



LAKE WHATCOM WATER AND SEWER DISTRICT

1220 Lakeway Drive
Bellingham, WA 98229

REGULAR MEETING OF THE BOARD OF COMMISSIONERS

AGENDA

January 10, 2018

6:30 p.m. – Regular Session

1. CALL TO ORDER
2. PUBLIC COMMENT OPPORTUNITY
At this time, members of the public may address the Commission. Please state your name prior to making comments.
3. ADDITIONS, DELETIONS, OR CHANGES TO THE AGENDA
4. CONSENT AGENDA
5. SPECIFIC ITEMS OF BUSINESS:
 - A. Herrera Report Update from Rob Zisette
 - B. Election of Officers for 2018
 - C. 2018 Representative to WCOG and Lake Whatcom Policy Group
 - D. Wildwood Resort Expansion Project Update
6. OTHER BUSINESS
7. MANAGER'S REPORT
8. PUBLIC COMMENT OPPORTUNITY
9. ADJOURNMENT



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 4, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Staff	MANAGER APPROVAL _____		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	4		
SUBJECT:	Consent Agenda		
LIST DOCUMENTS PROVIDED ⇒	1. See list below		
NUMBER OF PAGES	2.		
INCLUDING AGENDA BILL:	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☒	INFORMATIONAL/ OTHER ☐

BACKGROUND/EXPLANATION

**** To be updated 1/9/18**

- Minutes for the December 27, 2017 meeting.
- Accounts Payable Vouchers totaling \$XXX,XXX.XX
- Payroll for Pay Period #27 (12/16/2017 through 12/29/2017) totaling \$40,364.66.
- Payroll Benefits for Pay Period #27 totaling \$47,536.32.

Lake Whatcom Water and Sewer District
Regular Meeting of the Board of Commissioners

December 27, 2017

Board President Laura Weide called the Regular Session to order at 8:00 a.m. Other District representatives present included Commissioners John Carter, Todd Citron, and Bruce Ford; General Manager Patrick Sorensen; District Engineer Bill Hunter; Finance Manager Debi Denton; consulting engineer Melanie Mankamy; District Legal Counsel Bob Carmichael; and Recording Secretary Rachael Hope. District Employees Randy Craker, Rich Munson, and Jason Dahlstrom were also in attendance. Commissioner Curtis Casey had an excused absence. There were no members of the public present.

- Consent Agenda

- Action Taken

- Citron moved, Ford seconded, approval of:

- Minutes for the December 13, 2017 Board Meeting
 - Accounts Payable Vouchers totaling \$169,961.74.
 - Payroll for Pay Period #26 (12/02/2017 through 12/15/2017) totaling \$42,394.44
 - Payroll Benefits for Pay Period #26 totaling \$45,854.97.

- Motion passed.

- Meeting Schedule for 2018

Commissioner Weide reminded the board that at the December 13 meeting, they had postponed discussion of the 2018 schedule to allow more commissioners to be present. For 2017, the regular board meetings were held on the second Wednesday of each month at 6:30 p.m. with a second meeting on the last Wednesday of each month at 8:00 a.m. Commissioner Citron expressed that he is strongly in favor of keeping a morning and an evening meeting to give public and staff the greatest opportunity for participation.

- Action Taken

- Carter moved, Ford seconded, to adopt Resolution #841 Establishing the Regular Meeting Dates and Times for 2018 as the second Wednesday of each month at 6:30 p.m. and the last Wednesday of the month at 8:00 a.m.. Motion passed.

- Draft Emergency Response Plan

Sorensen recounted that on May 17, 2017, the District and Whatcom County Sheriff's Office, Division of Emergency Management entered into an agreement for emergency management services. One of the services was to update the District's Emergency Response Plan. After several months a final draft has been completed. District Safety Officer Rich Munson briefly introduced the plan. Discussion followed.

- Re-Elected Commissioner Oath of Office

District Finance Manager Debi Denton gave the Oath of Office to re-elected Commissioners Todd Citron (Position #2) and John Carter (Position #5).

- Review of Engineering Consultant Fees for 2018

Sorensen detailed that in accordance with Section 7.4 of the on-call Engineering Services Contract, Wilson Engineering provided the District with their increased rates for 2018. These rate increases are variable depending on the staff type. These numbers simply reflect inflation and the

marketplace for engineering staff and services at this time.

Action Taken

Carter moved, Ford seconded, to approve Wilson Engineering's proposed fees for general engineering services in 2018. Motion Passed.

- **Summary of Existing District Projects**

Hunter gave an update on the Country Club project.

- **Monthly Budget Analysis**

Denton provided the Board with information on the budget through November 30. Commissioner Ford requested that a category be added to employee timesheets in 2018 for Capital Projects in order to separate payroll costs for Capital Projects from payroll costs for Operations & Maintenance.

- **Manager's Report**

Sorensen summarized upcoming dates to remember, including the 2018 Commissioners Workshop on January 27, and Staff Appreciation Dinner on January 26. He also presented the recently updated S&P report to the Board.

- **Executive Session Per RCW 42.30.110 (1)(i)(iii): Protected Communications with Legal Counsel – 20 Minutes**

Weide recessed the Regular Session to Executive Session at 9:21 a.m. It was estimated that the Executive Session would take about 20 minutes. The purpose of the Executive Session was for protected communications with District Legal Counsel. Weide recessed the Executive Session and reconvened the Regular Session at 9:55 a.m.

With no further business, Weide adjourned the Regular Session at 9:55 a.m.

Recording Secretary, Rachael Hope

Date Minutes Approved

Laura Weide

Todd Citron

Bruce R. Ford

excused

Curtis J. Casey

John Carter

PAYROLL

CHECK REGISTER

Lake Whatcom W-S District
MCAG #: 2330

01/04/2018 To: 01/04/2018

Time: 09:57:03 Date: 01/03/2018

Page: 1

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
12	01/04/2018	Payroll	5	EFT		3,331.36	12/16/2017 - 12/29/2017 PR1
13	01/04/2018	Payroll	5	EFT		2,613.09	12/16/2017 - 12/29/2017 PR1
14	01/04/2018	Payroll	5	EFT		2,142.32	12/16/2017 - 12/29/2017 PR1
15	01/04/2018	Payroll	5	EFT		3,050.93	12/16/2017 - 12/29/2017 PR1
16	01/04/2018	Payroll	5	EFT		1,275.62	12/16/2017 - 12/29/2017 PR1
18	01/04/2018	Payroll	5	EFT		1,074.70	12/16/2017 - 12/29/2017 PR1
19	01/04/2018	Payroll	5	EFT		2,375.62	12/16/2017 - 12/29/2017 PR1
20	01/04/2018	Payroll	5	EFT		1,546.33	12/16/2017 - 12/29/2017 PR1
21	01/04/2018	Payroll	5	EFT		3,169.12	12/16/2017 - 12/29/2017 PR1
22	01/04/2018	Payroll	5	EFT		1,651.85	12/16/2017 - 12/29/2017 PR1
23	01/04/2018	Payroll	5	EFT		1,790.03	12/16/2017 - 12/29/2017 PR1
24	01/04/2018	Payroll	5	EFT		3,148.38	12/16/2017 - 12/29/2017 PR1
25	01/04/2018	Payroll	5	EFT		2,279.14	12/16/2017 - 12/29/2017 PR1
26	01/04/2018	Payroll	5	EFT		1,419.96	12/16/2017 - 12/29/2017 PR1
27	01/04/2018	Payroll	5	EFT		1,755.41	12/16/2017 - 12/29/2017 PR1
28	01/04/2018	Payroll	5	EFT		3,765.29	12/16/2017 - 12/29/2017 PR1
29	01/04/2018	Payroll	5	EFT		2,734.24	12/16/2017 - 12/29/2017 PR1
17	01/04/2018	Payroll	5	7386		1,241.27	12/16/2017 - 12/29/2017 PR1
401 Operating Fund						40,364.66	

40,364.66 Payroll: 40,364.66

I do hereby certify, under penalty of perjury, that the above is an unpaid, just, and due obligation as described herein, and that I am authorized to certify this claim.



01: 28957 P16019NVD

Sign _____ Date _____

Board Authorization - As the duly elected board for this district we have reviewed the claims listed and approve the payment with our signatures below.

Commissioner

Commissioner

Commissioner

Commissioner

Commissioner

BENEFITS

CHECK REGISTER

Lake Whatcom W-S District
MCAG #: 2330

01/04/2018 To: 01/04/2018

Time: 10:58:39 Date: 01/03/2018

Page: 1

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
30	01/04/2018	Payroll	5	EFT	UNITED STATES TREASURY	16,023.16	941 Deposit for Pay Cycle(s) 01/04/2018 - 01/04/2018
31	01/04/2018	Payroll	5	7387	AFLAC	120.75	Pay Cycle(s) 01/04/2018 To 01/04/2018 - AFLAC Pre-Tax
32	01/04/2018	Payroll	5	7388	AFSCME LOCAL	367.24	Pay Cycle(s) 01/04/2018 To 01/04/2018 - Union Dues; Pay Cycle(s) 01/04/2018 To 01/04/2018 - Union Fund
33	01/04/2018	Payroll	5	7389	DEPARTMENT OF RETIREMENT SYSTEMS	2,955.00	Pay Cycle(s) 01/04/2018 To 01/04/2018 - DCP
34	01/04/2018	Payroll	5	7390	HRA VEBA TRUST (PAYEE)	515.00	Pay Cycle(s) 01/04/2018 To 01/04/2018 - VEBA
35	01/04/2018	Payroll	5	7391	VANTAGEPOINT TRANSFER AGENTS - 306798	665.00	Pay Cycle(s) 01/04/2018 To 01/04/2018 - ICMA
36	01/04/2018	Payroll	5	7392	WA ST PUBLIC EMP RET PLAN 2	10,870.67	Pay Cycle(s) 12/22/2017 To 12/22/2017 - PERS 2; Pay Cycle(s) 01/04/2018 To 01/04/2018 - PERS 2
37	01/04/2018	Payroll	5	7393	WA ST PUBLIC EMP RET PLAN 3	1,320.93	Pay Cycle(s) 01/04/2018 To 01/04/2018 - PERS 3
38	01/04/2018	Payroll	5	7394	WA ST SUPPORT ENFORCEMENT REGISTRY	208.34	Pay Cycle(s) 01/04/2018 To 01/04/2018 - SUP ENF
39	01/04/2018	Payroll	5	7395	WASHINGTON STATE HEALTH CARE AUTHORITY	14,490.23	Pay Cycle(s) 01/04/2018 To 01/04/2018 - PEBB Medical; Pay Cycle(s) 01/04/2018 To 01/04/2018 - PEBB ADD LTD; Pay Cycle(s) 01/04/2018 To 01/04/2018 - PEBB SMK Surcharge
401 Operating Fund						47,536.32	
						47,536.32	Payroll:
							47,536.32

BENEFITS

CHECK REGISTER

Lake Whatcom W-S District
MCAG #: 2330

01/04/2018 To: 01/04/2018

Time: 10:58:39 Date: 01/03/2018

Page: 2

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
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I do hereby certify, under penalty of perjury, that the above is an unpaid, just, and due obligation as described herein, and that I am authorized to certify this claim.



Sign _____ Date 009-18968-933129DLE

Board Authorization - As the duly elected board for this district we have reviewed the claims listed and approve the payment with our signatures below.

Commisioner

Commisioner

Commisioner

Commisioner

Commisioner



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 4, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	5.A.		
SUBJECT:	Water Quality/Herrera Consulting Update		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	1.		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

A brief phone conference update with Rob Zisette will be provided to the Board of Commissioners regarding the status of water quality testing along the North Shore area that we entered into previously with Herrera Consulting. This will include discussion around the phosphorus loading evaluation previously discussed in the December 13, 2017 board meeting and the February 5, 2018 Lake Whatcom Policy Group presentation.

FISCAL IMPACT

Not applicable for this discussion.

RECOMMENDED BOARD ACTION

None required.

