose of the environment and the setting.*
> *2. The City will have standards that are designed to promote no net loss of shoreline ecological functions or values.*
> *3. Public access and public recreation objectives should be implemented whenever feasible and significant ecological impacts can be mitigated.*
> *4. Water-oriented uses should be given priority over nonwater-oriented uses.*

Urban Intensity areas are to be managed using the following policies for the project's Deschutes River Shoreline:

> *1. New uses and activities should result in no net loss of shoreline ecological functions.*
> *2. Where feasible, visual and physical public access should be required as provided for in this Program.*
> *3. The City will establish sign control regulations, appropriate development siting, screening and architectural standards, and vegetation conservation areas to promote visually attractive uses.*
> *4. The City will encourage a variety of urban uses in accordance with City plans and regulations to create a vibrant shoreline consistent with Tumwater's character and quality of life. …..*
> *– Deschutes River: The former Olympia Brewery is located on the east side of the Deschutes River. Consistent with the City's vision for these properties, a wide variety and mixture of uses are envisioned including residential, commercial, industrial, educational and cultural as well as*

public and recreational places. Future development should include restoration and/or enhancement of degraded shorelines.

Shoreline Section B. 14.c Regulations specific to the Old Brewhouse site

14. Uses listed … in subsection… "c" are allowed within shoreline jurisdiction including critical area buffers without a shoreline variance permit, provided the uses comply with TMC 18.38 (Floodplain Overlay) and the City's critical areas regulations as incorporated into this Program, and are constructed and maintained in a manner that minimizes adverse impacts on shoreline ecological functions and complies with this Program.

a….
b.…
c. Nonwater-oriented uses within Shoreline Reach CAP-1, as allowed in the Tumwater Zoning Code to accommodate future use and/or redevelopment of the historic Old Brewhouse site located adjacent to the Deschutes River and the south portion of Capitol Lake. Navigability is severely limited at this site. Uses must be located, designed, constructed and operated to minimize critical area disturbance to the maximum extent feasible. Nonwater-oriented uses shall not be closer to the OHWM than those existing as of the effective date of this SMP. These uses may be required to increase public access to the shoreline and/or restore or enhance degraded ecological functions as mitigation for impacts to shoreline resources.

Therefore, in relation to the Brewery site, the Tumwater Shoreline Master Program Plan has specific language that recognizes the pre-existing industrial use as well as historic character of the surrounding area. Section 4.3 of the SMP further expands on goals for protecting and restoring historical buildings. Section 4.6 expands on opportunities for restoration and enhancement of shoreline ecological functions. At such time as specific site development plans are developed, specific potential impacts on Shorelines will be considered and addressed, and the project-specific actions and permits will be identified. However, a listing of potential mitigation opportunities for the three Alternatives being considered in the EIS is provided below.

The three Alternatives are:

Alternative 1 (No Action)—Assumes continuation of existing development trends; site redevelopment would occur, without adoption of a planned action ordinance (Figure 17).

Alternative 2 (Moderate Development Intensity)--Includes redevelopment of existing buildings, the re-building of two demolished structures plus a new-build structure for parking (Figure 18).

Alternative 3 (Maximum Development Intensity)—Includes the same development as Alternative 2 plus another new-build structure for mixed-use. The parking structure is greater in size to accommodate additional needed parking (Figure 19).

