PL16-0555

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February 24, 2017

Critical Areas Reconnaissance

PL16-0555

For:
Lake Erie Trucking
13540 Rosario Road
Anacortes, WA 98221

Site Location:

Rosario Road
Anacortes, WA 98221

P19164

T 34 N, R 01 E, Sec. 11

Site Description

This site is located in unincorporated Skagit County south of the City of Anacortes, consisting of a portion of the NW¼ of Section 11, Township 34 North, Range 01 East. The property consists of numerous tax parcels under the same ownership utilized primarily as a gravel mine, but as part of this review only P19164 (16.68 acres per the Skagit County Assessor) would be considered the primary parcel addressed, although much of the overall holding was casually reviewed. The property holding is irregular in shape, bound by Rosario Road to the north and west and rural residential development to the south and east. The property slopes down in all directions from the middle area, with a gravel mining operation taking place upon the highest (or highest prior to mining) land in the immediate area.

Outside of the actively mined portion of the property, the site is almost completely forested. Close in to the mining operations, past clearing is prevalent with a vegetation regime of thick alder saplings interspersed with a few open grassy areas housing scattered Scotts broom. Along the perimeters the woodland is a late-succession second growth dominated in the main by large fir with an open understory of sword fern. This vegetation regime extends offsite and downslope significantly to the south until meeting an expansively developed single family home (estate may be a more appropriate descriptor). The central focus of this neighboring development is a large wetland area, part of a landscape feature known locally as Devil's Elbow; formerly a large wetland, but historically excavated in part into a pond with canals going through and around much of the remaining wetland.

Project Description

The project proposal for this property at this time is for the expansion of the existing gravel pit operations onsite. Per a December 19, 2016 letter from Skagit County Planning and Development Services (John Cooper), a wetland reconnaissance was requested to address wetland indicators within 200 feet of the proposal near the southern boundary of the parcel. The wetland reconnaissance has been limited in scope for this large property to that area required to be addressed per Skagit County request.

FINDINGS

Methodology

The methodology for the wetland portion of this assessment is dictated by the 1987 Corps of Engineers Wetland Delineation Manual supplemented by the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (version 2.0), as well as the Skagit County Critical Areas Ordinance.

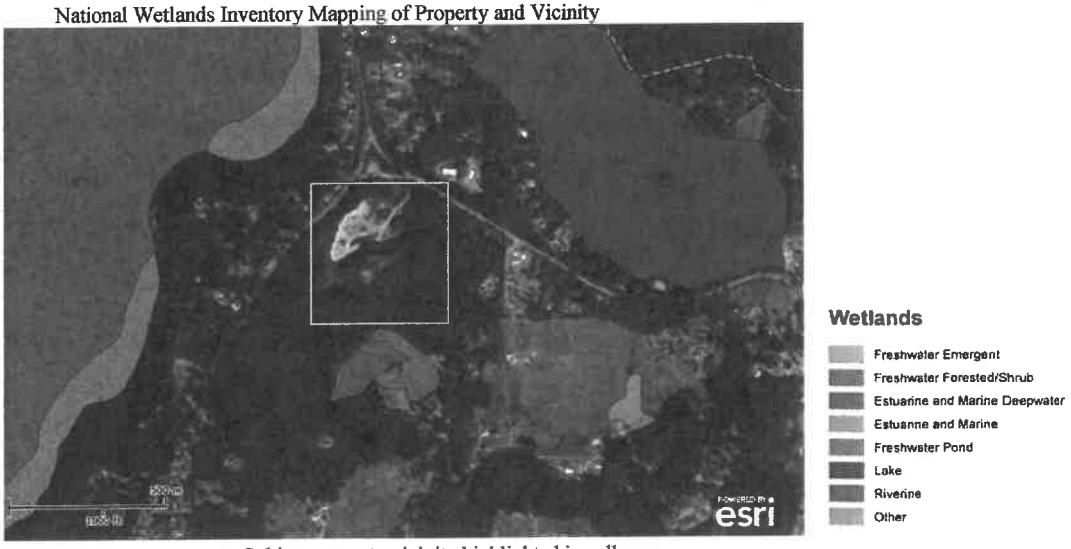
Literature Review

Prior to an onsite investigation, a literature review of available resources regarding this property was made with the following results:

- The USDA Soil Survey of Skagit County did not indicate any soils onsite to be mapped as hydric soils.
- The National Wetland Inventory mapping shows wetland presence in the vicinity (see below).
- Review of available aerial photography shows no evidence of wetland presence onsite, but clearly visible on the neighboring property to the south.
- Washington State Department of Natural Resources stream type mapping does not show potential streams affecting this property.

- Skagit County records give indication of critical areas present on adjacent property (south), documented with a submitted wetland assessment. Skagit County permit PL14-0064; Wetland and Fish & Wildlife Assessment, Edison Engineering December 16, 2014.
- Information gleaned from the Priority Species and Habitat mapping indicated no priority habitats or species within the vicinity (excluding NWI wetland mapping).

National Wetlands Inventory Mapping of Property and Vicinity



Subject property vicinity highlighted in yellow.

Site Inspection

As part of site inspection for a neighboring property, this area was observed first in 2014, with a second site visit February 19, 2017. We walked through the entire study area for a thorough visual coverage. We sampled the soils, vegetation, and for indicators of near-surface hydrology and wetland and upland conditions. Sample plots were not recorded as there were no onsite wetland indicators of wetland presence.

The offsite wetland area (Devil's Elbow) was observed personally in 2014 as part of a preliminary site review for that neighboring property. Inspection of that neighboring property, including inspection of the wetland area, was made at that time by Skagit Wetlands staff. While formal documentation was not prepared by Skagit Wetlands, the assessment prepared later that year by Edison Engineering was reviewed, and with a single minor exception, noted as consistent with previous site observations.

Wetlands

Criteria for Wetland Classification

The methodology for the wetland portion of this assessment is dictated by the 1987 Corps of Engineers Wetland Delineation Manual supplemented by the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (version 2.0). To qualify as wetland, three criteria must be met. These criteria refer to the presence of vegetation, soil types, and hydrology that are characteristic of wetland areas under normal circumstances.

Vegetation of wetlands consists of plants typically adapted to thrive in areas where anaerobic soil conditions prevail for a long portion of the growing season. Categories based on the likelihood of a particular plant occurring in association with wetland areas are the basis for determining whether a site meets the vegetation criteria. These categories are shown in Table 1 below

Table 1

Plant Indicator Status Categories*

Indicator Category	Indicator Symbol	Definition
OBLIGATE WETLAND PLANTS	OBL	Plants that almost always occur (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in nonwetlands. Examples: *Typha latifolia, Lysichitum americanum*
FACULTATIVE WETLAND PLANTS	FACW	Plants that usually occur (estimated probability 67% to 99%) in wetlands, but also occur (estimated probability 1% to 33% in nonwetlands). Examples: *Fraxinus latifolia Cornus stolonifera*
FACULTATIVE PLANTS	FAC**	Plants with a similar likelihood (estimated probability 34% to 66%) of occurring in both wetlands and nonwetlands. Examples: *Alnus rubra, Rubus spectabilis*
FACULTATIVE UPLAND PLANTS	FACU	Plants that sometimes occur (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability 67% to 99%) in nonwetlands. Examples: *Acer macrophyllum, Rubus discolor*
OBLIGATE UPLAND PLANTS	UPL	Plants that rarely occur (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in nonwetlands under natural conditions.

Areas within the property that are dominated (greater than 50 percent) by facultative, facultative wetland, and/or obligate indicator plants meet the wetland criteria for vegetation. These areas also must meet soils and hydrology requirements to be delineated as a wetland.

Soil types that occupy wetlands are hydric soils, or soils that are characteristic of reducing soil conditions. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA NRCS 1995).

The term "wetland hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively. Such characteristics are usually present in areas that are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic soil conditions (US Army Corps of Engineers 1994)

ONSITE ASSESSMENT FACTORS

Vegetation

Besides the more recently cleared area repopulating in the main to opportunistic *Alnus rubra* (Red Alder, FAC), onsite the review area is dominated in the main by the following, with clear visual domination by FACU species:

Abies grandis, Grand fir, FACU
Pseuedotsuga menziesii, Douglas fir, FACU
Tsuga heterophylla, Western hemlock, FACU
Acer macrophyllum, Bigleaf maple, FACU
Polystichum munitum, Sword fern, FACU
Rubus spectabalis, Salmonberry, FAC
Gaultheria shallon, Salal, FACU
Acer circinatum, Vine Maple, FAC

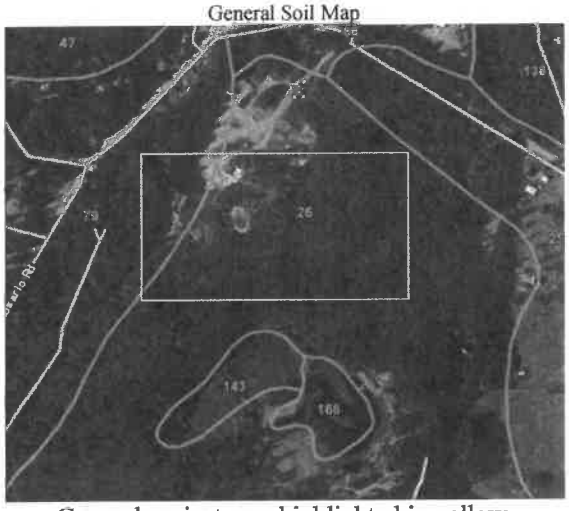
Offsite observations were made in 2014, but were casual. For a specific vegetation description see the Wetland and Fish & Wildlife Assessment authored by Edison Engineering, attached.

Hydrology

In no portion of the onsite review area was wetland hydrology observed. There were no inundated areas, utilized drainage paths, nor soils saturated within 12 inches of the surface during the winter wet season. Immediately offsite to the south, wetland hydrology is readily apparent with a distinct break in the topography with areas of open water and permanently saturated organic soils. This line of positive wetland hydrology is absolutely distinct, readily viewable via aerial photography, and personally observed as a easily viewed boundary.