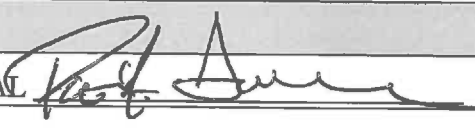
PROPOSED MOTION

None proposed.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 03, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Lyn Edwards	MANAGER APPROVAL 		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	5.3		
SUBJECT:	Election of Officers		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: 2	1. Resolution #842		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☒	FORMAL ACTION/ MOTION ☒	INFORMATIONAL/ OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

Per RCW 57.12.010, the Board shall annually elect one of its members as president and another as secretary. See Resolution 842, attached.

FISCAL IMPACT

None

RECOMMENDED BOARD ACTION

1. Elect a Commissioner to serve as Board President for 2018
2. Elect a Commissioner to serve as Board Secretary for 2018

PROPOSED MOTION

1. To elect _____ as Board President for 2018
2. To elect _____ as Board Secretary for 2018

LAKE WHATCOM WATER AND SEWER DISTRICT

RESOLUTION No 842

A Resolution of the Board of Commissioners
Designating the Elected Officers for Calendar Year 2018

WHEREAS, in accordance with RCW 57.12.010 the "Board shall annually elect one of its members as president and another as secretary";

NOW, THEREFORE, BE IT RESOLVED and adopted by the Board of Commissioners on this 10th day of January, 2018 that Commissioner _____ shall serve as Board President, and that Commissioner _____ shall serve as Board Secretary through January, 2019.

ADOPTED by the Board of Commissioners of Lake Whatcom Water and Sewer District, Whatcom County, Washington, at a Regular Meeting thereof, on the 10th day of January, 2018.

Todd Citron, Commissioner

Laura Weide, Commissioner

John Carter, Commissioner

Bruce R. Ford, Commissioner

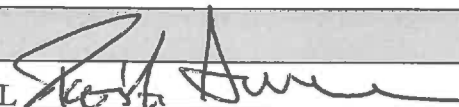
Curtis Casey, Commissioner

Approved as to form, District legal counsel



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 3, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL 		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	5.C		
SUBJECT:	2018 Representative to WCOG and Lake Whatcom Policy Group		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. 2018 WCOG Board Meeting Schedule		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

The District appoints a representative to serve on the Whatcom Council of Governments and a representative to the Lake Whatcom Policy Group.

FISCAL IMPACT

None

RECOMMENDED BOARD ACTION

Appoint a representative to the Whatcom Council of Governments and a representative to the Lake Whatcom Policy Group.

PROPOSED MOTION

No motion needed.



whatcom council of governments

MEMORANDUM

To: WCOG Member Jurisdictions
From: Bob Wilson, Executive Director
Date: December 14, 2017
Subject: **Approved 2018 WCOG Meeting Schedule**

At its meeting yesterday, the Board of the Whatcom Council of Governments approved the following schedule for meetings of the Council Board, Executive Committee and the Whatcom Transportation Policy Board for 2018 and January 2019:

January 17, 2018	Council Board 3:00 p.m., Policy Board 3:30 p.m.
March 14, 2018	Executive Committee 3:00 p.m., Policy Board 3:30 p.m.
May 9, 2018	Executive Committee 3:00 p.m., Policy Board 3:30 p.m.
July 11, 2018	Executive Committee 3:00 p.m., Policy Board 3:30 p.m.
September 12, 2018	Executive Committee 4:00 p.m. (if needed)
October 10, 2018	Policy Board 3:00 p.m., Council Board 4:00 p.m.
December 12, 2018	Executive Committee 3:00 p.m., Council Board 3:30 p.m.
January 16, 2019	Council Board 3:00 p.m., Policy Board 3:30 p.m.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 4, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	5.D.		
SUBJECT:	Wildwood Resort Expansion Project Update		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	1. Email Correspondence from Whatcom County		
	2. Critical Areas Assessment Memo and Report		
	3. Shoreline Permit Notice of Additional Requirements		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

Wildwood Resort is a recreational resort located on just over 13 acres of land on the South shore of Lake Whatcom. The resort is currently in the permitting stage of an expansion and improvement project including adding boat mooring, installing patio canopies, and more. This is a placeholder for discussion to keep the Board apprised of new information received from Whatcom County Planning and Development Services.

FISCAL IMPACT

Not applicable for this discussion.

RECOMMENDED BOARD ACTION

None required.

PROPOSED MOTION

None proposed.

Patrick Sorensen

From: Bill Hunter
Sent: Tuesday, January 2, 2018 8:52 AM
To: Patrick Sorensen; Bob Carmichael
Subject: FW: Wildwood Resort Expansion Project - SHR2017-00006, SHC2017-00002, & SHV2017-00001

FYI.

I know our Board is interested in following this project.

Bill Hunter, P.E. | Assistant General Manager / District Engineer



LAKE WHATCOM WATER & SEWER DISTRICT

1220 Lakeway Drive
Bellingham, WA 98229

8am – 5pm, Monday – Thursday
(360) 734-9224, Fax: (360) 738-8250
www.lwwsd.org

NOTICE: The information contained in this electronic message is confidential and only for the use of the intended recipient(s); and contains confidential and/or privileged information belonging to Lake Whatcom Water and Sewer District or its customers or consultants or vendors. Any unauthorized review, use, copying, disclosure or distribution of this message is strictly prohibited. If you are not an intended recipient of this message, please contact the sender and destroy all copies of the message and any attachments immediately.

Email from this address is subject to public disclosure pursuant to RCW 42.56.

From: Andrew Hicks [<mailto:AHicks@co.whatcom.wa.us>]
Sent: Friday, December 29, 2017 2:15 PM
Cc: Ryan Ericson; 'cyun461@ecy.wa.gov'; Sam McDaniel; Michael Kershner; Matthew Mahaffie; Andrew Wisser; Denise Doezeema; Will Anderson
Subject: RE: Wildwood Resort Expansion Project - SHR2017-00006, SHC2017-00002, & SHV2017-00001

You are receiving this e-mail because new information has been received by Whatcom County Planning and Development Services (PDS) for the Wildwood Resort expansion project referenced above. On August 28, 2017, PDS issued a Notice of Additional Requirements (NOAR) to the project applicant. In response, the applicant submitted additional information to this department on December 28, 2017. The response documents are available to view on the Whatcom County website at: <http://www.whatcomcounty.us/2761/Response-Documents-NOAR>. Please be patient when following the links, as some of the documents may take a few minutes to load.

This new information will be distributed to applicable staff for comprehensive review. Once staff has completed review of the documents and a determination that no additional information is necessary, a SEPA threshold determination will be issued and a public hearing scheduled for the permit applications.

You will be notified of any SEPA threshold determination, scheduling of a public hearing, or if any additional requests for information are made.



From: Andrew Hicks

Sent: Friday, September 01, 2017 12:52 PM

Cc: Ryan Ericson; 'cyun461@ecy.wa.gov'; Sam McDaniel

Subject: Wildwood Resort Expansion Project - SHR2017-00006, SHC2017-00002, & SHV2017-00001

You are receiving this e-mail because you provided comments on the Wildwood Resort expansion project applications that have been submitted to Whatcom County Planning & Development services (referenced above) and provided an e-mail address to receive additional information on the project. The purpose of this e-mail is to inform you that PDS staff has issued a Notice of Additional Requirements (NOAR) on the project and it can be viewed at the following link: <http://www.whatcomcounty.us/DocumentCenter/View/30193>

This department will await the submittal of additional information prior to commencing further review on the project and prior to issuing a SEPA threshold determination (WCC 2.33 & WAC 197-11-355(4)(d)). Once staff has received and completed review of the additional information and determined that no additional information is necessary, a SEPA threshold determination will be issued and a public hearing scheduled for the permit applications.

You will be notified once the additional information requested through this NOAR has been submitted.



Total Control Panel

[Login](#)

To: bill.hunter@lwmsd.org

[Remove this sender from my allow list](#)

From: ahicks@co.whatcom.wa.us

You received this message because the sender is on your allow list.

DEC 28 2017

RECEIVED

MEMORANDUM

To: Rick Faber, Wildwood Resort

From: Molly Porter, Northwest Ecological Services, LLC (NES)
Collin Van Slyke, NES

Date: November 28, 2017

RE: Wetland Update for the Wildwood Resort

Background

Northwest Ecological Services (NES), was retained to update a critical areas assessment for the Wildwood Resort property in unincorporated Whatcom County, Washington. This memorandum serves as an addendum to the NES *Critical Area Reconnaissance, Impact Assessment and Mitigation Report for the Lake Whatcom Resort* (Revised February 2008). This memo provides an update to the wetland extent and wetland ratings forms per current regulatory requirements.

The resort is located on approximately 13.4 acres located on Lake Whatcom at 990 Lake Whatcom Boulevard (parcel numbers 370420 440088 & 520066 & 468050 & 443046 & 434040) (Section 20, Township 37N, Range 4E, W.M.) (Figure 1). The site is developed as a recreational resort with small cabins, boating facilities (docks, boat ramp, moorage floats), and swim areas.

David Evans and Associates (DEA) conducted a critical area assessment on the subject property in July of 2006. In February of 2008, NES performed an update to this document and a mitigation plan for proposed improvements to the site that resulted in impacts to site critical areas.

Existing Conditions

Molly Porter (Professional Wetland Scientist [PWS] #2064) and Collin Van Slyke, NES ecologists, performed a site visit on November 1st of 2017 to review current site conditions. The following summarizes the findings of the NES 2017 assessment.

The parcel is bounded by Lake Whatcom Boulevard to the west and property lines on remaining sides. Vegetation is dominated by closely mowed lawn intermixed with mature cedar trees (*Thuja plicata*), and native planting areas. The majority of proposed improvements included in the 2008 mitigation plan have been made. A number of the cabins have been



NW ECOLOGICAL SERVICES

2801 Meridian St, Suite 202, Bellingham, WA 98225
nwecological.com | t 360.734.9484

constructed as planned, but not all. All improvements to the shoreline appear to have occurred per plan, as well as all required mitigation.

A summary of current critical areas is included below.

Wetlands

A total of four wetlands (Wetlands A, B, D, and E) were documented in the 2008 reports. Three of the four wetlands were observed during the 2017 site visit. Wetlands currently present are summarized in Table 1 and below, and are shown in Figure 2.

Table 1. 2017 Wetland Summary

Wetland	HGM Class	Cowardin Class	Approx. Size (sq. ft.)
A	Riverine	PFO	5,700
B	Lake Fringe	PSS/PEM	7,200
E	Lake Fringe	PEM	230

PEM: Palustrine Emergent; PSS: Palustrine Scrub-Shrub; PFO: Palustrine Forested

Wetland A

Wetland A is a riverine wetland associated with Stream B. No significant change was observed to Wetland A. A portion of the buffer of the wetland was enhanced per the 2008 mitigation plan. Most material appeared to be in good condition, but some invasive species were also observed.

Wetland B

Wetland B is a lake fringe wetland associated with Lake Whatcom. In the 2008 mitigation plan, fill was permitted in four areas to create a gravel/sand beach. The fill and associated wetland enhancement/ rehabilitation areas appear to have occurred per plan. Four remaining separate lake fringe wetlands are present (Wetland B1-4, Figure 2). All four areas are dominated by native plantings.

Overall, the remaining portions of Wetland B did not appear to have changed significantly. However small changes were observe in a few areas. Wetland B-2 appears to have expanded slightly into the grass north of existing fencing. This addition of wetland area was small, approximately 150 square feet. A data sheet for this location is attached, and the additional wetland area is included in Figure 2. Additionally, Wetland B1 may be slightly narrower, as it appears some erosion has occurred along the shoreline. Area B-3 may also have slightly expanded north beyond existing fencing. Hydrophytic plants were observed in this location, paired with low survival of installed upland material. However, soil in this area, as documented in the 2008 report, is fill and hydric soil was observed in both upland and wetland areas. Hydrology monitoring occurred to determine the wetland boundary in 2008, as this area was

difficult to delineate prior. It may be that the current edge still is accurate, but additional hydrology monitoring would need to occur to verify.

Wetland D

Wetland D was a small (280 sq. ft.) lake fringe wetland adjacent to Lake Whatcom and Wildwood Creek. Since the 2008 assessment a fair amount of sediment has been transported down the stream and deposited at the mouth of the creek. There also appear to have been some erosion at the outlet, where the wetland was located on a bench. There is a small fringe of the hydrophytic plants remaining, but this area appears more accurately located within the ordinary high water mark (OHWM) of the stream currently rather than a separate wetland area.

Wetland E

Wetland E is small a lake fringe wetland near the docks at the northern edge of the review area. The wetland is dominate by grasses and emergent species that appear to be occasionally mowed. No significant change was observed to Wetland E.

Wetland Ratings

NES rated the identified wetlands using the Washington Department of Ecology (WDOE) 2014 Wetland Rating System for Western Washington. Wetland rating sheets are attached and are summarized in Table 2.

Table 2. Wetland Rating and Functional Assessment

Wetland	Improving Water Quality	Hydrologic	Habitat	Total Score	WDOE Category
A	M/M/H (7)	M/M/L (5)	M/M/H (7)	19	III
B	M/H/H (8)	L/H/M (6)	L/M/M (5)	19	III
E	H/H/H (9)	L/H/M (6)	L/M/L (4)	19	III

Site potential score /landscape potential score/ value score (total points for function)
L=Low; M=Moderate, H=High

Streams

Two streams are located within the site (Figure 2). Wildwood Creek (formerly known as Stream A) is a seasonal stream that bisects the site. Stream B is an un-named seasonal stream located within Wetland A at the west property boundary.

Wildwood Creek is mapped by Whatcom County with known fish (salmonid) distribution, and by Washington Department of Fish and Wildlife (WDFW) with resident cutthroat trout (*Oncorhynchus clarki clarki*). Kokanee salmon (*O. nerka*) are also mapped in Lake Whatcom by WDFW, and no passage barrier is mapped between. Stream B is not mapped as fish bearing by either agency. Both cutthroat trout and Kokanee salmon are listed as Priority species by Washington State.

Fish and Wildlife HCA

Lake Whatcom is a 7.8 square mile lake and is the primary drinking water source for the City of Bellingham and portions of Whatcom County. Lake Whatcom outlets to Whatcom Creek at the northern extent of the lake, which flows to Bellingham Bay. The City of Bellingham manipulates lake water levels throughout the year. In the summer months, the lake levels are higher to allow for recreational use in the lake. After mid-September, the lake level is lowered. At the time of the 2017 site visit, the lake had been lowered and the water line was approximately 15 to 20 feet from the OHWM.

Lake Whatcom is mapped as a wildlife habitat conservation area (HCA) and is within Whatcom County Shoreline Mater Program (SMP) jurisdiction as a shoreline of statewide significance. The shoreline designation for this reach is Rural. Mapping by Whatcom County indicates a fish HCA on-site associated with Wildwood Creek, but no other wildlife HCAs are mapped within the site.

WDFW mapping indicates Townsend's big-eared bat (*Corynorhinus townsendii*). This mapping is at a Township level rather than site specific. Townsend's big-eared bat are listed as a Candidate species by Washington State, but are not federally listed. In Washington, this species can be found in lowland conifer-hardwood forest and riparian habitats (WDFW, 2012). No habitat features (mines, caves, lava tubes) that would be used as hibernacula are present within the subject site. However, larger trees that could be used as day-roosts and foraging is present on-site.

No additional State or Federal Threatened, Sensitive, or Endangered plant or animal species were observed or are mapped on the subject property. However, the area just northwest of Lake Whatcom Boulevard is mapped as a biodiversity area/ corridor by WDFW and Urban Natural Open Space (HCA) by Whatcom County.

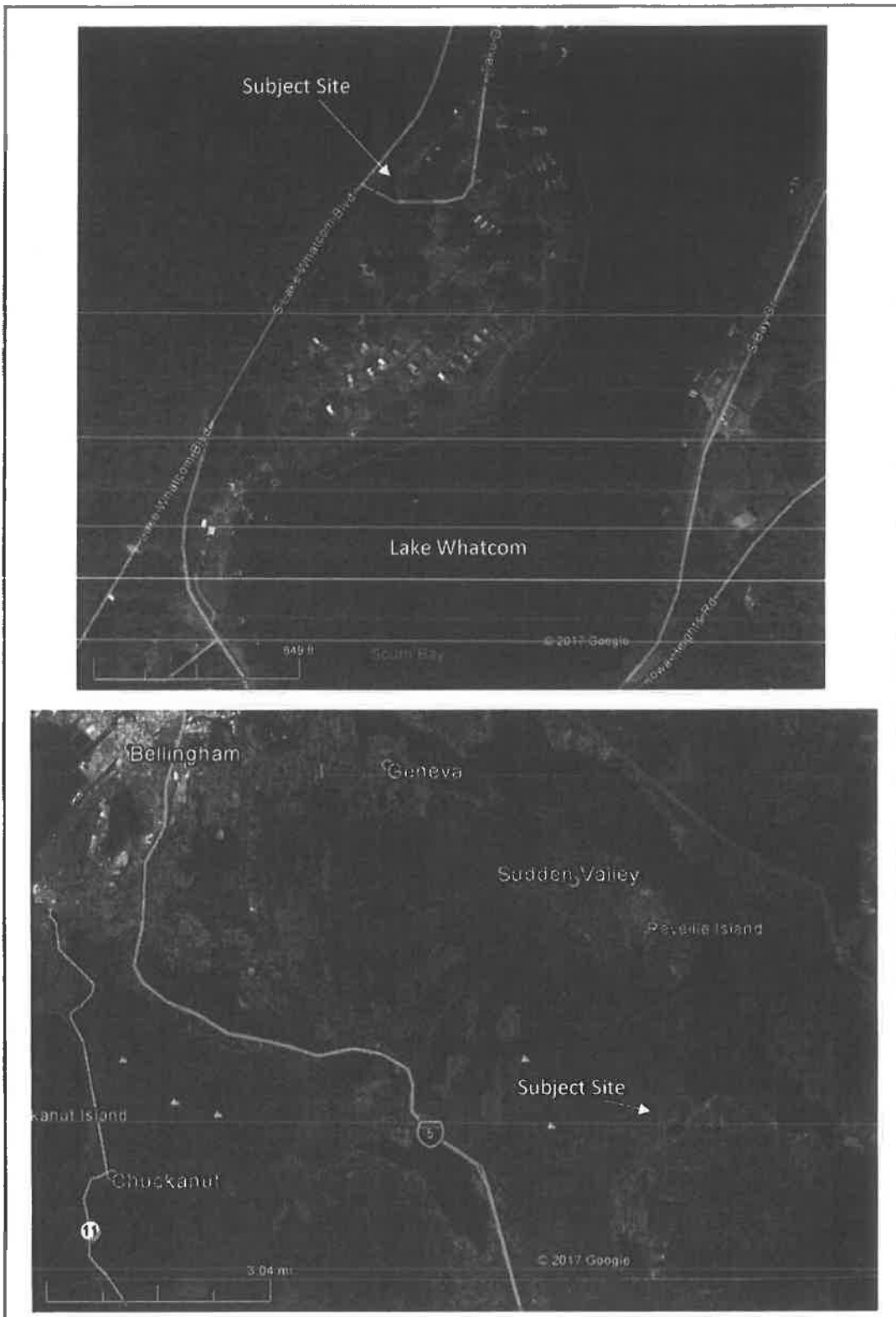
Regulatory Summary

Three wetlands, two seasonal streams, and one lake were identified within the vicinity of the subject parcel. Agencies that are likely to have regulatory authority over site wetlands, streams, fish and wildlife habitats, and/or shorelines are summarized in Table 1. Table 1 also includes buffer width on regulated features per the current WDOE 2014 rating and Whatcom County Code (WCC 16.16).

Table 1. Critical Areas Summary

Feature	WDOE Category/ Stream Type/ Shoreline Designation	Regulatory Authority				Regulated Buffer (ft)
		Whatcom County	Corps	WDOE	WDFW	
Wetland A	III	X	X	X	X	150
Wetland B	III	X	X	X	X	150
Wetland E	III	X	X	X	X	80
Wildwood Creek	F	X	X	X	X	100
Stream B	Ns	X	X	X	X	50
Lake Whatcom	Rural	X	X	X	X	100

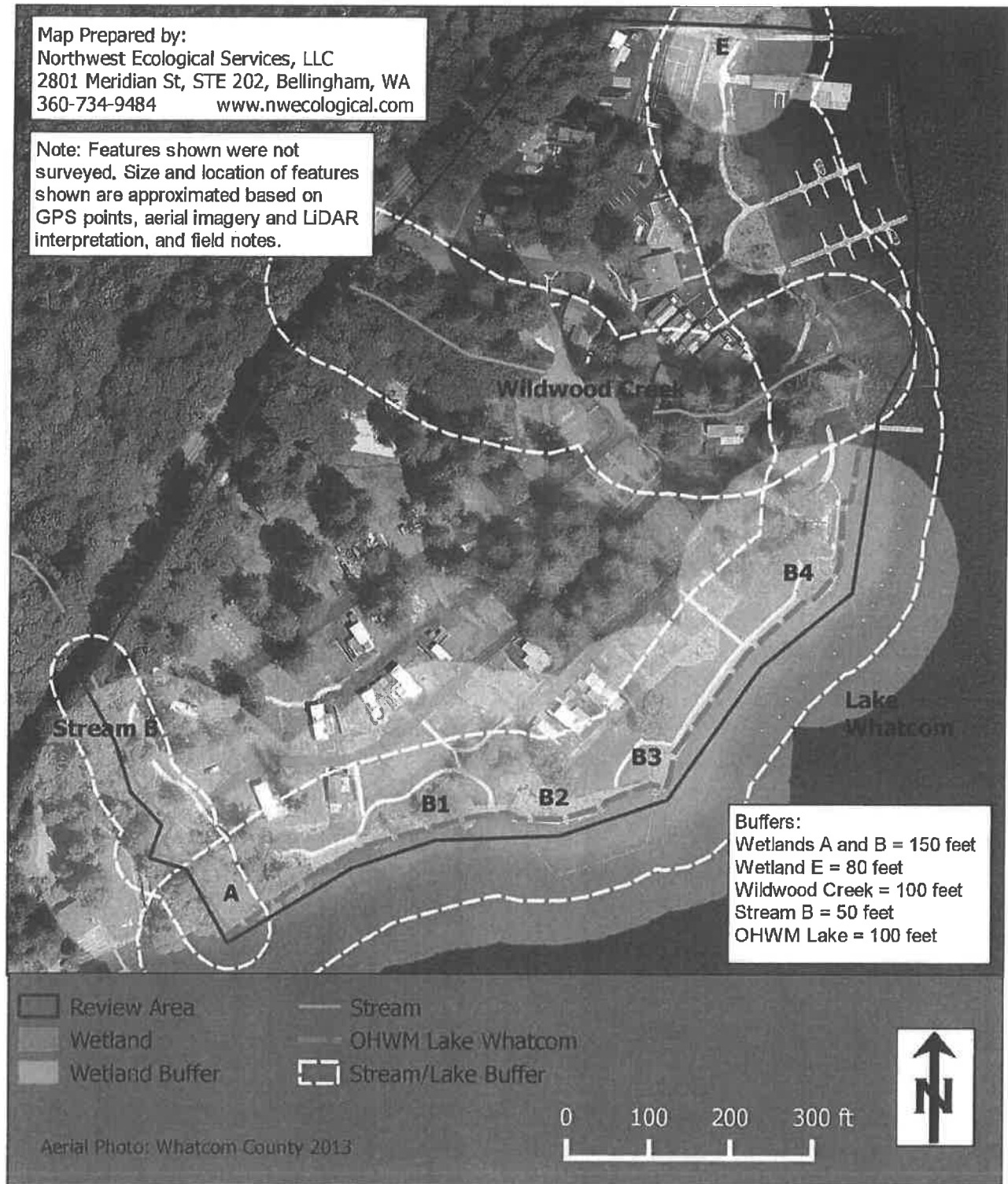
F= fish bearing, Ns = no fish, seasonal



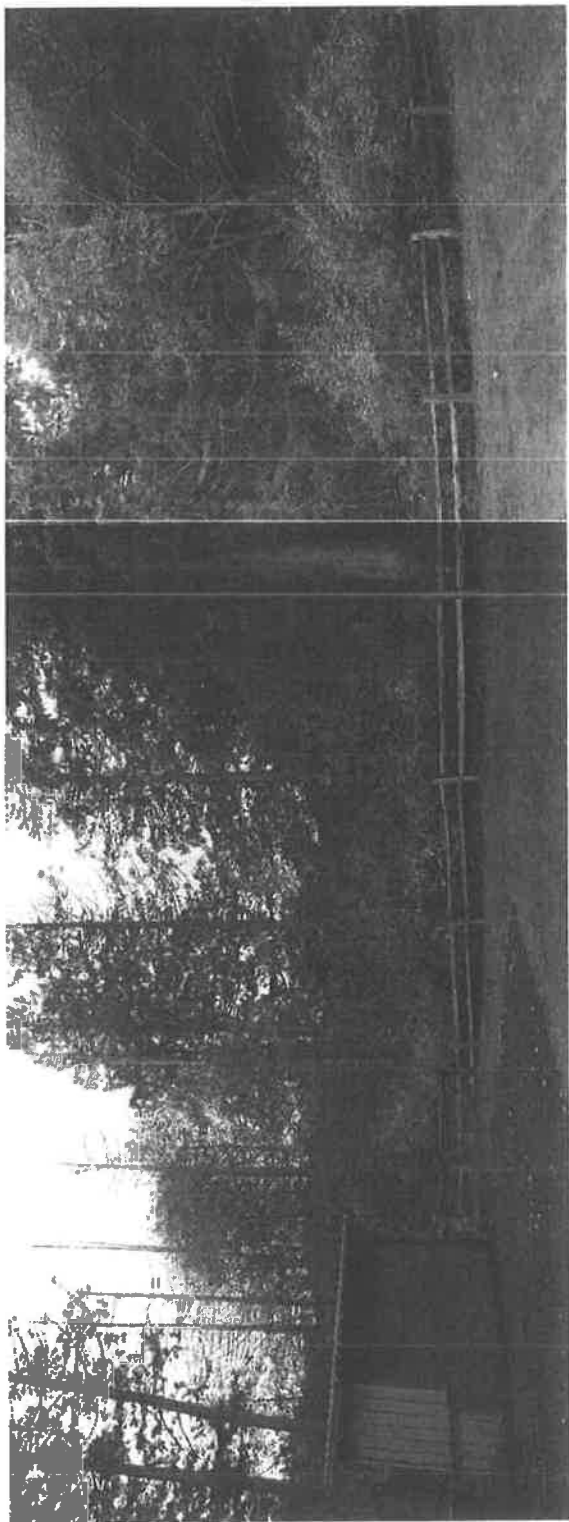
ECOLOGICAL NORTHWEST 	Vicinity Map (Google Earth) Wildwood Resort Critical Areas Update	Figure 1 Nov 2017
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Map Prepared by:
 Northwest Ecological Services, LLC
 2801 Meridian St, STE 202, Bellingham, WA
 360-734-9484 www.nwecological.com

Note: Features shown were not surveyed. Size and location of features shown are approximated based on GPS points, aerial imagery and LiDAR interpretation, and field notes.



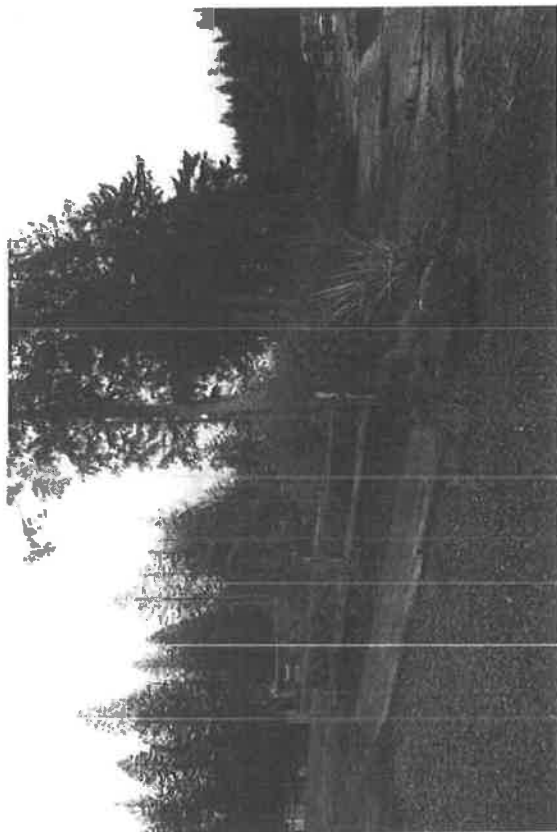
NORTHWEST ECOLOGICAL 	Wildwood Critical Areas Map Wildwood Resort Natural Resource Assessment	Figure 2 NOV 17
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Overview of Wetland A and its buffer from near Lot 31 looking southwest:



Wetland A and buffer at the lake shoreline



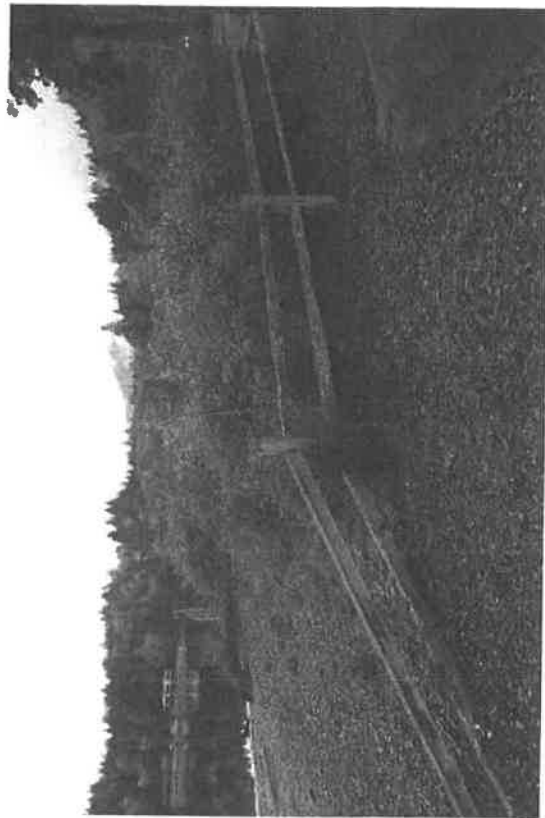
Wetland B1 (enhancement area)



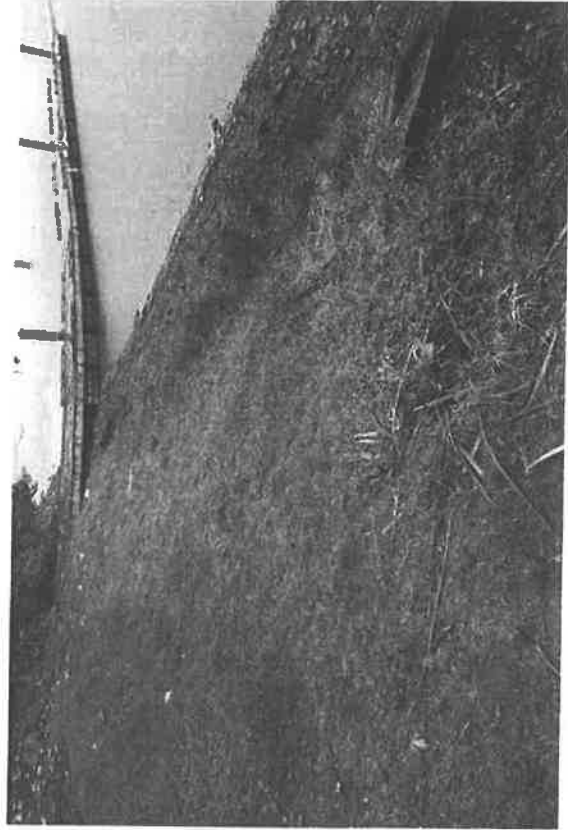
Wetland B2 and buffer (enhancement area)



Wetland B3 and buffer (rehabilitation area)



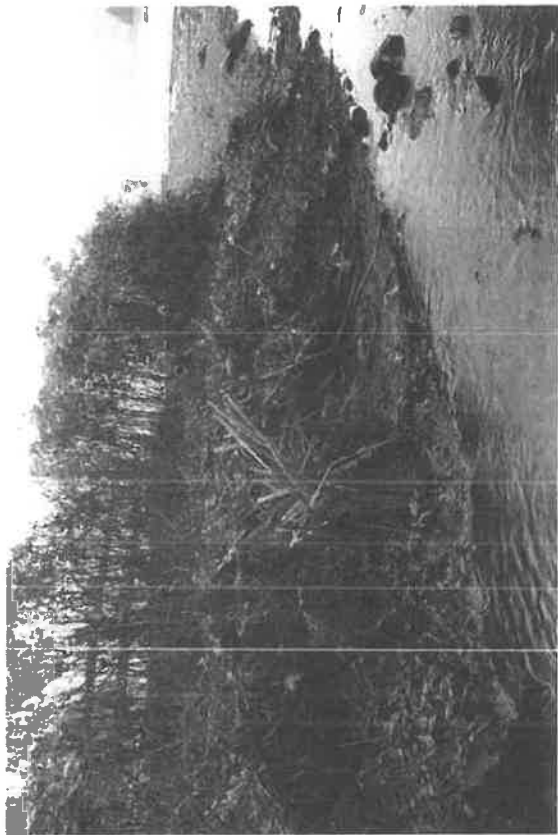
Wetland B4 and buffer (enhancement area)



Wetland E



Wildwood Creek, reach behind the shop just south of Lake Whatcom Blvd



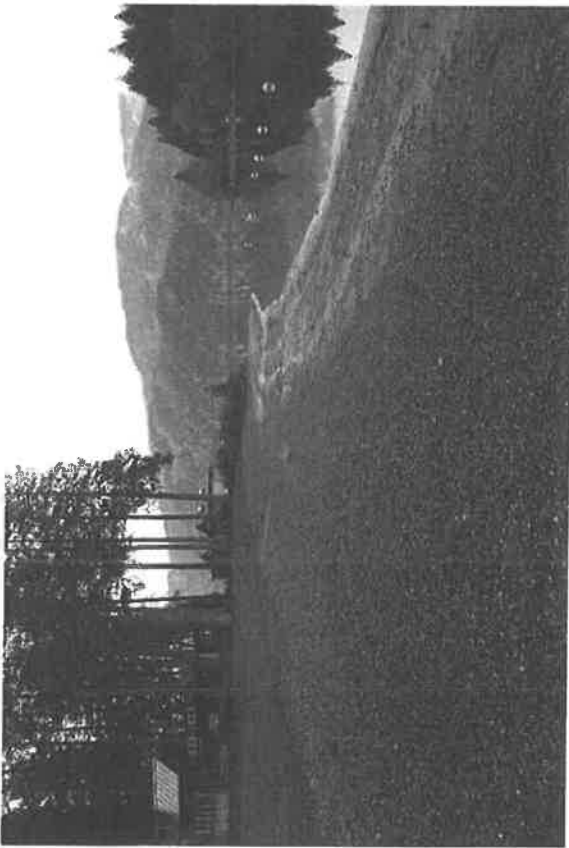
Wildwood Creek (where Wetland D was located in 2008)



Wildwood Creek, looking towards Lake Whatcom from the foot bridge



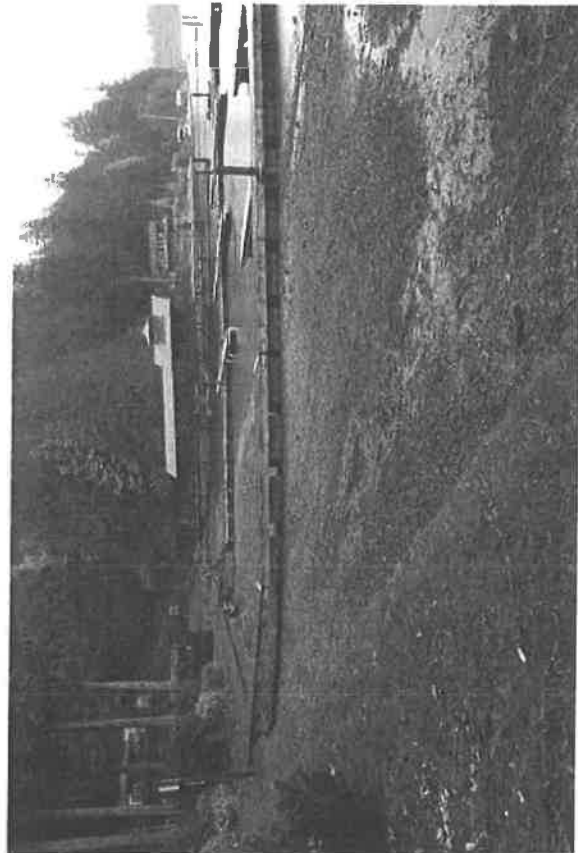
Looking from the lake back to Wildwood Creek



Beach between Wetland Areas B3 and B4



Swim beach, looking south from docks to outlet of Wildwood Creek



Existing docks at OHWM of lake



Cabins north of Wetland B1

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Wildwood	City/County: Whatcom	Sample Date: 11/1/17
Applicant/Owner: Faber	State: WA	Sample Point: SP 01
Investigator: Porter; Van Slyke	Section/Township/Range: 20/37N/04E	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none) : none	Subregion: LRR A
Soil Map Unit Name: Barneston gravelly loam	NW1 Classification: none	
Are climatic/hydrologic conditions on the site typical of 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 ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Wetland B. Positive indicators for all three parameters were observed at this location. Sample Plot was located adjacent to a wetland enhancement area.	