Figure 17. Alternative I layout

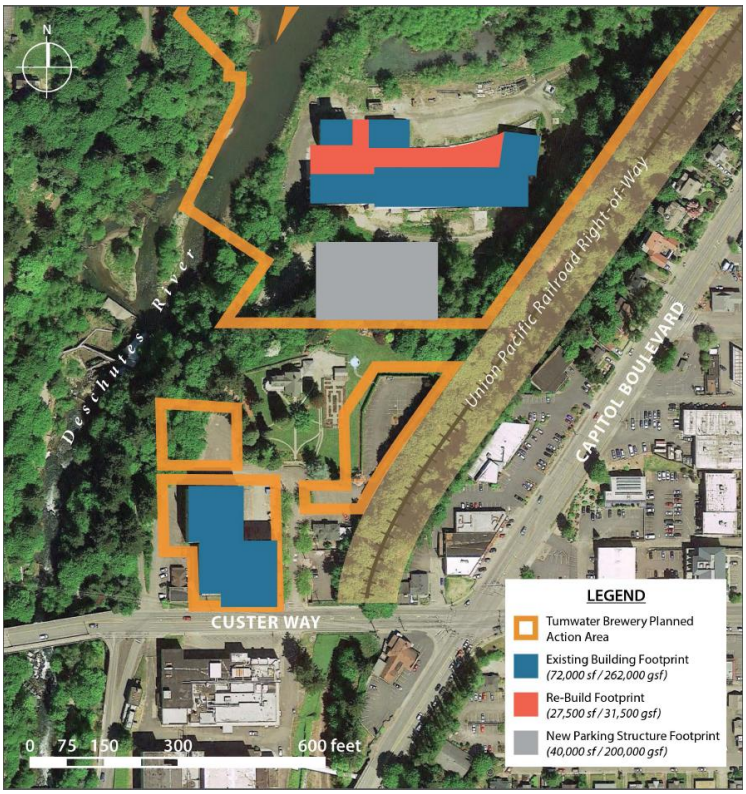


Figure 18. Alternative 2 layout

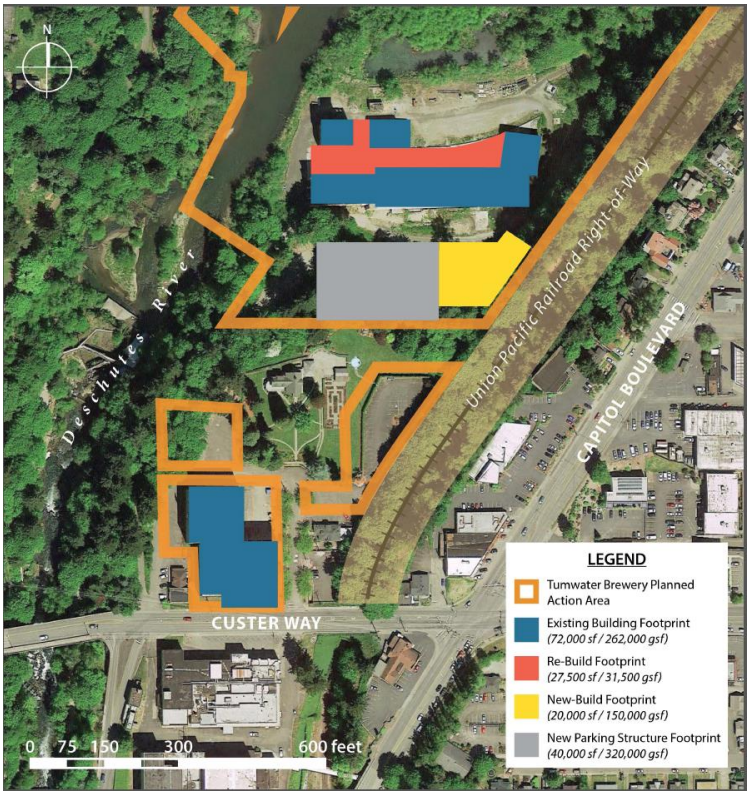


Figure 19. Alternative 3 layout

3.4.2 Additional Critical Area Regulations

The Deschutes River is also regulated as a Fish and Wildlife Habitat Area through the City of Tumwater Critical Areas Ordinance (Chapter 16.32). The recommended Riparian Habitat Width (RHW) for a Shoreline of the State is 250 feet, measured upslope from the Ordinary High Water Mark at the river's edge. However, under Section 16.32.070 (Habitat areas – Allowed Uses and Activities), subsection O, existing "structures, infrastructure improvements, utilities, public or private roads, dikes, levees, or drainage systems" may be "operated, maintained and repaired" as long as the activity does not increase impacts or encroachment and does not directly impact endangered species.

Slopes to the south and east of the Brewery complex are also potentially regulated as Landslide Hazard Areas under Chapter 16.20.040 of the City of Tumwater Critical Areas Ordinance, due to having slopes steeper than 15%, and hillsides that have "intersecting geologic contact with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock" and springs or groundwater seepage. Assessment for potential landslide issues and buffer or setback recommendations must be carried out and provided by a state licensed geotechnical engineer or geologist. In general, the minimum setback from top or toe of slope is 50 feet, unless reports or engineering can be provided to ensure public safety with the reduced setbacks.

3.5 Potential Mitigation Alternatives (for impacts to wetland[s] and river buffers)

Please refer to the EIS report for more detailed descriptions of the three Alternatives.

Under Alternative 1, areas of the site already developed (current impermeable surfaces) can be redeveloped and remodeled within the existing building footprint, and existing parking surface and roads can be improved within existing footprints. This alternative may require redesign of the site access road to meet code, and will likely require mitigation for impacts to wetlands and improvement of the current stormwater management system.

Under Alternative 2, the existing buildings would be remodeled and modified in ways that involves expansion of building footprints, both in the lower elevation Deschutes River Shoreline areas and in areas upslope near Custer Way. Alternative 2 would also require a parking garage structure to accommodate City parking requirements for the additional building area and public use. Alternative 3 is the same as Alternative 2, but with an additional mixed use building located east of the proposed parking structure. Both Alternatives 2 and 3 would result in impacts to wetland and Shoreline setbacks and buffers, which would require compensatory mitigation. The new parking structure is proposed on the hillside south of the Old Brewhouse structure. This, in combination with required road access improvements, would result in loss of Wetland A, which will require mitigation to meet federal, state and city No-Net-Loss requirements. The added mixed use building in Alternative 3 will impact wetland buffers, and may require geotechnical mitigation to address possible steep slope issues.

There are many wetland and buffer impact mitigation opportunities on and near the site. The list below is not comprehensive, but provides a context for mitigation alternatives:

- The sand-bar islands in the Deschutes River north of the Old Brewhouse are currently covered with seral stage plant species (such as red alder and scrub willows) and with many weed species – such as Himalayan blackberry and yellow flag iris. Planting of native vegetation and enhancing habitat on the islands can be designed specifically to enhance off-channel salmonid habitat, in addition to habitat for migratory and water-dependent birds.
- Offsite wetland creation and enhancement sites have been identified near Pioneer Park, within the Deschutes River floodplain. There are few areas within the project footprint that allow for effective wetland creation, which makes it important to find sites nearby, adjacent to existing habitat within the same river system for that purpose.
- Wetland B, located on the sideslope northeast of the Old Brewhouse is receiving and storing high volumes of eroded sediment from slope failure along the railroad tracks upslope. The vegetation community in the upslope buffer by the railroad tracks is dominated by Himalayan blackberry and English Ivy -- weedy non-native species. Planting of native willows within the wetlands, and deep-rooted native trees and shrubs on the upper side slopes and downslope of Wetland B, by the river will improve habitat, stabilize soils and improve water quality.
- Noxious and invasive weeds currently onsite will be controlled with a long-term adaptive management plan. Weedy species observed onsite include:
    - Himalayan blackberry
    - Japanese knotweed
    - English ivy
    - Tansy ragwort
    - Scotch broom