Soils

General Soil Map



General project area highlighted in yellow.
25/26 – Catla gravelly fine sandy loam
47 – Dystric Xerochrepts 70-90 percent slopes
79 – Keystone loamy sand
143 –Terric Medisaprists
166 – Water

The review area is mapped as Catla gravelly fine sandy loam (8-15% slopes) for the most part by the Soil Survey of Skagit County, with a small portion noted as Keystone loamy sand. Catla soils are a moderately well drained soil found on hillslopes formed in compact glacial till. Catla soils are not known as hydric, with the soils of the area matching the description (dark yellowish brown 10YR4/4 gravelly loam under a shallow dark grey 10YR4/1 surface layer of sandy loam). Disturbed areas mapped as Keystone loamy sand were readily apparent onsite, with essentially pure sand visible at the surface or near surface under a shallow organic layer.

The wetland soils were mapped as Terric Medisaprists, a deep poorly drained soil formed in depressional areas out of decomposed organic matter over mineral material. These soils were not observed as part of this review, but were during a 2014 site visit of the neighboring property. The source of the organic material forming the soil was noted at the time to be Spiraea douglasii; as such the wetland would not be considered a bog for rating purposes.

Wetland Determinations

No onsite portion of the review area has regulated wetlands impacting them, nor apparently the buffers of such. A large wetland area was noted south of the subject property; this wetland area is part of the landscape features known locally as Devil's Elbow; a large wetland that was historically excavated in part to an open water pond. Per aerial photo imagery and mapping data available from Skagit County, the wetland appears to be approximately 170 feet from the subject property. The wetland edge as observed on aerial photography is readily apparent and has been observed onsite during a 2014 site visit of the neighboring property.

The wetland as a whole was rated as best able considering it is offsite, but the rating is reinforce by previous observations as well as assessment by Edison Engineering who prepared a Wetland Assessment for a neighboring project abutting the wetland in question. The rating was for the 2004 version of the rating system (no longer applicable), but contributed much information, with the only discrepancy noted being a lack of points added for organic soil presence. Utilizing the Washington State Wetland Rating System for Western Washington (2014) resulted in a rating of a Category III wetland with a combined score of 18. The same rating category was assigned per previous assessment by Edison Engineering. The rating breakdown was as follows:

- Score for Water Quality Functions: 6
- Score for Hydrologic Functions: 4
- Score for Habitat Functions: 8

Regulatory Analysis

Per Skagit County Code 14.24.230(1)(a) a Category III wetland requires a 150 foot buffer when assigned a high land use impact. Per the Land Use Impact definition (SCC 14.04), surface mining appears to be considered a high land use impact per SCC, a consistent conclusion with land use intensity guidance from the Washington State Department of Ecology (WA DOE #05-06-008, Appendix 8C).

Utilizing the data available (Skagit County GIS data), the regulated wetland buffer appears to be completely offsite. As such, a Protected Critical Area (PCA) site plan has not been prepared. The site plan supplied by Edison Engineering suggests that the buffer may extend into the subject property in minor fashion, but not basis for the site plan supplied was given (ie. survey). If Skagit County supplied data is in error, which does happen frequently in rural areas, and the buffer does extend into the subject property, it will be only into the outer portion of the setback area from the mining operations, an area slated to be preserved anyway.

HCA'S

There were no Habitat Conservation Areas (HCA's) noted as present within the review area. There were no streams or similar water courses observed, no were there other habitats or species observed that would be of concern to this project, or would dictate designation of a formal Habitat and Conservation Area such as the presence of a endangered or State designated Priority species (or habitat).

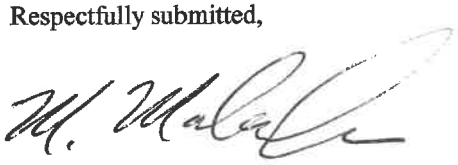
CONCLUSIONS

No area of this property shows evidence of natural wetland hydrology during the growing season nor were there any soils onsite that would be considered hydric. While small portions of the property are presently (or previously observed) to be dominated by what can be considered hydrophyte, this is judged to be due to past clearing development activities in anticipation of further gravel extraction. As such there are no regulated wetlands affecting this property, nor were any streams, other habitat and/or conservation areas, or priority species observed on this property.

DISCLAIMER

This reconnaissance is based upon physical circumstances that are described in manuals and publications utilized by Federal, State, and Local agencies. The wetland delineation methodology used in this report is consistent with the routine on-site determination method prescribed by the 1987 Corps of Engineers Wetland Delineation Manual and by the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coasts Regional Supplement. No guarantees are given that the delineation will concur precisely with those performed by agencies with jurisdiction or by other qualified professionals. This report is provided for the use of the specified recipient only and is not intended for use by other parties or purposes.

Respectfully submitted,



Matt Mahaffie
Skagit Wetlands & Critical Areas, LLC

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Appendices

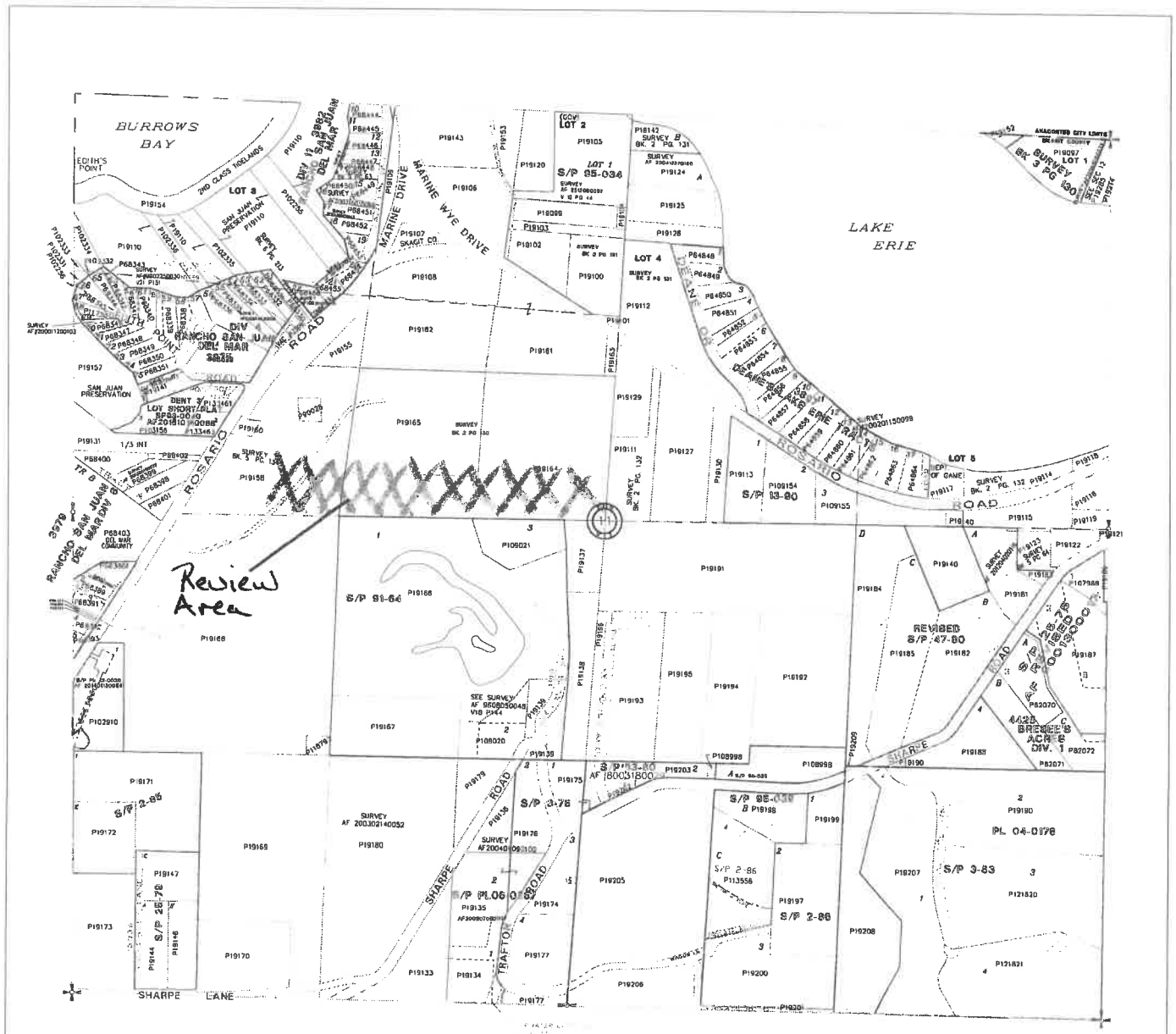
Appendix A: Vicinity Map (Skagit County Assessor)

Appendix B: Review Area Photo

Appendix C: Wetland Rating Form and Displays

Appendix D: Wetland and Fish & Wildlife Assessment, Edison Engineering 2014

Appendix A: Vicinity Map (Skagit County Assessor)



SKAGIT COUNTY

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

T 34 N R 01 E

ATTENTION

THIS MAP CONTAINS A PARCEL ACCOUNT THAT HAS BEEN PLACED WITH THE BEST AVAILABLE INFORMATION THE EXACT LOCATION OF THIS PARCEL IS UNKNOWN

N NW NE W E SW SE S

0 400

Scale in feet

These maps were created from available public records and existing map sources, not from field surveys. Map features from all sources have been adjusted to achieve a "best fit" registration to the Ownership Parcels mosaic. While great care was taken in this process, maps from different sources rarely agree as to the precise location of geographic features. This relative positioning of map features to one another results from combining different map sources without field "ground truthing".

- THIS MAP IS NOT A SUBSTITUTE FOR FIELD SURVEY -

	DATE	INIT.
DRAWN BY	11/17/95	LHS
REVISED	10/25/16	RS
PLOTTED	10/25/16	RS

MAP PRODUCED BY SKAGIT COUNTY MAPPING SERVICES

Section 11
T 34 N R 01 E

Appendix B: Review Area Photo

Oblique Image of Project Review Area (Bing Maps)

Red line is approximate property boundary.