VEGETATION

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet	
		-	☐	Number of Dominant Species that are OBL, FACW, or FAC:	2 (A)
		-	☐		
		-	☐		
		-	☐		
Total Cover:	0			Total number of dominant species across all strata:	2 (AB)
Sapling/Shrub Stratum (Plot size: 15 feet)				Percent of dominant species that are OBL, FACW, FAC:	100 (A/AB)
<i>Spiraea douglasii</i>	20	FACW	☒		
<i>Thuja plicata</i> (sapling)	5	FAC	☐		
<i>Picea sitchensis</i> (sapling)	5	FAC	☐		
<i>Rubus spectabilis</i>	5	FAC	☐	Prevalence Index worksheet	
<i>Lonicra involucrata</i>	5	FAC	☐	OBL species:	x 1=
Total Cover:	40			FACW species:	x 2=
Herb Stratum (Plot size: 5 feet)				FAC species:	x 3=
<i>Ranunculus repens</i>	100	FAC	☒	FACU species:	x 4=
<i>Phalaris arundinacea</i>	10	FACW	☐	UPL species:	x 5=
<i>Juncus effusus</i>	5	FACW	☐	Total:	(A) (B)
		-	☐	Prevalence Index = B/A =	
		-	☐	Hydrophytic Vegetation Indicators:	
		-	☐	☒ Dominance Test is > 50%	
Total Cover:	115			☐ Prevalence Index is ≤3.0 ¹	
Woody Vine Stratum (Plot size: 30 feet)				☐ Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
		-	☐	☐ Wetland Non-Vascular Plants ¹	
		-	☐	☐ Problematic Hydrophytic Vegetation ¹	
		-	☐	¹ Indicators of hydric soil and wetland hydrology must be present.	
Total Cover:					
% Bare Ground in Herb Stratum:					
Remarks: The majority of dominant species observed at this location were hydrophytic. All the trees and shrubs were installed as part of a mitigation project.				Hydrophytic Vegetation Present? Yes ☒ No ☐	

SOIL

Sample Point: 01

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 3/2	100			-	-	silt loam	
5+	2.5Y 3/1	95	10YR 4/6	5	C	M	silt loam	with gravel and wood
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel M=matrix**Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red parent material (TF2)
☐ Very shallow dark surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soil at this location met NRCS hydric soil indicators.

HYDROLOGY**Wetland hydrology indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)

- ☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along living roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-stained (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ Frost-heave Hummocks (D7)
☒ FAC-neutral (D5)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches):Water Table Present? Yes ☐ No ☒ Depth (inches):Saturation Present? Yes ☐ No ☒ Depth (inches): (include capillary fringe)**Wetland Hydrology Present?**Yes ☒ No ☐

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

Remarks: Secondary wetland hydrology indicators were present at this location. Sample Plot is located adjacent to a wetland enhancement area. Wetland hydrology has not yet recharged.

Wetland name or number _____ Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wildwood- Wetland A Date of site visit: 11/1/17
Rated by: Porter, Vandyke Trained by Ecology? ☒ Yes ☐ No Date of training: 2014

HGM Class used for rating: Riverine Wetland has multiple HGM classes? ☐ Yes ☒ No

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

Source of base aerial photo/map: Whitman County

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

☒ Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat
	Circle the appropriate ratings		
Site Potential	H O M O L O	H O M O L O	H O M O L O
Landscape Potential	H O M O L O	H O M O L O	H O M O L O
Value	H O M O L O	H O M O L O	H O M O L O
Score Based on Ratings	7	5	7
			19

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
6 = H,M,M
5 = H,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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Wetland name or number _____ Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	A
Hydroperiods	H 1.2	C
Ponded depression is	R 1.1	C
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	A
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	A
Width of unit vs. width of stream (can be added to another figure)	R 4.1	C
Map of the contributing basin	R 2.2, R 2.3, R 5.2	C
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	D
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	E
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	E

Lake Fringe Wetlands

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

Slope Wetlands

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

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Wetland name or number: Wetland A

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
NO - go to 2
YES - the wetland class is Tidal Fringe - go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
NO - Saltwater Tidal Fringe (Estuarine)
YES - Freshwater Tidal Fringe
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is an Estuarine wetland and is not scored. This method cannot be used to score functions for estuarine wetlands.
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO - go to 3
YES - The wetland class is Flats
If your wetland can be classified as a Flats wetland, use the form for Depressional wetlands.
3. Does the entire wetland unit meet all of the following criteria?
The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
At least 30% of the open water area is deeper than 6.6 ft (2 m).
NO - go to 4
YES - The wetland class is Lake Fringe (Lacustrine Fringe)
4. Does the entire wetland unit meet all of the following criteria?
The wetland is on a slope (slope can be very gradual).
The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
The water leaves the wetland without being impounded.
NO - go to 5
YES - The wetland class is Slope
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit meet all of the following criteria?
The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
The overbank flooding occurs at least once every 2 years.

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Wetland name or number: Wetland A

NO - go to 6

YES - The wetland class is Riverine

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

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

NO - go to 7

YES - The wetland class is Depressional

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

NO - go to 8

YES - The wetland class is Depressional

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

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

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

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

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Wetland name or number Wetland A

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS	
Water quality functions and potential to improve water quality	
R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:	
Depressions cover $> \frac{1}{2}$ area of wetland	points = 8
Depressions cover $> \frac{1}{4}$ area of wetland	points = 4
Depressions present but cover $< \frac{1}{4}$ area of wetland	points = 2
No depressions present	points = 0
R 1.2. Structure of plants in the wetland (areas with $> 80\%$ cover at person height, not Cowardin classes)	
Trees or shrubs $> \frac{1}{2}$ area of the wetland	points = 8
Trees or shrubs $> \frac{1}{4}$ area of the wetland	points = 6
Herbaceous plants (> 6 in high) $> \frac{1}{2}$ area of the wetland	points = 6
Herbaceous plants (> 6 in high) $> \frac{1}{4}$ area of the wetland	points = 4
Trees, shrubs, and ungrazed herbaceous $< \frac{1}{4}$ area of the wetland	points = 2
	points = 0
Total for R 1	Add the points in the boxes above
Rating of Site Potential If score is: $12-16 = H$ $6-11 = M$ $0-5 = L$	Record the rating on the first page
R 1.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0
R 2.3. Does at least 10% of the contributing basin contain filled fields, pastures, or forests that have been cleared within the last 5 years?	Yes = 1 No = 0
R 2.4. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4?	Yes = 1 No = 0
Other sources	
Total for R 2	Add the points in the boxes above
Rating of Landscape Potential If score is: $3-5 = H$ $3 = M$ $0 = L$	Record the rating on the first page
R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 No = 0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which the unit is found)	Yes = 1 No = 0
Total for R 3	Add the points in the boxes above
Rating of Value If score is: $3-4 = H$ $1 = M$ $0 = L$	Record the rating on the first page

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Wetland name or number Wetland A

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

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Wetland name or number Wetland A

HABITAT FUNCTIONS	
These questions apply to wetlands of all kinds and sizes.	
H 1.0. Does the site have the potential to provide habitat?	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 1/3 or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon
H 1.1. 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 1/4 ac to count (see text for descriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland
H 1.2. 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 5 - 19 species points = 2 points = 1 points = 0
H 1.3. Interspersion of habitats	Decide from the diagrams below whether interspersions among Cowardin plant 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 High = 3 points All three diagrams in this row are HIGH = 3 points

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Wetland name or number Wetland A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	2
Total for H 1	7
Rating of Site Potential If score is: 15-18 = H ☒ 7-14 = M ☐ 0-6 = L Record the rating on the first page	
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat: 0 = 0% [(% moderate and low intensity land uses)/2] 8 = 8% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat: 87 = 87% [(% moderate and low intensity land uses)/2] 16 = 16% Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0
H 2.3. Land use intensity in 1 km Polygon: if > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (-2) points = 0
Total for H 2	3
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: ☒ It has 3 or more priority habitats within 100 m (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) It is mapped as a location for an individual WDFW priority species It is a Wetland of High Conservation Value as determined by the Department of Natural Resources It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m Site does not meet any of the criteria above	points = 2 points = 1 points = 0
Rating of Value If score is: ☒ 3 = H ☐ 2 = M ☐ 1 = L ☐ 0 = L Record the rating on the first page	

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Wetland name or number Wetland A

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats and the counties in which they can be found, i.e. Washington Department of Fish and Wildlife, 2008. Priority Habitat and Species List: Olympia, Washington, 177 pp. <https://wdfw.wa.gov/publications/000165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/bhs/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 Forest:** 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/acre (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 Oaks:** 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. 159 – 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:** Homogeneous 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.

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Wetland name or number Wet and A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal. — Vegetated, and — With a salinity greater than 0.5 ppt. Yes – Go to SC 1.1. No – Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No = Go to SC 1.2	Cat. I ☐
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I ☐ Cat. II ☐
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a 'Wetland of High Conservation Value'? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www2.dnr.wa.gov/hsp/hsp/whcv/whcvdata/whcvdata.asp Yes – Contact WHNP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/P/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	Cat. I ☐ Cat. I ☐ Cat. I ☐ Cat. I ☐
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No – Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, snaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	Cat. I ☐

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Wetland name or number: Wetland A

Wetland name or number: Wetland A

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (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 (<i>needs to be measured near the bottom</i>) Yes — Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/4 ac (4350 ft²) Yes = Category I No = Category II	SC 6.0. Intertidal Wetlands Is the wetland west of the 1289 line (also called the Western Boundary of Upland Ownership or WBUD)? <i>If you answer YES you will still need to rate the wetland based on its habitat functions.</i> — 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 intertidal 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 H₁H₂H₃ or H₁H₄M 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
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Wetland name or number Wetland B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wildwood - Wetland B Date of site visit: 11/1/17
Rated by: Potter, VanSlyke Trained by Ecology? ☒ Yes ☐ No Date of training: 2014
HGM Class used for rating: Lake Fringe Wetland has multiple HGM classes? ☐ Yes ☒ No

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

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

☒ Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Site Potential	HO MO LO	HO MO LO	HO MO LO
Landscape Potential	HO MO LO	HO MO LO	HO MO LO
Value	HO MO LO	HO MO LO	HO MO LO
Score Based on Ratings	8	6	5
			19

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	A
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	A
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	A
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	D
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	E
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	E

Slope Wetlands

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

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Wetland name or number: Wetland B

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
NO - go to 2
YES - the wetland class is Tidal Fringe - go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
NO - Saltwater Tidal Fringe (Estuarine)
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is an Estuarine wetland and is not scored. This method cannot be used to score functions for estuarine wetlands.
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO - go to 3
If your wetland can be classified as a Flats wetland, use the form for Depressional wetlands.
3. Does the entire wetland unit meet all of the following criteria?
☒ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac. (8 ha) in size;
☒ At least 30% of the open water area is deeper than 6.6 ft (2 m).
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.

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Wetland name or number: Wetland B

NO - go to 6

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.

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Wetland name or number: Wetland B

LAKE FRINGE WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
L1.0. Does the site have the potential to improve water quality?	3
L1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes): Plants are more than 33 ft (10 m) wide Plants are more than 18 ft (5 m) wide and <33 ft Plants are more than 6 ft (2 m) wide and <18 ft Plants are less than 6 ft wide	points = 6 points = 3 points = 1 points = 0
L1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed. Cover of herbaceous plants is >90% of the vegetated area Cover of herbaceous plants is >2/3 of the vegetated area Cover of herbaceous plants is >1/3 of the vegetated area Other plants that are not aquatic bed > 1/3 unit Other plants that are not aquatic bed in > 1/3 vegetated area Aquatic bed plants and open water cover > 2/3 of the unit	points = 6 points = 4 points = 3 points = 3 points = 1 points = 0
Total for L1	6
Rating of Site Potential: If score is: <u>8-12</u> = H <u>X</u> <u>4-7</u> = M <u>0-3</u> = L	Record the rating on the first page

LAKE FRINGE WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
L2.0. Does the landscape have the potential to support the water quality function of the site?	1
L2.1. Is the lake used by power boats?	Yes = 1 No = 0
L2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	Yes = 1 No = 0
L2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?	Yes = 1 No = 0
Total for L2	2
Rating of Landscape Potential: If score is: <u>X</u> <u>2-4</u> = H <u>1</u> = M <u>0</u> = L	Record the rating on the first page

LAKE FRINGE WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
L3.0. Is the water quality improvement provided by the site valuable to society?	1
L3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0
L3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0
L3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the lake or basin in which the unit is found.	Yes = 2 No = 0
Total for L3	4
Rating of Value: If score is: <u>X</u> <u>2-4</u> = H <u>1</u> = M <u>0</u> = L	Record the rating on the first page

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Wetland name or number: Wetland B

LAKE FRINGE WETLANDS	
Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion	
L4.0. Does the site have the potential to reduce shoreline erosion?	4
L4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not include Aquatic bed): Choose the highest scoring description that matches conditions in the wetland. > 1/2 of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide > 1/3 of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide > 1/4 of distance is Scrub-shrub or Forested at least 3 ft (1 m) wide Plants are at least 6 ft (2 m) wide (any type except Aquatic bed) Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 6 points = 4 points = 4 points = 2 points = 0
Rating of Site Potential: If score is: <u>6</u> = M <u>X</u> <u>0-5</u> = L	Record the rating on the first page
L5.0. Does the landscape have the potential to support the hydrologic functions of the site?	2
L5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0
L5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0
Total for L5	2
Rating of Landscape Potential: If score is: <u>X</u> <u>2</u> = H <u>1</u> = M <u>0</u> = L	Record the rating on the first page

LAKE FRINGE WETLANDS	
Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion	
L6.0. Are the hydrologic functions provided by the site valuable to society?	1
L6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit There are nature trails or other paths and recreational activities within 25 ft of OHWM Other resources that could be impacted by erosion There are no resources that can be impacted by erosion along the shores of the unit	points = 2 points = 1 points = 1 points = 0
Rating of Value: If score is: <u>2</u> = H <u>X</u> <u>1</u> = M <u>0</u> = L	Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

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Wetland name or number: Wetland B

HABITAT FUNCTIONS These questions apply to wetland or upland areas that are important for habitat functions.

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 1/4 or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.

4 structures or more: points = 4
3 structures: points = 3
2 structures: points = 2
1 structure: points = 0

Emergent
Scrub-shrub (areas where shrubs have > 30% cover)
Forested (areas where trees have > 30% cover)
If the unit has a Forested class, check if:
The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon.

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 1/4 ac to count (see text for descriptions of hydroperiods).

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

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

2 points
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
5 - 19 species
< 5 species

points = 2
points = 1
points = 0

H 1.4. Interspersion of habitats
Decide from the diagrams below whether interspersions among Cowardin plant 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
High = 3 points

All three diagrams in this row are HIGH = 3 points

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Wetland name or number: Wetland B

H 1.5. Special habitat features:
Check the habitat features that are present in the wetland. The number of checks is the number of points.

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

points = 1

Total for H 1

Rating of Site Potential If score is: 15-18 = H 7-14 = M 4-6 = L Add the points in the boxes above

H 2.0. Does the landscape have the potential to support the habitat functions of the site?
Record the rating on the first page

H 2.1. Accessible habitat (includes only habitat that directly abuts wetland unit).
Calculate: % undisturbed habitat 0-4 (1% moderate and low intensity land uses)/21 5 8 %
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

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.
Calculate: % undisturbed habitat 0-4 (1% moderate and low intensity land uses)/21 16 70 %
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

H 2.3. Land use intensity in 1 km Polygon: if
> 50% of 1 km Polygon is high intensity land use points = (-2)
≤ 50% of 1 km Polygon is high intensity points = 0

Total for H 2

Rating of Landscape Potential If score is: 4-6 = H 7-14 = M 4-6 = L Add the points in the boxes above

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:
It has 3 or more priority habitats within 100 m (see next page)
It provides habitat for threatened or endangered species (any plant or animal or the state or federal list)
It is mapped as a location for an individual WDFW priority species
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
Site has 1 or 2 priority habitats (listed on next page) within 100 m

points = 2
points = 1
points = 0

Site does not meet any of the criteria above
Rating of Value If score is: 2 = H 1 = M 0 = L

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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 2006, 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/pubs/list.cfm>)

Count 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 western Cascade forest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ha (> 3.2 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

Special Characteristic	Response	Category
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No – Not an estuarine wetland		
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No – Go to SC 1.2		Cat. I ☐
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ½ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II		Cat. I ☐ Cat. II ☐
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www2.dnr.wa.gov/hdp/reports/databases/nhwetlands.pdf Yes – Contact WNHFP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV		Cat. I ☐
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No – Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a "hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog		Cat. I ☐

Wetland name or number Wetland BWetland name or number Wetland B

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (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, grading), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ½ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than ½ 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 WBUE)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> 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			

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Wetland name or number: Wetland E

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wildwood - Wetland E Date of site visit: 11/1/17
Rated by: Porter, Vanskye Trained by Ecology? ☒ Yes ☐ No Date of training: 2014

HGM Class used for rating: Lake Fringe Wetland has multiple HGM classes? ☐ Yes ☒ No

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

Source of base aerial photo/map: Wisnom County

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

☐ Category III – Total score = 16 - 19

☐ Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Circle the appropriate ratings			
Site Potential	H O M O L O	H O M O L O	H O M O L O
Landscape Potential	H O M O L O	H O M O L O	H O M O L O
Value	H O M O L O	H O M O L O	H O M O L O
Score Based on Ratings	9	8	4
			19

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

6 = H,M,M

5 = M,M,M

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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Wetland name or number: Wetland E

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Slope Wetlands

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

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Wetland name or number Wetland E

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
NO - go to 2
YES - the wetland class is Tidal Fringe - go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
NO - Saltwater Tidal Fringe (Estuarine) YES - Freshwater Tidal Fringe
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is an Estuarine wetland and is not scored. This method cannot be used to score functions for estuarine wetlands.
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO - go to 3
YES - The wetland class is Flats
If your wetland can be classified as a Flats wetland, use the form for Depressional wetlands.
3. Does the entire wetland unit meet all of the following criteria?
X 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;
X 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.

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Wetland name or number Wetland E

NO - go to 6

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.

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Wetland name or number Wetland E

LAKE FRINGE WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
L 1.0. Does the site have the potential to improve water quality?	
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes): Plants are more than 33 ft (10 m) wide Plants are more than 16 ft (5 m) wide and <33 ft Plants are more than 6 ft (2 m) wide and <16 ft Plants are less than 6 ft wide	points = 6 points = 3 points = 1 points = 0 3
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate descriptor that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed. Cover of herbaceous plants is >90% of the vegetated area Cover of herbaceous plants is > 2/3 of the vegetated area Cover of herbaceous plants is > 1/3 of the vegetated area Other plants that are not aquatic bed > 1/3 unit Other plants that are not aquatic bed in > 1/3 vegetated area Aquatic bed plants and open water cover > 1/3 of the unit	points = 6 points = 4 points = 3 points = 3 points = 1 points = 0 6
Total for L 1	9
Rating of Site Potential: If score is: ☒ 6 = H ☐ 4 = M ☐ 3 = L	
Record the rating on the first page	

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

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

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Wetland name or number Wetland E

LAKE FRINGE WETLANDS	
Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion	
L 4.0. Does the site have the potential to reduce shoreline erosion?	
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (do not include Aquatic bed): Choose the highest scoring description that matches conditions in the wetland. > 1/2 of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide > 1/3 of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide > 1/3 of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide Plants are at least 6 ft (2 m) wide (any type except Aquatic bed) Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 6 points = 4 points = 4 points = 2 points = 0 2
Rating of Site Potential: If score is: ☐ 6 = M ☒ 5 = M ☐ 4 = L	
Record the rating on the first page	
L 5.0. Does the landscape have the potential to support the hydrologic functions of the size?	
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0 1
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0 1
Total for L 5	2
Rating of Landscape Potential: If score is: ☒ 2 = H ☐ 1 = M ☐ 0 = L	
Record the rating on the first page	

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

NOTES and FIELD OBSERVATIONS:

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Wetland name or number Wetland E

HABITAT FUNCTIONS	
H 1.0. Does the site have the potential to provide habitat?	☒ Yes (The site has the potential to provide habitat.) ☐ No (The site does not 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 1/4 or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.	☒ Yes (The site has the potential to provide habitat.) ☐ No (The site does not have the potential to provide habitat.)
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 1/4 ac to count (see text for descriptions of hydroperiods). ☒ Yes (The site has the potential to provide habitat.) ☐ No (The site does not have the potential to provide habitat.)
H 1.3. Richness of plant species	Count the number of plant species in the wetland that cover at least 10 ft². ☒ Yes (The site has the potential to provide habitat.) ☐ No (The site does not have the potential to provide habitat.)
H 1.4. Interspersion of habitats	Decide from the diagrams below whether interspersions among Cowardin plant 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. ☒ Yes (The site has the potential to provide habitat.) ☐ No (The site does not have the potential to provide habitat.)

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Wetland name or number Wetland E

H 2.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (d.b.h. > 4 in) within the wetland. ☒ Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m). ☒ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut stumps or trees that have not yet weathered where wood is exposed). ☒ At least 1/4 ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians). ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 2.1 for list of strata).	1
Total for H 1	4
Rating of Site Potential If score is: 15-18 = H 7-14 = M 9-6 = L Record the rating on the first page	
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat $\frac{9}{10} \times 100 = 90\%$ (moderate and low intensity land uses) $\frac{2}{2} = 1$ points = 2 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: % undisturbed habitat $\frac{87}{100} \times 100 = 87\%$ (moderate and low intensity land uses) $\frac{16}{2} = 8$ points = 3 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	3
H 2.3. Land use intensity in 1 km Polygon: if	
> 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2	3
Rating of Landscape Potential If score is: 4-6 = H 1-3 = M 0-1 = 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: ☒ It has 3 or more priority habitats within 100 m (see next page) points = 2 ☒ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) points = 2 ☒ It is mapped as a location for an individual WDFW priority species ☒ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☒ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1	0
Site does not meet any of the criteria above Rating of Value If score is: 2 = H 1 = M 0 = L Record the rating on the first page	0

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Wetland name or number: Wetland E

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/000165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/pbs/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 Baidis: 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/ha (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 10%; 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 Oaks: 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.
- Wetland 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: Homogeneous 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 slopes 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 larger 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.

