

# WETLAND DELINEATION AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT AND CONCEPTUAL MITIGATION PLAN

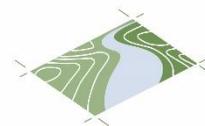
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## KESTREL RIDGE

APRIL 2019

REVISED AUGUST 2019

RECEIVED  
12/27/2019  
CITY OF MONROE



**Soundview  
Consultants**  
Environmental Assessment  
Planning + Land Use Solutions

# WETLAND DELINEATION AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT AND CONCEPTUAL MITIGATION PLAN

## KESTREL RIDGE

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APRIL 4, 2019

REVISED AUGUST 2, 2019

### PROJECT LOCATION

13305 CHAIN LAKE ROAD  
MONROE, WASHINGTON 98272

### PREPARED FOR

#### PROSPECT DEVELOPMENT LLC

2913 5<sup>TH</sup> AVENUE NORTHEAST, SUITE 201  
PUYALLUP, WASHINGTON 98372

### PREPARED BY

#### SOUNDVIEW CONSULTANTS LLC

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**Soundview  
Consultants**  
Environmental Assessment  
Planning + Land Use Solutions

## Executive Summary

Soundview Consultants LLC (SVC) is assisting Prospect Development LLC (Applicant) with a wetland delineation and fish and wildlife habitat assessment and conceptual mitigation plan for a proposed residential development on an approximately 5.92-acre site, located at 13305 Chain Lake Road in the City of Monroe, Washington. The property consists of two parcels located in the Northwest ¼ of Section 31, Township 28 North, Range 7 East, W.M. (Snohomish County Tax Parcel Numbers 28073100202500 and 28073100200600).

SVC investigated the subject property for the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in the winter of 2018. The site investigation performed by SVC was following a site inspection and review and comment letter by the City of Monroe’s third-party reviewer (Perteet) in the fall of 2018. Perteet’s comment letter reviewed the findings of a prior consultant’s opinion. SVC responded to Perteet’s comments dated November 9, 2018 in a separate technical memorandum. SVC and Perteet completed a site investigation together on May 29, 2019 to determine wetland boundaries. Perteet submitted a second round of comments dated June 24, 2019 in response to the site investigation. SVC has responded to these comments in a separate technical memorandum and has revised the Wetland A boundary as well as the wetland ratings in response to the site visit and Perteet’s comments. Using current methodology, the site investigations identified and delineated two potentially-regulated wetlands (Wetlands A and B). Wetlands A and B are classified as Category IV wetlands per Monroe Municipal Code (MMC) 20.05.080. Wetland A is an isolated Category IV wetland less than 4,000-square feet and meets the exemption requirements per MMC 20.05.050.B.1, therefore, Wetland A is exempt from the development provisions within MMC 20.05. Wetland B is a Category IV wetland approximately 1,545 square feet in size but does not appear to be isolated from all other surface waters, therefore, Wetland B is subject to the development provisions of MMC 20.05. No other potentially-regulated wetlands or fish and wildlife habitat were identified within 300 feet of the subject property.

The Applicant proposes the development of 29 single-family residential lots and associated infrastructure. The project was carefully designed in order to avoid impacts to critical areas to the greatest extent feasible; however, complete avoidance of wetland impacts is not possible. In order to provide City-required frontage improvements and maintain reasonable site development, the project requires the complete fill of Wetland B. Mitigation for this impact will be provided through the purchase of wetland mitigation bank credits from the Snohomish Basin Mitigation Bank (SBMB), as allowed per MMC 20.05.080.G.4.i.

The table below summarizes the critical areas and identifies the potential regulatory status by local, state, and federal agencies.