Appendix C: Wetland Rating Form

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Devils Elbow Date of site visit: 2/11/2017

Rated by M Mahaffie Trained by Ecology? ☑ Yes ☐ No Date of training Sep-15

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map _____

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	H	M	M	
Landscape Potential	M	L	M	
Value	L	L	H	**Total**
Score Based on Ratings	6	4	8	**18**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

HGM Classification of Wetland in Western Washington

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

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

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

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

☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☑ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

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

4. Does the entire wetland unit **meet all** of the following criteria?
☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded.**

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

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

5. Does the entire wetland unit **meet all** of the following criteria?
☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

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

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

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☑ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☑ The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	5
Total for D 4 — Add the points in the boxes above	**10**

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

D 5.0. Does the landscape have the potential to support hydrologic function of the site?	
D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0
Total for D 5 — Add the points in the boxes above	**0**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 ☐ • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0 ☑ There are no problems with flooding downstream of the wetland. points = 0	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

- ☑ Aquatic bed
- ☑ Emergent
- ☑ Scrub-shrub (areas where shrubs have > 30% cover)
- ☑ Forested (areas where trees have > 30% cover)

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

If the unit has a Forested class, check if:

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

4

H 1.2. Hydroperiods

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

- ☑ Permanently flooded or inundated
- ☑ Seasonally flooded or inundated
- ☐ Occasionally flooded or inundated
- ☑ Saturated only

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

- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☑ Seasonally flowing stream in, or adjacent to, the wetland
- ☐ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

3

H 1.3. Richness of plant species

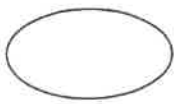
Count the number of plant species in the wetland that cover at least 10 ft^2.
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

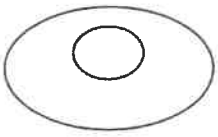
1

H 1.4. Interspersion of habitats

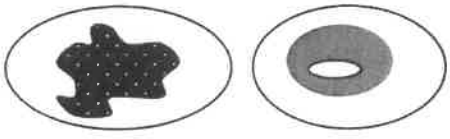
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

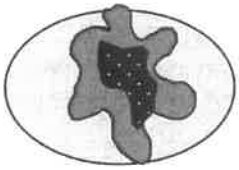


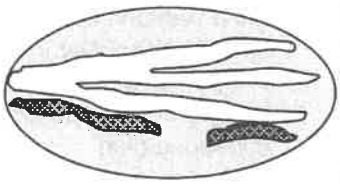
Low = 1 point



Moderate = 2 points

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





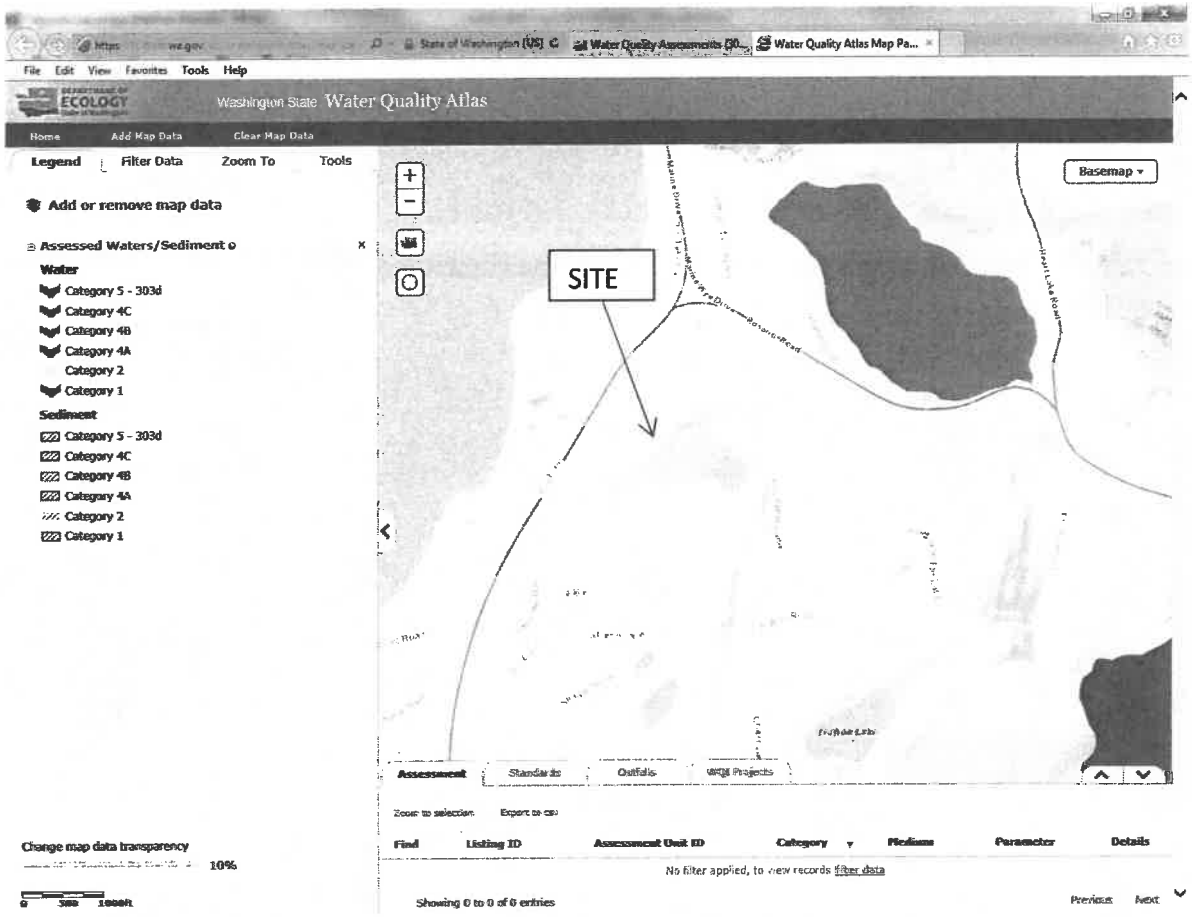
3

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

addressed elsewhere.

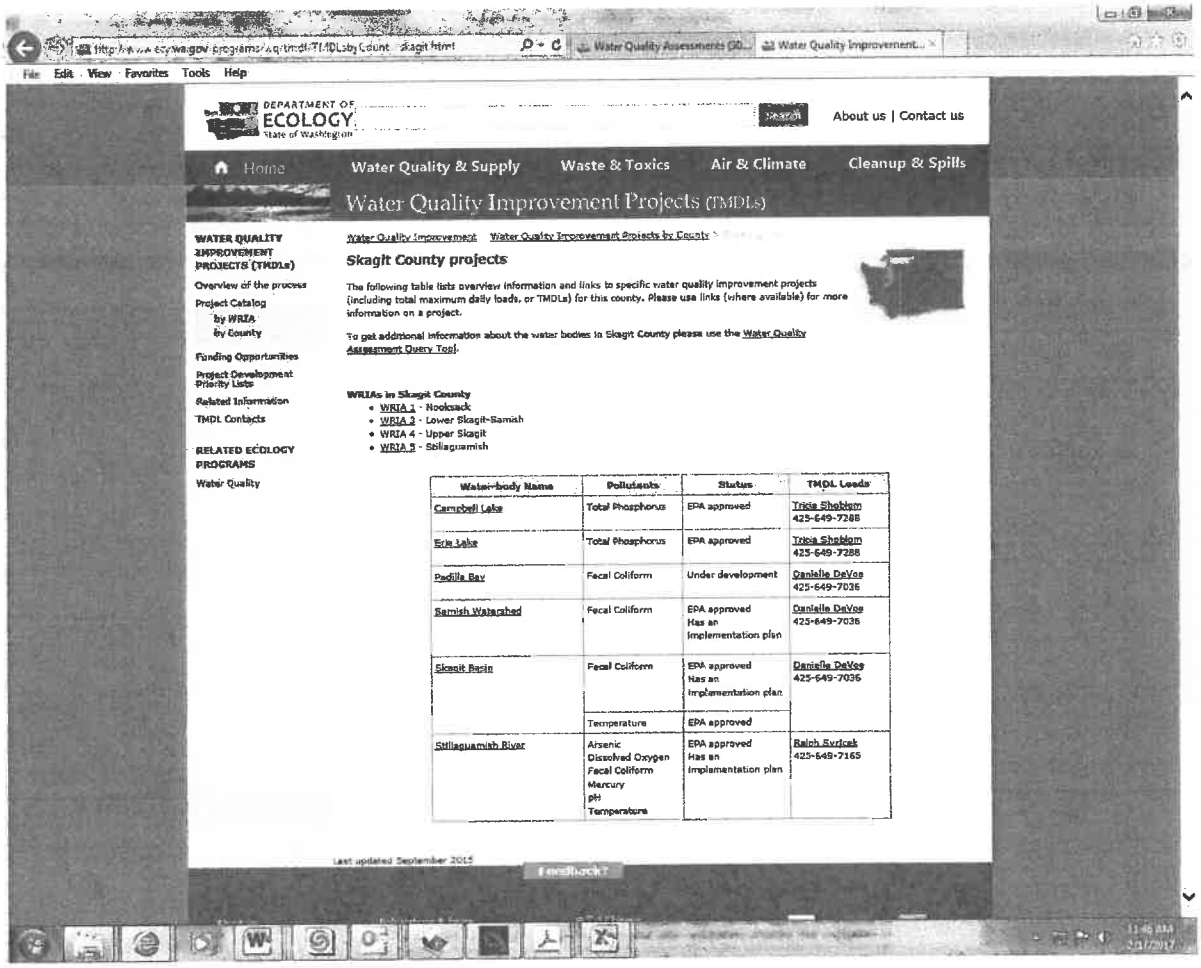
in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☑ No = **Is not a bog**	

303d Waterbodies




1KM Circle
Legend
Wildwood Ln
Sunset Ln
S Wildwood Ln
Lake Erie Way
Deane Dr
Joshua Ct
Orca Ln
Heart Lake Rd
Bloomaisl Dr
Seaview Way
Eaglecrest Ln
Sharpe Ln
Traylon Rd
Donnell Rd
Biz Point Rd
Madrona Dr
Bay Ln
Sharpe Rd
Crater Lake Rd
Google earth
Image © 2016 TerraMetrics
© 2016 Google
N
3000 ft

Skagit TMDL List



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DEPARTMENT OF ECOLOGY
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Water Quality Improvement Projects (TMDLs)

WATER QUALITY IMPROVEMENT PROJECTS (TMDLs)

Overview of the process
Project Catalog
by WRIA
by County
Funding Opportunities
Project Development Priority Lists
Related Information
TMDL Contacts

RELATED ECOLOGY PROGRAMS

Water Quality

Water Quality Improvement | Water Quality Improvement Projects by County

Skagit County projects

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

To get additional information about the water bodies in Skagit County please use the Water Quality Assessment Query Tool.