- Reed canarygrass
- Purple loosestrife
- Yellow flag iris

- New Zealand mud snail, a non-native invasive species has been documented in the Deschutes River System within a mile of the project site. It is assumed to occur in the Deschutes River as far upstream at Tumwater Falls, and thus is expected in the river directly adjacent to the project site. A Habitat Management Plan designed to eliminate potential for expansion of the invasive snail from onsite activities will be developed.
  (Additional information: http://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=1008).

  - Construction activities would include a plan for avoiding accidental spreading of the mud snail. Any in-water construction would have a safety plan that includes washing equipment at the water edge, to eliminate potential transport offsite.
  - All future boardwalk trails in wetlands or along the river would have railings designed to keep people on the trail.
  - Educational signage should be provided explaining how people can avoid picking up the snails on their shoes, and what to do if snails are accidentally transported.

- The site provides many opportunities for expansion of public trail connectivity between existing systems to the south and north along the Deschutes River as well as to the east toward Watershed Park.
  - Raised boardwalk trails with railings can be built along the river for public viewing pleasure.
  - The old railroad spur road to the northeast can be developed for use as a pedestrian trail connection from the site to Capitol Blvd.
  - Connections to the trail system associated with Tumwater Falls to the south can be developed.

- Historic and environmental overlooks and interpretive signs can be designed and installed around the property and along the Deschutes River.

4. SUMMARY AND CONCLUSIONS

4.1 Regulatory Review

Wetlands and certain waterways are regulated by tribes, federal, state, and local government agencies. Compliance with one agency's permitting and review requirements does not always fulfill permitting review and requirements of the other agencies. Critical Area and Shoreline Master Program regulations guide development on parcels affected by wetlands and streams. The City of Tumwater is the local regulatory agency, and will be the lead in reviewing and approving any permits related to site development.

Other state and federal agencies regulate impacts to wetlands, streams and rivers, as well as to threatened and endangered species. The US Army Corps of Engineers (Corps) regulates impacts to waters of the United States (including wetlands) and has developed procedures for defining and delineating wetlands at a federal level, and the state of Washington has adopted that standard definition and delineation process. If the project involves in-water work, the Corps will regulate those

impacts under Section 404 of the Clean Water Act (CWA), and the Washington State Department of Ecology (Ecology) will review under Section 401 (water quality standards). In addition, the Washington Dept. of Fish and Wildlife will review the project for potential impacts on salmonids, and in awareness of potential impacts from the presence of the invasive New Zealand mud snail (known to be present in Capitol Lake).

4.2 Wetland Rating Results

The State Dept. of Ecology developed an updated Wetland Rating Protocol, which is in effect as of January 1, 2015. However, Tumwater in still in process with updating their Critical Areas Ordinance in response to this new updated rating system. Therefore, the rating results provided use the current 2015 protocol, but buffers reported are preliminary, using guidance provided by Ecology that or may not be adopted by the City. The City anticipates adoption of the updated Critical areas Ordinance in 2016.

Wetland A is a Palustrine Emergent/Palustrine Scrub-Shrub wetland, located south of the Brewery buildings on the slope between the Brewery and the Schmidt mansion property. It is a severely impacted system, showing evidence of past buildings, drainage and filling. The hydrology source is from sideslope seeps, with possible perennial artesian spring flow (i.e., year-round). Hydrology at the toeslope is captured and diverted to the east of the Brewery buildings in perimeter site drains designed to protect the buildings from water damage. This wetland was scored 16 out of 27 possible total points with a Habitat score of 5 points (out of 9 possible). Therefore, it is a Category III system under the 2014 rating protocol, and based on draft buffering standards described in draft Table 8C-5 (**Width of buffers needed to protect Category III wetlands in western Washington)** is assigned a buffer of 150 feet. Under the 2004 wetland rating system and buffering rules, Wetland A would be a Category III system with an 80 foot wide buffer.

Wetland B is a Palustrine Emergent/Palustrine Scrub-Shrub wetland, located northeast of the Brewery buildings on the slope between the Union Pacific railroad and the Deschutes River Shoreline. Only the southern 300 feet of this system was delineated, but it extends several hundred feet farther north along the toeslope below the railroad tracks, and includes a Palustrine Forested vegetation community in the area farther north. The hydrology source is from sideslope seeps, with possible perennial artesian spring flow, but exacerbated by seasonal stormwater flows. Hydrology from the springs is captured at the toeslope by the spur road and diverted to culverts draining to the Deschutes River Shoreline. This wetland scored a total of 23 points (out of 27 possible), and 7 points (out of 9 possible) for Habitat Functions. Therefore, it is a Category I system under the 2014 rating protocol. Applying draft Table 8C-7 (**Width of buffers needed to protect Category I wetlands in western Washington)**—a Category I wetland with a High Intensity proposed Land Use and with a Habitat score of 5-7 points has a standard buffer of 150 feet. Under the 2004 rating system and buffering rules, Wetland B would be a Category II system with a 150 ft buffer.