Wetland Name	Size/Length Onsite	Category/Type <sup>1</sup>	Regulated Under MMC <sup>2</sup>	Regulated Under RCW 90.48	Regulated Under Clean Water Act
Wetland A	~3,800 SF	IV	No <sup>3</sup>	Likely	Likely
Wetland B	~1,545 SF	IV	Potentially	Likely	Likely

1. Current WSDOE and MMC 20.05.030 wetland definitions; Washington State Department of Natural Resources (DNR) water typing system and MMC 20.05.030 waterbody definitions.
2. Critical area definitions as defined in MMC Chapter 20.05.030.
3. Potentially exempt from provisions of Chapter 20.05 requirements per MMC 20.05.050.B.1

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- Appendix C – Site Plan
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# Chapter 1. Introduction

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Soundview Consultants LLC (SVC) has been assisting Prospect Development LLC (Applicant) with a wetland delineation and fish and wildlife habitat assessment and conceptual mitigation plan for a proposed residential development on an approximately 5.92-acre site located at 13305 Chain Lake Road in the City of Monroe, Washington (Figure 1). The property consists of two parcels located in the Northwest ¼ of Section 31, Township 28 North, Range 7 East, W.M. (Snohomish County Tax Parcel Numbers 28073100202500 and 28073100200600).

The purpose of the wetland and fish and wildlife habitat assessment is to identify the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species that may be found on or near the subject property, assess potential impacts to any such critical areas from the proposed project, and provide mitigation to offset those impacts.

This report provides conclusions, recommendations, and preliminary specifications regarding:

- Site description, a brief project description, and area of assessment;
- Identification, delineation, and assessment of potentially-regulated wetlands and other waterbodies within the vicinity of the proposed project;
- Identification and assessment of potentially-regulated fish and wildlife habitat and/or priority species within the vicinity of the proposed project;
- Standard buffer recommendations and development limitations;
- Existing conditions site map detailing identified critical areas and standard buffers;
- Site plan outlining the proposed residential development and improvements;
- Documentation of wetland impact avoidance, minimization measures and mitigation sequencing;
- Description of direct impacts and mitigation banking; and
- Supplemental information necessary for local, state, and federal regulatory review.