WRIAs in Skagit County

- WRIA 1 - Nooksack
- WRIA 3 - Lower Skagit-Samish
- WRIA 4 - Upper Skagit
- WRIA 5 - Stillaguamish

Water-body Name	Pollutants	Status	TMDL Leads
Campbell Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Erie Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Padilla Bay	Fecal Coliform	Under development	Danielle DeVos 425-649-7036
Samish Watershed	Fecal Coliform	EPA approved Has an implementation plan	Danielle DeVos 425-649-7036
Skagit Basin	Fecal Coliform	EPA approved Has an implementation plan	Danielle DeVos 425-649-7036
	Temperature	EPA approved	
Stillaguamish River	Arsenic Dissolved Oxygen Fecal Coliform Mercury pH Temperature	EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

Last updated September 2015

Feedback?

Appendix D: Wetland and Fish & Wildlife Assessment, Edison Engineering 2014

WETLAND ASSESSMENT
And
FISH AND WILDLIFE INVESTIGATION

DODDRIDGE PROPERTY

Islewood Drive (Fidalgo Island)
Skagit County, Washington

Skagit County Property
P19166

Skagit County File:
BP14-0064

Prepared for:

William Doddridge
13732 Tustin Village Way
Tustin CA 92780

Prepared by:

EDISON ENGINEERING
P.O. Box 164
Bow WA 98227

(360) 766-4414

Edison Engineering
Project Number

214035

December 16, 2014

TABLE OF CONTENTS

ATTACHMENTS

EDISON ENGINEERING
P.O. BOX 164
BOW, WA 98232

INTRODUCTION AND BACKGROUND INFORMATION

This report provides the scope of services and findings for our investigation of wetlands and the fish and wildlife habitat assessment at your property. The main theme of the house is a wetland with an island in the middle of it and the small stream that sometimes flows out of it. The house is directly on the wetland.

The client wants to build two additions at the house, one is the room at the north part of the house and the other is a new entry structure by the driveway. The house is about 3,327 square feet, the new room is 372 square feet and the entry structure is about 4 feet by 8 feet with about a 16 foot wall to the north (Critical Area Site Plan and Site Plan).

The site is to the north of Sharpe Road at Devils Elbow curve. It is also to the southwest of Lake Erie, northwest of Trafton Lake, about 800 feet from Rosario Road and 1,250 feet from Marine Drive. The site is situated within the northeast one-quarter of the southeast one-quarter of Section 11, Township 34N, and Range 01E of the Willamette Meridian. The property slopes toward the wetland from everywhere around it but not at a very large angle. The property is shaped like a square with the northeast part missing and added to the southeast part. It is about 1,281 feet wide and 1,136 feet high.

PURPOSE AND SCOPE OF SERVICES

The scope of this project included a wetland investigation and fish and wildlife habitat assessment, with hand-excavation of soil test pits and observations of vegetation.

Specifically, our scope of services included the following:

1. Reviewed published maps regarding topographic and soil conditions in the vicinity of the subject property, including:
   - USGS Topographic Map, Deception Pass Quadrangle, Washington, United States Department of the Interior Geological Survey, 1978, revised 1980.
   - Soil Survey of Skagit County Area, Washington, USDA Soil Conservation Service, 1989.
   - National Wetland Inventory, Deception Pass Quadrangle, Washington, US Department of the Interior, 1987.
   - Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species Map (online).
2. Measured the house and the environs around it and drew it.
3. Excavated four test pits at the wetland and did the determination form.
4. Measure portions of the wetland.
5. Rated the wetland and determined the buffers.
6. Catalogued plants around the wetland and the plants not associated with the wetland.
7. Rated the stream.

Wetland Methodology

Delineation of wetlands on this site included (1) an initial investigation of published information to acquire general knowledge of site conditions, and (2) an on-site wetlands delineation using the Washington State Wetland Identification and Delineation Manual (Department of Ecology publication #96-94 to define the location of wetlands.

Vegetation

Verification of vegetative species is made using Flora of the Pacific Northwest (Hitchcock and Cronquist, 1981) or Plants of the Pacific Northwest Coast (Pojar & MacKinnon, Lone Pine Press, 1994). Vegetation is classified according to its frequency of occurrence in wetlands, as cited in the National List of Plant Species that Occur In Wetlands: Northwest (Region 9) (Reed, 1988), and as shown in the following table:

Wetland Classification	CODE	Wetland Occurrence
Obligate Wetland	OBL	More than 99% of its occurrence is in wetlands.
Facultative Wetland	FACW	From 67% to 99% of its occurrence is in wetlands.
Facultative	FAC	From 33% to 67% of its occurrence is in wetlands.
Facultative Upland	FACU	from 1% to 33% of its occurrence is in wetlands, or;
Upland	UPL	Less than 1% of its occurrence is in wetlands.

Vegetation classified as Obligate (OBL), Facultative Wetland (FACW), or Facultative (FAC) is used as an indicator of hydrophytic, or wetland vegetation. Any given area with greater than 50% FAC or wetter is considered to possess the criteria for wetland or hydrophytic vegetation.

Soils

Hydric soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. Hydric soils that occur in areas having positive indicators of hydrophytic vegetation and wetland hydrology are wetland soils.

Initially, soils were identified and classified as either hydric or non-hydric using the Soil Survey of Skagit County Area and the Skagit County Hydric Soils List, respectively. The mapped identification provides only an approximate idea of the type of soils present at a location because the soil types are mapped at a large scale and are not an accurate representation of small-scale features.

Verification of hydric/non-hydric soil conditions was made at each sample plot by digging a hole at least 16 inches in depth. Soil samples from each hole were compared with a Munsell Soil Color Chart. The parameters are expressed in the Munsell notation of Hue, Value, and Chroma. Hue refers to the color in relation to red, yellow, blue, etc. Value refers to lightness of the hue and Chroma refers to the strength of the hue or its departure from a neutral of the same lightness. The notation for a yellowish red color of hue 5YR, value 5, chroma 6, is 5YR 5/6.

Soils that are saturated for substantial periods during the growing season and are under the influence of anaerobic and reducing conditions may develop a very low matrix chroma. Under these conditions, soils can become Mottled or marked by spots of different color or shades of color interspersed within the dominant (matrix) color in a soil layer. Under extremely reducing conditions, soils can become Gleyed or colored by iron or manganese that are in a reduced state. Gleyed conditions are marked by soils that are colored in shades of blue, green, or gray. Soils exhibiting matrix chroma values of 1 or less in unmottled soils, 2 or less in mottled soils, or are gleyed are considered hydric.

Hydric conditions are indicated in more coarsely grained soils by black streaks which are caused by organic matter moving through the soil, and by the presence of bright orange coloration due to iron oxidation on the edges of root pores.

Hydrology

Wetland hydrology is determined by checking for soil saturation and/or the presence of standing water in soil test holes. Soils from the test holes that are determined to be saturated, found to have standing water

within 6 in sand or 12 inches in other soils, depending on the soil type, or show evidence of saturation for seven consecutive days during the growing season, are considered to have wetland hydrology. Areas containing hydric soils and hydrophytic vegetation are assumed to have wetland hydrology.

On-Site Delineation Wetland Delineation Methodology

The purpose of the delineation is to identify the portions of the property that are wetlands. The on-site delineation methodology consists of looking for the three lines indicating wetland plants, soils, and hydrology, and delineating those areas in which all three are present, or where wetland hydrology is assumed to be present in areas that have both wetland plants and soils.

Recorded test plots were selected in suspected wetland and upland areas. At each sample plot, vegetative species were recorded and test plots were dug to obtain information on soil characteristics, including texture, color, and hydrological evidence of saturation. Information regarding vegetation, soils, and hydrology were recorded on field data forms. Copies of these forms are included in the appendices.

LITERATURE REVIEW

The USGS Topographic Map, Deception Pass Quadrangle, Washington (attached as the Topographic / Vicinity Map) indicates that the subject property is situated between elevation 420 and 330 and that it holds water in a 360 feet elevation topographic depression.

The Soil Survey of Skagit County, Washington (USDA Soil Conservation Service, 1989) maps Catla gravelly fine sandy loam on 8- to 15-percent slopes (Soil Type 26) over much of the property. The map indicates water and no soils are listed and that is where the bulk of the wetlands are located. To the west of the wetland is Terric Medisaprists 0- to 2-percent slope (Soil Type 143) and these are also part of the wetland.

The Catla gravelly fine sandy loam on 8- to 15-percent slopes (Soil Type 26) is described as a shallow, moderately well drained soil that is found on hillsides and which formed in very compact glacial till. Permeability of the Catla soil is moderate above the dense glacial till and very slow through it. The substratum may consist of consist of very gravelly sand in some areas. Runoff is slow and the hazard of water erosion is slight.

Terric Medisaprists are described as deep, poorly drained that are found in back swamps of flood plains and in depressional areas on till plains. The soil formed in decomposed organic matter over mineral material. Permeability is slow, runoff is ponded and there is no hazard of water erosion.

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species Map (online) indicates two eagles nests to the west-northwest about 2,500 feet away to the west of Rosario Road. No eagle habitat management plan is required because they are not threatened; they are now a sensitive species.

The Skagit County DNR (WC) Hydrography (February 1, 2009) showed no streams on the site. The Washington State Department of Natural Resources (DNR) website stream type map showed no streams from the wetland.

REGULATORY ANALYSIS

Wetland, streams and their buffers are critical areas that are regulated by Skagit County. They may not be disturbed by clearing, grading, fill, or construction without permission from the County. The attached Critical Area Site Plan will need to be filed with the County Auditor for inclusion with documents regarding the property after acceptance by Skagit County Planning and Development Services.