5. REFERENCES

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Cowardin , Lewis M. et al, Classification of Wetlands and Deepwater Habitats of the United States, US Fish and Wildlife Service, 1979.

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USDA Natural Resources Conservation Service Plants Database, 2015 (for hydrophytic plant classification): http://plants.usda.gov/ .

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Washington Department of Fish and Wildlife Priority Habitats and Species Maps 2015 http://wdfw.wa.gov/mapping/phs/.

Washington Department of Fish and Wildlife SalmonScape Mapping system, 2015 (for fish presence); http://apps.wdfw.wa.gov/salmonscape/map.html.

Washington State Department of Natural Resources FPARS mapping system, 2015 (for stream typing): https://www.dnr.wa.gov/.

APPENDIX A

WETLAND RATING FIGURES AND FORMS (DRAFT 2014)

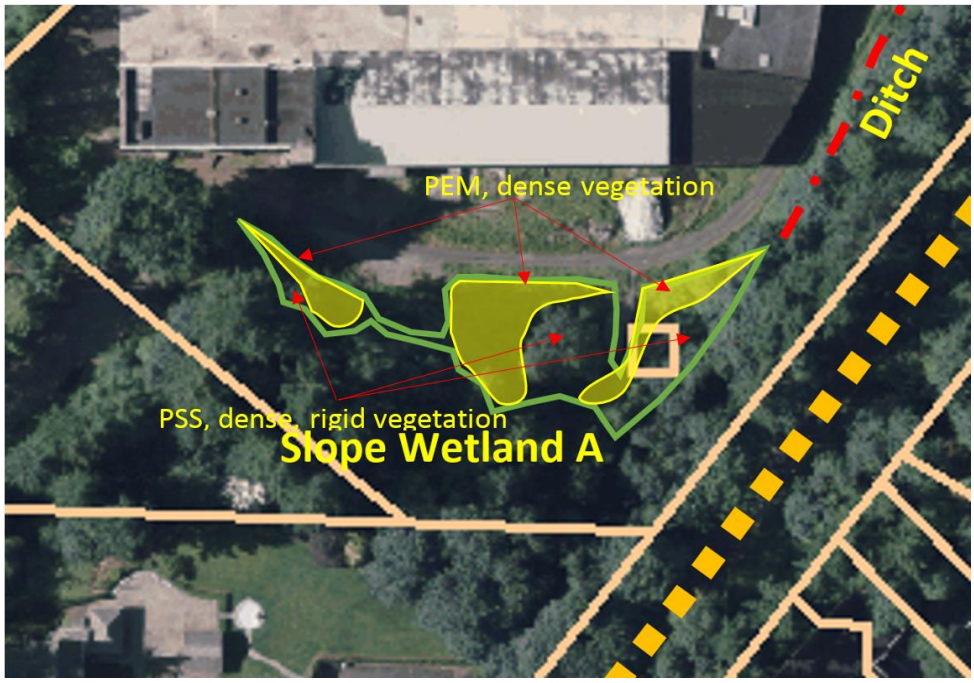


Figure A21. Wetland A: Cowardin Plant Classes (H1.1, H1.4), and Plant Cover (S 1.3 and S 4.1)

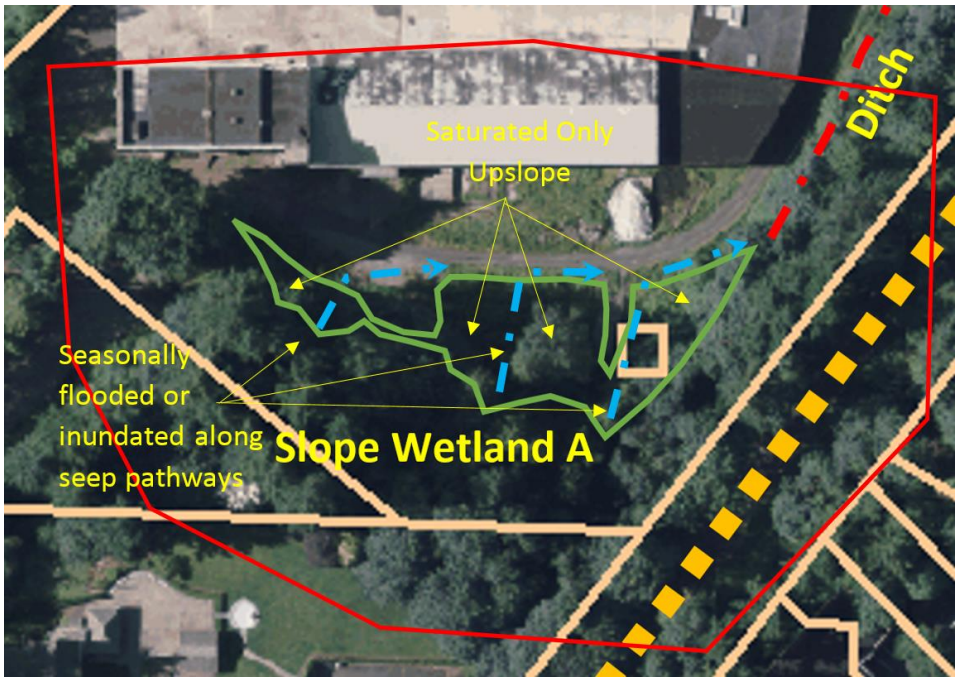


Figure A20. Wetland A: Hydroperiods (H 1.2), and 150' buffer (red line -- S 2.1, S 5.1). S 2.1: Only spring sources and related downstream drainage courses are seasonally inundated. The rest of the wetland is saturated only. S 5.1: The upslope Schmidt Mansion grounds (south) may have excess runoff from lawn areas, but that takes up less than 25% of the upslope area within 150 feet. The section of railroad to the southeast is in a deep ravine, and thus does not send surface water toward the site.

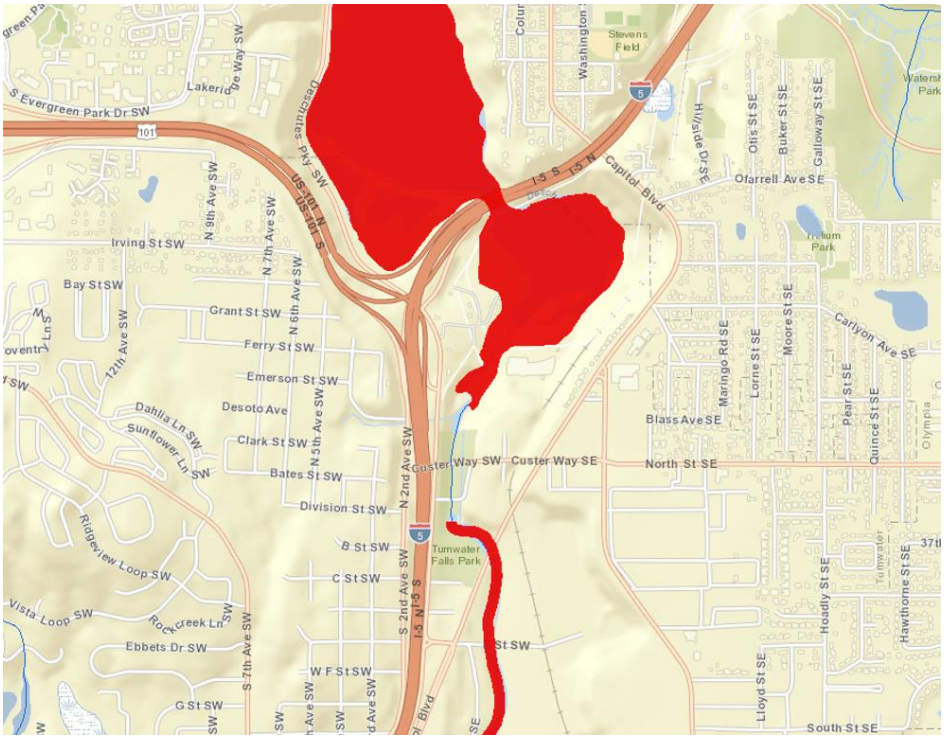


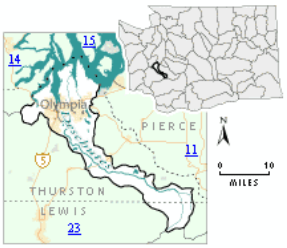
Figure A22. 303 D Waters Map, S/D 3.1 S/D 3.2, Wetlands A and B

Figure A23. Wetlands A and B: One-km setback polygons around Wetlands A and B. Yellow areas are relatively undeveloped; cemetery only gets 50% area credit. H 2.1 H 2.2 H 2.3

Water Quality Improvement Projects (TMDLs)

Water Quality Improvement > Water Quality Improvement Projects by WRIA > WRIA 13: Deschutes

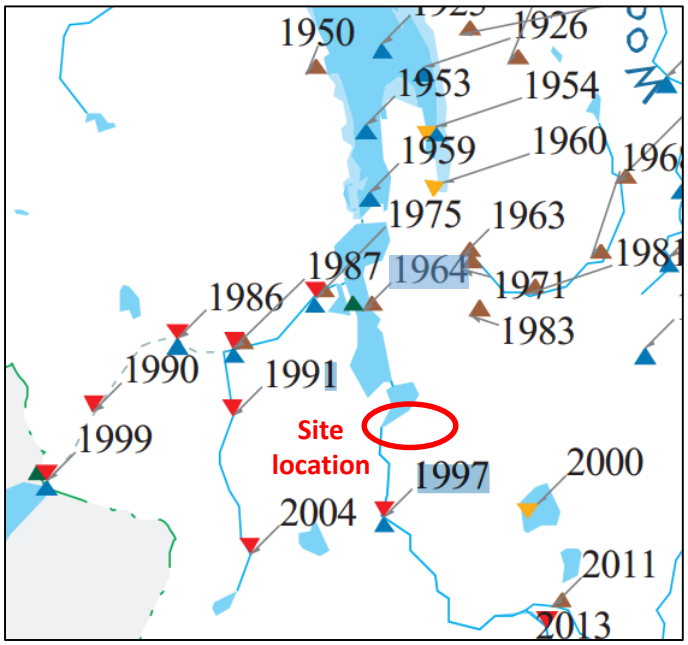
The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- Lewis
- Thurston

Waterbody Name	Pollutants	Status**	TMDL Lead
Budd Inlet Capitol Lake Deschutes River	Dissolved Oxygen Fecal Coliform PCB pH Phosphorus Temperature	Under Development	Lydia Wagner 360-407-6329



303(d) Parameters: ▲ Dissolved Oxygen ▲ Fecal Coliform ▲ pH, Total Phosphorus ▼ Temperature ▼ Toxics ▼ Other

Map#	Listing	Waterbody	Parameter
1997	6576	DESCHUTES RIVER	Temperature
1997	10894	DESCHUTES RIVER	Dissolved Oxygen
1964	22718	CAPITOL (SOUTH ARM) LAKE	Total Phosphorus
1964	40588	CAPITOL (SOUTH ARM) LAKE	Fecal Coliform

Figure A24. Wetlands A and B: TMDLs for Deschutes WRIA adjacent to site (S/D 3.3) (See Deschutes WRIA map and TMDLs attachment)

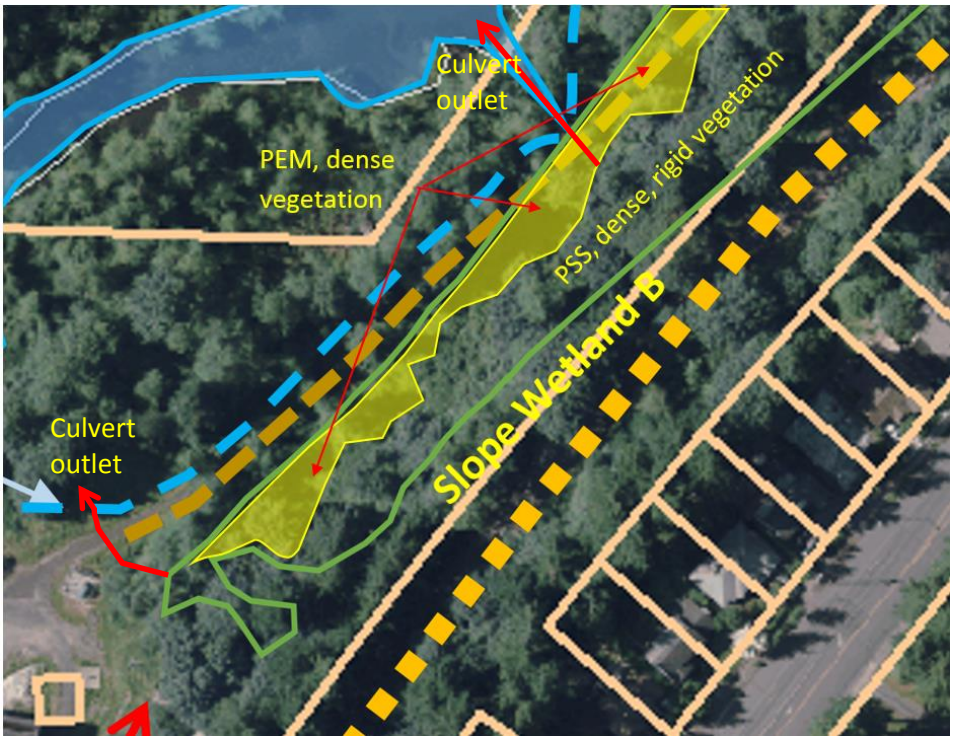


Figure A25. Wetland B: H1.1, H1.4, S1.3, D1.1, D1.3, D4.1, D4.3, D5.3. Showing the PEM/PSS portion of Wetland B that was delineated. Areas within WL-B farther north are assumed to be Palustrine Forested. Contr. Basin IS the wetland – fed by seeps.

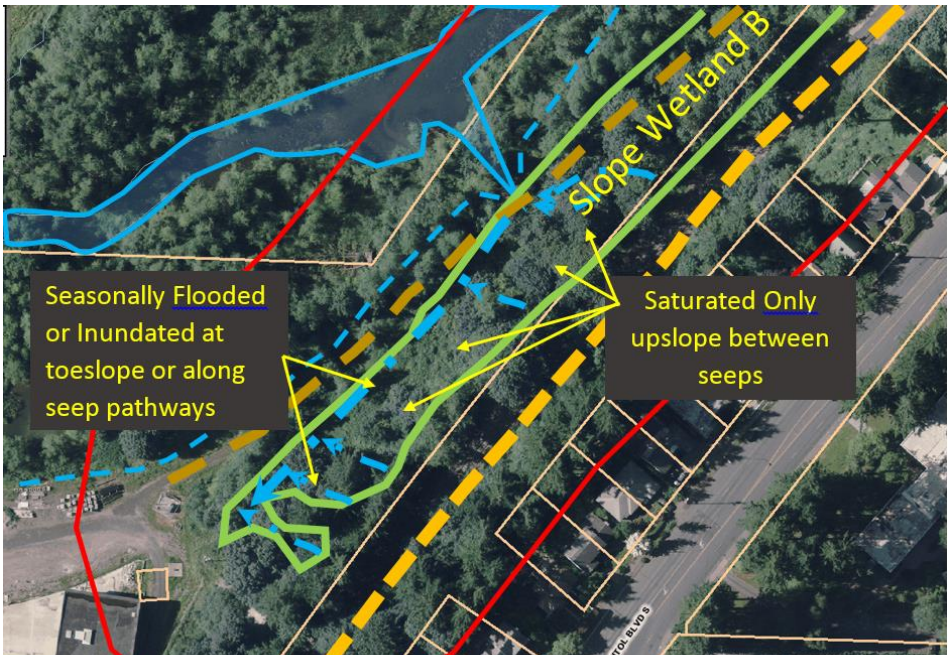


Figure A26. Wetland B: H1.2, S2.1, S5.1, red line is 150' buffer. H1.2: Hydroperiods show Seasonally Inundated in the seep pathways and at toeslope; Saturated Only between the seeps upslope. S2.1, S5.1: The railroad is directly upslope, and Capitol Blvd. and homes are upslope from the railroad; both potentially generate pollutants, but not much runoff within 150'.