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Wetland name or number: Wetland E

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal. — Vegetated and — With a salinity greater than 0.5 ppt. Yes – Go to SC 1.1. No – Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I. No – Go to SC 1.2	Cat. I ☐
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ½ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I. No = Category II	Cat. I ☐ Cat. II ☐
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources located their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2. No – Go to SC 2.3 SC 2.2. Is the wetland listed in the WDNR database as a Wetland of High Conservation Value? Yes = Category I. No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www.dnr.wa.gov/hdp/references/databases/nhwpwetlands.pdf Yes – Contact WNHCP/WDNR and go to SC 2.4. No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wet and of High Conservation Value and listed it on their website? Yes = Category I. No = Not a WHCV	Cat. I ☐ Cat. I ☐ Cat. I ☐
SC 3.0. Bogs Does the wet and (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3. No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3. No – Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog. No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 10% of the cover under the canopy? Yes = Is a Category I bog. No = Is not a bog	Cat. I ☐

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Wetland name or number Wetland EWetland name or number Wetland E

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? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/he) 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 unmowed grassland. — The wetland is larger than 1/32 ac (4350 ft²) Yes = Category I No = Category II	SC 6.0. Intertidal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUD)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> — 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 intertidal 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 H₁H₂H or H₁H₂M 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
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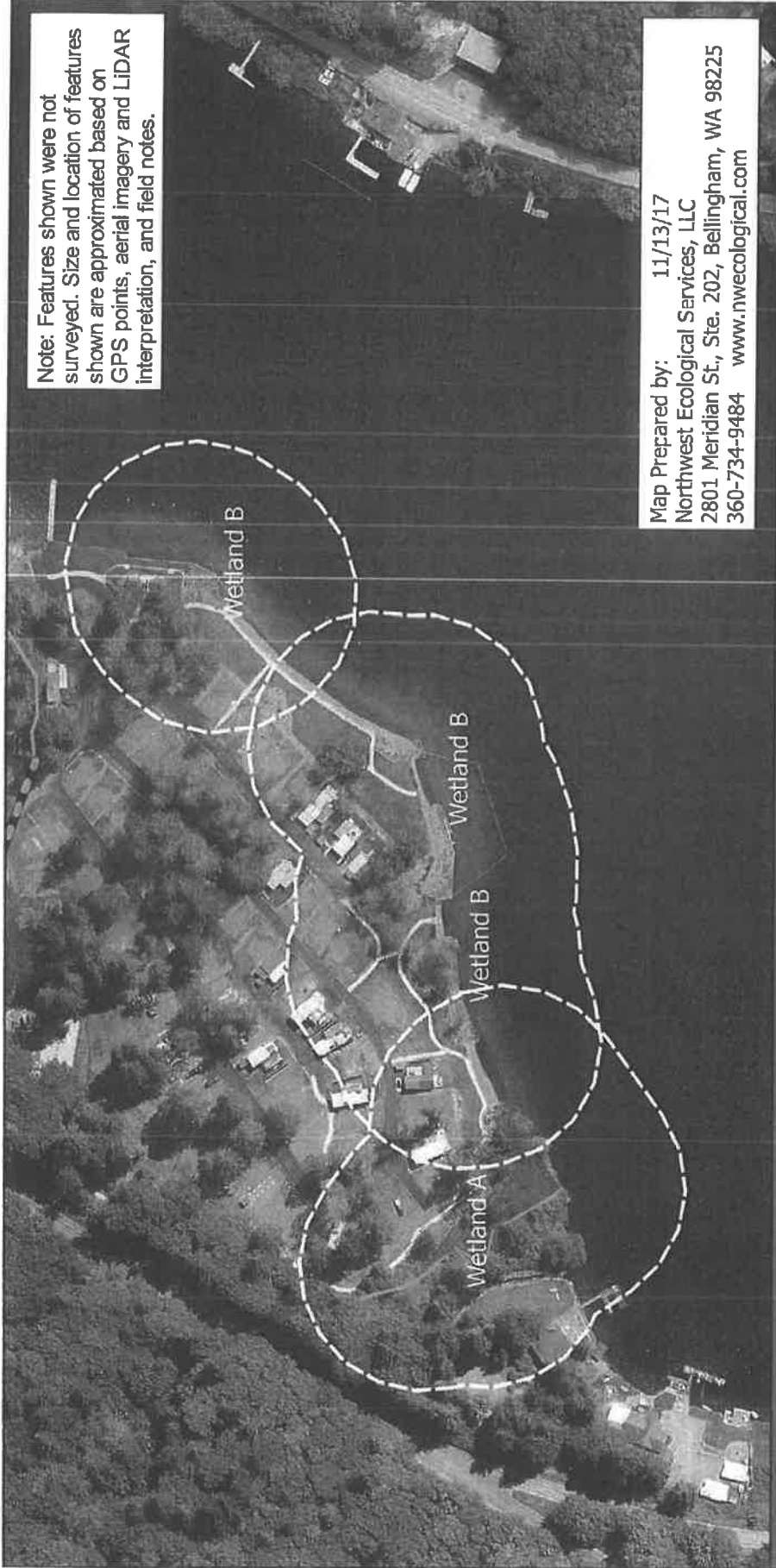
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Note: Features shown were not surveyed. Size and location of features shown are approximated based on GPS points, aerial imagery and LiDAR interpretation, and field notes.

Map Prepared by: 11/13/17
 Northwest Ecological Services, LLC
 2801 Meridian St., Ste. 202, Bellingham, WA 98225
 360-734-9484 www.nwecological.com



0 50 100 150 200 ft



- 150ft Rating Buffer
 - Emergent
 - Scrub-Shrub
 - Forested
 - Streams
- Aerial Photo: Whatcom County 2013

	Vegetation Map Wildwood Natural Resource Assessment	Attachment A NOV 2017
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Note: Features shown were not surveyed. Size and location of features shown are approximated based on GPS points, aerial imagery and LiDAR interpretation, and field notes.



ECOLOGICAL  NORTHWEST	Vegetation Map Wildwood Natural Resource Assessment	Attachment B NOV 2017
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Note: Features shown were not surveyed. Size and location of features shown are approximated based on GPS points, aerial imagery and LiDAR interpretation, and field notes.



ECOLOGICAL 	Hydrology Wildwood Natural Resource Assessment	Attachment C NOV 2017
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Note: Features shown were not surveyed. Size and location of features shown are approximated based on GPS points, aerial imagery and LiDAR interpretation, and field notes.

Map Prepared by: 11/13/17
 Northwest Ecological Services, LLC
 2801 Meridian St, STE 202, Bellingham, WA
 360-734-9484 www.nwecological.com

1km Polygon Moderate/Low Intensity
 Wetlands Undisturbed

Aerial Photo: Whatcom County 2013

0 500 1000 1500 2000 ft



ECOLOGICAL



Land Use Map

Attachment D

Wildwood
 Natural Resource Assessment

NOV 2017

Legend:

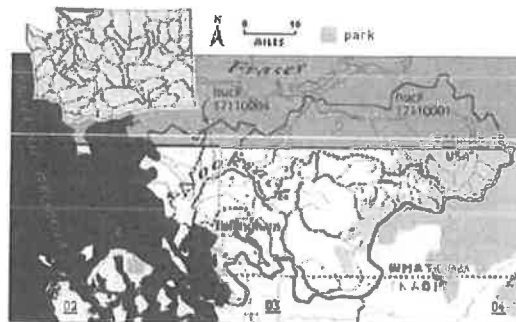
Assessed water

Category 5 - 303(d)



WRIA 1: Nooksack

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



Counties

- Skagit
- Whatcom

Waterbody Name	Pollutants	Status**	TMDL Lead
<u>Bellingham Bay</u>	Sediment bioassay Mercury Phenol PCBs Zinc Arsenic Lead Copper Wood waste	EPA approved Has an implementation plan	<u>Steve Hood</u> 360-715-5211
<u>Johnson Creek</u>	Dissolved Oxygen Fecal Coliform	EPA approved Has an implementation plan	<u>Steve Hood</u> 360-715-5211
<u>Lake Whatcom</u>	Dissolved Oxygen Fecal Coliform Phosphorus	Under Development	<u>Steve Hood</u> 360-715-5211
<u>Nooksack River</u>	Fecal Coliform	EPA approved Has an implementation plan	<u>Steve Hood</u> 360-715-5211
<u>Sumas River</u>	Ammonia-N BOD Chlorine	EPA approved	<u>Steve Hood</u> 360-715-5211
<u>Whatcom Creek</u>	Fecal Coliform	Under Development	<u>Steve Hood</u> 360-715-5211
<u>Whatcom, Sauvium and Padden Creeks</u>	Temperature	EPA approved	<u>Steve Hood</u> 360-715-5211

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

ECOLOGICAL



WDOE Rating Maps-
303d and TMDL

Wildwood
Critical Areas Update

Attachment E

NOV 2017

WHATCOM COUNTY
Planning & Development Services
5280 Northwest Drive
Bellingham, WA 98226-9097
360-778-5900, TTY 800-833-6384
360-778-5901 Fax



J.E. "Sam" Ryan
Director

**Shoreline Substantial Development Permit
Notice of Additional Requirements (NOAR)**

TO: Rick Faber

FROM: Andrew Hicks - Shoreline Administrator

DATE: August 28, 2017

SUBJECT: Applications: SHR2017-00006, SHV2017-00001, SHC2017-00002, SEP2017-00038
Address: 990 Lake Whatcom Blvd / APN: 370420475090, 370420488084

Staff has reviewed the information you submitted with the shoreline permit referenced above and has determined that additional information is required prior to approval and **prior** to submittal of a building permit application.

Please submit a copy of this letter and **all** of the required information listed below to Planning and Development Services (PDS) in one complete package within 180 days of this notice or your Shoreline Exemption application will expire. Once received by PDS, the information package will be re-reviewed in the order in which it was received.

Watersheds/NPDES Phase II (Title 20) – Michael Kershner

mkershne@whatcomcounty.us

More information required for review: ☒ Yes (if yes list what is needed below) ☐ No

The project proposal consists of the addition of 28 boat/ski lift mooring locations, dredging 150 cubic yards of material from the gravel bar from the mouth of one of the creeks, installation of fire hydrants, standpipes and firelines, and finishing 19-20 patio canopies which were not completed under the previously approved Conditional Use Permit (CUP). The Wildwood Resort is located within the Lake Whatcom watershed and is subject to WCC 20.51 – Lake Whatcom Watershed District Overlay.

A stormwater plan, which demonstrated that the site would accommodate 100% infiltration for the entire site, was approved as part of the previously approved shorelines permits and CUP. This plan was also approved by the Washington State Department of Ecology (DOE).

The additional moorages and the dredging do not trigger any review through WCC 20.51.

The installation of the fire hydrants, standpipes and underground fire lines may affect the ability of the site to infiltrate 100% of the stormwater. The fire lines appear to be located in areas that had previously been amended to guarantee full infiltration. These fire lines may divert stormwater from being infiltrated into the ground. The DOE has also expressed concerns about trenching affecting the performance of the overall stormwater plan. Prior to approval, documentation and details showing that the installation of the fire infrastructure

will not impair the performance of the previously approved stormwater system must be provided.

The stormwater from all (83) of the patio canopies was previously shown to fully infiltrate on site. This analysis, dated July 2, 2012, was provided by a licensed civil engineer (Mike Bratt, P.E.). Whatcom County has found that this analysis is still applicable and therefore the stormwater from all canopies, including the 19-20 that are proposed, have been shown to be fully infiltrated on site.

WCC 20.51.440 requires that no more than 5,000 sq. ft. or 35% of the tree canopy may be removed. No tree canopy removal information was submitted. If the removal of trees is proposed, provide existing and proposed tree canopy locations and calculations.

Prior to Shoreline permit approvals, the following information is required:

- Documentation and details showing that the installation of the fire infrastructure will not impair the performance of the previously approved stormwater system.
- An Erosion and Sedimentation Control (ESC) Plan which indicates how sediment laden water will be prevented from entering Lake Whatcom, critical areas, or adjacent properties.
- A Tree Canopy Retention Plan consistent with WCC 20.51.440.
 - o If no trees are proposed for removal, indicate this in writing.
- A site plan showing the location of all proposed patio canopy covers. The site plan shall also have a table of contents which identifies all applicable map elements.

If you, or the applicant, should have any questions, feel free to contact me at 778-5948 or at mkershne@co.whatcom.wa.us.

Wetlands and HCA (WCC 16.16) – Matt Mahaffie – mmahaffie@whatcomcounty.us

More information required for review: ☒ Yes (if yes list what is needed below) ☐ No

The project proposal consists of the addition of 28 boat/ski lift mooring locations, dredging 150 cubic yards of material from the gravel bar from the mouth of a creek, installation of fire hydrants, standpipes and fire lines, rebuilding and repurposing a shop building, and finishing 19-20 patio canopies which were not completed under the previously approved Conditional Use Permit (CUP).