Wetlands are also regulated by the Washington State Department of Ecology and the US Army Corps of Engineers. The wetland may not be cleared, filled, or otherwise disrupted without permission from at least one of these agencies. It is not legal to utilize critical areas or their buffer as a wood source. The wetlands were rated utilizing the Washington State Wetland Rating System for Washington State (revised) (DOE, 04-06-025, 2006).

Skagit County wetland buffer widths are in the code (SCC 14.24.230.1.a). Standard buffers are based on land use intensity as defined in the definitions (SCC 14.04). The land use intensity for wetland buffers is high intensity land use (more than one unit per five acres) or moderate land use (1 unit per 5 acres or less). Low intensity land use does not have any buildings being built. The nearby land is zoned Rural Reserve with a ten acre minimum density so that would mean a moderate land use.

Buffer width decreasing. Prior to considering buffer reductions, the applicant shall demonstrate application of mitigation sequencing as required in SCC 14.24.080. In all circumstances where a substantial portion of the remaining buffer is degraded, the buffer reduction plan shall include replanting with native vegetation in the degraded portions of the remaining buffer area and shall include a 5-year monitoring and maintenance plan. This plan is for buffers to be reduced by 25 percent. Standard and optional buffer widths may be reduced by more than 25% through a variance pursuant to SCC 14.24.140.

Mitigation Sequence. The sequence of mitigation is defined below:

(i) Avoid the impact altogether by not taking a certain action or parts of an action;
(ii) Minimize the impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
(iii) Rectify the impact by repairing, rehabilitating or restoring the affected environment to the conditions existing at the time of the initiation of the project or activity;
(iv) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action and
(v) Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.

No trees may be cut from the buffer unless the tree presents a hazard to a residence or an appurtenant structure. The County Planning and Permit Center must be notified of, and grant permission for removal of any proposed hazard trees prior to removal. Hazard trees that are removed from the buffer must be replaced by appropriate species. Vegetation that is dead or diseased may be removed from the buffer to control fire or halt the spread of disease or insects.

The wetland buffers say this area should have a 110 foot buffer. It can be reduced by 25 percent under the House Review by the County. The wetland buffer can be reduced from 25 to 50 percent under a variance (Level I), that requires the permission of the County, and the County must ensure the opportunity for public comment, including that from appropriate Federal, State, and Tribal natural resource agencies. To reduce the buffer to less than 50 percent requires a variance (Level II) and that is the Hearing Examiner variance. The client has to remediate all land that was not occupied by the former buildings by planting trees or shrubs.

Low impact uses and activities that are consistent with the purpose and function of the buffer and which do not detract from the buffer integrity may be permitted within the buffer, depending on the sensitivity of the habitat involved, provided that such activity does not result in a decrease in buffer functions. Examples of such usage include removal of noxious vegetation and construction of pedestrian trails.

A Critical Area Site Plan will need to be filed with the County Auditor following acceptance by the Planning and Permit Center. The Critical Area Site Plan indicates the proposed project and critical areas that exist within 200 feet of the proposed project area at the time of our investigation. The Critical Area Site Plan that is at the back of this document will suffice for the County Auditor.

SITE OBSERVATIONS

A representative from Edison Engineering conducted site visits on November 19 and December 12, 2014. The map was made by measuring the house, road, and a bit of the wetland. The rest of the wetland and the island were taken from aerial photographs and placed with the house as a reference to location. The house was place there long before the state was noticing wetlands.

Critical Areas

There is one wetland with an island within it on the property. The wetland is about 12.55 acres and the island is about 0.97 acres. The total score for the wetland is 44 (Washington State Wetland Rating System (revised, DOE, 04-06-025, 2006) and it is a Category III wetland and the buffer is 110 feet.

There is also one stream that empties the wetland and there is not another stream that drains into the wetland. The stream is not flowing now and as of December 12 the water must go up five inches to drain. On November 19, the water level was 11 inches below the drain. We conclude the stream is too steep for fish and it is a type Ns (no fish, seasonal) and its buffer is 50 feet. Where the stream is underground there will not be buffers. The streams are cemented rock lined and there are no plants.

The property has no federally listed Threatened or Endangered plant or animal species on it. The wetland has not been documented as habitat for any State listed Threatened or Endangered species by the Washington Department of Fish and Wildlife (WDFW).

Vegetation

In the open water wetlands are pond-lily (*Nuphar luteum*, OBL) or white water lily (*Nymphaea odorata*, OBL) and floating-leaf pondweed (*Potamogeton natans*, OBL). At the edges there are trees: red alder (*Alnus rubra*, FAC), Pacific willow (*Salix lasiandra*, FACW), Sitka willow (*Salix sitchensis*, FACW) and western red cedar (*Thuja plicata*, FAC). Shrubs are there too such as salmonberry (*Rubus spectabilis*, FAC) hardhack (*Spirea douglasii*, FACW) and salal (*Gaultheria shallon*, FACU). Many herbaceous species are at the lake to land junction, including cattail (*Typha latifolia*, OBL), reed canary grass (*Phalaris arundinacea*, FACW), slough sedge (*Carex obnupta*, OBL), yellow iris (*Iris pseudoacorus*, OBL), soft rush (*Juncus effusus*, FACW), creeping buttercup (*Ranunculus repens*, FACW), water parsley (*Oenanthe sarmentosa*, OBL), skunk cabbage (*Lysichiton americanum*, OBL) and marsh speedwell (*Veronica scutellata*, OBL).

In the uplands there are trees, including western hemlock (*Tsuga heterophylla*, FACU), grand fir (*Abies grandis*, FACU), Pacific madrone (*Arbutus menziesii*, UPL), shore pine (*Pinus contorta*, FAC), western red cedar and Douglas-fir (*Pseudotsuga menziesii*, FACU). Shrubs and vines include black raspberry (*Rubus leucodermis*, FACU), Scot's broom (*Cytisus scoparius*, NI), Himalayan blackberry (*Rubus armeniacus*, FACU) and ocean spray (*Holodiscus discolor*, FACU). Herbivorous vegetation includes sword fern (*Polystichum munitum*, FACU), bracken fern (*Pteridium aquilinum*, FACU), (*Thuja plicata*, FAC), cleaver bedstraw (*Galium aparine*, FACU), spotted cats ear (*Hypochaeris radicata*, FACU) and dandelion (*Taraxacum officinale*, FACU).

Soil Conditions

The soil encountered by the wetland probably had been moved in the late 1980s, when the wetland was constructed or modified. The soils have been in place about 25 years. We are not doing anything with the soils.

CONCLUSIONS

General

The house next to the wetlands was purposely set there. It is too bad that they could not have seen to everything because it is difficult to expand the house with the buffer setbacks in place. Still they want to put an extra bathroom on the landward side of the house and they would like to put an entrance structure at the southeast end of the building. Both areas are covered with gravel or paving and there is a stone wall to the east of the bathroom and the entry structure. The wetland would suffer no ill effects because of the bathroom or the entrance structure being built where they are intended. For example the ground is already covered with gravel (bathroom) or paved (entry structure) and so no more water could get to the earth. The hot tub is out there and people would walk from the front of the house to the hot tub in view of the animals in the wetland. Instead, people walk from the bathroom to the hot tub and would be a lot less visible from the wetland. They will have 22 more feet of invisibility from the animals.

Relief is needed from the 110 foot wetland buffer. They need to work at 21.4 through 43.4 feet from the wetland on the bathroom and from 42.6 to 62.6 feet on the entryway structure. To reduce the buffer to less than 50 percent requires a variance (Level II); that is the Hearing Examiner variance. The client has to remediate all land by planting trees or shrubs on bare areas of the buffer or the island.

There is not a zoning variance that would make the project work and it will not avoid the need of a buffer variance. The issuance of a zoning variance by itself will not provide sufficient relief to avoid the need of a Critical Areas variance. Even with the zoning variance on the side yard, the setback is at 8 feet, but the buffer is still there.

The wetland buffer is completely covering the house and the land behind it. This site assessment indicates there would be no harm by constructing the addition behind the wetland (21.4 feet) and (42.6 feet) because it is shielded from the wetland by the house. The sites are sitting in gravel or paving with no native vegetation being destroyed. But a mitigation plan is there for the project.

The wetland will have all of its buffers and the work will happen within one section of the buffer. The bathroom will cause 372 square feet of buffer degradation and the entryway structure will be another 48 square feet of buffer degradation. This equals 420 feet of degradation. The buffer will be mitigated by replacing grass on the island or the buffer anywhere by trees or shrubs.

Proposed Mitigation

Portions of the house will be constructed within the 110-foot wetland buffer, that space is 420 square feet of vegetation. There is plenty of space in the island or within the buffers where the vegetation will go.

To plant 420 square feet; plant the trees on 8-foot centers (64 square feet) or shrubs on 5-foot centers (25 square feet). The fish and wildlife buffer will need to have about 6 trees or 17 shrubs or a combination thereof, planted into the remaining fish and wildlife habitat buffer. Placing the trees and shrubs in small groups will make the mitigation more pleasing.

The recommended criteria for successful buffer enhancement efforts is survival of 85 percent of all plantings within the enhanced area over the 5 year period and survival of 100 percent of the species through the first year. Percent survivorship shall be calculated through a direct count of all living specimens. If some of the plants fail, the method of failure will be determined (i.e., soil conditions, predation, moisture conditions, etc.) and recommendations will be made to rectify the problems, and either that specie or another specie shall be planted.

You could plant other trees and shrubs, but they have to be native of Skagit County and they have to be acclimated to the habitat in the area. We think the plantings may include:

TREES:
grand fir (*Abies grandis*), sunny, moist to dry,
Douglas-fir (*Pseudotsuga menziesii*), sunny, dry,
western red cedar (*Thuja plicata*), moist, must be kept shaded for the first 4 years,
choke cherry (*Prunus virginiana*), sunny, dry,
Douglas maple (*Acer glabrum*), dappled shade to sunny, dry,
paper birch (*Betula papyrifera*), dappled shade to sunny, any condition,
quaking aspen (*Populus tremuloides*), sunny, moist,
pin cherry (Prunus pensylvanica), dappled shade to sunny, dry,
shore pine (*Pinus contorta*), sunny, moist.
vine maple (*Acer circinatum*), shady to dappled shade, moist and
ocean spray (*Holodiscus discolor*), sunny to dabbled shade, moist to dry.