Wetland name or number Brewery Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Brewery Wetland A Date of site visit: 2/2014

Rated by Lisa Palazzi, CPSS, PWS Trained by Ecology? ☑ Yes ☐ No Date of training '05,'14

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

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map Google Earth and Thurston County GeoData

OVERALL WETLAND CATEGORY III (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

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

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

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

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H☐ M☐ L☑	H☐ M☐ L☑	H☐ M☐ L☑	
Landscape Potential	H☐ M☑ L☐	H☐ M☐ L☑	H☐ M☐ L☑	
Value	H☑ M☐ L☐	H☑ M☐ L☐	H☑ M☐ L☐	**TOTAL**
Score Based on Ratings	6	5	5	16

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number Brewery Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	A21
Hydroperiods	H 1.2	A20
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	A21
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	A21
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	A20
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	A23
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	A22
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	A24

Wetland name or number Brewery Wetland A

HGM Classification of Wetlands in Western Washington

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

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

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

☑ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

☑ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☑ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

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

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☑ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

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

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

☐ NO – go to 5 ☑ **YES –** The wetland class is **Slope**

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

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

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

☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number Brewery Wetland A

☑NO – go to 6 ☐**YES** – The wetland class is **Riverine**

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

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

☑NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

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

☐NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number Brewery Wetland A

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 drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 3 Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 ☐ No = 0 ☑	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 wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher 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	3
Total for S 1 Add the points in the boxes above	3

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

S 2.0. Does the landscape have the potential to support the water quality function 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 points in the boxes above	1

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 ☐	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list*. ☑ Yes = 1 No = 0 ☐	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☑ Yes = 2 No = 0 ☐	1
Total for S 3 Add the points in the boxes above	3

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

Wetland name or number Brewery Wetland A

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	0

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 generate excess surface runoff? ☐ Yes = 1 No = 0 ☑	0

Rating of Landscape Potential If score is: ☐ **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 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	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☑ Yes = 2 No = 0 ☐	
Total for S 6 Add the points in the boxes above	

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number Brewery Wetland A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____	Aquatic bed	4 structures or more: points = 4
x	Emergent	3 structures: points = 2
x	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

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

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

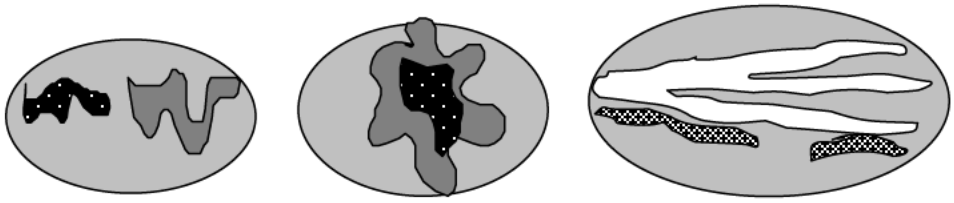
1

H 1.4. Interspersion of habitats

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

None = 0 points ☐ **Low** = 1 point ☐ **Moderate** = 2 points ☑

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



2

Wetland name or number Brewery Wetland A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☑ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	1
Total for H 1 Add the points in the boxes above	6

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 1 **+** [(% moderate and low intensity land uses)/2] 0 = 1 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 40 **+** [(% moderate and low intensity land uses)/2] 5 = 45 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

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

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

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

Wetland name or number Brewery Wetland A

WDFW Priority Habitats

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

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

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☑ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number Brewery Wetland A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes –Go to **SC 1.1** ☑ No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☑ No - Go to **SC 1.2**	**Cat. I** ☐
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	**Cat. I** ☐ **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** ☑ No – Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www.dnr.wa.gov/ ☐ 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**	**Cat. I** ☐
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes – Go to **SC 3.3** ☑ No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes – Go to **SC 3.3** ☑ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☑ No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☑ No = **Is not a bog**	**Cat. I** ☐

Wetland name or number Brewery Wetland A

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). ☐ Yes = **Category I** ☑ No = **Not a forested wetland for this section**	☐ **Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ Yes – Go to **SC 5.1** ☑ No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) ☐ Yes = **Category I** ☐ No = **Category II**	☐ **Cat. I** ☐ **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 ☐ Yes – Go to **SC 6.1** ☑ No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? ☐ Yes = **Category I** ☐ No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? ☐ Yes = **Category II** ☐ No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? ☐ Yes = **Category III** ☐ No = **Category IV**	☐ **Cat I** ☐ **Cat. II** ☐ **Cat. III** ☐ **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

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Wetland name or number Brewery Wetland B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Brewery Wetland B Date of site visit: 2/2014

Rated by Lisa Palazzi, CPSS, PWS Trained by Ecology? ☑ Yes ☐ No Date of training '05,'14

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

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map Google Earth and Thurston County GeoData

OVERALL WETLAND CATEGORY I (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

