

Preliminary Critical Area Report and Conceptual Mitigation

Prepared For

City of Marysville
501 Delta Avenue
Marysville, WA 98270

December 15, 2023
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Marysville Riverwalk Project



EXECUTIVE SUMMARY

PROJECT NAME: Marysville Riverwalk

LOCATION: The project is located at 80 Columbia Avenue and 60 State Avenue, in Marysville, WA, within the NW 1/4 of Section 33 of Township 30N, Range 05E, WM (the Site). It also includes portions of 13 residential parcels the City acquired as part of the 1st Street bypass project in 2019.

CLIENT: City of Marysville

PROPOSED PROJECT: The City of Marysville proposes a water-dependent mixed-use development on the Ebey Slough waterfront as part of the 2019 Downtown Master Plan. The project includes multi-family luxury apartments, a hotel, restaurants, a sports facility, a public plaza, and open space connections to the Ebey Waterfront trail and connecting commercial uses.

PRELIMINARY DETERMINATION: Three wetlands, one stream, and the Ebey Slough shoreline were identified directly adjacent to or within the project corridor. The wetlands and streams are summarized below.

Table 1. Wetlands within the Project Vicinity.

Wetland	Wetland Classification				Wetland Size (acre)	Buffer Width (feet)
	Cowardin ^b	HGM	Ecology	Local Jurisdiction		
WL1	PEM1Ch	Depressional	Category III	Category III	18+/-	75
WL2	PEMIC	Depressional	Category III	Category III	2.5+/-	75
WL3	E2EMIN	Freshwater Tidal Fringe	Category II	Category II	0.75+/-	25

Table 4. Streams within the Project Corridor.

Stream Name	DNR Water Type	City of Marysville Buffer Width (feet)
Ebey Slough	Type S	70' under Marysville SMP
Stream 1	Type F	150'

IMPACTS: The impact consists of filling 2,000 square feet of Category III wetland and 16,400 square feet of its associated buffer and rerouting 6,800 square feet (566 linear feet) of Type F stream to a pipe east of the project.

Table 5. Impact Summary.

Impact Area	Category	Total Impact Area (acres)
Wetland "WL2"	Category III Wetland	0.05
WL2 Buffer	Category III Wetland Buffer	0.38
Stream 1	Type F Stream	0.16

MITIGATION: Obtain mitigation bank credits from the Qwuloolt Estuary Mitigation Bank.

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ACRONYMS AND ABBREVIATIONS

DNR	Washington Department of Natural Resources
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
HGM	hydrogeomorphic wetland classification
LRR	land resource area
MLRA	major land resource area
MP	milepost
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent
PHS	priority habits and species
ROW	right-of-way
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WMVC	Western Mountains, Valleys, and Coast (regional supplement to the USACE Wetland Delineation Manual)
WDFW	Washington State Department of Fish and Wildlife
WRIA	water resource inventory area

1.0 INTRODUCTION

This report provides an assessment of wetlands, streams and fish and wildlife habitat areas within the study area for the Marysville Riverwalk project. It also includes a description of existing conditions anticipated impacts, and a conceptual mitigation approach to compensate for proposed impacts on critical area and fish and wildlife habitat functions and values.

The information provided in this report was based on the review of available online public resources and a site visit to evaluate the existing conditions. This report is prepared for the City of Marysville to use during site planning and permitting procedures.

All waters identified in this report are assumed to be under US Army Corps of Engineers (Corps), Washington State Department of Ecology (Ecology), and Washington Department of Fish and Wildlife jurisdictions. Buffers are regulated by the City of Marysville.

2.0 REVIEW AREA

2.1 Project Location

The project is located at 80 Columbia Avenue and 60 State Avenue, in Marysville, WA, within the NW 1/4 of Section 33 of Township 30N, Range 05E, W.M (the Site). It also includes portions of 13 residential parcels the City acquired as part of the 1st Street bypass project in 2019. See Figure 1 on the next page for a view of the project's vicinity.

2.2 Study Area

The study area includes the project boundary and areas within 300 feet surrounding it. We did not access off-site conditions beyond what could be observed from public roads and across property or fence lines. We used aerial photograph interpretations and published inventories to assess conditions beyond the public rights-of-way.

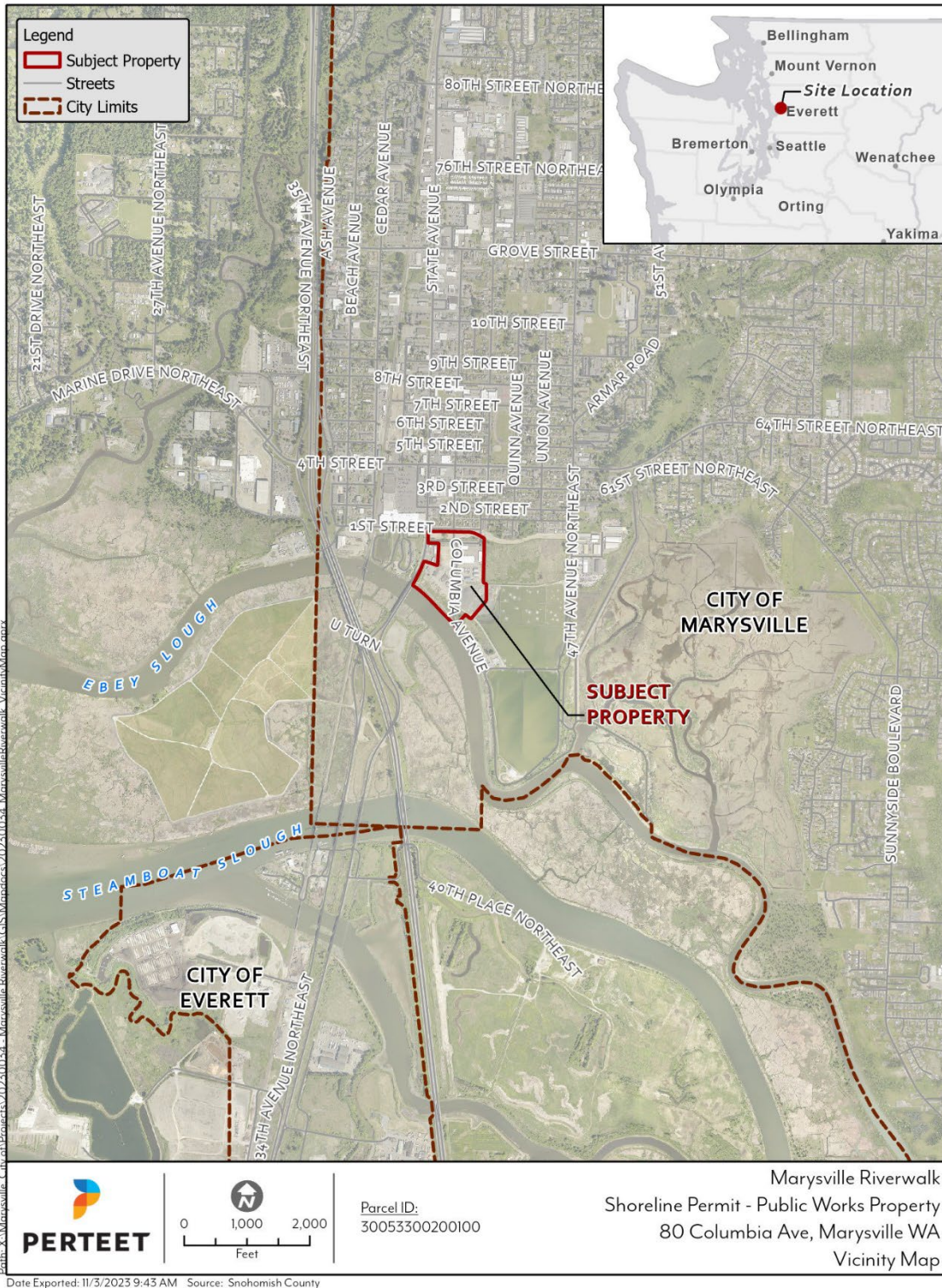


Figure 1. Vicinity Map.

3.0 METHODS

Our methods included review of existing databases to gather information on topography, drainage patterns, soils, vegetation, and potential or known wetlands and streams in the project vicinity and a site investigation to verify conditions. The information and conclusions are based on the professional judgment of Perteet ecological staff using readily available information. Wetland field delineations and determination data collection are imminent during later project application reviews.

The following resources were reviewed:

- National Wetlands Inventory (NWI) maps (US Fish and Wildlife Service, 2023).
- NRCS Web Soil Survey for Snohomish County, Washington (NRCS, 2023) and Washington State Hydric Soils (NRCS, 2023).
- Wetlands of High Conservation Value and Washington State threatened, endangered, and sensitive plants (Washington State Department of Natural Resources [DNR], 2023).
- Federally listed threatened, endangered, or candidate wildlife species (Washington State Department of Fish and Wildlife [WDFW], 2018) and proposed and designated critical habitat (National Oceanic and Atmospheric Administration Fisheries, 2023).
- WDFW Priority Habitats and Species (WDFW, 2023).
- City of Marysville Critical Areas Map (Marysville, 2023).
- Washington State Department of Natural Resources (DNR) Forest Practices Application Mapping Tool.

The field visit for this assessment was completed on September 26, 2023, by Perteet ecological staff to evaluate the existing conditions and estimate the boundaries of regulated aquatic areas in the project area.

Wetland and stream assessment and report preparation follow policy and guidance under the Marysville Municipal Code Chapter 22E.

The City of Marysville buffers (Marysville, 2023) were applied to wetlands, streams, and other waters in the project, in conjunction with the Washington State Department of Natural Resources (DNR) Forest Practices Rules, water type classifications (DNR, 2023).

3.1 Wetland Review

Wetland indicators are determined using the routine methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (WMVC Regional Supplement) (USACE 2010).

Wetlands were classified using the US Fish and Wildlife Service (USFWS) classification system (Cowardin) (USFWS 1979) and the hydrogeomorphic classification system (HGM) (Brinson 1993). Wetlands were rated using the Washington State Wetland Rating System for Western Washington: 2014 Update (Hruby 2014), as required by the Marysville Municipal Code (MMC), Chapter 22E.010 (Marysville, 2023).

The Marysville Municipal Code (MMC), Chapter 22E.010, was evaluated for wetland buffer requirements for wetlands near the project. Anticipated buffer widths range from 25 on wetlands associated with Ebey Slough to 75 feet on Category III wetlands.

3.2 Stream Review

Stream ordinary high water mark (OHWM) follows the USACE guidance for OHWM identification (USACE 2014) and Ecology's guidance for Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State (Ecology 2016).

Fish presence was determined based on available WDFW Fish Passage Inventory (WDFW, 2023) and Fish Distribution data (WDFW and Northwest Indian Fisheries Commission, 2018).

Impaired waters, those on the 303(d) list or covered by a Total Maximum Daily Load (TMDL), in the study area were identified using Ecology's Water Quality Atlas website.

Special designations were determined using the Corps list of Navigable Waters of the United States in Washington State (Corps, 2008) and the National Wild and Scenic Rivers System website for Washington State.

3.3 Species and Habitats of Interest

Under federal Section 404 Clean Water Act Permitting, a separate Biological Assessment (BA) will address impacts to Endangered Species Act (ESA) federally listed threatened or endangered wildlife species and proposed and designated critical habitat, as needed. This report includes preliminary information regarding potential ESA species and habitat, Washington State threatened, endangered, or sensitive species, and habitats of interest that may occur in the project. The following data sources were reviewed for information on federally and state listed threatened, endangered, candidate, sensitive species, and species of concern (TES), as well as habitats of interest:

- Federally listed threatened, endangered, or candidate wildlife species (WDFW 2023) and proposed and designated critical habitat (NOAA 2023).
WDFW Priority Habitats and Species (PHS) (WDFW 2023).
- Washington State threatened, endangered, and sensitive plants (DNR 2023).
- Wetlands of High Conservation Value (DNR 2023).

4.0 EXISTING CONDITIONS

4.1 Landscape Setting

The site is situated on low-lying topography along the northern side of the Ebey Slough Waterfront with minor variations in elevations just above sea level. Flood deposits and low river terraces are the predominant geomorphic features in the area. Ebey Slough is a significant water body, part of an extensive estuary system in the Snohomish River delta.

The dominant vegetation community in the area consists of wetland plants and species adapted to the coastal and estuarine environment, such as marsh grasses, sedges, thicket of blackberry and Douglas spiraea, as well as

stands of willow, black cottonwood, and alder. However, the subject site has largely been denuded of native vegetation and gravel and asphalt cover more than 50% of it.

The current land use activities on-site include light industrial activities and the city of Marysville public works buildings and operations and maintenance center. Surrounding land uses include a mix of residential, commercial, and recreational areas. Waterfront locations often have parks, marinas, and other recreational amenities, such as the paved, publicly accessible Ebey Waterfront Trail.

Historical land uses and disturbances in the area include industrial activities, land reclamation, and the wastewater treatment facility. These historic land uses have altered the natural hydrology for development purposes. Such changes have resulted in limited protection of critical areas and their functions and values, which are at risk of further degradation as development expands into the area.

4.2 Wetlands

4.2.1 Overview

Three wetlands were identified¹ nearby. They are mostly off-site or outside the project boundaries and labeled as WL1, WL2, and WL3 in this report and corresponding exhibits (Appendix A, Figures 1 and 2). Table 1 below summarizes the wetlands in the vicinity and the remainder of this subsection includes a description of vegetation, soils, and hydrology and functions and values. Wetland rating forms are provided in Appendix B.

Table 1. Wetlands within the Project Vicinity.

Wetland	Wetland Classification			Local Jurisdiction	Wetland Size (acre)	Buffer Width (feet)
	Cowardin	HGM	Ecology			
WL1	PEMICH	Depressional	Category III	Category III	18+/-	75
WL2	PEMIC	Depressional	Category III	Category III	2.5+/-	75
WL3	E2EMIN	Freshwater Tidal Fringe	Category II	Category II	0.75+/-	25

4.2.2 Vegetation

Table 2. Dominant Vegetation Observed at Each Wetland.

Wetland	Dominant Vegetation
WL1	Reed canary grass, black cottonwood, pacific willow, Sitka willow, Douglas hardhack, Himalayan blackberry, pacific cattail
WL2	Reed canary grass
WL3	Seacoast bulrush, triangle arache

4.2.3 Soils

The NRCS maps the site as containing Puget Silty Clay Loam. This soil is comprised of 85% Puget soils with small includes of Sultan, Snohomish, and Sumas soils. The Puget series is described as very deep, poorly drained soil that formed in flood deposits and largely found on low river terraces and in floodplains. These soils occur in nearly

¹ Our review did not include field delineation or completion of Corps data forms. During later phases of project planning, a field delineation and survey should confirm the coverage and impact areas.

level topography. Common characteristics include a dark grayish brown (2.5Y 3/2) silt loam at the surface and grayish brown (2.5Y 5/2) silty clay loam with dark brown and brown redox concentrations to about 17 inches below the surface. Puget, Snohomish, and Sumas are listed as hydric soils in Washington State.

4.2.4 Hydrology

Surface water and saturation was not observed during the September 26, 2023, site assessment within WL1 and WL2 but inundation is visible in aerial imagery and their geomorphic positions and dominance of Facultative and wetter species are indicators that these areas are influenced by seasonal high groundwater. Hydrology within WL3 within the Ebey Slough channel, is influenced by surface flows and tidal fluctuations.

Table 3. Presumed Hydrologic Inputs Observed at Each Wetland.

Wetland	Primary Hydrologic Input
WL1	Seasonal high groundwater
WL2	Seasonal high groundwater
WL3	Tidal and surface flows

4.2.5 Wetland Functions

WL1 is a large emergent and scrub-shrub wetland located offsite to the east. It has been modified and manipulated over the years through diking and impoundments from high-intensity development on all sides. The wetland supports perennially flowing drainage outlet, persistent vegetation, and potential for seasonal ponding. It is surrounded by surface areas that generate excessive runoff and pollutants, and pollution and flooding problems are known to occur in the same basin. Based on these existing conditions, WL1 provides important water quality and hydrologic functions on-site and in the landscape.

Wildlife habitat is limited within the wetland, due to low habitat interspersion, few special habitats features and isolation from habitats. Its association with instream and riparian habitats elevates its value somewhat, but overall, it scores low for habitat functions.

WL2, though smaller than WL1, holds similar conditions and levels of function also due to historical modifications. It receives stormwater discharges and hydrology from the piped stream that originates in WL1 (discussed in greater detail in Section 4.4). WL2 is dominated by persistent vegetation adjacent upland surface areas that generate excessive runoff and pollutants, and pollution and flooding problems are known to occur in the same basin. Based on these existing conditions, WL2 provides important water quality and hydrologic functions on-site and in the landscape.

Wildlife habitat is also limited within WL2 due to low habitat interspersion, few special habitat features, and is isolated from other habitats by heavily developed areas. Although it supports valuable instream and perennial habitat and is near Ebey Slough habitat, its overall value for habitat is low.

WL3 is the tidal fringe wetland influenced by Ebey Slough seasonal fluctuations and regular tidal fluctuations. The wetland is covered by persistent emergent vegetation with potential to trap sediments and pollutants, which benefits the slough and downstream environments. It is somewhat narrow compared to the width of the slough, which hinders its capacity to control floodwaters at the site. It nevertheless has the capacity to reduce flow velocities and protect downstream communities and ecosystems during significant flooding events.

The wetland itself supports relatively low plant diversity with limited special features and hydroperiods, but it can provide important refuge and nutrients for birds, fish, and macroinvertebrates. Its connectedness with Ebey Slough, a lightly used waterway by boaters, and proximity to valuable riparian and instream habitat are indicative of moderate to high habitat function and value in the landscape.

4.2.6 Wetland Buffers

The buffers are mostly degraded and devoid of viable vegetation on this site. The vegetated buffers on WL1 terminate at the edge of the existing developed areas, resulting in roughly 25 feet vegetated areas between the wetland and the existing pavement and building. The buffer on WL2 is partly vegetated with invasive blackberry, reed canary grass, and sporadic black cottonwood. The buffer on WL3 contains the paved pedestrian riverfront walkway as part of the allowed use under the Shoreline Master program and contains some landscape plantings, rose, and blackberries.

Where existing roadways intersect the buffers, the buffer extent is at the base of the road prism. Buffers do not extend across roadways or other legally established uses that functionally limit wetland protection.

4.3 Streams

Two streams occur in the project’s vicinity, including Ebey Slough along the southern site boundary and a Type F stream flowing south through the site within the southeastern quarter.

A summary of each aquatic resource is presented in Table 4 below.

Table 4. Streams within the Project Corridor.

Stream Name	DNR Water Type	City of Marysville Buffer Width (feet)
Ebey Slough	Type S	70’ under Marysville SMP
Stream 1	Type F	150’

4.3.1 Ebey Slough

Ebey Slough is part of an extensive estuary system in the Snohomish River delta, classified as a Type S Shoreline of Statewide Significance and borders the south side of the subject site. The shoreline is regulated under the Marysville Shoreline Master Program (SMP). Its setback for mixed uses within the High-Intensity Shoreline Jurisdiction is 70 feet (Marysville Shoreline Management Program, March 2020). Ebey Slough provides valuable habitat for several important fish species, as described in Section 5.0 below.

4.3.2 Stream 1

The Type F stream historically flowed in a meandering channel from WL1 to Ebey Slough where the filled lagoon now exists. The stream is more than two feet wide on a low gradient less than 5% between Ebey Slough up to the upper reach in WL1. Marysville Critical Areas Maps (Marysville, 2023) show the stream as unregulated but it is likely a Type F stream.

Stream 1 was placed in a pipe several decades ago to make way for the Marysville Sewage Lagoon facility. The piped conveyance flows west and discharges to a south-flowing drainage and eventually discharges to Ebey

Slough. The ditch conveyance is vegetated with grasses and blackberries along the side slopes, but above-bank riparian vegetation is non-existent as it flows through the active industrial site. No fish habitat has been documented within this stream.

5.0 SPECIES AND HABITATS OF INTEREST

As part of the greater Snohomish River delta leading to the Puget Sound, Ebey Slough provides habitat for a variety of species. Important fish include Steelhead Trout, Sockeye Salmon, Pink Salmon, Bull Trout, Coho Salmon, Chinook Salmon, Chum Salmon, and Cutthroat Trout.

Listed species under the Endangered Species Act (ESA) documented within Ebey Slough and nearshore waters of Puget Sound include Puget Sound Chinook salmon, Puget Sound steelhead, and Bull Trout. Other ESA-listed species potentially present in Puget Sound are Stellar sea lion, humpback whale, leatherback sea turtle, marbled murrelet, and Southern Resident killer whale. Of these latter species, only Southern Resident killer whale is likely to be present in the nearshore or estuarine waters of Ebey Slough.

Ebey Slough is critical habitat for Puget Sound Chinook salmon and steelhead, and the outer part of the Snohomish River delta, 0.3 miles west of the site is critical habitat for Southern Resident killer whale.

For Marbled Murrelet there is a final critical habitat for this species identified on IPaC; however, the project location does not overlap the critical habitat.

6.0 IMPACT ASSESSMENT

6.1 Project Purpose and Description

A proposed future site development will convert city lands from light industrial purposes into a mixed-use development comprised of multi-family luxury apartments, a hotel, restaurants, a sports facility, a public plaza, and open space connections to the Ebey Waterfront trail and connecting commercial uses. The project is intended to meet the City's vision for its downtown as presented in the 2019 Downtown Master Plan.

To achieve this development plan, adding a significant amount of fill to the site (187,500 CY) is necessary to bring it above the base flood elevation. As a result, a portion of a Category III wetland ("WL2") will be filled, and a ditch Type F stream ("Stream 1") will be rerouted into a pipe east of the project area. The work is anticipated to begin in June 2024 upon receipt of applicable permits. The impacts to aquatic resources are summarized below.

- Wetland impact – Fill approximately 2,000 square feet (0.05 acre) of Category III wetland (WL2) and 16,400 square feet (0.36 acre) of its associated buffer located in the southeastern corner of the site, where the project overlaps these areas (Table 5).
- Stream impact – Place approximately 6,800 square feet (0.16 acre)/566 linear feet of a ditch/Type F stream (Stream 1) into an appropriately sized pipe east of the site (Table 6).

To mitigate the permanent impacts, the City obtained the appropriate quantity of mitigation bank credits from the Qwuloolt Estuary Mitigation Bank. All other provisions for wetland mitigation banking under MMC Chapter 22E.010.130 will apply.

Table 5. Expected Impacts to Wetlands.

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Buffer Area (acre)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
WL2	2.5+/-	0.05	0.36	PEMIC	III	III	Depressional
TOTALS	2.5+/-	0.05	0.36				

Table 6. Expected Impacts to Streams.

Water Course Identifier	Permanently Impacted Water Course (acre/linear ft)	Buffer Area (acres)	Classification System Used	Water Type	303(d) Listed (parameters)
Stream 1	0.16/566	No buffers due to the existing development	WDNR	F = Fish	None
TOTALS	0.16/566	0			

7.0 REGULATIONS

7.1 City of Marysville

The City of Marysville Municipal Code (MMC) Chapter 22E.010.110 requires adverse impacts to wetland functions and values be mitigated by first demonstrating that the impacts are unavoidable or minimized to the greatest extent possible. For impacts on Category III wetlands, the proposed mitigation shall be through the utilization of mitigation bank as allowed under Chapter 22.E.010.130. The nearby Qwuloolt Estuary mitigation bank is the preferred bank for use in off-site mitigation.

MMC 22E.010.230 requires adverse impacts to stream be mitigated by first demonstrating that the impacts are unavoidable or minimized to the greatest extent possible. MMC 22E.010.230 (3)(c) allows the relocation of a stream when it is part of an approved mitigation or rehabilitation plan and will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream. Through the utilization of the nearby Qwuloolt Estuary mitigation bank, better habitat shall be provided, as it has already restored several miles of salmon habitat. On-site water quality and flow capacity will not be diminished, as demonstrated in Section 8.2.

7.2 Department of Ecology (Ecology)

Ecology has authority over discharges into wetlands and streams, including isolated wetlands. It can enforce buffers and compensatory mitigation for impacts under RCW 90.48. Activities that discharge into Waters of the US under a Federal Section 404 permit require a Clean Water Act (CWA) Section 401 Water Quality Certification (WQC), which Ecology is authorized to issue.

7.3 Washington Department of Fish and Wildlife (WDFW)

WDFW requires the issuance of a Hydraulic Project Approval (HPA) before engaging in any activities that could impact streams or related wetlands, whether directly or indirectly. The WDFW has regulating authority over Stream 1 and likely Wetland 2 because of a direct connection. Per RCW 77.55.241, allowing mitigation in off-site

locations could be cost-effective and beneficial for fish resources. WDFW has the authority to approve off-site mitigation plans submitted by permit applicants. However, if the department rejects the permit or imposes conditions that make off-site mitigation impractical, there may be consequences for the permit applicant. US Army Corps of Engineers (Corps).

7.4 US Army Corps of Engineers (Corps)

The Corps regulates the release of dredged or fill material into wetlands, streams, and connected drainages falling under Waters of the United States through Section 404 of the Clean Water Act (CWA). Disturbances to wetlands, streams, and potentially other drainages (such as ditches) require notification, and it is the responsibility of the applicant to disclose such disturbances.

Most activities also require mitigation, and the Corps has discretion to disallow disturbance to high-quality wetlands. In their permit review, the Corps must ensure compliance with the Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, and National Historic Preservation Act (including archeological sites), as outlined in Section 7, Section 106, and other relevant provisions.

8.0 IMPACT ANALYSIS

8.1 Wetland Functions to be Impacted

Water Quality Functions – The project reduces the capacity for water quality functions by 2,000 square feet within “WL2,” roughly 2% of the estimated wetland area. The overall impact is relatively minimal. The impacted aquatic resources are not on the 303(d) listed waters.

Long-term stormwater management and treatment will comply with the 2019 Washington Department of Ecology Stormwater Manual and implement low-impact development (LID) strategies where possible. Construction impacts will be minimized to the greatest extent possible, and best management practices (BMPs) will be implemented to prevent the mobilization of sediments and ensure that site disturbances remain on-site.

Overall, water quality impacts are expected to be relatively minimal and mitigated through construction BMP and post-development stormwater management.

Fish and Wildlife Habitat Functions – The project is expected to have no direct impact on fish and wildlife habitat functions since none exist. WL2 provides insufficient habitat functions within the wetland itself and is isolated from other habitats in the landscape. Overall, its value for habitat is low. Thus, impacts on habitat functions are expected to be none compared to current conditions.

Hydrologic Functions – The entire site is degraded with hardened surfaces, limited vegetation cover, and limited capacity to retain significant floodwaters. Most of the site is within the 100-year floodplain. Although the site and approximately 2,000 square feet of Category III wetlands are to be filled to just above base flood elevations, the floodway of Ebey Slough will not be filled. Vegetation along the Ebey shoreline will be enhanced as part of the Shoreline Master Program (SMP) requirements, which can help control hydrologic processes. Furthermore, displaced floodwaters can be taken up by off-site wetland “WL1” and the remainder of “WL2.”

8.2 Stream Functions to be Impacted

Water Quality Functions – While placing a stream in a pipe is typically perceived as impacting water quality functions, the contrary is anticipated for this project. This is because Stream 1 was historically placed into a drainage ditch, which conveys runoff from an on-site public works facility. Therefore, the open segment of Stream 1 currently conveys a combination of natural hydrology and surface runoff carrying potential pollutants and suspended sediments. By placing Stream 1 in a closed, piped system, the water course will no longer receive dirty stormwater runoff, and there is no risk of mobilized contaminants from the sewage lagoon fill entering the stream. The piped stream will convey only hydrology sourced from upstream reaches within the off-site Wetland 1.

Fish and Wildlife Habitat Functions – The project is expected to have no direct impact on fish and wildlife habitat functions since none exist within the project area. Placing Stream 1 in a pipe obviates potential opportunities for fish habitat restoration in that site but improves and better protects water quality.

Hydrologic Functions – The entire site is degraded with hardened surfaces, limited vegetation cover, and limited capacity to retain significant floodwaters. Most of the site is within the 100-year floodplain. Piping the stream could help to increase flow capacity, reduce erosional damage, and be less likely to overflow and damage nearby buildings and roads.

8.3 Cumulative Impacts

The subject site is currently heavily degraded and developed with industrial uses within the downtown core growth area of Marysville. The proposed redevelopment project will convert the site to other high intensity mixed uses. We would anticipate that population growth and development will continue to increase as part of the redevelopment plan on-site and in surrounding areas. Along with that, traffic and noise levels are expected to increase. But industrial noises will decrease. Although the project requires significant fill placement, it is unlikely to detrimentally impact water quality or hydrologic functions as BMPs and the most current stormwater methods will be implemented. Furthermore, cumulative impacts on fish and wildlife habitat are expected to be low since these functions are virtually nonexistent on-site, compensatory mitigation will ensure no-net-loss of functions, and development impacts will be contained on-site.

9.0 MITIGATION SEQUENCING

9.1 Overview

Project proponents are required to demonstrate mitigation sequencing for wetland impacts, according to MMC 22E.010.110 and for stream impacts according to MMC 22E.010.230. This means the applicant must demonstrate that all reasonable efforts have been taken to mitigate impacts in the following sequence: avoiding the impact, minimizing the impact, rectifying the impact, reducing the impact over time, and compensating the impact. The discussion follows.

9.2 Wetland

The proposed project avoids impacts on Ebey Slough waters and its buffers but cannot avoid impacts on WL2. The subject development site must be filled above the potential base flood elevations. Not taking action to increase the site elevation could render the new development at risk of damage from flooding and could also put the health and safety of residents at risk during a significant flood event. To minimize impacts to the greatest

extent possible, best management practices (BMPs) will be implemented to prevent the mobilization of sediments and ensure that site disturbances remain on-site. Additionally, the project stormwater plans will comply with the 2019 Washington Department of Ecology Stormwater Manual and implement LID where possible. To mitigate the impacted wetland functions, the City proposes to obtain bank credit from adjacent the Qwuloolt Estuary Mitigation Bank allowed under MMC Chapter 22.E.010.130.

9.3 Stream

Consistent with sequencing requirements under MMC 22E.010.230, the City conducted an analysis of stream alignment alternatives, revealing constraints and adverse impacts on wastewater treatment operations and mitigation options. The assessment considered five alternatives for re-establishing Stream 1, evaluating them based on physical constraints, implementation schedule, and habitat benefits.

Alternatives to re-establish Stream 1 involved:

1. Re-establishing the channel along its historic alignment.
2. Re-aligning the channel to the southeast of the proposed development area.
3. Shifting Wetland 1’s discharge to the southeast corner of the wetland and discharge to the Qwuloolt Estuary.
4. Separating jurisdictional waters from site stormwater through a new piping system and applying mitigation credits available to the City.
5. No action, which would involve retaining existing utility conditions.

Alternatives 1-3 faced significant infrastructure constraints, making them impractical due to sewer force mains, wastewater ponds, and other obstacles. The proposed development schedule rendered Alternatives 1-3 unviable. While Alternatives 1 and 2 promised improved water quality, they posed challenges with imported materials. Alternative 3 conflicted with project objectives by commingling with stormwater. Alternative 4, preferred by the City, involves capping the old pipe connection and placing a new pipe connecting Wetland 1 to Wetland 2, circumventing physical constraints and enhancing water quality.

Based on the analysis of alternatives presented above, the City has selected Alternative 4. Design elements for rerouting Stream 1 include a suitably sized pipe (size to be determined) spanning 640 feet, with impact and mitigation calculations factoring in an existing open water ditch of 6,800 square feet and 566 feet in length. To mitigate the impact, the City proposes to obtain bank credit from adjacent the Qwuloolt Estuary Mitigation Bank allowed under MMC Chapter 22.E.010.130.

10.0 CONCEPTUAL MITIGATION STRATEGY

The impacts consist of filling 2,000 square feet of Category III wetland and 16,400 square feet its associated buffer and placing 6,800 square feet (566 linear feet) of Type F stream into an appropriately sized pipe. There are two mitigation banks in the area in which the City will inquire about availability of credits and recommended purchase ratios for each impact area.

Table 7. Impact Summary.

Impact Area	Category	Total Impact Area (acres)
Wetland “WL2”	Category III Wetland	0.05
WL2 Buffer	Category III Wetland Buffer	0.38

Stream 1	Type F Stream	0.16
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The City plans to utilize available mitigation bank credits in the nearby Qwuloolt Estuary mitigation bank to mitigate the loss of stream and wetland functions.

The Qwuloolt Estuary Mitigation Bank is in a lesser developed adjacent hydrologic unit within the lower Snohomish River Estuary (WRIA 7) near the Snohomish River delta, one-half mile east of the subject development site.

The Qwuloolt Estuary offers significant recovered habitat for Puget Sound Chinook, bull trout, and other salmonids through rehabilitated estuary habitat comprised of channels, marsh, mud flats, and riparian areas, including over 1.5 miles of restored habitat within lower Allen and Jones Creeks (Qwuloolt.org, 2013). The bank can appropriately compensate for the 2,000 square feet of Category III wetland impact and 6,800 square feet of Type F stream impact. Utilizing this bank guarantees a no-net-loss of ecological functions within WRIA 7 and is consistent with the mitigation hierarchy established in the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (The Rule). A separate bank use proposal is being developed for submission to Ecology and the Corps.

The approach is consistent with Ecology publications, "Wetland Mitigation in Washington State," 2006 (Publication # 06-06-011a and 06-06-011b) and Chart 2 of "Selecting Wetland Mitigation Sites Using a Watershed Approach" (Publication #09-06-032).

11.0 LIMITATIONS

This report documents existing conditions, best professional judgment, and conclusions based on the site conditions encountered at the time of this study. The information contained in this report is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities. The final determination of the wetland boundary, classification, and required setback and buffer will be made by local, state, and federal jurisdictions.

12.0 REFERENCES

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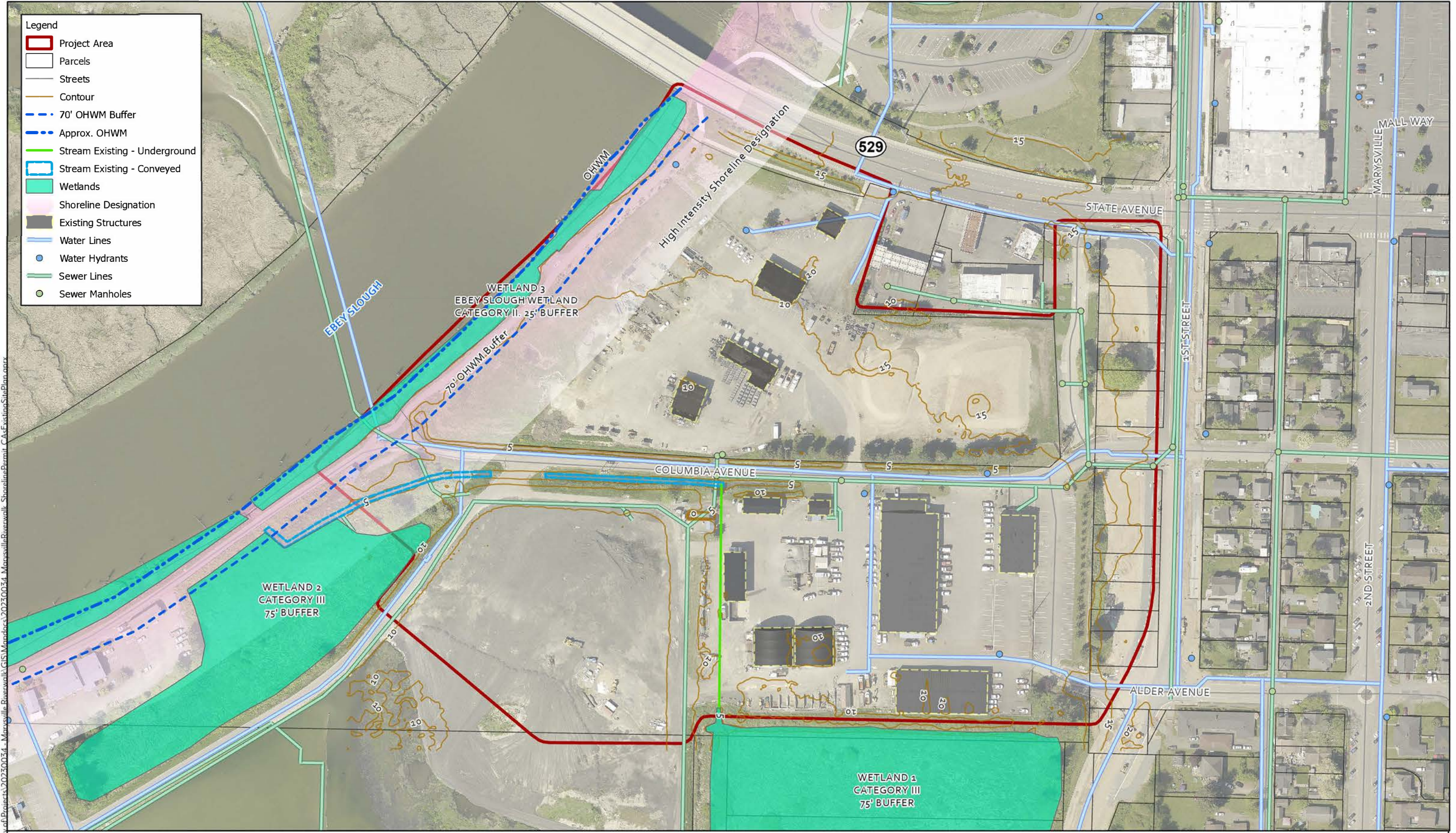
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APPENDIX A

Figure 2. Existing Critical Areas Map

Figure 3. Project Layout

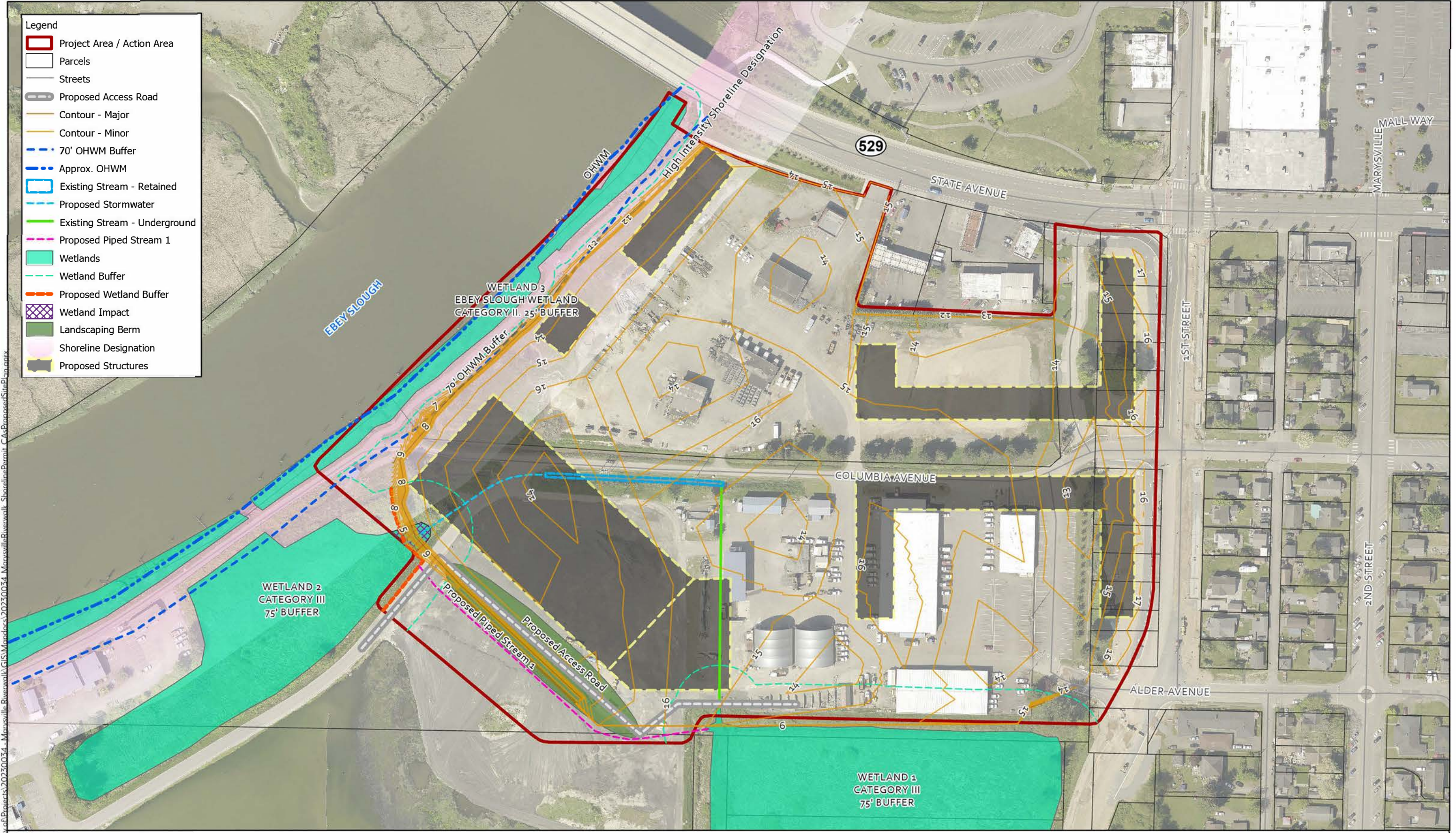


Path: X:\Marysville - City of Marysville - City of Marysville - GIS\Projects\2023\0034 - Marysville Riverwalk - GIS\MapDocs\2023\0034 - Marysville Riverwalk - ShorelinePermit - CA&E\ExistingSitePlan.aprx

PERTEET

0 80 160
Feet

Marysville Riverwalk
 Shoreline Permit- Public Works Property
 80 Columbia Ave, Marysville WA
 Figure 2. Existing Critical Areas Map



- Legend**
- Project Area / Action Area
 - Parcels
 - Streets
 - Proposed Access Road
 - Contour - Major
 - Contour - Minor
 - 70' OHWM Buffer
 - Approx. OHWM
 - Existing Stream - Retained
 - Proposed Stormwater
 - Existing Stream - Underground
 - Proposed Piped Stream 1
 - Wetlands
 - Wetland Buffer
 - Proposed Wetland Buffer
 - Wetland Impact
 - Landscaping Berm
 - Shoreline Designation
 - Proposed Structures

D:\p\Marysville - City of Marysville - Riverwalk - GIS\Mapdocs\2023\0034 - Marysville Riverwalk - ShorelinePermit - CA\Proposed\SitePlan.aprx

0 80 160
Feet

Marysville Riverwalk
Shoreline Permit- Public Works Property 80
Columbia Ave, Marysville WA
Figure 3. Project Layout

APPENDIX B
Wetland Rating Forms

Wetland name or number: WL1

RATING SUMMARY - Western Washington

Name of wetland (or ID#): WL1 **Date of site visit:** 09/26/2023
Rated By: Andrea Bachman **Trained by Ecology? Yes [X] No []** **Date of Training:** 05/16/2015
HGM Class used for rating: Depressional
Wetland has multiple HGM classes? Yes [] No [X]

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

OVERALL WETLAND CATEGORY: [Category III] (based on functions [X] or special characteristics [])

1. Category of wetland based on FUNCTIONS

- Category I** - Total score = 23 - 27
- Category II** - Total score = 20 - 22
- Category III** - Total score = 16 - 19
- Category IV** - Total score = 9 - 15

Score for each function based on three ratings
 (order of ratings is not important)
 9 = H,H,H 6 = M,M,M
 8 = H,H,M 5 = H,L,L
 7 = H,H,L 5 = M,M,L
 7 = H,M,M 4 = M,L,L
 6 = H,M,L 3 = L,L,L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	M	M	L	
Landscape Potential	M	H	L	
Value	H	H	M	Total
Score Based on Ratings	7	8	4	19

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	Not Applicable

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	1-2
Hydroperiods	D 1.4, H 1.2	1-3
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1-1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1-6
Map of the contributing basin	D 4.3, D 5.3	1-4
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	1-5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	1-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1-8

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 <u>What are the characteristics of surface water outflows from the wetland?</u> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	Score: 1
D 1.2 <u>Can the soil 2in below the surface be identified as true clay or organic soil?</u> None of the above	points = 0	Score: 0
D 1.3 <u>What are the characteristics and distribution of persistent plants?</u> Wetland has persistent, ungrazed, plants > 95% of area	points = 5	Score: 5
D 1.4 <u>What are the characteristics of seasonal ponding or inundation in the wetland area?</u> Area seasonally ponded is > 25% total area of wetland	points = 2	Score: 2
Total for D 1:		8

Rating of Site Potential

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 <u>Does the wetland unit receive stormwater discharges?</u> Yes	points = 1	Score: 1
D 2.2 <u>Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?</u> Yes	points = 1	Score: 1
D 2.3 <u>Are there septic systems within 250ft of the wetland?</u> No	points = 0	Score: 0

Wetland name or number: WL1

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? No	points = 0	Score: 0
D 2.5 What are the other sources of pollutants coming into the wetland?		
Total for D 2:		2

Rating of Landscape Potential

3-4 = H 1-2 = 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? No	points = 0	Score: 0
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes	points = 1	Score: 1
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes	points = 2	Score: 2
Total for D 3:		3

Rating of Value

2-4 = H 1 = M 0 = L

Record the rating on the first page

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 What are the characteristics of surface water outflows from the wetland? Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	Score: 0
D 4.2 What is the depth of storage during the wet periods? Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	Score: 3
D 4.3 What is the contribution of the wetland to storage in the watershed? The area of the basin is less than 10 times the area of the unit	points = 5	Score: 5
Total for D 4:		8

Wetland name or number: WL1

Rating of Site Potential

[] 12-16 = H [X] 6-11 = M [] 0-5 = L

Record the rating on the first page

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges? Yes	points = 1	Score: 1
D 5.2 Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes	points = 1	Score: 1
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes	points = 1	Score: 1
Total for D 5:		3

Rating of Landscape Potential

[X] 3 = H [] 1-2 = 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 Is the wetland in a landscape that has flooding problems? Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	Score: 2
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No	points = 0	Score: 0
Total for D 6:		2

Rating of Value

[X] 2-4 = H [] 1 = M [] 0 = L

Record the rating on the first page

HABITAT FUNCTIONS		
These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat		
H 1.0 Does the wetland have the potential to provide habitat for many species?		
H 1.1 What is the structure of the plant community?		
<input type="checkbox"/> Aquatic Bed		
<input checked="" type="checkbox"/> Emergent		
<input checked="" type="checkbox"/> Scrub-shrub		
<input type="checkbox"/> Forested		
<input type="checkbox"/> Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)		
2 structures	points = 1	Score: 1

Wetland name or number: WL1

H 1.2 <u>What are the hydroperiods that meet the size thresholds in the wetland?</u>		
<input type="checkbox"/> Permanently flooded or inundated		
<input checked="" type="checkbox"/> Seasonally flooded or inundated		
<input type="checkbox"/> Occasionally flooded or inundated		
<input checked="" type="checkbox"/> Saturated only		
<input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		
<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		
<input type="checkbox"/> Lake Fringe wetland		
<input type="checkbox"/> Freshwater Tidal wetland		
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	Score: 2
H 1.3 <u>What is the richness of the plant species in the wetland?</u>		
5-19 species	points = 1	Score: 1
H 1.4 <u>What is the interspersion of habitats?</u>		
Low	points = 1	Score: 1
H 1.5 <u>What are the special habitat features in the wetland?</u>		
<input type="checkbox"/> Large, downed, woody debris within the wetland (>4in diameter and 6ft long).		
<input type="checkbox"/> Standing snags (dbh >4in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)		
<input type="checkbox"/> 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)		
<input type="checkbox"/> At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)		
<input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1:		5

Rating of Site Potential

[] 15-18 = H [] 7-14 = M [X] 0-6 = L

Record the rating on the first page

H 2.0 Does the landscape have the potential to support habitat functions of the site?		
H 2.1 <u>What is the percentage of accessible habitat within 1km of the wetland?</u>		
<10% of 1km Polygon	points = 0	Score: 0
H 2.2 <u>What is the percentage of total habitat in a 1km polygon around the wetland?</u>		
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	Score: 1

Wetland name or number: WL1

H 2.3 <u>What is the land use intensity in the 1km polygon?</u>	points = -2	Score: -2
50% of the Polygon is high intensity land use		
Total for H 2:		-1

Rating of Landscape Potential

[] 4-6 = H [] 1-3 = M [X] 0 = L

Record the rating on the first page

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

H 3.1 <u>Does the site provide habitat for species valued in laws, regulations, or policies?</u>		
<input type="checkbox"/> Aspen Stands <input type="checkbox"/> Biodiversity Areas and Corridors <input type="checkbox"/> Herbaceous Balds <input type="checkbox"/> Old-growth/Mature Forests <input type="checkbox"/> Oregon White Oak <input checked="" type="checkbox"/> Riparian <input type="checkbox"/> Westside Prarie <input type="checkbox"/> Fresh Deepwater <input checked="" type="checkbox"/> Instream <input type="checkbox"/> Nearshore (Coastal, Open Coast, Puget Sound) <input type="checkbox"/> Caves <input type="checkbox"/> Cliffs <input type="checkbox"/> Snags and Logs <input type="checkbox"/> Talus		
The following criteria automatically score 2 points:		
<input type="checkbox"/> The wetland provides habitat for Threatened or Endangered species <input type="checkbox"/> The wetland is mapped as a location for an individual WDFW priority species <input type="checkbox"/> The wetland is a Wetland of High Conservation Value <input type="checkbox"/> The wetland has been categorized as an important habitat site in a local plan		
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	Score: 1
Total for H 3:		1

Rating of Value

[] 2 = H [X] 1 = M [] 0 = L

Record the rating on the first page

Wetland name or number: WL1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

- The dominant water regime is tidal
 The wetland is vegetated
 The water salinity is greater than 0.5 ppt

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

No - Go to SC 2.2

Result: Go to SC 2.2

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

No - Go to SC 3.2

Result: 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?

No - Not a Bog Wetland

Result: Not a Bog Wetland

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

- Old-growth forests
 Mature forests

No - Not a Forested Wetland

Result: Not a Forested Wetland

Wetland name or number: WL1

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 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 rocks
- The depression 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 open water area (measured near the bottom)