SHRUBS:
beaked hazelnut (*Corylus cornuta*), shady or sunny, anywhere.
dull Oregon grape (*Mahonia nervosa*), dappled shade, dry,
common juniper (*Juniperus communis*), sunny, well drained
evergreen huckleberry (*Vaccinium ovatum*), moist and shady
Indian plum (*Oemleria cerasiformis*), dappled shade, dry,
Nootka rose (*Rosa nutkana*), shady or sunny, anywhere
red elderberry (*Sambucus racemosa*), sun or shade, fairly dry conditions,
salal (*Gaultheria shallon*), dappled shade, dry to moist,
serviceberry (*Amelanchier alnifolia*), sunny, dry,
snowberry (*Symphoricarpos albus*), sunny or shade, wet or dry,
red currant (*Ribes sanguineum*), dappled shade to sunny, dry and
western red huckleberry (*Vaccinium parvifolium*), shady and dry.

We recommend Plants of the Pacific Northwest Coast (Pojar & MacKinnon, Lone Pine Press, 1994) as a guide to identification and habitats for the recommended native species to be planted at the site. We also recommend Gardening with Native Plants of the Pacific Northwest (Arthur R. Kruckeberg, University of Washington Press, 1996) to provide planting ideas for site development. High quality native plants are available from Fourth Corner Nursery in Bellingham. A catalogue can be viewed at their web site: www.fourthcornernurseries.com

General Construction Recommendations

We recommend the following for general site development:

- We feel that a silt fence should be set up at the just a few feet from the bathroom or the entry structure.
- The silt fence will minimize transport of sediments and chemicals toward the ocean. The silt fence should be erected with the skirt on the upgradient side of the support posts. The skirt should be put into a trench, a slit cut into the upper soil layer, or the skirt may be held down to the soil by covering the skirt of the silt fence with a low berm of sand to press it to the ground surface.
- No soil or demolition materials should be stored waterward of the silt fence.
- All construction at the site should be conducted during the dry season (between the end of May and the end of September) to minimize erosion and sedimentation transport brought on by seasonal rains. If construction does commence during the wet season, cover all soil stockpiles with polyethylene sheeting to minimize erosion.

- Concrete footings, slabs and all outdoor brickwork should be covered with polyethylene sheeting if rain is likely to occur within 3 days of concrete work. Concrete spills or runoff may be neutralized by the application of sodium bicarbonate (baking soda) to lower the pH.

INDEMNIFICATION AND LIMITATION

This report was produced for William Doddridge and his representatives for the project described in this report. It is not intended for use by other persons or at other locations without the permission of Edison Engineering.

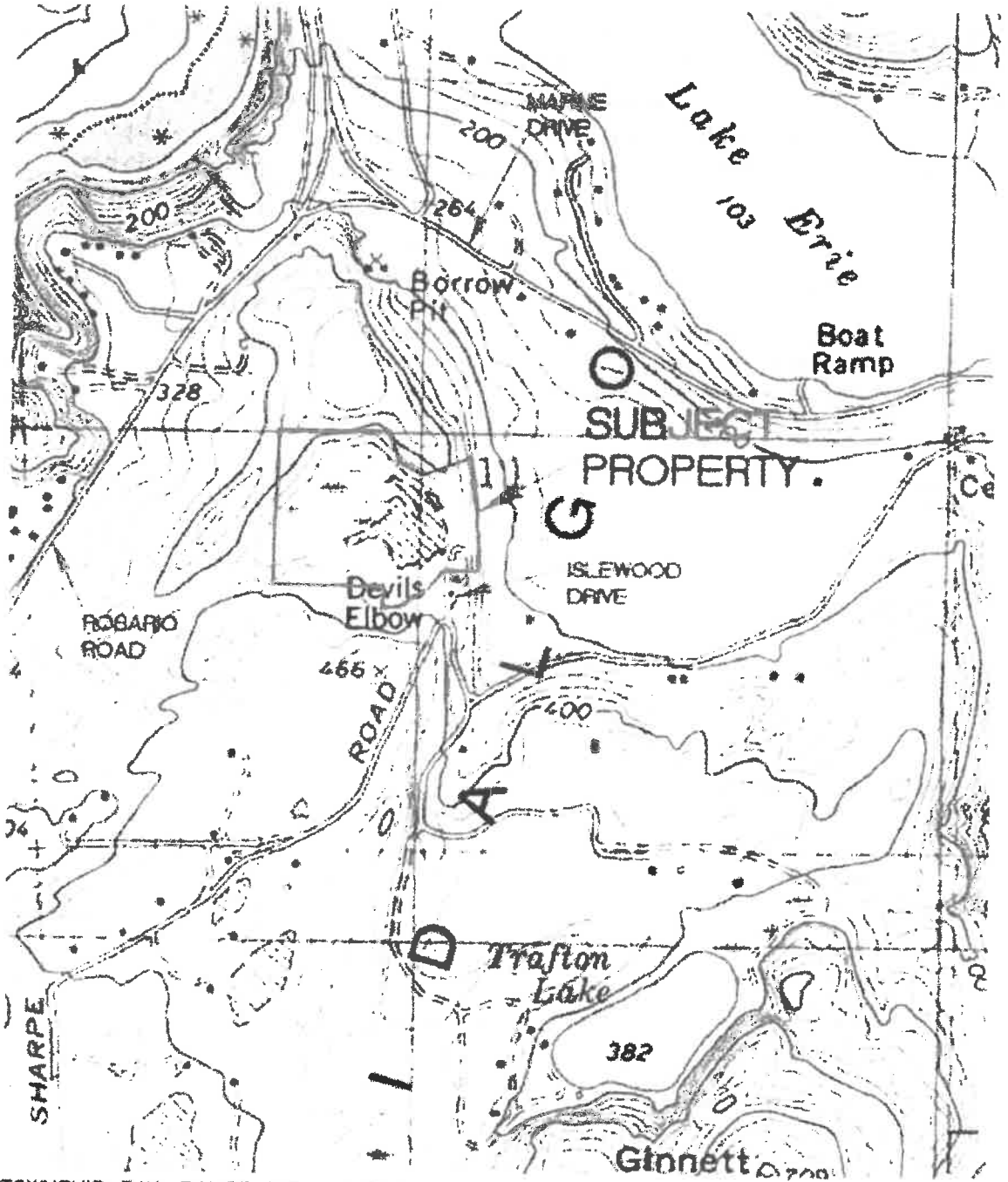
Our wetland report describes subsurface conditions at the dates and locations indicated. The analysis, conclusions, and recommendations contained in our report are based on site conditions to the limited depth of our test pits at the time of our investigation and the scope and budget of this project. We assume that the exploratory test pits are representative of the subsurface conditions throughout the site. If, during construction, different subsurface conditions from those encountered during our explorations are observed or appear to be present in excavations, we must be advised promptly so that we can review these conditions and reconsider and/or modify our recommendations and conclusions where necessary.

We appreciate the opportunity to be of service to you. Should you have any questions concerning this report or require further information, please contact Bob Bailey at (360) 766-4414.

Sincerely,

EDISON ENGINEERING

Robert P. Bailey, M.S.C.E., P.E.
Biologist / Wetland Scientist / Geotechnical Engineer



TOWNSHIP 34N, RANGE 01E, SECTION 11
LATITUDE: 48°26'50", LONGITUDE: 122°38'51"

GRAPHIC SCALE
1000 0 500 1000 2000
(IN FEET)
1 inch = 1000 ft.

REFERENCE: USGS 7.5-MIN TOPOGRAPHIC MAP
DECEOPTION PASS QUADRANGLE
CREATED 1978, REVISED 1980.

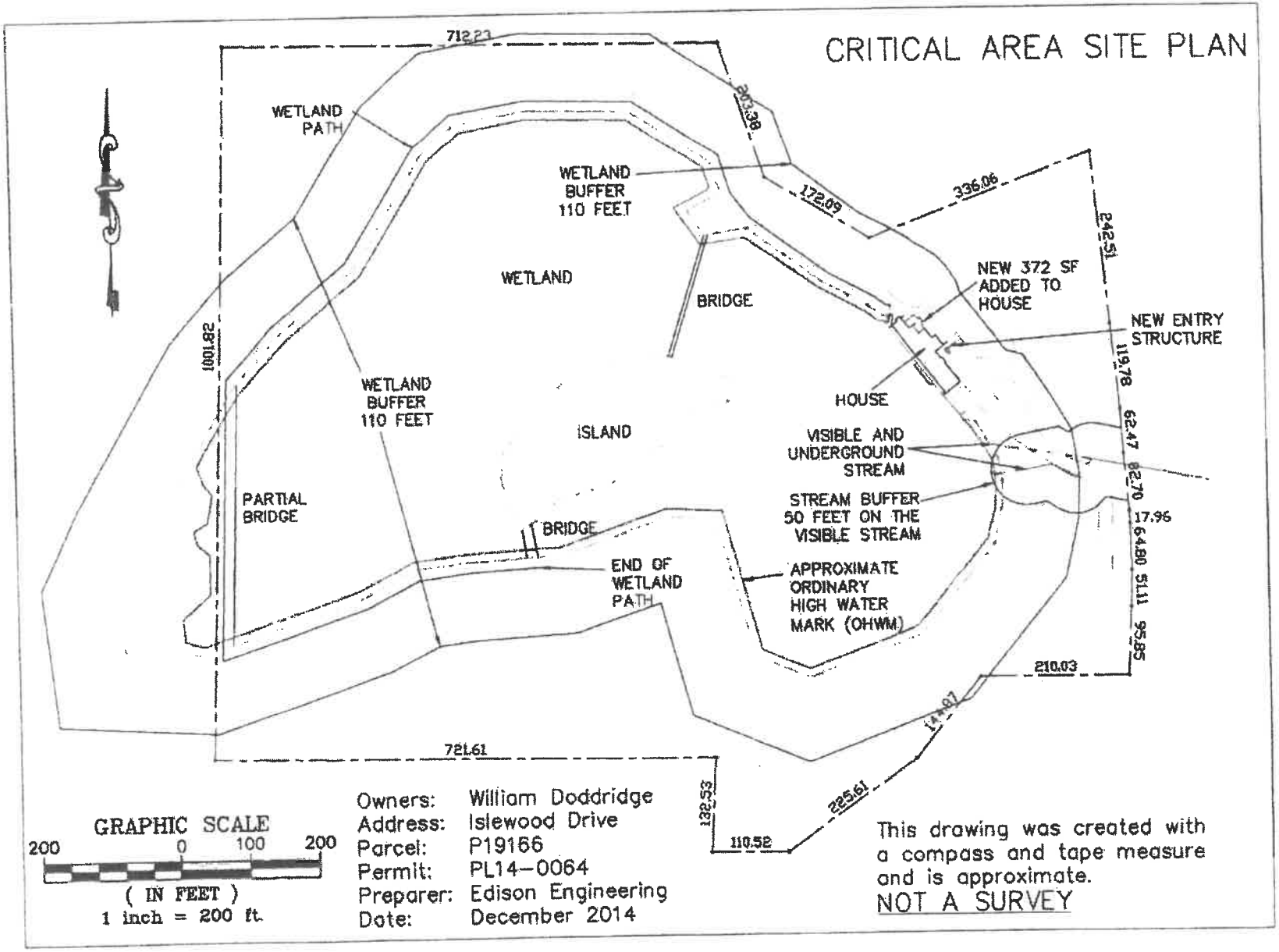
JOB NO.	214036
DESIGNED BY	rpb
DRAWN BY	rpb
CHECKED BY	rpb