The proposal was submitted with no documentation indicating the required compliance for the proposals with WCC 16.16. At a minimum, to begin review for such compliance, a Critical Areas Assessment Report shall be prepared pursuant to the standards found in WCC 16.16.255 and/or a Habitat Management Plan as outlined in WCC 16.16.750. In addition to the basic reporting requirements, all relevant provisions of WCC 16.16 Articles 6 & 7 shall be addressed.

Reporting shall be completed by a qualified professional. Whatcom County carries a list of qualified wetland and stream specialists; however, no list is carried for qualified professionals in the Habitat Conservation Areas (HCA's) associated with the project. It is incumbent upon the applicant to choose a professional that is qualified for such work. The project and reporting scope should be reviewed by PDS staff in conjunction with the retained consultant prior to commencement of work and/or study.

Geohazards (WCC 16.16) – Andrew Wiser – awiser@whatcomcounty.us

More information required for review: ☐ Yes (if yes list what is needed below) ☒ No

Flood (WCC 17) – Denise Doezema – ddoezema@whatcomcounty.us

More information required for review: ☐ Yes (if yes list what is needed below) ☒ No

The subject permits to 1) add decks and deck covers to existing park-model pad sites, 2) renovate a shop building, 3) add additional mooring slips to existing docks, and 4) remove gravel in swimming area at the Wildwood Resort on Lake Whatcom has been reviewed for compliance with the Whatcom County Flood Damage Prevention Code (Title 17) and the associated requirements of the Endangered Species Act (ESA). According to the attached Digital Flood Insurance Rate Map (DFIRM) and submitted site map, portions of the proposed project located at 990 Lake Whatcom Blvd. (Parcel #380117-535540) are within a Special Flood Hazard Area or specifically Flood Zone A with a Community Determined Base Flood Elevation of 319.0 feet (City Datum).

1. Proposed Deck and Canopy Conditions

The proposed decks which fall within the SFHA must be built according to the submitted drawings and used for the purpose as intended in the applicable permits. Any associated building materials located below the BFE must be water resistant. The structure must be anchored to resist floatation, collapse, and lateral movement.

2. Renovate Shop Building A

Shop Building A is not located within the SFHA, therefore no Flood Conditions apply.

3. Expansion of Mooring Slips & Docks

Per Whatcom County Code, Flood Damage Prevention (Title 17), Section 17.12.030, Part 2, *"review all development permits to determine that all necessary permits have been obtained from those Federal, State or local government agencies from which prior approval is required"*. Accordingly, the project is required to obtain permit approval with the Washington State Dept. Fish and Wildlife (DFW);

- A copy of the approved DFW permit must be submitted to the River and Flood Division and/or Planning and Development Services prior to start of any work.
- The project must be constructed in accordance with the submitted plans/drawings and supporting documentation.

4. Gravel Removal

Per Whatcom County Code, Flood Damage Prevention (Title 17), Section 17.12.030, Part 2, *"review all development permits to determine that all necessary permits have been obtained from those Federal, State or local government agencies from which prior approval is required"*. Accordingly, the project is required to obtain permit approval with the Washington State Dept. Fish and Wildlife (DFW);

- A copy of the approved DFW permit must be submitted to the River and Flood Division and/or Planning and Development Services prior to start of any work.
- The project must be constructed in accordance with the submitted plans/drawings and supporting documentation.
- All dredged material must be deposited outside the Special Flood Hazard Area.

Lake Whatcom is not listed as Critical Habitat for endangered/listed species; therefore a Floodplain Habitat Assessment is not required for compliance with the ESA. Furthermore, it is our understanding that because the Lake is regulated by the State a US-ACOE permit is not required.

Based on our review of the submitted information we have determined that the project complies with Title 17 and the ESA provided that all the above referenced conditions are met.

I hope this information is helpful, feel free to contact me at (360) 778-6213 with any questions.

Shorelines (Title 23) – Andrew Hicks- ahicks@whatcomcounty.us

More information required for review: ☒ Yes (if yes list what is needed below) ☐ No

Comments:

Shorelines staff has reviewed the proposal to expand the marina, dredge up to 133 cu. yds of gravel and silt from the swim area/marina, and add patio canopies to 19 park-model units within shoreline jurisdiction at Wildwood Resort.

Two site plans were submitted with the above referenced application materials. Neither site plan appears to accurately depict all of the requested improvements as outlined in the project narrative and the answers provided to application questions. One of the site plans appears to be a master site plan from a previous substantial development application. This site plan provides a detailed layout of the entire Wildwood Resort but does not appear to accurately identify what is currently existing or what is being proposed through the application requests currently under review. The second site plan is a less detailed, not-to-scale rendering of the marina area that appears to show some of the elements of the current proposal but also appears to be missing key information (i.e. identification of area to be dredged, location of proposed patio covers, location of proposed jet ski slips, fire protection improvements, etc.). A scaled site plan, accurately showing all existing development and proposed development, needs to be submitted.

The marina and campground resort were granted legal nonconforming status on May 18, 2007 by Whatcom County Planning and Development Services through a formal request for legal nonconforming status by Wildwood Resort (File #NON2007-00008). Pursuant to WCC 23.50.070.E, expansion of non-conforming structures, other than single-family residences and their appurtenances, requires a variance. In order for a variance to be approved, the applicant/proponent must demonstrate that the variance criteria set forth in WCC 23.60.030 can be met. Staff could find no analysis of the variance criteria as it relates to the proposed improvements. Please provide an analysis that demonstrates how this proposal meets the variance criteria set forth in WCC 23.60.030.

Based on the application materials submitted, it is unclear why the proposed dredging is needed. In one section of the application, the dredging request seems to be based on the use of the swim area. In another area of the application it is stated that the dredging is needed to allow moorage. Please clarify, in a single narrative, why the proposed dredging is needed. This narrative should provide current depth intervals in the areas where dredging is proposed. Pursuant to WCC 23.100.040.3.d, marinas and accessory uses shall be located where water depths are adequate to avoid the need for dredging and minimize potential loss of shoreline ecological functions or processes. Therefore, if the dredging is for the marina usage, then WCC 23.100.040.3.d should be considered and an alternatives analysis should be provided that explores relocation of any affected docks to areas that provide adequate depths. If an alternatives analysis concludes that dredging is justified, please detail the dredging methodology (including how spoils are to be disposed of).

The application materials do not adequately detail what improvements would be made to accommodate the proposed jet ski moorage. Please provide this information. Additionally, identify the jet ski moorage slips on a revised site plan.

Pursuant to WCC 23.90.080, consideration of public access shall be required for all substantial developments and conditional use permits. Additionally, per WCC 23.100.040.B.2, marinas shall provide public access for as many water-dependent recreational uses as possible, commensurate with the scale of the proposal. No information was provided that show how public access is currently accommodated nor if/how additional public access will be provided to account for the proposed increase in scale of the marina. Please provide this information.

Prior to Shoreline permit approvals, the following information is required:

1. Submit a detailed site plan, drawn to a standard engineering scale (i.e. 1"=10', 1"=20' etc.), showing all existing development and which also clearly identifies proposed improvements or development activities.
2. Provide a detailed analysis of how your proposal satisfies all of the variance permit criteria set forth in WCC 23.60.030.
3. Provide an alternatives analysis for the proposed dredging that is consistent with WCC 23.90.120 and WCC 23.100.040.3.d.
4. Explain/show what structural improvements are needed to accommodate the proposed jet ski moorage.
5. Provide a statement on how public access is currently being accommodated and how public access will be increased commensurate with the proposed increase in scale of the marina.
6. Provide a breakdown of how many mooring spaces are being added for boats vs jet skis. This breakdown should distinguish between dock slips and mooring bouy slips. All moorage slips shall be clearly identified on the site plan.

If you have any questions regarding these requirements please feel free to contact me. If needed, staff can set up a meeting to discuss the requirements listed above.

Fire Marshal (International Fire Code) – Will Anderson – wanderso@whatcomcounty.us

More information required for review: ☒ Yes (if yes list what is needed below) ☐ No

Comments:

The Whatcom County Fire Marshal's Office requires that the applicant demonstrate compliance with the following requirements prior to permit approval. A revised site plan is required to show where, if applicable, each of the required fire protection components listed below will be located.

1. Fire Protection Equipment- per IFC 2015 Edition Chapter 36 Section 3604- docks servicing fire or more vessels and marine motor fuel-dispensing facilities shall be equipped with fire protection equipment.
2. Separate Fire Marshal's Office permit is required for the installation of underground fire lines, hydrant(s), and Standpipe system to all docks including the fuel dock. Plans, Calculations, and cuts sheets shall be provided by a licensed Washington State Engineer for the standpipe system. Standpipe system must meet NFPA 303.
3. Fire hydrant(s) shall be located with 100' feet of standpipes.
4. Fire Access is required with 150' of all docks.
5. Fire access road width is 20' feet wide.
6. Fire access road width in front of hydrants is required to 26' wide for a total of 40' feet. 20' feet in each direction on center of the hydrants.
7. Dead end roads over 150' long are required to have an approved Fire truck turn-a-round.

8. Fire extinguishers are required at each required standpipe connection of ordinary moderate hazard type.
9. Communications. A telephone shall be provided and maintained on the site in a location approved by the fire code official.

The proposal shall comply with all applicable codes and ordinances adopted by Whatcom County. Any overlooked hazardous condition and/or violation of applicable code does not imply approval of such condition or violation.

Please wait to submit your building permit application until you have received approval via a Shoreline Substantial Development permit.

For specific requirement questions, please contact the applicable NR staff person listed above by email or at (360) 778-5900.

Please note: This document and attachments may include appealable decisions pursuant to the applicable regulations. Please contact the reviewing staff person for additional information and associated time limitations.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	January 4, 2018		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	January 10, 2018		
AGENDA ITEM NUMBER:	7.0		
SUBJECT:	Manager's Report		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Manager's Report		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

Updated information from the General Manager in advance of the Board meeting.

FISCAL IMPACT

None

RECOMMENDED BOARD ACTION

None required.

PROPOSED MOTION

None

General Manager Comments

Wednesday

January 10, 2018

Regular Meeting

6:30 p.m.

Important Upcoming Dates:

- **Meetings Associated with the Lake Whatcom Management Program:**
 - **Policy Group Meeting:** The next meeting is tentatively scheduled for February 5, 2018.
 - **Management Meeting:** Another meeting has not been planned for at this time.
- **Next Regular Board Meeting:** Will be held on **Wednesday, January 31, 2018** at 8:00 a.m.
- **Employee Staff Meeting:** The next staff meeting is set for **Thursday, January 11, 2018 at 8:00 a.m.** in the Board Room. Commissioner Ford is scheduled to attend this meeting.
- **Employee Safety Committee Meeting:** The next meeting is set for **January 11, 2018 at 9:00 a.m.** in the small conference room.
- **Washington Association of Sewer & Water Districts (WASWD) Section III Meeting:** The next Section III meeting will be held at Bob's Burger & Brew in Tulalip on **January 9, 2018** at 6:15 p.m.
- **Whatcom Water District's Caucus Meeting:** The Caucus meeting is set for **January 17, 2018** at 1:00 p.m. in the Board Room.

Other:

- **Committee Meeting Reports as Needed:** This is a place holder for Board and staff members to report on recent committee meetings, such as the Lake Whatcom Policy Group, since the last Board Meeting.
- **Upcoming Important Agenda Topics:**
 - The annual Commissioners work shop is going to be held on Saturday, January 27, 2018 in Tukwila at the Embassy Suites (near I-5 & 405 merge) by South Center. This starts in the morning and goes into the mid-afternoon. So far I am aware that both

Commissioner Carter and Weide will be attending. I will also be there. Commissioner Ford has also expressed an interest in attending. A block of rooms is set aside and Rachael can make your accommodations if needed.

- Our annual employee appreciation/State of the District dinner with Commissioners & staff is going to be held on Friday, January 26, 2018 at the Four Points Hotel (714 Lakeway Drive). The event starts at 5:30 p.m. with dinner being served at 6:00 p.m.
- At the January 31, 2018 meeting the Board will be getting an update on the District's succession plan and our leadership training efforts. Likewise we talk a little about the upcoming labor negotiations process in 2018.
- I will be out of the area at our upcoming meeting attending the annual Insurance Pool's planning meeting. Bill Hunter will represent the General Manager.