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

Category of wetland based on Special Characteristics

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

Final Category: Not Applicable

WLI—Depressional, Category III

Rating Figures

Figure 1-1. Outlets



Figure 1-2. Cowardin Classes

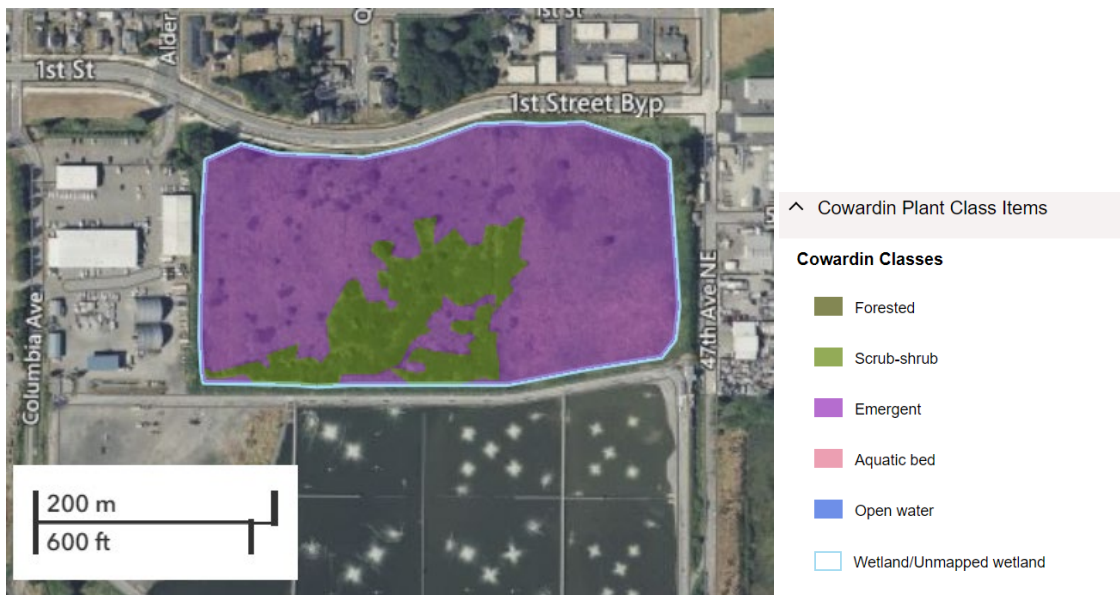


Figure 1-3. Hydroperiod

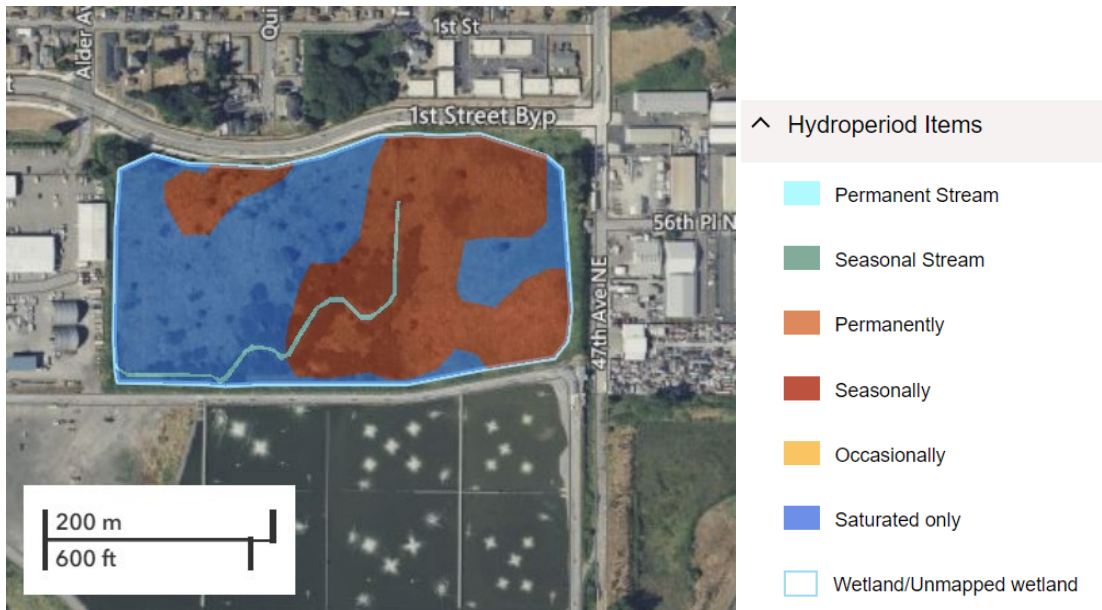


Figure 1-4. Contributing Basin

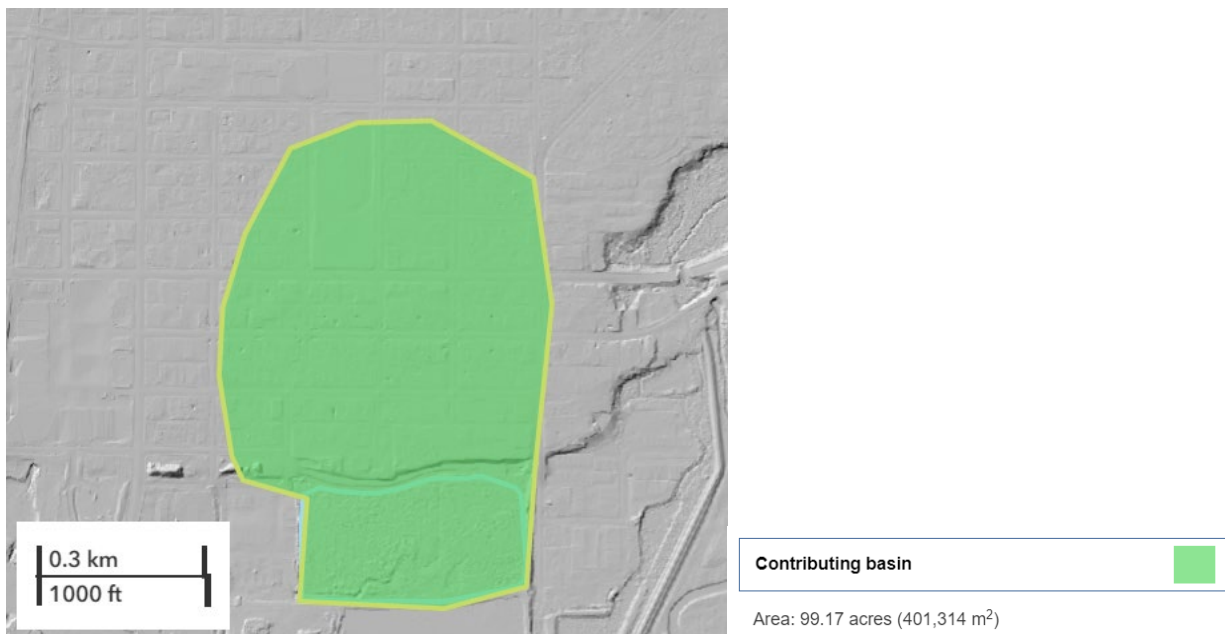


Figure 1-5. Available Habitat within 1KM

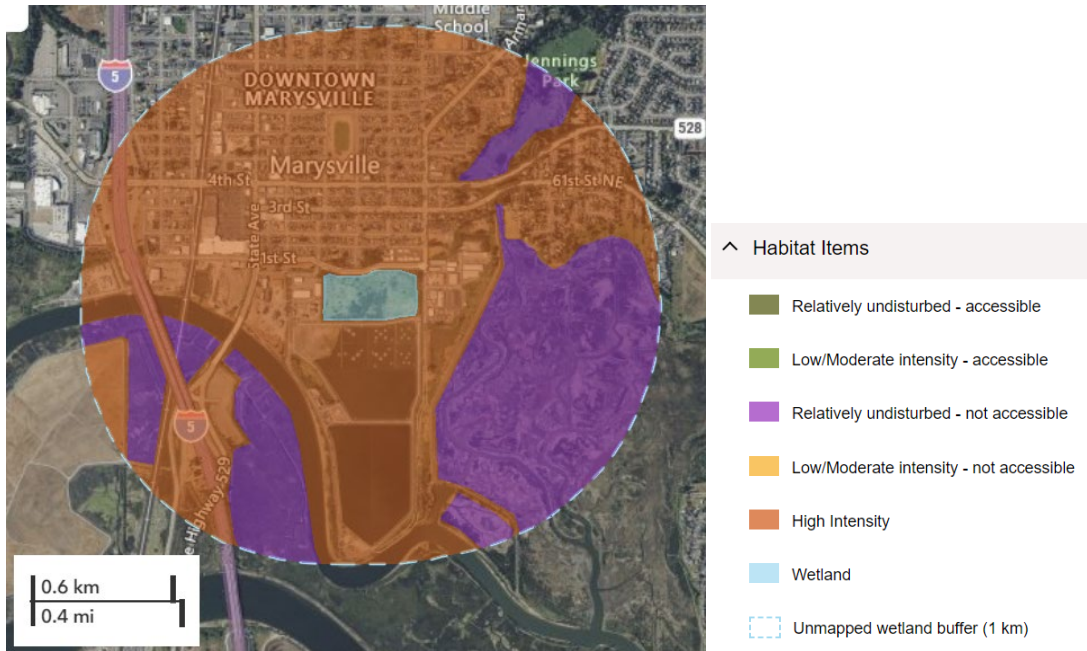


Figure 1-6. 303d Waters

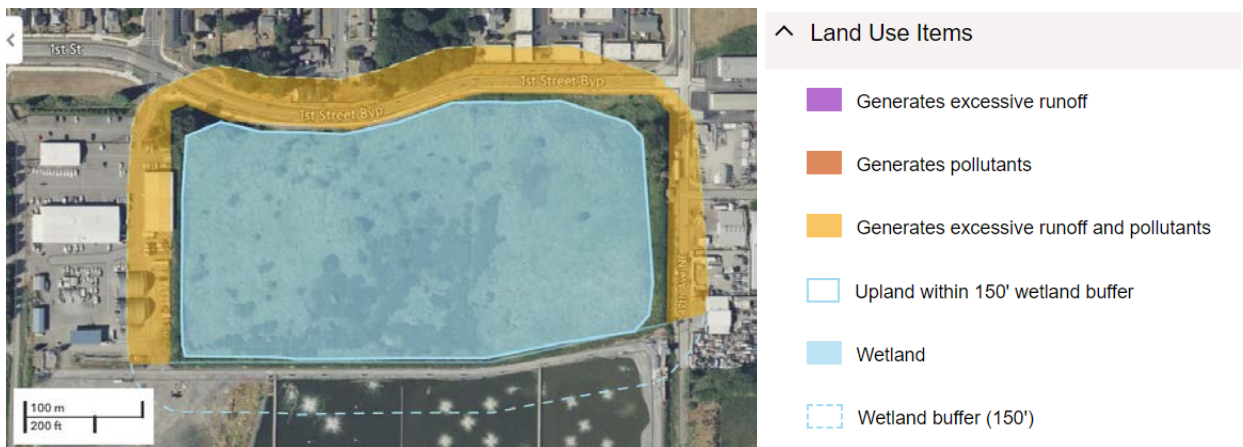


Figure 1-7. 303d Waters

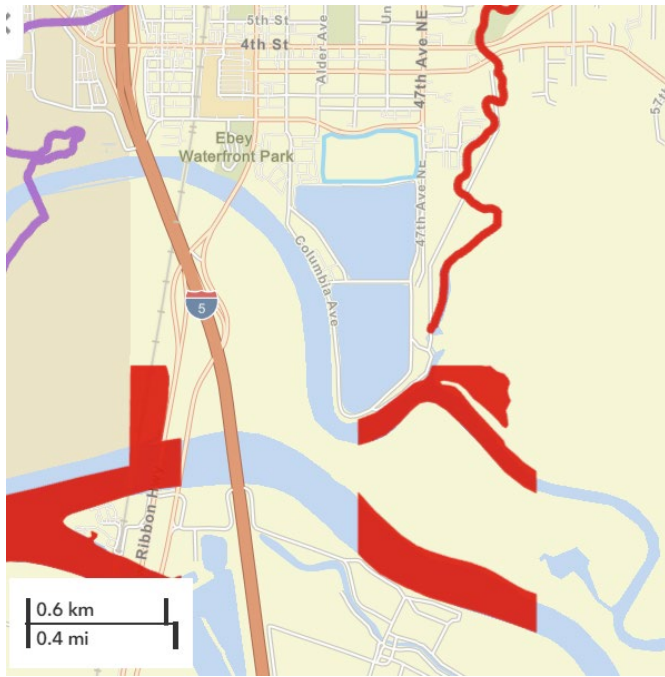


Figure 1-8. TMDLs



Wetland name or number: WL2

RATING SUMMARY - Western Washington

Name of wetland (or ID#): WL2 **Date of site visit:** 09/26/2023
Rated By: Andrea Bachman **Trained by Ecology? Yes [X] No []** **Date of Training:** 05/16/2015
HGM Class used for rating: Depressional
Wetland has multiple HGM classes? Yes [] No [X]

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

OVERALL WETLAND CATEGORY: [Category III] (based on functions [X] or special characteristics [])

1. Category of wetland based on FUNCTIONS

- Category I** - Total score = 23 - 27
- Category II** - Total score = 20 - 22
- Category III** - Total score = 16 - 19
- Category IV** - Total score = 9 - 15

Score for each function based on three ratings
 (order of ratings is not important)
 9 = H,H,H 6 = M,M,M
 8 = H,H,M 5 = H,L,L
 7 = H,H,L 5 = M,M,L
 7 = H,M,M 4 = M,L,L
 6 = H,M,L 3 = L,L,L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	M	M	L	
Landscape Potential	M	H	L	
Value	H	H	M	Total
Score Based on Ratings	7	8	4	19

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	Not Applicable

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	2-2
Hydroperiods	D 1.4, H 1.2	2-3
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2-1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	2-6
Map of the contributing basin	D 4.3, D 5.3	2-4
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2-5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	2-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	2-8

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 <u>What are the characteristics of surface water outflows from the wetland?</u> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	Score: 1
D 1.2 <u>Can the soil 2in below the surface be identified as true clay or organic soil?</u> None of the above	points = 0	Score: 0
D 1.3 <u>What are the characteristics and distribution of persistent plants?</u> Wetland has persistent, ungrazed, plants > 95% of area	points = 5	Score: 5
D 1.4 <u>What are the characteristics of seasonal ponding or inundation in the wetland area?</u> Area seasonally ponded is > 50% total area of wetland	points = 4	Score: 4
Total for D 1:		10

Rating of Site Potential 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 <u>Does the wetland unit receive stormwater discharges?</u> Yes	points = 1	Score: 1
D 2.2 <u>Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?</u> Yes	points = 1	Score: 1
D 2.3 <u>Are there septic systems within 250ft of the wetland?</u> No	points = 0	Score: 0

Wetland name or number: WL2

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? No	points = 0	Score: 0
D 2.5 What are the other sources of pollutants coming into the wetland?		
Total for D 2:		2

Rating of Landscape Potential

3-4 = H 1-2 = 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? No	points = 0	Score: 0
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes	points = 1	Score: 1
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes	points = 2	Score: 2
Total for D 3:		3

Rating of Value

2-4 = H 1 = M 0 = L

Record the rating on the first page

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 What are the characteristics of surface water outflows from the wetland? Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	Score: 0
D 4.2 What is the depth of storage during the wet periods? Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	Score: 3
D 4.3 What is the contribution of the wetland to storage in the watershed? The area of the basin is less than 10 times the area of the unit	points = 5	Score: 5
Total for D 4:		8

Wetland name or number: WL2

Rating of Site Potential

[] 12-16 = H [X] 6-11 = M [] 0-5 = L

Record the rating on the first page

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges? Yes	points = 1	Score: 1
D 5.2 Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes	points = 1	Score: 1
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes	points = 1	Score: 1
Total for D 5:		3

Rating of Landscape Potential

[X] 3 = H [] 1-2 = 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 Is the wetland in a landscape that has flooding problems? Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	Score: 2
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No	points = 0	Score: 0
Total for D 6:		2

Rating of Value

[X] 2-4 = H [] 1 = M [] 0 = L

Record the rating on the first page

HABITAT FUNCTIONS		
These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat		
H 1.0 Does the wetland have the potential to provide habitat for many species?		
H 1.1 What is the structure of the plant community?		
<input type="checkbox"/> Aquatic Bed		
<input checked="" type="checkbox"/> Emergent		
<input checked="" type="checkbox"/> Scrub-shrub		
<input type="checkbox"/> Forested		
<input type="checkbox"/> Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)		
2 structures	points = 1	Score: 1

Wetland name or number: WL2

H 1.2 <u>What are the hydroperiods that meet the size thresholds in the wetland?</u>		
<input type="checkbox"/> Permanently flooded or inundated		
<input checked="" type="checkbox"/> Seasonally flooded or inundated		
<input type="checkbox"/> Occasionally flooded or inundated		
<input checked="" type="checkbox"/> Saturated only		
<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		
<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		
<input type="checkbox"/> Lake Fringe wetland		
<input type="checkbox"/> Freshwater Tidal wetland		
2 types present	points = 1	Score: 1
H 1.3 <u>What is the richness of the plant species in the wetland?</u>		
5-19 species	points = 1	Score: 1
H 1.4 <u>What is the interspersion of habitats?</u>		
Low	points = 1	Score: 1
H 1.5 <u>What are the special habitat features in the wetland?</u>		
<input type="checkbox"/> Large, downed, woody debris within the wetland (>4in diameter and 6ft long).		
<input type="checkbox"/> Standing snags (dbh >4in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)		
<input type="checkbox"/> 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)		
<input type="checkbox"/> At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)		
<input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
No habitats selected	points = 0	Score: 0
	Total for H 1:	4

Rating of Site Potential

[] 15-18 = H [] 7-14 = M [X] 0-6 = L

Record the rating on the first page

H 2.0 Does the landscape have the potential to support habitat functions of the site?		
H 2.1 <u>What is the percentage of accessible habitat within 1km of the wetland?</u>		
<10% of 1km Polygon	points = 0	Score: 0
H 2.2 <u>What is the percentage of total habitat in a 1km polygon around the wetland?</u>		
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	Score: 1

Wetland name or number: WL2

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use

points = -2

Score: -2

Total for H 2: -1

Rating of Landscape Potential

[] 4-6 = H [] 1-3 = M [X] 0 = 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?

- Aspen Stands
- Biodiversity Areas and Corridors
- Herbaceous Balds
- Old-growth/Mature Forests
- Oregon White Oak
- Riparian
- Westside Prarie
- Fresh Deepwater
- Instream
- Nearshore (Coastal, Open Coast, Puget Sound)
- Caves
- Cliffs
- Snags and Logs
- Talus

The following criteria automatically score 2 points:

- The wetland provides habitat for Threatened or Endangered species
- The wetland is mapped as a location for an individual WDFW priority species
- The wetland is a Wetland of High Conservation Value
- The wetland has been categorized as an important habitat site in a local plan

The site has 1 or 2 WDFW priority habitats within 100m

points = 1

Score: 1

Total for H 3: 1

Rating of Value

[] 2 = H [X] 1 = M [] 0 = L

Record the rating on the first page

Wetland name or number: WL2

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 2.0 Wetlands of High Conservation Value

SC 3.0 Bogs

SC 4.0 Forested Wetlands

Wetland name or number: WL2

SC 5.0 Wetlands in Coastal Lagoons

SC 6.0 Interdunal Wetlands

Category of wetland based on Special Characteristics

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

Final Category: Not Applicable

WL2—Depressional, Category III

Rating Figures

Figure 2-1. Outlets



Figure 2-2. Cowardin Classes



Figure 2-3. Hydroperiod

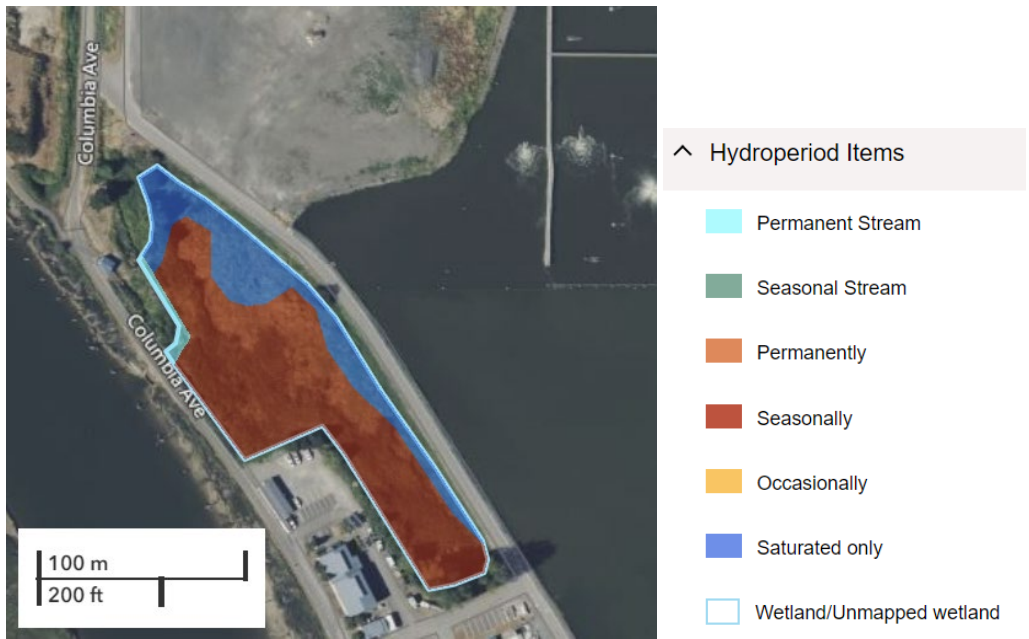


Figure 2-4. Contributing Basin



Figure 2-5. Available Habitat within 1KM

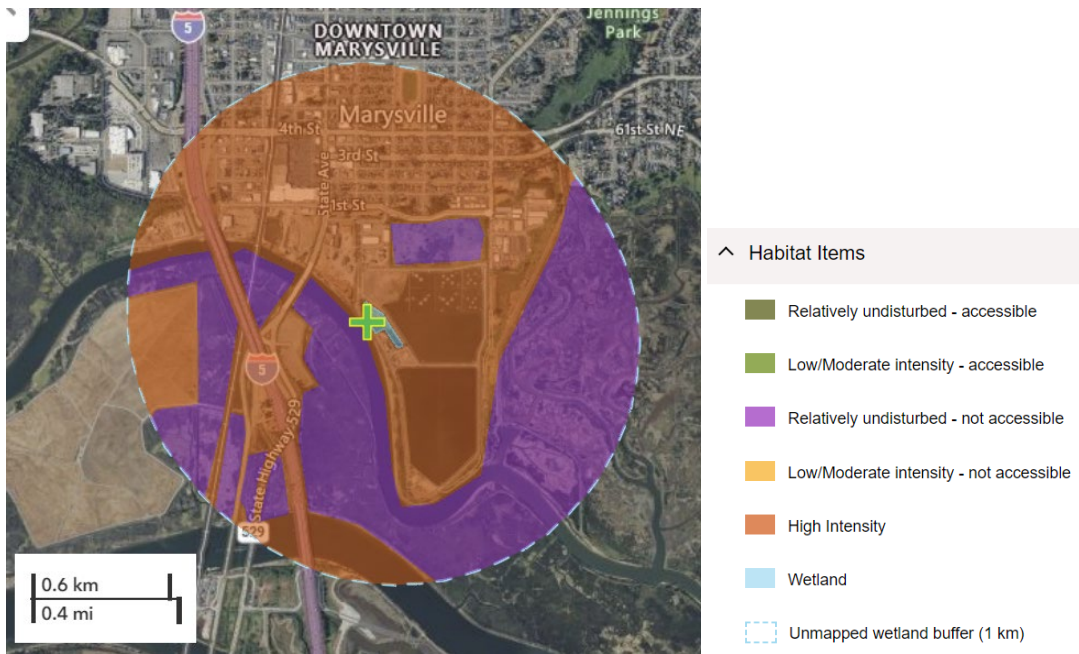


Figure 2-6. Land Use



Figure 1-9. 303d Waters

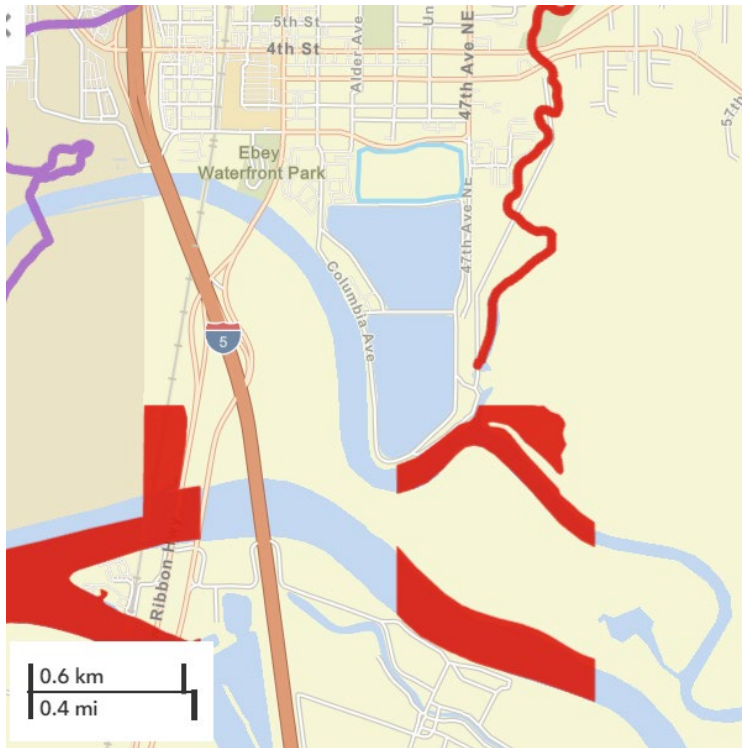


Figure 1-10. TMDLs



Wetland name or number: WL3

RATING SUMMARY - Western Washington

Name of wetland (or ID#): WL3 **Date of site visit:** 09/26/2023
Rated By: Andrea Bachman **Trained by Ecology? Yes** **No** **Date of Training:** 05/16/2015
HGM Class used for rating: Freshwater Tidal Fringe
Wetland has multiple HGM classes? Yes **No**

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

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

1. Category of wetland based on FUNCTIONS

- Category I** - Total score = 23 - 27
- Category II** - Total score = 20 - 22
- Category III** - Total score = 16 - 19
- Category IV** - Total score = 9 - 15

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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	M	M	L	
Landscape Potential	H	H	M	
Value	M	H	H	
Score Based on Ratings	7	8	6	Total
				21

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	Not Applicable

Maps and figures required to answer questions correctly for Western Washington

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	3-1
Hydroperiods	H 1.2	3-2
Ponded depressions	R 1.1	none
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	3-6
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	3-3
Map of the contributing basin	R 2.2, R 2.3, R 5.2	3-4
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	3-5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	3-7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	3-8

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0 Does the site have the potential to improve water quality?

R 1.1 <u>What is the total area of surface depressions within the Riverine wetland that can trap sediments during a flooding event?</u> No depressions present	points = 0	Score: 0
R 1.2 <u>What is the structure of plants in the wetland?</u> Ungrazed, herbaceous plants cover (>6in high) >66% area of the wetland	points = 6	Score: 6
Total for R 1:		6

Rating of Site Potential 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

R 2.0 Does the landscape have the potential to support the water quality function of the site?

R 2.1 <u>Is the wetland within an incorporated city or within its UGA?</u> Yes	points = 2	Score: 2
R 2.2 <u>Does the contributing basin to the wetland include a UGA or incorporated area?</u> Yes	points = 1	Score: 1
R 2.3 <u>Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?</u> Yes	points = 1	Score: 1

Wetland name or number: WL3

R 2.4 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants? Yes	points = 1	Score: 1
R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in question R 2.1-R 2.4? No	points = 0	Score: 0
R 2.6 What are the other sources of pollutants coming into the wetland?		
Total for R 2:		5

Rating of Landscape Potential

 3-4 = H 1-2 = M 0 = L

Record the rating on the first page

R 3.0 Is the water quality improvement provided by the site valuable to society?

R 3.1 Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? No	points = 0	Score: 0
R 3.2 Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes	points = 1	Score: 1
R 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? No	points = 0	Score: 0
Total for R 3:		1

Rating of Value

 2-4 = H 1 = M 0 = L

Record the rating on the first page

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation**R 4.0 Does the site have the potential to reduce flooding and erosion?**

R 4.1 What are the characteristics of the overbank storage the wetland provides? If the ratio is < 1	points = 1	Score: 1
R 4.2 What are the characteristics of plants that slow down water velocities during floods? Forest or shrubs cover >33% of the wetland area OR emergent plants cover >66% of the wetland area	points = 7	Score: 7
Total for R 4:		8

Rating of Site Potential

 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

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

R 5.1 Is the stream or river adjacent to the wetland downcut? No	points = 1	Score: 1
R 5.2 Does the up-gradient watershed include a UGA or incorporated area? Yes	points = 1	Score: 1
R 5.3 Is the up-gradient stream or river controlled by dams? No	points = 1	Score: 1
Total for R 5:		3

Rating of Landscape Potential

 3 = H 1-2 = M 0 = L

Record the rating on the first page

Wetland name or number: WL3

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

R 6.1 What is the distance to the nearest areas downstream that have flooding problems? The sub-basin immediately down-gradient of the wetland has flooding problems	points = 2	Score: 2
--	------------	-----------------

R 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? No	points = 0	Score: 0
Total for R 6:		2

Rating of Value [X] 2-4 = H [] 1 = M [] 0 = L *Record the rating on the first page*

HABITAT FUNCTIONS
These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- Aquatic Bed
- Emergent
- Scrub-shrub
- Forested
- Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

1 structure points = 0 **Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- Permanently flooded or inundated
- Seasonally flooded or inundated
- Occasionally flooded or inundated
- Saturated only
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland
- Freshwater Tidal wetland

3 types present or Lake Fringe / Freshwater Tidal Fringe points = 2
 1 type present points = 0 **Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

5-19 species points = 1 **Score: 1**

H 1.4 What is the interspersion of habitats?

Low points = 1 **Score: 1**

Wetland name or number: WL3

H 1.5 <u>What are the special habitat features in the wetland?</u>		
<input type="checkbox"/> Large, downed, woody debris within the wetland (>4in diameter and 6ft long).		
<input type="checkbox"/> Standing snags (dbh >4in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)		
<input type="checkbox"/> 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)		
<input type="checkbox"/> At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)		
<input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
1 habitat selected	points = 1	Score: 1
Total for H 1:		5

Rating of Site Potential

[] 15-18 = H [] 7-14 = M [X] 0-6 = L

Record the rating on the first page

H 2.0 <u>Does the landscape have the potential to support habitat functions of the site?</u>		
H 2.1 <u>What is the percentage of accessible habitat within 1km of the wetland?</u>		
20-33% of 1km Polygon	points = 2	Score: 2
H 2.2 <u>What is the percentage of total habitat in a 1km polygon around the wetland?</u>		
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	Score: 1
H 2.3 <u>What is the land use intensity in the 1km polygon?</u>		
50% of the Polygon is high intensity land use	points = -2	Score: -2
Total for H 2:		1

Rating of Landscape Potential

[] 4-6 = H [X] 1-3 = M [] 0 = L

Record the rating on the first page

Wetland name or number: WL3

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?

- Aspen Stands
- Biodiversity Areas and Corridors
- Herbaceous Balds
- Old-growth/Mature Forests
- Oregon White Oak
- Riparian
- Westside Prarie
- Fresh Deepwater
- Instream
- Nearshore (Coastal, Open Coast, Puget Sound)
- Caves
- Cliffs
- Snags and Logs
- Talus

The following criteria automatically score 2 points:

- The wetland provides habitat for Threatened or Endangered species
- The wetland is mapped as a location for an individual WDFW priority species
- The wetland is a Wetland of High Conservation Value
- The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value points = 2 **Score: 2**

Total for H 3: 2

Rating of Value [X] 2 = H [] 1 = M [] 0 = L *Record the rating on the first page*

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

- The dominant water regime is tidal
- The wetland is vegetated
- The water salinity is greater than 0.5 ppt

No - Not an Estuarine Wetland **Result: Not an Estuarine Wetland**

Wetland name or number: WL3

SC 2.0 Wetlands of High Conservation Value**SC 2.1** Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

No - Go to SC 2.2

Result: Go to SC 2.2**SC 3.0 Bogs****SC 3.1** Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

No - Go to SC 3.2

Result: 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?

No - Not a Bog Wetland

Result: Not a Bog Wetland**SC 4.0 Forested Wetlands****SC 4.1** Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria? Old-growth forests Mature forests

No - Not a Forested Wetland

Result: Not a Forested Wetland**SC 5.0 Wetlands in Coastal Lagoons****SC 5.1** 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 rocks The depression 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 open water area (measured near the bottom)

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

Wetland name or number: WL3

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

Category of wetland based on Special Characteristics

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

Final Category: Not Applicable

WL3— Freshwater Tidal Fringe, Category II

Rating Figures

Figure 3-1. Cowardin Classes



Figure 3-2. Hydroperiods

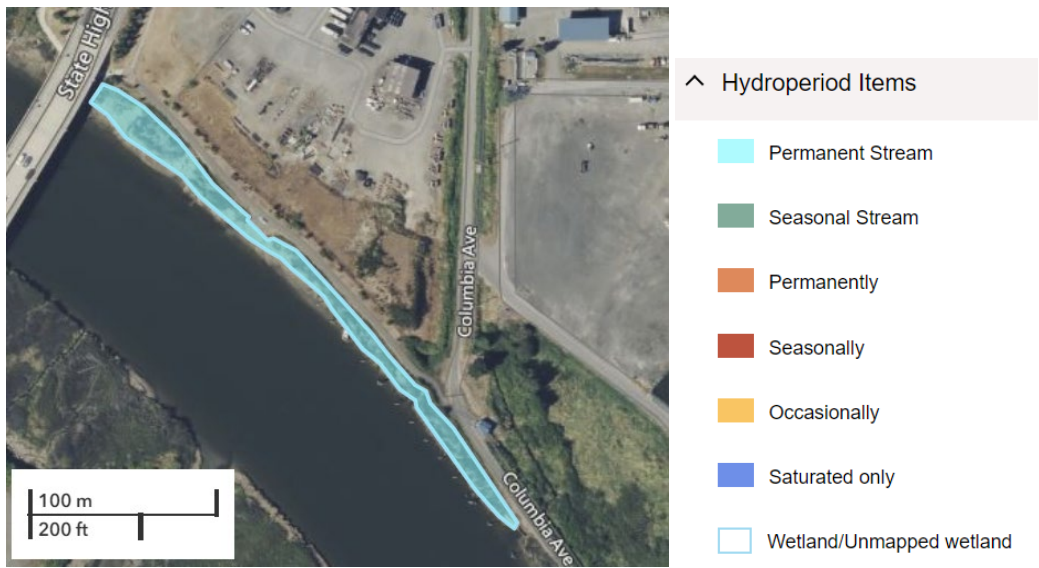


Figure 3-3. Width of Unit vs. Width of Stream



Figure 3-4. Contributing Basin

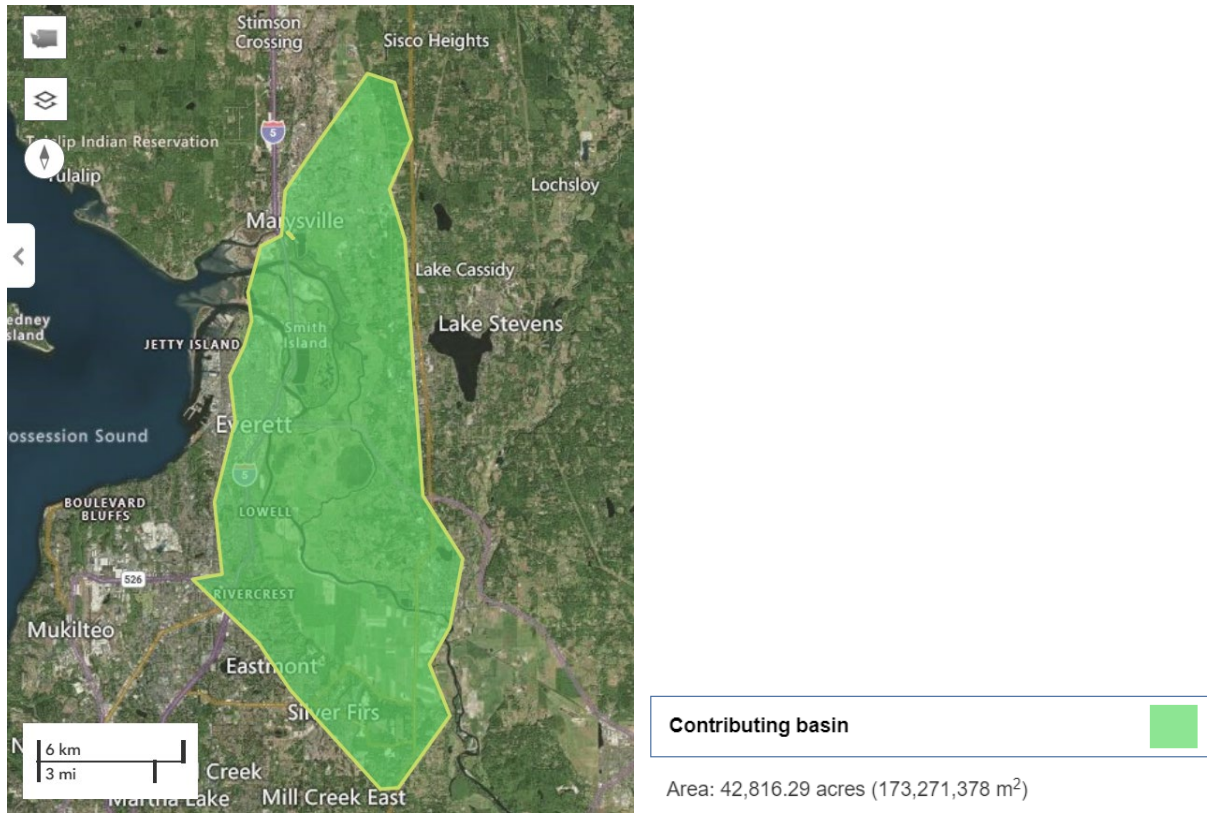


Figure 3-5. Available Habitat within 1KM

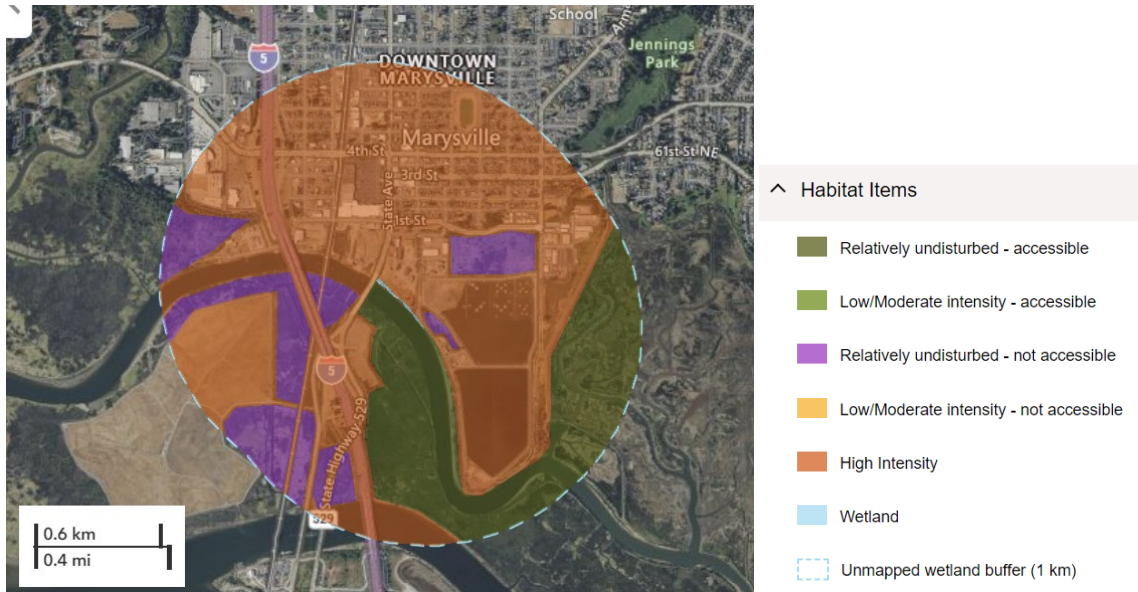


Figure 3-6. Land Use



Figure 3-7. 303d Waters

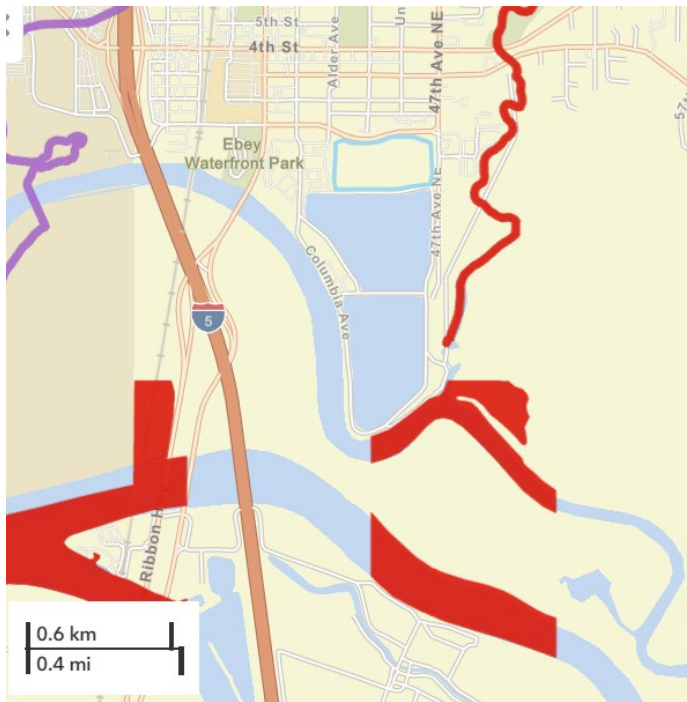


Figure 3-8 TMDLs