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

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

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

_____ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	H☐ M☑ L☐	H☐ M☑ L☐	H☐ M☑ L☐	
Landscape Potential	H☑ M☐ L☐	H☑ M☐ L☐	H☐ M☑ L☐	
Value	H☑ M☐ L☐	H☑ M☐ L☐	H☑ M☐ L☐	TOTAL
Score Based on Ratings	8	8	7	23

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number Brewery Wetland B

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	A25
Hydroperiods	D 1.4, H 1.2	A26
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	A25
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	A26
Map of the contributing basin	D 4.3, D 5.3	A25
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	A23
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	A22
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	A24

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number Brewery Wetland B

HGM Classification of Wetlands in Western Washington

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

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

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

☑ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

☑ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☑ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

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

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☑ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

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

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

☑ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

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

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

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

☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number Brewery Wetland B

☑NO – go to 6 ☐**YES** – The wetland class is **Riverine**

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

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

☐NO – go to 7 ☑ **YES** – The wetland class is **Depressional**

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

☐NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number Brewery Wetland B

DEPRESSIONAL AND FLATS WETLANDS

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

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

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☑ Yes = 1 No = 0 ☐	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☑ Yes = 1 No = 0 ☐	1
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 No = 0 ☑	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source water fowl use (per manual) ☑ Yes = 1 No = 0 ☐	1
Total for D 2 Add the points in the boxes above	3

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

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

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

Wetland name or number Brewery Wetland B

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

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

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	2
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	2

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

Wetland name or number Brewery Wetland B

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

____	Aquatic bed	4 structures or more: points = 4
x	Emergent	3 structures: points = 2
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

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

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

3

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

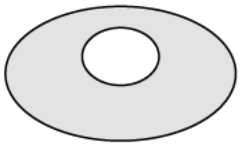
If you counted:	> 19 species ☑	points = 2
	5 - 19 species ☐	points = 1
	< 5 species ☐	points = 0

2

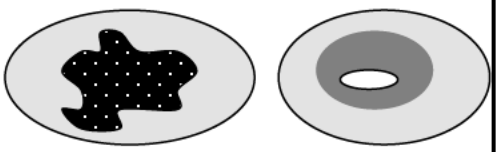
H 1.4. Interspersion of habitats

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

None = 0 points ☐

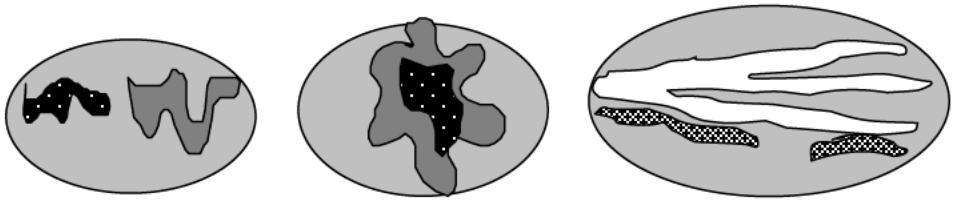


Low = 1 point ☐



Moderate = 2 points ☐

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



3

Wetland name or number Brewery Wetland 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.* ☑ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☑ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 Add the points in the boxes above	11

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 0 = 10 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 40 **+** [(% moderate and low intensity land uses)/2] 5 = 45 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	1

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

H 3.0. Is the habitat provided by the site valuable to society?

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

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

Wetland name or number Brewery Wetland B

WDFW Priority Habitats

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

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

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☑ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number Brewery Wetland B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes –Go to **SC 1.1** ☑ No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☑ No - Go to **SC 1.2**	**Cat. I** ☐
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	**Cat. I** ☐ **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** ☑ No – Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☑ No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www.dnr.wa.gov/NHPwetlandviewer ☐ 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**	**Cat. I** ☐
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes – Go to **SC 3.3** ☑ No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes – Go to **SC 3.3** ☑ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☑ No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☑ No = **Is not a bog**	**Cat. I** ☐

Wetland name or number Brewery Wetland B

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

☐ Yes = **Category I** ☑ No = **Not a forested wetland for this section** — ☐ **Cat. I**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ Yes – Go to **SC 5.1** ☑ No = **Not a wetland in a coastal lagoon** — ☐ **Cat. I**

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

☐ Yes = **Category I** ☐ No = **Category II** — ☐ **Cat. II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

☐ Yes – Go to **SC 6.1** ☑ No = **not an interdunal wetland for rating** — ☐ **Cat I**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?

☐ Yes = **Category I** ☐ No – Go to **SC 6.2** — ☐ **Cat. II**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?

☐ Yes = **Category II** ☐ No – Go to **SC 6.3** — ☐ **Cat. III**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?

☐ Yes = **Category III** ☐ No = **Category IV** — ☐ **Cat. IV**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form — NA

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APPENDIX B
WETLAND PHOTOGRAPHS

Figure B32. Western access road along Deschutes River

Figure B31. Railroad ravine by Schmidt mansion

Figure B30. View of I-5 Bridge from Capitol, north of the Brewery site

Figure B29. View of Brewery from the north, Capitol Blvd.

Figure B28. Looking downslope from Wetland B at Deschutes River islands

Figure B27. Slope failure on hillside by railroad.

Figure B34. Looking south down spur road to Brewery site

Figure B33. Stream flow from northern culvert below spur road.

Figure B36. Rack line from recent flooding and erosion line from earlier flooding at Tumwater Historic Park

Figure B35. View of Brewery from upstream during high water event.