EDISON ENGINEERING
P.O. Box 164
Bow, WA 98232
Phone / Fax
(360) 766-4144

TOPOGRAPHIC / VICINITY MAP
DODDRIDGE PROPERTY, ISLEWOOD DRIVE
SKAGIT COUNTY, WASHINGTON

DATE 12/12/14 SCALE 1"=1000 REVISED n/a

CRITICAL AREA SITE PLAN



GRAPHIC SCALE

200 0 100 200

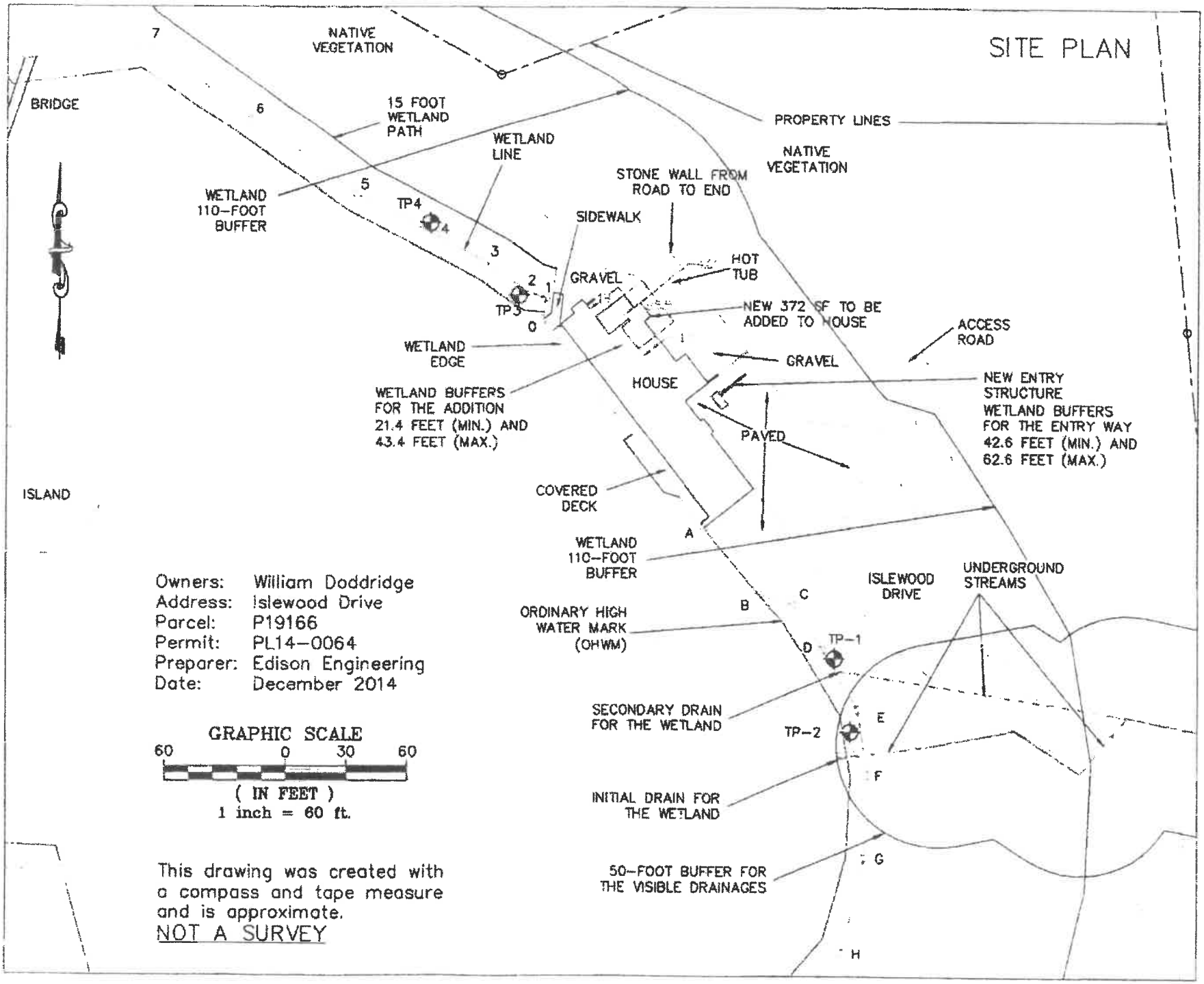
(IN FEET)

1 inch = 200 ft.

Owners: William Doddridge
Address: Islewood Drive
Parcel: P19166
Permit: PL14-0064
Preparer: Edison Engineering
Date: December 2014

This drawing was created with a compass and tape measure and is approximate.

NOT A SURVEY


SITE PLAN
NATIVE VEGETATION
BRIDGE
15 FOOT WETLAND PATH
WETLAND LINE
PROPERTY LINES
NATIVE VEGETATION
STONE WALL FROM ROAD TO END
WETLAND 110-FOOT BUFFER
TP4
SIDEWALK
HOT TUB
GRAVEL
TP3
NEW 372 SF TO BE ADDED TO HOUSE
ACCESS ROAD
WETLAND EDGE
GRAVEL
HOUSE
NEW ENTRY STRUCTURE
WETLAND BUFFERS FOR THE ENTRY WAY
42.6 FEET (MIN.) AND
62.6 FEET (MAX.)
WETLAND BUFFERS FOR THE ADDITION
21.4 FEET (MIN.) AND
43.4 FEET (MAX.)
PAVED
ISLAND
COVERED DECK
WETLAND 110-FOOT BUFFER
ISLEWOOD DRIVE
UNDERGROUND STREAMS
ORDINARY HIGH WATER MARK (OHWM)
TP-1
SECONDARY DRAIN FOR THE WETLAND
TP-2
INITIAL DRAIN FOR THE WETLAND
50-FOOT BUFFER FOR THE VISIBLE DRAINAGES
Owners: William Doddridge
Address: Islewood Drive
Parcel: P19166
Permit: PL14-0064
Preparer: Edison Engineering
Date: December 2014
GRAPHIC SCALE
60 0 30 60
(IN FEET)
1 inch = 60 ft.
This drawing was created with a compass and tape measure and is approximate.
NOT A SURVEY

Wetland name or number ___

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Doddridge Date of site visit: ____

Rated by Bailey - Edison Eng. Trained by Ecology? Yes X No___ Date of training 10/2007

SEC: 11 TWNSHP: 34 RNGE: 6 E Is S/I/R in Appendix D? Yes___ No X

Map of wetland unit: Figure ____ **Estimated size** 19 Ac.

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	10
Score for Hydrologic Functions	10
Score for Habitat Functions	24
TOTAL score for Functions	44

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

Final Category (choose the "highest" category from above) **III**

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	✓
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	

Wetland name or number _____

		Points (only 1 score per box)
D	**Depressional and Flats Wetlands** **HYDROLOGIC FUNCTIONS** - Indicators that the wetland unit functions to reduce flooding and stream degradation	
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	*(see p.46)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and **no obvious natural outlet** and/or outlet is a man-made ditch points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of unit 6.05 times points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	5
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4. Does the wetland unit have the opportunity to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 49)* multiplier 1
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	10

Wetland name or number _____

	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	**D 1. Does the wetland unit have the potential to improve water quality?**	*(see p.38)*
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and **no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*) Provide photo or drawing	Figure ___ 2
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0 Map of Hydroperiods	Figure ___ 0
D	**Total for D 1** *Add the points in the boxes above*	5
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ✓ Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ✓ Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 44)* multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 *Add score to table on p. 1*	10

Wetland name or number _____

These questions apply to wetlands of all HGM classes. **Points** (only 1 score per box)

HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat

H 1. Does the wetland unit have the potential to provide habitat for many species?

H 1.1 Vegetation structure *(see p. 72)* — Figure ___

Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.

- ✓ Aquatic bed
- ✓ Emergent plants
- ✓ 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

Add the number of vegetation structures that qualify. If you have:

4 structures or more	points = 4 (circled)
3 structures	points = 2
2 structures	points = 1
1 structure	points = 0

Map of Cowardin vegetation classes

Points: 4

H 1.2. Hydroperiods *(see p. 73)* — Figure ___

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

- ✓ Permanently flooded or inundated
- ✓ Seasonally flooded or inundated
- ___ Occasionally flooded or inundated
- ✓ Saturated only
- ___ Permanently flowing stream or river in, or adjacent to, the wetland
- ✓ Seasonally flowing stream in, or adjacent to, the wetland
- ___ ***Lake-fringe wetland* = 2 points**
- ___ ***Freshwater tidal wetland* = 2 points**

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

Map of hydroperiods

Points: 3

H 1.3. Richness of Plant Species *(see p. 75)*

Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)*

You do not have to name the species.

Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

If you counted:	
> 19 species	points = 2
5 - 19 species	points = 1 (circled)
< 5 species	points = 0

List species below if you want to:

Counted 18 Species But No Reed Canary Grass

So 17 Species

Points: 1

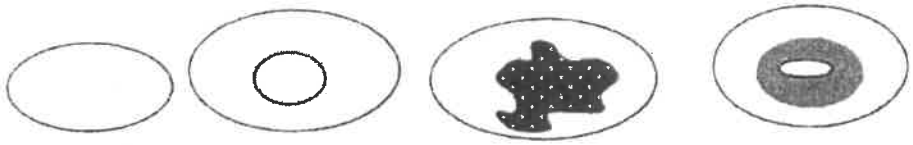
Total for page 8

Wetland name or number _ ____

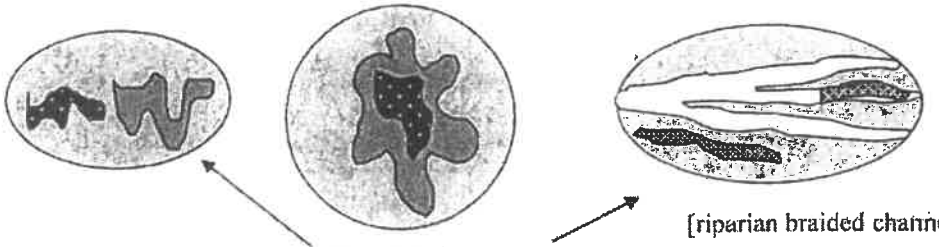
H 1.4. Interspersion of habitats *(see p. 76)*

Figure ___

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

3

H 1.5. Special Habitat Features: *(see p. 77)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

✓ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

✓ Standing snags (diameter at the bottom > 4 inches) in the wetland

___ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

___ At least ¼ acre of thin-stemmed persistent vegetation 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 each stratum of plants

NOTE: The 20% stated in early printings of the manual on page 78 is an error.

3

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

14

Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 80)* — Figure ___

Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."

— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5**

— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4**

— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**

— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3**

— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**

If buffer does not meet any of the criteria above

— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**

— Heavy grazing in buffer. **Points = 1**

— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.**

✓ — Buffer does not meet any of the criteria above. Heavy Trails around Buffer - Dog Paths **Points = 1**

Aerial photo showing buffers — 1

H 2.2 Corridors and Connections *(see p. 81)*

H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*).

YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2

H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? — 2

YES = **2 points** (*go to H 2.3*) NO = H 2.2.3

H 2.2.3 Is the wetland:

within 5 mi (8km) of a brackish or salt water estuary OR
within 3 mi of a large field or pasture (>40 acres) OR
within 1 mi of a lake greater than 20 acres?

YES = **1 point** NO = **0 points**

Total for page 3

Wetland name or number _____

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)***

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

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

____**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 p. 152*).

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

____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 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:** Woodlands 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*).

✓ **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*).

✓ **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: pp. 167-169 and glossary in Appendix A).*

____**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 7.6 m (25 ft) high and occurring below 5000 ft.

____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

If wetland has **3 or more** priority habitats = **4 points**
If wetland has **2** priority habitats = **3 points**
If wetland has **1** priority habitat = **1 point** No habitats = 0 points

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)

4

4

Wetland name or number _____

H 2.4 Wetland Landscape *(choose the one description of the landscape around the wetland that best fits)* ***(see p. 84)*** There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	10
TOTAL for H 1 from page 14	14
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	24

Vegetation in the Doddridge Wetland Site

CODE	Common Name	Latin Name	Status
	TREE OR SHRUB		
ALRU	red alder	*Alnus rubra*	FAC
PSME	Douglas-fir	*Pseudotsuga menziesii*	FACU
SASI	Sitka willow	*Salix sitchensis*	FACW
SPDO	hardhack	*Spirea douglasii*	FACW
	HERBACEOUS		
CAOB	slough sedge	*Carex obnupta*	OBL
FEID	Idaho fescue	*Festuca idahoensis*	FACU
GAAP	cleaver bedstraw	*Galium aparine*	FACU
HYRA	spotted cats ear	*Hypochaeris radicata*	FACU
IRPS	yellow iris	*Iris pseudoacorus*	OBL
LOPE	perennial ryegrass	*Lolium perenne*	FACU
NULU	pond-lily	*Nuphar luteum*	OBL
OESA	water parsley	*Oenanthe sarmentosa*	OBL
PHAR	reed canary grass	*Phaluris arundinacea*	FACW
POMU	sword fern	*Polystichum munitum*	FACU
PONA	floating-leaf pondweed	*Potamogeton natans*	OBL
TAOF	dandelion	*Taraxacum officinale*	FACU
TYLA	cattail	*Typha latifolia*	OBL
VESC	marsh speedwell	*Veronica scutellata*	OBL
	WOODY VINES		
RUUR	trailing blackberry	*Rubus ursinus*	FACU

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

Project/Site: Islewood Dr City/County: SKAGIT Sampling Date: 11/19/14
Applicant/Owner: Doddridge State: WA Sampling Point: TP-1
Investigator(s): Bailey Section, Township, Range: 11/34/01
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 20
Subregion (LRR): LRR A Lat: 48 26 50 Long: 122 38 51 Datum:
Soil Map Unit Name: Terric Medisaprists / CATLA NWI classification: PEM H
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ___	No ✓	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1 PHAR	10	No	FACW
2 LOPE	30	Yes	FACU
3 FEID	30	Yes	FACU
4 TAOF	7	No	FACU
5 HYRA	9	No	FACU
6 GAAP	10	No	FACU
7			
8			
9			
10			
11			
	96 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum: None

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 Rapid Test for Hydrophytic Vegetation
___ 2 Dominance Test is >50%
___ 3 Prevalence Index is ≤3.0[1]
___ 4 Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

Sample Point TP-1

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type	Loc	Texture	Remarks
0-14	10YR 3/3	100					Silt Loam	
14-19	10YR 5/2	100					Silt Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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 Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): No F INDICATORS

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Leaves (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)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): > 18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): > 18"

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

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

Project/Site: Islewood Dr City/County: SKAGIT Sampling Date: 11/19/14
Applicant/Owner: Dodderidge State: WA Sampling Point: TP-2
Investigator(s): Bailey Section, Township, Range: 11/34/01
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 10
Subregion (LRR): LRR A Lat: 48 26 50 Long: 122 38 51 Datum:
Soil Map Unit Name: Terric Medisaprists / CATCA NWI classification: PEM H
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1 PHAR	25	Yes	FACW
2 TYLA	25	Yes	OBL
3 DESA	10	No	OBL
4 VESC	30	Yes	OBL
5 PONA	10	No	OBL
6			
7			
8			
9			
10			
11			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum: None

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1 Rapid Test for Hydrophytic Vegetation
2 Dominance Test is >50%
3 Prevalence Index is ≤3.0[1]
4 Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
5 Wetland Non-Vascular Plants[1]
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks

Sampling Point: TP-2

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type¹	Loc²	Texture	Remarks
0-9	10YR 3/1	100					Silt Loam	
9-18	10YR 3/2	60	10YR 5/1	20	RM		Silt Loam	
			10YR 4/6	20	C		Silt Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): None Noted

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Leaves (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)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): 0

Water Table Present? Yes ✓ No ___ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Islewood Dr City/County: SKAGIT Sampling Date: 11/19/14
Applicant/Owner: Doddridge State: WA Sampling Point: TP-3
Investigator(s): Bailey Section, Township, Range: 11/34/01
Landform (hillslope, terrace, etc): Terrace Local relief (concave, convex, none): Convex Slope (%): 10
Subregion (LRR): LRR A Lat: 48 26 50 Long: 122 38 91 Datum:
Soil Map Unit Name: Terric Mediaquepts / CATLA NWI classification: PEMH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ✓ No
Hydric Soil Present? Yes ✓ No
Wetland Hydrology Present? Yes ✓ No
Is the Sampled Area within a Wetland? Yes ✓ No
Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 25')			
1. ALRU	100	Yes	FAC
2.			
3.			
4.			
	100	Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. SASI	10	No	FACW
2. SPDO	10	NO	FACW
3.			
4.			
5.			
	20	Total Cover	
Herb Stratum (Plot size: 5')			
1. IRPS	10	NO	OBL
2. CAOB	25	Yes	OBL
3. PONA	10	NO	OBL
4. PHAR	5	No	FACW
5. NULU	20	Yes	OBL
6.			
7.			
8.			
9.			
10.			
11.			
		Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		Total Cover	

% Bare Ground in Herb Stratum: 15%
Remarks:

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1 Rapid Test for Hydrophytic Vegetation
2 Dominance Test is >50%
3 Prevalence Index is ≤3.0
4 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5 Wetland Non-Vascular Plants
Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Sampling Point TP-3

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	5Gy1 7/N	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining, 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 Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Leaves (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)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ~0~

Water Table Present? Yes ✓ No ___ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Islewood Dr. City/County: SKAGIT Sampling Date: 10/19/14
Applicant/Owner: Dodderidge State: WA Sampling Point: TP-4
Investigator(s): Bailey Section, Township, Range: 11/34/01
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0
Subregion (LRR): LRR A Lat: 48 26 50 Long: 122 38 51 Datum:
Soil Map Unit Name: Terric Medisaprists / CATLA NWI classification: PEMH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓
Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 25')			
1. PSME	100	Yes	
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. SPDO	15	No	FACW
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. POMU	5	No	FACW
2. HYRA	25	Yes	FACU
3. PTAQ	20	Yes	FACU
4. GRASS - Too short to tell			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: 5')			
1. RUUR	20	Yes	FACU
2.			
	= Total Cover		

% Bare Ground in Herb Stratum: NONE
Remarks:

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1 Rapid Test for Hydrophytic Vegetation
2 Dominance Test is >50%
3 Prevalence Index is ≤3.0[1]
4 Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
5 Wetland Non-Vascular Plants[1]
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Sampling Point: TP-4

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type	Loc	Texture	Remarks
0-16	7.5YR 4/3	100					Sandy - Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): None Noted

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Leaves (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)
- ___ FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches):	
Water Table Present?	Yes ___	No ✓	Depth (inches):	7.19"
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches):	7.19"

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: