



WETLAND DELINEATION AND RATING REPORT MOSURE SUBDIVISION

Prepared For:
MOSURE FAMILY

Project Site:
**XXXX 56TH Ave SE
Lacey, Washington**

Prepared By:
**Agua Tierra Land and Water Services, Inc.
(Agua Tierra)
Olympia, Washington**

March 2022

WETLAND DELINEATION AND RATING REPORT MOSURE SUBDIVISION

Project Information:

Project Name: Mosure Subdivision
Project Site Address: XXX 56th Ave SE, Lacey, WA
Project Site County / Parcel#: THURSTON / 118 343 200 00

Prepared for:

Patty Mosure
1211 215th Place SW
Lynwood, WA 98036

Reviewing Agency/ies:

Jurisdiction: City of Lacey Planning Department

Project Representative:

Prepared by: Agua Tierra Land and Water Services, Inc. (Agua Tierra)
1910 4th Ave East, # 227
Olympia WA 98506
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Contact:

Christian Fromuth, M. Sc; C.E
Project Manager / Aquatic Ecologist

File: O_Agua\Wetland\Lacey&UGA\Mosure\Mosure,Patty.20.06.15\Delin\WrkDoc\0_WLDelinTxt_0203023.docx

1.0 EXECUTIVE SUMMARY

Agua Tierra Land and Water Services, Inc. (Agua Tierra) completed this Wetland Delineation and Characterization report for the above noted project site. This report is consistent with US Army Corps of Engineers standards for wetland delineation (2010 Regional Supplement), Washington State Department of Ecology wetland rating methodology (2014) and the Thurston County (County) Critical Areas Ordinance (CAO) (rev July 2012).

Agua Tierra performed a delineation and rating (characterization) for those portions of wetland within or influencing the project area (closest wetland within 300 lineal feet). Evaluation was limited to wetland/s or portions of wetland/s (and associated buffer/s) with a potential to encumber land use actions within the defined project area.

Proposed Land Use / Project Impacts

Proposed land use actions include:

- Subdivision of an existing City of Lacey parcel (10 acres) into residential parcels and open space
- Zoning Designation: LD-04, Low-Density Residential

Summary of Wetland Findings

Supporting maps and figures appear as Attachments to this report.

One jurisdictional wetland was found, delineated, and rated to determine buffer width.

- **Wetland A** is jurisdictional, is isolated and contained completely on site, and occupies a relic glacial kettle feature. Hydrologic support is from rainfall and groundwater and minimal amount of interflow seepage. Vegetative classes are dominated by shrub and forest. **Wetland A** is geomorphically situated within an ancient glacial outwash plain. **Wetland A** rating accumulated 18 total points resulting in a **Category 3 Rating**. **Habitat points totaled (6) [M, L, H]**.
City of Lacey buffer width conditions for this site include two options:
 - **Standard at 110 feet conditionally available if implementing minimum impact measures:**
 - a) **specific minimum impact measures and,**
 - b) **contiguous 100-foot-wide habitat (not public) corridor to Southwick Lake wetland, or**
 - **Enlarged at 150 feet if not implementing minimum impact measures or corridor protection.**
- **Wetland B** is a second jurisdictional wetland associated with shoreline of Southwick Lake and adjoins the north end of the subject parcel. **Wetland B** is located more distant from the proposed action area than the delineated **Wetland A**. **Wetland B** is more than 300 feet from any proposed impact area and at design team's direction was not included in the scope of this report.
 - Note: **Wetland B** will also have a wetland buffer (width not determined).

In cases of site design hardship, conditional buffer width reconfiguration options may exist. The least complicated (and smaller) modification options are considered "administrative" and managed at agency staff level. Larger reductions may be pursued as needed through additional mitigation and a Reasonable Use Exception (RUE) variance process that involves a quasi-judicial hearing.

Outcomes of the RUE process vary and are not guaranteed. Typically, the RUE process is only a practical choice if site conditions will otherwise not enable basic development options.

2.0 REGULATORY AUTHORITY

2.1 REGULATORY AUTHORITY - WETLANDS

Site development may involve land modifications in or near a wetland and/or associated buffer. Wetlands are protected by local, state, and federal laws.

Wetland *buffers* are protected at the local government level in Washington State.

2.1.1 CITY OF LACEY ENVIRONMENTALLY SENSITIVE AREAS CODE (Critical Areas Ordinance)

Lacey Municipal Code (LMC) Sections 16.54.060 and LMC 14.28 detail wetland protection protocols.

Key wetland documentation protocols include the following general guidance:

- Delineation per Corps of Engineers Wetlands Delineation Manual (1987), with 2010 supplement,
- Wetland Rating per Washington Wetland Rating System (Western Washington) (rev. 2014),
- Practitioners meeting training and experience criteria,
- Wetland boundaries must be surveyed on projects involving land subdivisions / Group B permits,

Wetland identification for this project extended to a radius equal to the maximum review authority buffer width (300 feet) from proposed land use impacts.

2.1.2 FEDERAL AND STATE REGULATIONS

Impacts to wetlands (clearing, filling, dredging, grading, excavation, draining, etc) require permits from the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act and Washington State Department of Ecology (WDOE) under Section 401 of the Clean Water Act. Local government agencies also require permitting for wetland impacts.

2.2 WETLAND BUFFERS

In Washington State, wetland buffers (size and land use within) are the jurisdiction of local government with oversight from WDOE. WDOE maintains a statewide buffer rating system (one for Eastern Washington and another for Western Washington). The rating system is used to score individual wetlands based on the functions and values each provides. Local governments routinely adopt the WDOE wetland rating systems in local ordinance. WDOE refers the actual regulation of land use occurring within wetland buffers (protective areas surrounding jurisdictional wetlands) to local governments. Local government ordinance specifies buffer size (width) based on rating score.

2.2.1 BUFFER WIDTHS

The most recent version of the WDOE rating system was used in this report.
Exempt / unregulated wetlands have no buffers.

Key excerpts from LMC Code specific to wetland buffers are provided below. Additional detail is included within the Attachments Section.

Insert 1: LMC 14.28 Table 14T-19. Wetland Buffer Table [i.e., Standard Buffer Widths]

Wetland Category and Type	Buffer Width (in feet) Based on Habitat Score		
	3--5 (Low)	6--7 (Medium)	8--9 (High)
I: Estuarine and Coastal Lagoons	150 (buffer width not based on habitat scores)		
I: Bogs and Wetlands of High Conservation Value	190		225
I: All Others	75	110	225
II: Estuarine and Coastal Lagoons	110 (buffer width not based on habitat scores)		
II: All	75	110	225
III: All	60	110	225
IV: All	40		

Insert 2: LMC 14.28 Table 14T-68. Required measures to minimize impacts to wetlands
Measures are required, where applicable to a specific proposal. *If not implemented, wetland buffers as indicated in Table 14T-69 will be used.*

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> • Direct lights away from wetland
Noise	<ul style="list-style-type: none"> • Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	<ul style="list-style-type: none"> • Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland • Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> • Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use Low Intensity Development techniques (per PSAT publication on LID techniques)
Change in water regime	<ul style="list-style-type: none"> • Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns

Disturbance	Required Measures to Minimize Impacts
Pets and human disturbance	<ul style="list-style-type: none"> • Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	<ul style="list-style-type: none"> • Use best management practices to control dust

Insert 3: LMC 14.28 Table 14T-69.

The following wetland buffer requirements *if habitat corridor is not provided* per subsection (C)(1) of this section *or minimization measures per subsection (C)(2)(b) of this section are not implemented:*

Wetland Category and Type	Buffer Width (in feet) Based on Habitat Score (if minimization measures are not met)		
	3--5 (Low)	6--7 (Medium)	8--9 (High)
I: Estuarine and Coastal Lagoons	200 (buffer width not based on habitat scores)		
I: Bogs and Wetlands of High Conservation Value	250		300
I: All Others	100	150	300
II: Estuarine and Coastal Lagoons	150 (buffer width not based on habitat scores)		
II: All	100	150	300
III: All	80	150	300
IV: All	50		

(Ord. 1585 §3, 2021; Ord. 1505 §10, 2017; Ord. 1449 §7, 2014; Ord. 1295 §1, 2007; Ord. 1215 §8, 2003; Ord. 912 §1 Sec. 7.1(a), 1991).

3.0 SCOPE OF WORK

Unless otherwise noted, the study area was limited the closest wetland boundary / potential wetland within a radius equal to the maximum buffer width from proposed impact area: **300 feet**

The Agua Tierra scope of work for this project included:

- (1) Delineate and rate wetland/s,
- (2) Determine presence and approximate area of unregulated wetland/s in the study area, and
- (3) If applicable, document absence of regulated wetland conditions in the study area.

4.0 GENERAL SITE CONDITIONS - *Not including wetlands (discussed later)*

Human Site Modifications

Years prior to current ownership the land was cleared in the north and the south ends. Oak trees were retained as was vegetation on the steep slope areas surrounding the kettle wetland (Wetland A). Clearing was more limited in the NW portion of the site adjoining the Lake Southwick property. A dirt road (some gravel added) was installed to access the north end of the site and has been maintained since.

Topography / Geomorphology

The southern end of the site proposed for home sites is gently sloping. The central site is dominated by steep slopes and kettle feature. The north end of the site is rolling and drops downward to the NW toward

the Lake Southwick depression. Topography was originally formed by a glacial outwash plain. The kettle intercepts water table.

Upland Vegetation

Upland vegetation is dominated by:

- Grassland choked with blackberries and Scotch broom. Brush has been mowed periodically to maintain more open conditions.
- Oregon white oak is well established in the south end. Seedlings are throughout the site.

5.0 DELINEATION METHODS

The vegetation, soils, and hydrology of anticipated wetland areas within the study area were examined according to the Routine Methodology as described in the *Washington State Wetlands Identification and Delineation Manual* (Washington State Department of Ecology 1997 DOE) which is consistent with the 1987 U.S. Army Corps of Engineers *Wetland Delineation Manual*. The 2010 USACE Regional Supplements to the delineation manual were employed.

A wetland is considered “jurisdictional” by the US Army Corps of Engineers, when specific soil, vegetation, and hydrologic conditions are present.

5.1 FIELD MARKING

Two types of flagging were used to mark the site.

- Pink flagging (with or without text “Wetland”) indicates outer edge of the wetland. Alpha-numeric numbering indicates unique flag locations; and
- Blue flagging (and/or blue and white striped flagging) indicates data plot (DP) locations.

Delineated wetland edges were marked at natural topographic and line of sight inflection points.

5.2 FIELD DATA

Field data sheets were completed at representative locations. (Attachments: Field Data Sheets). Soil characteristics, hydrologic indicators, and dominant plant species were noted at each of the data plots.

Recorded and unrecorded soil test pits were dug throughout the site to check for presence/absence of wetland soils. Soil pits were dug to approximately 16-18 inches and examined for hydric soil indicators in the upper 12 inches. Soil examination included: organic soils, histic epipedons, sulfidic material, aquic or preaquic moisture regimes, reducing soil conditions, gleyed soils, and mottled and/or low chroma soils.

Site hydrology was evaluated by primary and secondary means including surface and groundwater levels, soil saturation, sediment deposits, oxidized rhizospheres, water-stained leaves, drainage patterns, and inundation.

Vegetation within data plots was determined to be hydrophytic (adapted to anaerobic conditions) when more than 50% of the dominant plant species had an indicator status of facultative (FAC), facultative wetland (FACW), or obligate wetland (OBL). Dominant plant species were determined separately in vine, herb, shrub and tree strata.

5.3 MAPPING

Field work was performed 28 September 2021. A delineation sketch map is included in Attachments.

6.0 WETLAND DELINEATION RESULTS

Hydrogeomorphic Wetland Condition/s

One wetland unit (*Wetland A*) was found on site and extends off site north and south. *Wetland A* is dominated by depressional characteristics and has a prevailing drainage direction from north to south with an ultimate outlet under Spurgeon Creek Road. Hydrologic support for the unit includes seasonal high-water table, rainfall, and valley wall runoff.

6.1 WETLAND RATINGS

Wetland rating used the current Washington State Department of Ecology Rating System (Attachments).

WETLAND SUMMARY DATA					
Wetland ID (A,B,...)	On-Site Wetland Area ¹ (Ft ²) or (Ac)	Size Category ² < 1,000 SF < 5,000 SF <0.5 acres < 1 acre < 5 acres < 10 acres > 10 acres	HGM Category ³	Total Points & Category ³	Habitat Points / Stndrd Buffer Size (ft) / Mitigated Buffer Size (ft)
A	53,000	53,000 SF	Depressional	18 / 3	6 / 110 / 150

(1) On-site defined as: On subject parcel/s. This is an estimate.

(2) Includes estimate of off-parcel area; required for determination of regulatory status.

(3) Based on *Washington State Wetland Rating System for Western Washington* (Hruby, 2014)

(4) Based on *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979)

6.2 WETLAND VEGETATION

The site was inspected for presence of wetland vegetation. Results appear in the following table.

WETLAND VEGETATION CHARACTERISTICS			
Wetland ID (A,B,...)	Plant Community	Dominant Species	Wetland Vegetation Criteria Met (Yes / No)
A	Forested Shrub	<i>Alnus rubra</i> , <i>Salix sitchensis</i> , <i>Thuja plicata</i> , <i>Spirea douglasii</i> , <i>Fraxinus latifolia</i> , <i>Populus trichocarpa</i>	Yes

6.3 WETLAND SOILS

Soils for the study area are mapped on the website: websoilsurvey.nrcs.usda.gov and reported as:

Wetland ID (A, B,...)	USDA Mapped Soil Unit	Site Soils Match Mapped Unit (Y / N)	Hydric Soils Found (Y / N)
A & N	Mukilteo Muck	Y	Y
If deviating from mapped soil unit/s for this site, actual soils observed are noted below.			

6.4 WETLAND HYDROLOGY

The site was inspected for evidence of wetland hydrology. The following conditions were observed:

- Seasonally saturated soils indicators
- Seasonally inundated soil indicators

7.0 WETLAND DELINEATION & RATING CONCLUSION

One regulated wetland was found, delineated / evaluated.

No non-jurisdictional isolated wetland/s less than 1000 SQFT were found. Results for the jurisdictional wetlands included:

WETLAND/S A

- Total Rating Points: 18
- Wetland Category: 3
- Habitat rating points: 6
- Wetland Buffer Width (meeting code conditions): 110 feet
- Wetland Buffer Width (**NOT** meeting code conditions): 150 feet

8.0 ANTICIPATED NEXT STEPS

Anticipated additional environmental review steps include items below marked with (*):

(*) Indicates Anticipated	POTENTIAL ADDITIONAL RELATED ENVIRONMENTAL REVIEW TASKS
*	Update / prepare site plan to reflect wetland and buffer project impact areas
*	Submit wetland report for agency approval of findings.
*	If a Critical Area or Master application has not been submitted, one will be required. Review authority may require <u>hard copy/ies</u> and electronic of the wetland report, with the application.
*	Discuss any applicable buffer relief code (Intensification, Interruption, etc.) with agency
*	A Land Survey is required for some projects (subdivisions, easements, wetland impacts)
	If applicable, agency review & approval of <i>conceptual</i> mitigation plan is recommended prior to investing extensive effort on a draft or final mitigation plan.
	If applicable, address agency comments concerning conceptual mitigation strategy.
	If applicable, prepare mitigation design, specifications, maintenance, monitoring, bond
	If wetlands are to be impacted, coordination / review / approval by US Army Corps of Engineers (Corps) and WA State Department of Ecology (Ecology) is required
	Reasonable Use Exception (RUE) variance is required for all wetland impacts and, typically, for any buffer impacts located within the inner 75% of the standard width.
	If applicable, manage other environmental permitting: Shoreline, HMP, HPA, 404, etc
*	If applicable, SEPA Review

9.0 LIMITATIONS

This report was prepared for the use of the client, its affiliates, lenders and assigns, their consultants, and various agencies. It should be recognized that delineation of wetland boundaries is an inexact science and different individuals, and agencies may disagree on exact boundaries. Any results and conclusions within this report represent our professional judgment based on the most recent information provided from publications, maps, aerial photos, and field investigations as defined within the scope of services.

Final determination and acceptance of jurisdiction and concurrence with the wetland boundaries as delineated is the responsibility of the various resource agencies that regulate development in and around wetlands. The client understands that regulatory ordinances are living documents, subject to an ongoing state of change / revision. Agua Tierra makes a reasonable effort to stay abreast of ordinance revisions and relies on local government notification process of such changes. This report and the delineated wetland boundaries will be reviewed by the appropriate agencies prior to any detailed site planning or construction activities.

10.0 AGUA TIERRA QUALIFICATIONS (Standard Disclosure)

In addition to accredited academic training in related natural resource management topics, Agua Tierra staff have the following minimum training:

- Wetland Delineation;
- Using the Revised (2006, 2008) Wetland Rating System in Western WA;
- Using the Revised (2014) Wetland Rating System in Western WA;
- Coastal Training Program - Protecting and Managing Wetlands Using the Best Available Science;
- Ordinary High Water Mark Determination;
- Wetland Mitigation, Construction & Installation;
- Advanced Biological Assessment Preparation;
- Reviewing Wetland Mitigation and Monitoring Plans;
- Advanced Wetland Training: Hydric Soils Identification
- Understanding SEPA; and
- Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats.

Agua Tierra staff meet / exceed required training & experience for this scope of work.

Thank you for this opportunity to be of service. Please contact us with any questions.

Agua Tierra is a design – build firm providing a full range of services for drainage, erosion control, and environmental projects. We would be pleased to assist you with future phases of this project.

CHRISTIAN FROMUTH

Christian Fromuth, M.Sc., C.E

Hydrologist / Aquatic Ecologist / Project Manager

Attachments

REFERENCES

- Cooke, Sarah S. ed. 1997. *A Field Guide to the Common Wetland Plants of Western Washington and Northern Oregon*. Seattle Audubon Society, Seattle, WA.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Office of Biological Services, U.S. Fish and Wildlife Service, FWS/OBS-79/31, Washington, D.C.
- Hruby, T. 2004. *Washington State Wetlands Rating System – Western Washington- Revised*. Washington State Department of Ecology Publication #04-06-025.
- Hruby, T. 2014 (Update). *Washington State Wetlands Rating System – Western Washington*. Washington State Department of Ecology Publication #14-06-029
- Reed, P.B. Jr. 1988. *National List of Plant Species that Occur in Wetlands: 1988 Northwest (Region 9)*. U.S. Fish and Wildlife Service, Inland Freshwater Ecology Section, Biological Report 88 (26.9), St. Petersburg, Fla.
- Reed, P.B. et al. 1993. *Supplement to List of Plant Species that Occur in Wetlands: Northwest (Region 9)*. U.S. Fish and Wildlife Service, Inland Freshwater Ecology Section, Supplement to Biological Report 88 (26.9), St. Petersburg, Fla.
- U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical report Y-87-1, National Technical Information Service, Springfield, VA.
- U.S. Army Corps of Engineers. 1994. *Washington Regional Guidance on the 1987 Wetland Delineation Manual*. Public Notice dated May 23, 1994. District Regulatory Branch, Seattle, WA.
- Washington Natural Heritage Program (WNHP). 2001. *Field Guide to Washington's Rare Plants*. In cooperation with Washington Department of Natural Resources and Spokane District U.S.D.I. Bureau of Land Management. Olympia, WA.
- Washington State Department of Ecology (WDOE). 1997. *Washington State Wetlands Identification and Delineation Manual*. Publication 96-94. Olympia, WA.

ATTACHMENTS

FIGURE / ITEM DESCRIPTION	INCLUDED (X)
WETLAND MAPS and RATING FIGURES	X
WETLAND DELINEATION DATA SHEETS	X
WETLAND RATING DATA SHEETS	X



ATTACHMENT 1:

WETLAND DELINEATION & RATING MAPS AND FIGURES

PROJECT CLIENT:	MOSURE FAMILY SUBDIVISION – City of Lacey
SITE ADDRESS/ES (IF ANY):	Frontage on
SITE COUNTY / PARCEL NUMBER/S:	THURSTON / 118 343 200 00

- **WETLAND A: DEPRESSIONAL UNIT IN RELIC GLACIAL OUTWASH KETTLE HOLE**



FIGURE 1.0: VICINITY MAP (WITH WATERSHEDS)---- COUNTY GEODATA (Site shown by red dot)

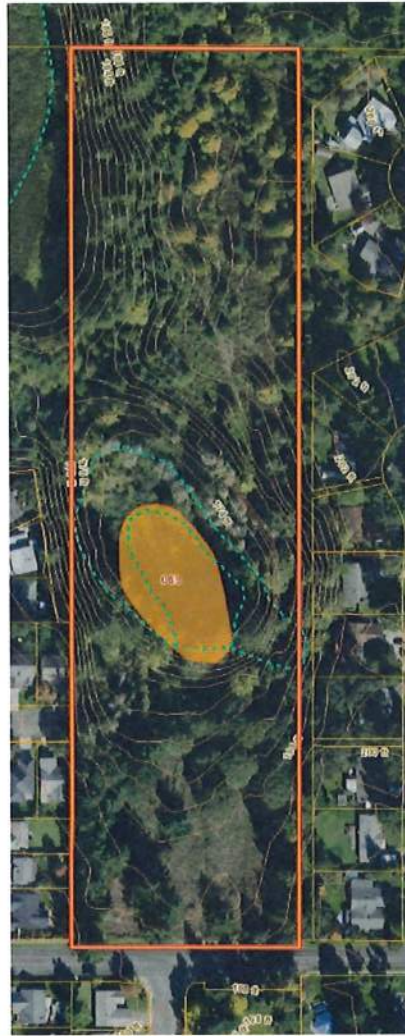


FIGURE 1.1: SURROUNDING AREA / NIEGHBORHOOD PARCEL MAP.

Public GIS Layers Include (where shown): 2019 air photo / Topography / Wetland blue dash line / County Hydric Soils
GIS layers of limited accuracy and do not substitute for field verification.



FIGURE 1.2: **PARCEL MAP**

Source: County GIS. Note: layers / boundaries may not be accurately rectified.



FIGURE 2.0: WETLAND DELINEATION MAP

WL-A#: Wetland Flag#
Estimated WL: **YELLOW**

WL Unit Break/: Red/White Striped
WL Outlet: Blue Arrow;
Blue Dashed Outline: Est Impact Area

(DP #): Data Plot#: Blue Triangle / Pin
Stream: Blue Solid or Dashed Line
Dashed Turquoise: Geodata WL estimate

Flagged WL Edge: **Red or Fusica Line;**
Drainage Ditch: **Orange Arrows / Lines.**



FIGURE 3.0 - COWARDIN PLANT CLASSES (Canopy may obscure Cowardian zones)

- (D 1.3) Persistent, ungrazed OR unmowed plants: > 90% area > 50 %; > 25 %; < 10 %

- (H 1.1) Number for Cowardin Classes (1/4 ac or 10% if unit < 2.5 ac): TWO (emergent area too small)..... FOREST EMERGENT SHRUB AQUATIC BED
• (Forested Trees > 30% canopy cover w/in forested unit)
• Within Forested Unit: 3 out of 5 Classes Present each covering > 20%): Y / N (Canopy, Sub-Canopy, Shrubs, Herbaceous, Moss / Ground cover).
- (H 1.4) Habitat Interspersion: LOW MED HIGH



FIGURE 4 - HYDROPERIODS [Note: Zone boundaries may be obscured by vegetation. Feature areas exceed rating thresholds indicated]

(D 1.4) Area seasonal ponding / inundation (2 months min):

> 50% total wetland;

> 25 %;

< 25 %;

(H 1.2) Types water regime (> 10% or 0.25 Acre of wetland): **TWO**

Perm flood / inundate; Seas flood/inundate; Occ flood/inundate; Saturated only; Perm Flow Drng; Seas Drng; Lake Fringe; Freshwater Tidal

Blue Arrow (if any) flow direction.



FIGURE 5 - BOUNDARY OF AREA WITHIN 150 FEET OF WETLAND

(D 2.2) Is > 10 % area within 150 feet of wetland in use that generates pollutants ? (YELLOW ZONE) **YES**
 (D 5.2) " " excess runoff ? **NO (DETENTION POND)**
 (R 2.4) " Pollutants...?
 (L 2.2); (S2.1); (S 5.1)

NOTE: portion of 150-foot radius drains away from the wetland.

(Yellow-perimeter/s = 150-foot-perimeter-offset)

Area WL: 53,000 SQFT
 Area Basin: 1,421,000 SQFT



FIGURE 6: MAP OF CONTRIBUTING BASIN

General Note: This figure / rating criteria not applicable to sloped wetland units.

High Intensity	<ul style="list-style-type: none"> • Commercial • Urban • Industrial • Institutional • Retail sales • Residential (more than 1 unit/ac) • High-intensity agriculture (dairies, nurseries, greenhouses, growing and harvesting crops requiring annual tilling, and raising and maintaining animals, etc.) • High-intensity recreation (golf courses, ball fields, etc.)
Moderate and Low Intensity	<ul style="list-style-type: none"> • Residential (1 unit/ac or less) • Parks • Moderate-intensity agriculture (orchards, hay fields, pastures) • Trails • Forestry • Utility corridors

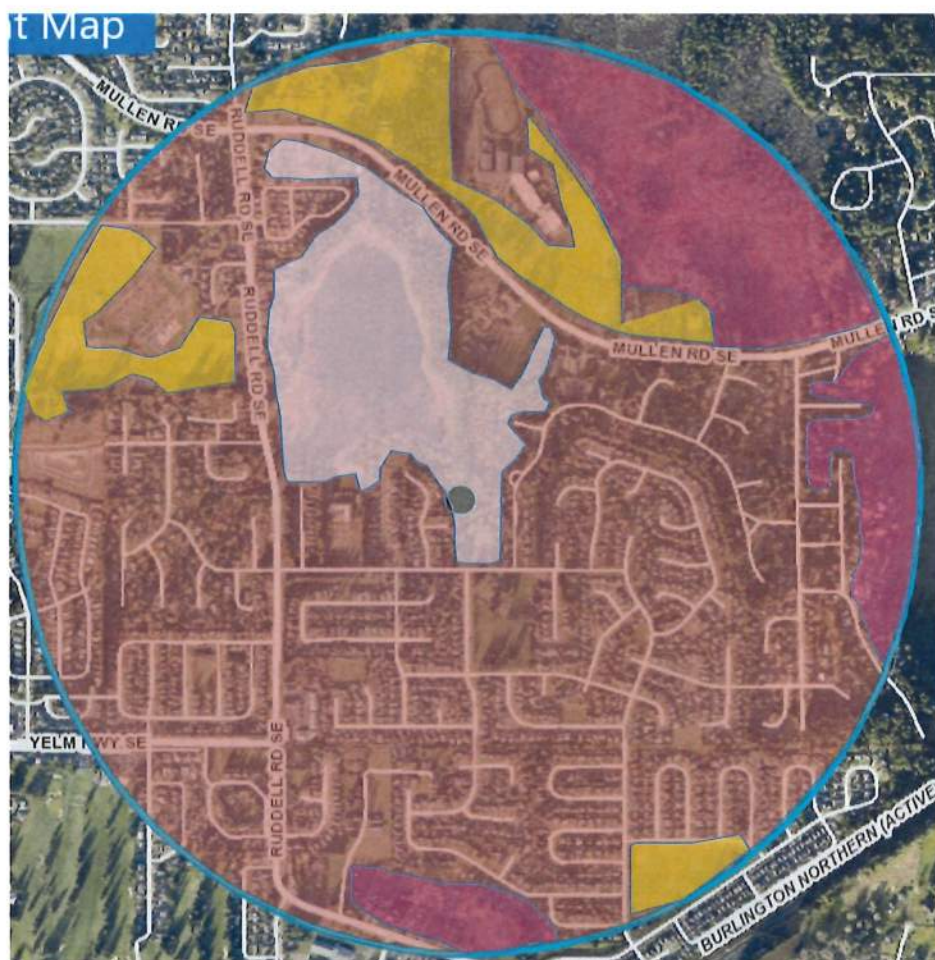
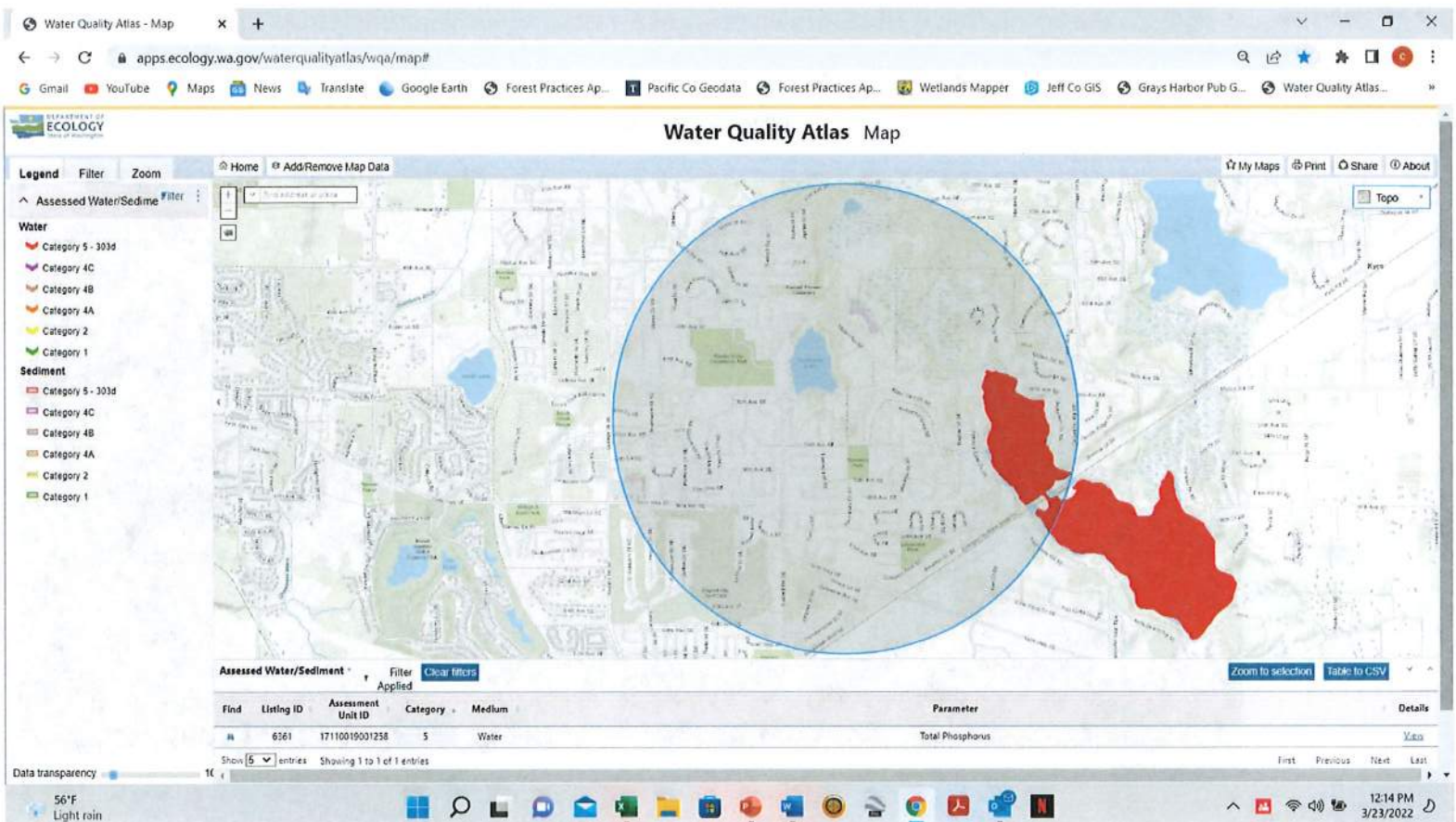


FIGURE 7: LAND USE INTENSITY ONE KILOMETER RADIUS SURROUNDING WETLAND (Yellow cross-hairs (if any) used as measurement guide only)

Subject Wetland/s: **Black = TRACE**
 Accessible Low/Moderate Intensity: **Blue = 0**
 Accessible Relatively Undisturbed: **White = 9**

Non-accessible Low/Mod Intensity: **Yellow = 11**
 Non-accessible Rel Undisturbed: **Fuscia = 14**
 High Intensity **No Color Shading** or **Light Red Hue = 66**

[Base Map: WDOE WQ Atlas / Public GIS / Google Earth]

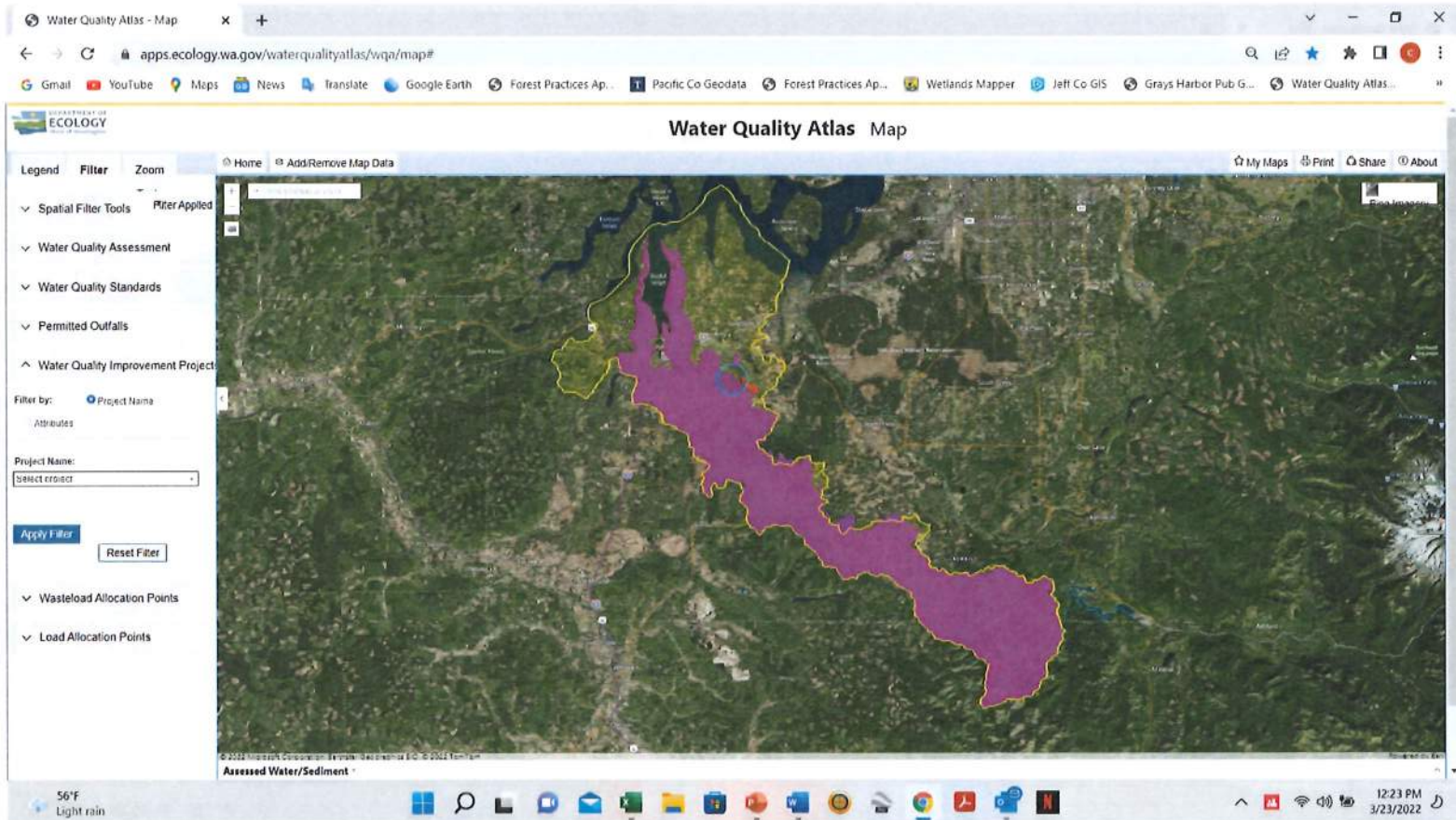


303 D WATERS WITHIN ONE MILE RADIUS:

NO

FIGURE 8: 303-D WATERS DIRECTLY DOWNSTREAM (1 MILE) OF WETLAND

- Mapping Source/s: <https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx> and <https://fortress.wa.gov/ecy/approvedwqa/ApprovedSearch.aspx>



TMDLS DOWNSTREAM WITHIN WRIA: **YES**

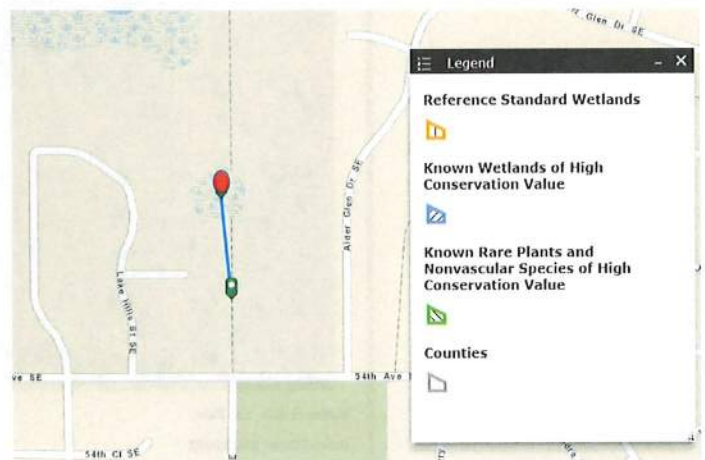
FIGURE 9: LIST OF TMDLS FOR WRIA WHERE SITE IS LOCATED (WDOE web site)

- ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process/Directory-of-improvement-projects
- waecy.maps.arcgis.com/home/webmap/viewer.html?layers=016d27df46004d138cdda32259787400
- <https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=3&Layers=25&Filters=n,n,n,n>



National Wetlands Inventory Map

Site **NOT** Accurately
Mapped but is included
in mapping



DNR Wetlands of High Conservation Value
LOCATION CLOSER THAN 330 FEET (100
METERS) FROM SITE ? YES / **NO**

FIGURE 10: NATIONAL WETLAND INVENTORY (NWI) MAP (USFWS data base) & WA DNR NATURAL HERITAGE SITES IN AREA
<https://www.fws.gov/wetlands/data/mapper.html> & <http://wadnr.maps.arcgis.com/apps/webappviewer/index.html>

Site = Red Dot



Buffer radius: 330 Feet

Report Date: 03/23/2022

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Wood duck	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Big brown bat	N/A	N/A	Yes
Little Brown Bat	N/A	N/A	Yes
Yuma myotis	N/A	N/A	Yes

PHS Recorded Species in Project Area (within 330 feet) with State or Federal protection status.

- **NO**

FIGURE 11: PRIORITY HABITAT AND SPECIES (STATE AND FEDERAL DATA)
<http://apps.wdfw.wa.gov/phsontheweb/>

Site = Red Mark

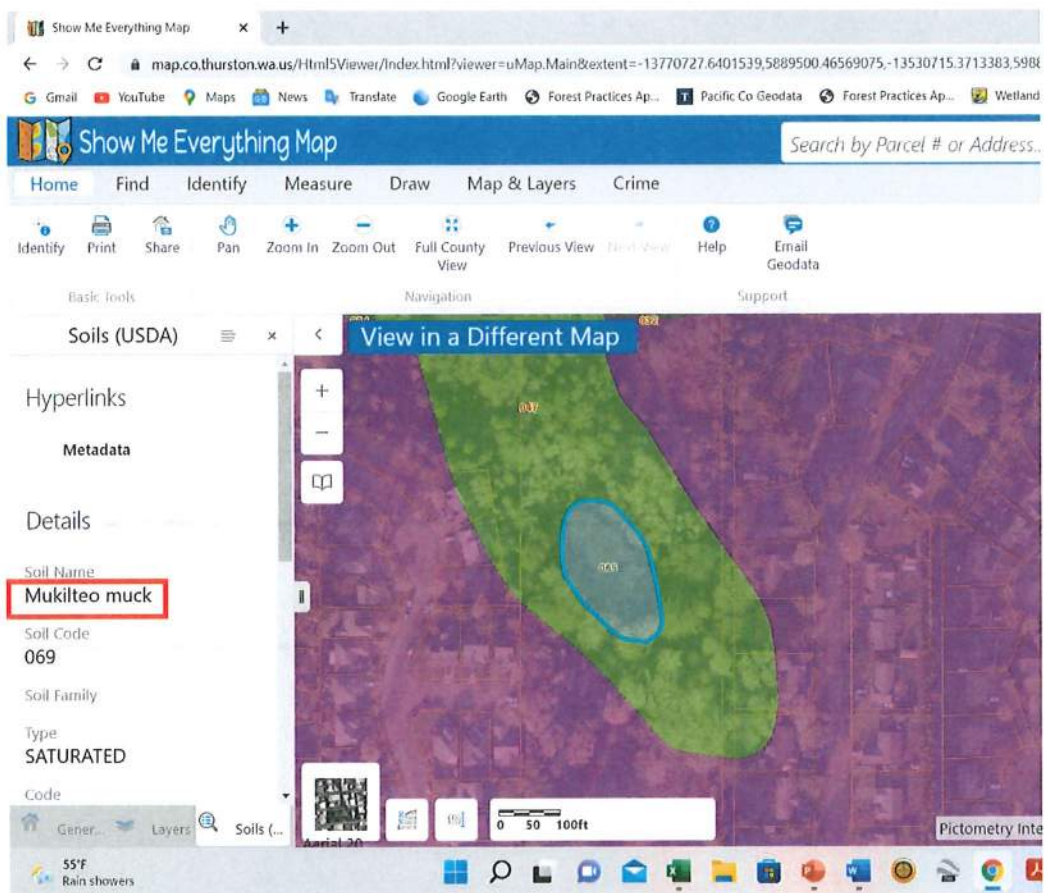


FIGURE 12: NRCS SOILS MAP FOR PROJECT AREA



ATTACHMENT 2:
WETLAND RATING FORM/S

RATING SUMMARY – Western Washington

Name of wetland (or ID #): SOUTHWICK LAKE AREA KETTLE UNIT Date of site visit: NOV 5 2021Rated by FROMUTH Trained by Ecology? ☒ Yes ☐ No Date of training 2013-14HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map THURSTON GIS & GOOGLE MAPS**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	M	M	
Landscape Potential	L	M	L	
Value	H	L	H	Total
Score Based on Ratings	7	5	6	18

**Score for each
function based
on three
ratings**

(order of ratings
is not
important)

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	3
Hydroperiods	D 1.4, H 1.2	4
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	4
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	5
Map of the contributing basin	D 4.3, D 5.3	6
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	7
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	8 & 9
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	10

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 (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	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 (<i>can be added to another figure</i>)	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 (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

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

- ☒ 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.*

NOTES and FIELD OBSERVATIONS:

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

3

☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing

points = 1

☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.

points = 1

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).

Yes = 4 No = 0

4

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

Wetland has persistent, ungrazed, plants > 95% of area

points = 5

Wetland has persistent, ungrazed, plants > 1/2 of area

points = 3

5

Wetland has persistent, ungrazed plants > 1/10 of area

points = 1

Wetland has persistent, ungrazed plants < 1/10 of area

points = 0

D 1.4. Characteristics of seasonal ponding or inundation:*This is the area that is ponded for at least 2 months. See description in manual.*

Area seasonally ponded is > 1/2 total area of wetland

points = 4

2

Area seasonally ponded is > 1/4 total area of wetland

points = 2

Area seasonally ponded is < 1/4 total area of wetland

points = 0

Total for D 1

Add the points in the boxes above

14

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

0

D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?

Source

Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

0

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

0

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?

Yes = 1 No = 0

1

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

3

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

Record the rating on the first page

DEPRESSIONAL AND FLATS WETLANDS**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

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

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 4 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|--|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 7 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 0 |
| The area of the basin is 10 to 100 times the area of the unit | points = 3 | |
| The area of the basin is more than 100 times the area of the unit | points = 0 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

11

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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

1

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): | | 0 |
| <input type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> 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 | |
| <input checked="" type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

0

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

Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> 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 | | |

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*).

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <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 | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft². *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*

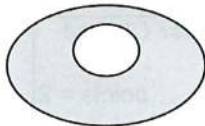
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions 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

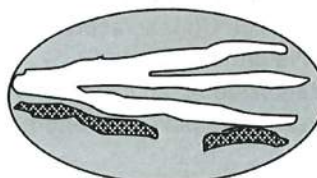


Moderate = 2 points



2

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



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		3
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)		
<input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland		
<input type="checkbox"/> 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)		
<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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)		
<input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)		
<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		8

Add the points in the boxes above

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 function of the site?		
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 9 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 9%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 23 % undisturbed habitat + (11 % moderate & low intensity land uses / 2) = 28.5%		
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 1km Polygon is high intensity points = 0		
Total for H 2		-1

Add the points in the boxes above

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
<input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)		2
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)		
<input type="checkbox"/> It is mapped as a location for an individual WDFW priority species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> 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 100m		points = 1
Site does not meet any of the criteria above		points = 0

Rating of Value If Score is: ☒ 2 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

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.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input checked="" type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input checked="" type="checkbox"/> No = Not 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? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes = Is a Category I bog <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes = Is a Category I bog <input checked="" type="checkbox"/> No = Is not a bog	

SC 4.0. Forested Wetlands

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

- ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

☐ Yes = **Category I** ☒ No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

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

- ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

☐ Yes - Go to **SC 5.1** ☒ No = **Not a wetland in a coastal lagoon**

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

- ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- ☐ The wetland is larger than $\frac{1}{10}$ ac (4350 ft²)

☐ Yes = **Category I** ☐ No = **Category II**

SC 6.0. Interdunal Wetlands

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

In practical terms that means the following geographic areas:

- ☐ Long Beach Peninsula: Lands west of SR 103
- ☐ Grayland-Westport: Lands west of SR 105
- ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

☐ Yes - Go to **SC 6.1** ☐ No = **Not an interdunal wetland for rating**

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

☐ Yes = **Category I** ☐ No - Go to **SC 6.2**

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

☐ Yes = **Category II** ☐ No - Go to **SC 6.3**

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

☐ Yes = **Category III** ☒ No = **Category IV**

Category of wetland based on Special Characteristics

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



ATTACHMENT 3:
WETLAND DELINEATION DATA PITS

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

Project/Site: Tax Parcel#: 11834320000 on 54th Ave SE, Lacey City/County: Thurston Sampling Date: 5 nov 2021

Applicant/Owner: PATRICIA MOSURE State: Sampling Point: DP#1 Wet

Investigator(s): C. Fromuth Section, Township, Range:

Landform (hillside, terrace, etc.): isolated depressional Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: Long: Datum:

Soil Map Unit Name: INDIANOLA LOAMY SAND NWI classification: PSS & PF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Malus fusca</u>	80	Yes	FACW	
2. <u>Cornus alba</u>	20	No	FACW	
3. <u>Salix lasiandra</u>	20	No	FACW	
4. _____				
	120	=Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
<u>Herb Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
		=Total Cover		
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
		=Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks: _____				

Dominance Test worksheet:			
Number of Dominant Species That Are OBL, FACW, or FAC:	1		(A)
Total Number of Dominant Species Across All Strata:	1		(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0%		(A/B)

Prevalence Index worksheet:			
	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	120	x 2 =	240
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120	(A)	240 (B)
Prevalence Index = B/A =		2.00	

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
<u>X</u> 2 - Dominance Test is >50%
<u>X</u> 3 - Prevalence Index is ≤3.0 ¹
___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants ¹
___ Problematic Hydrophytic Vegetation ¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation
Present? Yes <u>X</u> No ___

SOIL

Sampling Point: DP#1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10yr 3/1	100						SANDY LOAM
8-14	10yr 3/1	80	10YR 5/2	20	C	M		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 12 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

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

Remarks:

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

Project/Site: Tax Parcel#: 11834320000 on 54th Ave SE, Lacey City/County: Thurston Sampling Date: 5 nov 2021

Applicant/Owner: PATRICIA MOSURE State: Sampling Point: DP#2 UP

Investigator(s): C. Fromuth Section, Township, Range:

Landform (hillside, terrace, etc.): isolated depressional Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: Long: Datum:

Soil Map Unit Name: INDIANOLA LOAMY SAND NWI classification: PSS & PF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			
Remarks: LOGGING IMPACTS HAVE COMPACTED SOILS AND INCISED LANDSCAPE AND IMPOUNDED WATER					

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ 1 (A) Total Number of Dominant Species Across All Strata: _____ 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ 100.0% (A/B)																																	
1.	<u>Malus fusca</u>	80	Yes	FACW																																		
2.	<u>Corylus cornuta</u>	10	No	FACU																																		
3.	<u>Prunus emarginata</u>	10	No	FACU																																		
4.	_____	_____	_____	_____																																		
		100	=Total Cover																																			
<u>Sapling/Shrub Stratum</u> (Plot size: _____)					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th colspan="2">Total % Cover of:</th> <th colspan="2">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>0</td> <td>x 1 =</td> <td>0</td> </tr> <tr> <td>FACW species</td> <td>80</td> <td>x 2 =</td> <td>160</td> </tr> <tr> <td>FAC species</td> <td>0</td> <td>x 3 =</td> <td>0</td> </tr> <tr> <td>FACU species</td> <td>20</td> <td>x 4 =</td> <td>80</td> </tr> <tr> <td>UPL species</td> <td>0</td> <td>x 5 =</td> <td>0</td> </tr> <tr> <td>Column Totals:</td> <td>100 (A)</td> <td></td> <td>240 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td colspan="2">2.40</td> </tr> </tbody> </table>		Total % Cover of:		Multiply by:		OBL species	0	x 1 =	0	FACW species	80	x 2 =	160	FAC species	0	x 3 =	0	FACU species	20	x 4 =	80	UPL species	0	x 5 =	0	Column Totals:	100 (A)		240 (B)	Prevalence Index = B/A =		2.40	
Total % Cover of:		Multiply by:																																				
OBL species	0	x 1 =	0																																			
FACW species	80	x 2 =	160																																			
FAC species	0	x 3 =	0																																			
FACU species	20	x 4 =	80																																			
UPL species	0	x 5 =	0																																			
Column Totals:	100 (A)		240 (B)																																			
Prevalence Index = B/A =		2.40																																				
1.	_____	_____	_____	_____																																		
2.	_____	_____	_____	_____																																		
3.	_____	_____	_____	_____																																		
4.	_____	_____	_____	_____																																		
5.	_____	_____	_____	_____																																		
			=Total Cover																																			
<u>Herb Stratum</u> (Plot size: _____)					Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ X 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																	
1.	_____	_____	_____	_____																																		
2.	_____	_____	_____	_____																																		
3.	_____	_____	_____	_____																																		
4.	_____	_____	_____	_____																																		
5.	_____	_____	_____	_____																																		
6.	_____	_____	_____	_____																																		
7.	_____	_____	_____	_____																																		
8.	_____	_____	_____	_____																																		
9.	_____	_____	_____	_____																																		
10.	_____	_____	_____	_____																																		
11.	_____	_____	_____	_____																																		
			=Total Cover																																			
<u>Woody Vine Stratum</u> (Plot size: _____)					Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																	
1.	_____	_____	_____	_____																																		
2.	_____	_____	_____	_____																																		
			=Total Cover																																			
% Bare Ground in Herb Stratum _____																																						
Remarks: _____																																						

SOIL

Sampling Point: DP#2 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10yr 3/1	100						SANDY LOAM
11-14	7.5YR 4/4	100						FINE SANDY LOAM

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



ATTACHMENT 4:
CODE EXCERPTS

LACEY CAO CODE EXCERPTS: LAST REV 3 FEB 2022**14.28.280 Wetland buffers--Standard buffer zone widths.**

A. Wetland buffer zones shall be required for all regulated activities adjacent to regulated wetlands. Any wetland created, restored or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland. All buffers shall be measured from the wetland boundary as surveyed in the field pursuant to the requirements of LMC [14.28.090](#).

B. The width of the wetland buffer zone shall be **determined according to wetland category, the proposed land use and the wetland's identified functions and values**. This methodology shall be applied except when the community and economic development director, through consultation with the Department of Ecology, determines that another methodology better addresses best available science and/or the specific circumstances of the wetland and wetland protection needs.

C. Where an area of a wetland may be classified under more than one category, the category having the greatest buffer area shall apply. These buffer widths presume that buffer area is comprised of relatively intact native vegetation community adequate to protect the wetland functions at values at the time of the proposed activity. If the vegetation is not adequate, then the buffer width may need to be increased or planted to maintain the standard width. Buffer width required for points identified pursuant to the Department of Ecology wetland rating system. (See Table [14T-13](#)).

1. **For wetlands that score six or more points for habitat function, the following conditions must be maintained in order to use the standard buffers**, as follows:

- a. If an existing, relatively undisturbed vegetated corridor at least one hundred feet wide exists between the on-site wetland and other priority habitats, **as defined by the Washington State Department of Fish and Wildlife**, and the off-site portion of the corridor is already protected via an existing conservation easement, critical areas regulations, or other legal requirement, **the portion of the corridor on-site must also be protected by a similar legal protection**. All other applicable criteria found in subsection (C)(2) of this section must also be met. The evaluation of presence or absence of the conditions described above must be completed as part of the critical areas report.

CONSULTANT INSERT

The list of priority habitats can be accessed from the WDFW web page:
<http://wdfw.wa.gov/conservation/phs/list/>

PRIORITY HABITATS	
Terrestrial Priority Habitats	Westside Prairie
Aspen Stands	Aquatic Priority Habitats
Biodiversity Areas and Corridors	Freshwater Wetlands - Fresh Deepwater
Eastside Steppe	Instream
Herbaceous Balds	Coastal Nearshore
Inland Dunes	Open Coast Nearshore
Juniper Savannah	Puget Sound Nearshore
Old Growth - Mature Forest	Priority Habitats Features
Oregon White Oak Woodlands	Caves
Riparian	Cliffs
Shrubsteppe	Snags and Logs
	Talus

b. If no such corridor is present to protect, the standard buffers alone may be used with the other applicable criteria contained in this section. If an option for protection of a corridor, as defined under subsection (C)(1)(a) of this section, exists on the parcel, but is not provided, standard buffer widths must be increased by thirty-three percent.

2. The buffer widths in Table 14T-19 assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided.

a. Table 14T-19. Wetland Buffer Table. [STANDARD]

Wetland Category and Type	Buffer Width (in feet) Based on Habitat Score		
	3--5 (Low)	6--7 (Medium)	8--9 (High)
I: Estuarine and Coastal Lagoons	150 (buffer width not based on habitat scores)		
I: Bogs and Wetlands of High Conservation Value	190		225
I: All Others	75	110	225
II: Estuarine and Coastal Lagoons	110 (buffer width not based on habitat scores)		
II: All	75	110	225

Wetland Category and Type	Buffer Width (in feet) Based on Habitat Score		
	3--5 (Low)	6--7 (Medium)	8--9 (High)
III: All	60	110	225
IV: All	40		

b. **Table 14T-68.** Required measures to minimize impacts to wetlands. Measures are required, where applicable to a specific proposal. If not implemented, wetland buffers as indicated in Table [14T-69](#) will be used.

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> • Direct lights away from wetland
Noise	<ul style="list-style-type: none"> • Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	<ul style="list-style-type: none"> • Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland • Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> • Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use Low Intensity Development techniques (per PSAT publication on LID techniques)
Change in water regime	<ul style="list-style-type: none"> • Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	<ul style="list-style-type: none"> • Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion

Disturbance	Required Measures to Minimize Impacts
	<ul style="list-style-type: none"> Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	<ul style="list-style-type: none"> Use best management practices to control dust

c. **Table 14T-69.** The following wetland buffer requirements if habitat corridor is not provided per subsection [\(C\)\(1\)](#) of this section or minimization measures per subsection [\(C\)\(2\)\(b\)](#) of this section are not implemented:

Wetland Category and Type	Buffer Width (in feet) Based on Habitat Score (if minimization measures are not met)		
	3--5 (Low)	6--7 (Medium)	8--9 (High)
I: Estuarine and Coastal Lagoons	200 (buffer width not based on habitat scores)		
I: Bogs and Wetlands of High Conservation Value	250		300
I: All Others	100	150	300
II: Estuarine and Coastal Lagoons	150 (buffer width not based on habitat scores)		
II: All	100	150	300
III: All	80	150	300
IV: All	50		

(Ord. 1585 §3, 2021; Ord. 1505 §10, 2017; Ord. 1449 §7, 2014; Ord. 1295 §1, 2007; Ord. 1215 §8, 2003; Ord. 912 §1 Sec. 7.1(a), 1991).

14.28.290 Increased wetland buffer zone width.

The city of Lacey shall require increased standard buffer zone widths on a case-by-case basis when a larger buffer is necessary to protect wetlands functions and values based on local conditions. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the regulated wetland. Such determination shall be attached as a condition and shall demonstrate that:

A. A larger buffer is necessary to maintain viable populations of existing species; or

B. The wetland is used by species listed by the federal government or the state as endangered, threatened, sensitive or as documented priority species or habitats, or essential or outstanding potential habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or

C. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse wetland impacts; or

D. The adjacent land has minimal vegetative cover or slopes greater than thirty percent. (Ord. 1505 §11, 2017; Ord. 912 §1 Sec. 7.1(b), 1991).

14.28.300 Repealed.

Repealed by Ord. 1505. 14.28.310 Standard wetland buffer width averaging.

Standard wetland buffer zones may be modified by averaging buffer widths. Wetland buffer width averaging shall be allowed only where the applicant demonstrates all of the following:

A. That averaging is necessary to avoid an extraordinary hardship to the applicant caused by circumstances peculiar to the property and there are no feasible alternatives to the site design that could be accomplished without buffer averaging;

B. That width averaging will not adversely impact the wetland functions and values as demonstrated by a wetland report; and

C. That the total area contained within the wetland buffer after averaging is no less than that contained within the standard buffer prior to averaging. In no instance shall the buffer width be reduced by more than twenty-five percent of the standard. (Ord. 1505 §13, 2017; Ord. 912 §1 Sec. 7.1(d), 1991).

14.28.320 Permit processing--Retention of natural buffer zones.

Except as otherwise specified, wetland buffer zones shall be retained in their natural condition. Where buffer disturbance has occurred during construction, revegetation with native vegetation may be required. (Ord. 912 §1 Sec. 7.1(e), 1991).

14.28.330 Repealed.

Repealed by Ord. 1505. 14.28.340 Permit processing--Building setback lines.

A building setback line corresponding to the required yard area setback for the underlying zone is required from the edge of any wetland buffer. The setback shall be identified on a site plan which is filed as an attachment to the notice on title required by LMC [14.28.220](#). (Ord. 912 §1 Sec. 7.1(g), 1991).

14.28.350 Avoiding wetland impacts.

A. Regulated activities and special uses shall not be authorized in a regulated wetland except where it can be demonstrated that the impact is both unavoidable and necessary or that all reasonable economic uses are denied.

B. With respect to Category I wetlands, an applicant must demonstrate that denial would impose an extraordinary hardship on the part of the applicant brought about by circumstances peculiar to the subject property.

C. With respect to Category II and III wetlands, the following provisions shall apply:

1. For water-dependent activities, unavoidable and necessary impacts can be demonstrated where there are no practicable alternatives which would not involve a wetland or which would not have less adverse impact on a wetland, and would not have other significant adverse environmental consequences.
2. Where nonwater-dependent activities are proposed, it shall be presumed that adverse impacts are avoidable. This presumption may be rebutted upon a demonstration that:
 - a. The basic project purpose cannot reasonably be accomplished utilizing one or more other sites in the general region that would avoid, or result in less, adverse impact on a regulated wetland; and
 - b. A reduction in the size, scope, configuration, or density of the project as proposed and all alternative designs of the project as proposed that would avoid, or result in less, adverse impact on a regulated wetland or its buffer will not accomplish the basic purpose of the project; and
 - c. In cases where the applicant has rejected alternatives to the project as proposed due to constraints such as zoning, deficiencies of infrastructure, or parcel size, the applicant has made reasonable attempt to remove or accommodate such constraints.

D. With respect to Category IV wetlands, unavoidable and necessary impacts can be demonstrated where the proposed activity is the only reasonable alternative which will accomplish the applicant's objectives.

E. *Reasonable Use.* If an applicant for a development proposal demonstrates to the satisfaction of the city of Lacey that application of these standards would deny all reasonable economic use of the property, development as conditioned shall be allowed if the applicant also demonstrates all of the following to the satisfaction of the city of Lacey:

1. That the proposed project is water-dependent or requires access to the wetland as a central element of its basic function, or is not water-dependent but has no practicable alternative pursuant to this section;
2. That no reasonable use with less impact on the wetland and its buffer is possible (e.g., agriculture, aquaculture, transfer or sale of development rights or credits, sale of open space easements, etc.);
3. That there is no feasible on-site alternative to the proposed activities, including reduction in density, phasing of project implementation, change in timing of activities, revision of road and lot layout, and/or related site planning considerations, that would allow a reasonable economic use with less adverse impacts to wetlands and wetland buffers;
4. That the proposed activities will result in minimum feasible alteration or impairment to the wetland's functional characteristics and its existing contours, vegetation, fish and wildlife resources, and hydrological conditions;
5. That disturbance of wetlands has been minimized by locating any necessary alteration in wetland buffers to the extent possible;
6. That the proposed activities will not jeopardize the continued existence of species listed by the federal government or the state as endangered, threatened, rare, sensitive, or as documented priority species or priority habitats;

7. That the proposed activities will not cause significant degradation of ground water or surface water quality;
8. That the proposed activities comply with all state, local and federal laws, including those related to sediment control, pollution control, floodplain restrictions, and on-site wastewater disposal;
9. That any and all alterations to wetlands and wetland buffers will be mitigated as provided in LMC [14.28.510](#);
10. That there will be no damage to nearby public or private property and no threat to the health or safety of people on or off the property; and
11. That the inability to derive reasonable economic use of the property is not the result of actions by the applicant in segregating or dividing the property and creating the undevelopable condition after the effective date of this chapter.

If the city of Lacey determines that alteration of a wetland and/or wetland buffer is necessary and unavoidable, the city of Lacey shall set forth in writing in the file it maintains regarding a permit application its findings with respect to each of the items listed in this subsection. (Ord. 1215 §10, 2003; Ord. 912 §1 Sec. 7.2, 1991).

14.28.360 Minimizing wetlands impacts.

A. After it has been determined by the city of Lacey pursuant to LMC [14.28.350](#) that losses of wetland are necessary and unavoidable or that all reasonable economic use has been denied, the applicant shall take deliberate measures to minimize wetland impacts.

B. Minimizing impacts to wetlands shall include but is not limited to:

1. Limiting the degree or magnitude of the regulated activity;
2. Limiting the implementation of the regulated activity;
3. Using appropriate and best available technology and best available science;
4. Taking affirmative steps to avoid or reduce impacts;
5. Sensitive site design and siting of facilities and construction staging areas away from regulated wetlands and their buffers;
6. Involving resource agencies early in site planning; and
7. Providing protective measures such as siltation curtains, hay bales and other siltation prevention measures, scheduling the regulated activity to avoid interference with wildlife and fisheries rearing, resting, nesting or spawning activities. (Ord. 1215 §11, 2003; Ord. 912 §1 Sec. 7.3, 1991).

The Lacey Municipal Code is current through Ordinance 1613, passed February 3, 2022.

Disclaimer: The city clerk's office has the official version of the Lacey Municipal Code. Users should contact the city clerk's office for ordinances passed subsequent to the ordinance cited above.

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