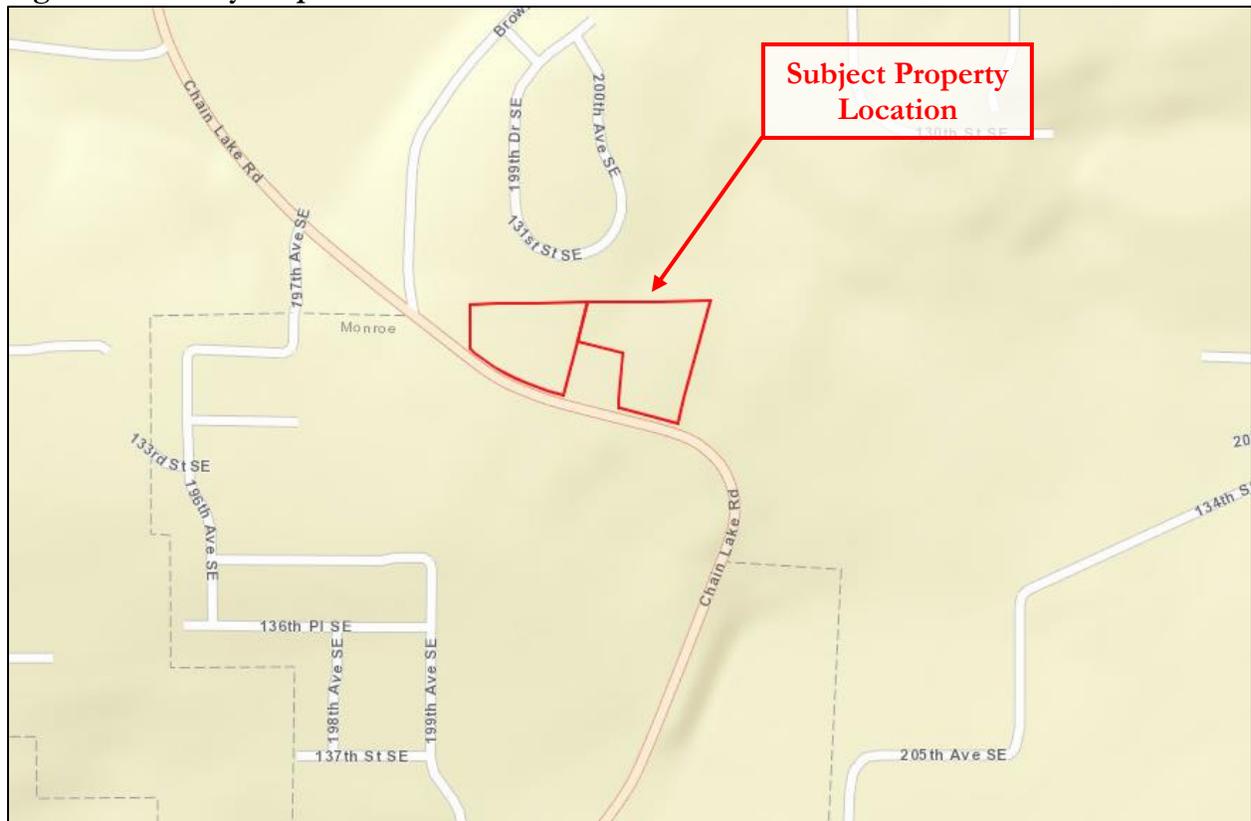
# Chapter 2. Proposed Project

## 2.1 Project Location

The subject property consists of a 5.92-acre site located at 13305 Chain Lake Road in the City of Monroe, Washington (Figure 1). The property consists of two parcels located in the Northwest ¼ of Section 31, Township 28 North, Range 7 East, W.M. (Snohomish County Tax Parcel Numbers 28073100202500 and 28073100200600).

To access the site from Interstate-5 North in the Tukwila area, take Exit 154 for Interstate-405 North toward Bellevue/Renton. Continue for 23 miles and take Exit 23 for WA-522. Continue on WA-522 E for approximately 15 miles and take exit for US-2 E. Continue 0.5 miles and turn left onto Chain Lake Road. Continue for 1.9 miles, where the subject property will be on the right.

Figure 1. Vicinity Map



## 2.2 Project Description

The Applicant proposes the development of 29 single-family residential lots that will include clearing and grading, an internal access road system, City required frontage improvements, stormwater and drainage infrastructure, and open space. The project was carefully designed in order to avoid impacts to critical areas to the greatest extent feasible; however, complete avoidance of wetlands is not possible due to the City required frontage improvements. In order to provide frontage improvements and

maintain reasonable site development, the project requires the necessary fill of Wetland B. Compensatory mitigation will be provided in the form of purchasing credits from the SBMB. Wetland A is an isolated Category IV wetland less than 4,000-square feet and meets the requirements per MMC 20.05.050.B.1 and is exempt from the development provisions within MMC 20.05. As Wetland A is exempt from the regulations within MMC 20.05, the wetland does not require an associated buffer. Furthermore, Wetland A will not be directly impacted. The Applicant will implement impact minimization techniques and appropriate best management practices (BMPs) and Temporary Erosion and Sediment Control Measures (TESC).

## Chapter 3. Methods

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SVC investigated, assessed, and delineated wetlands, drainages, and other potentially-regulated fish and wildlife habitat on or within 300 feet of the subject property in the winter of 2018. All wetland determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic map, Natural Resource Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife (USFWS) National Wetland Inventory (NWI), Snohomish County Geographic Information Systems (GIS) data, Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, DNR water typing data, local precipitation data, and various orthophotographic resources (Appendix B). Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (USDA, 2018). Qualified wetland scientists marked boundaries of onsite wetlands with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 to DP-11). Additional tests pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm each delineation.

SVC classified all wetlands using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979) classification systems. Following classification and assessment, WSDOE-trained scientists rated and categorized all wetlands using the *Washington State Wetlands Rating System for Western Washington* (Hruby, 2014) and the definitions established in MMC 20.05.030.

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.

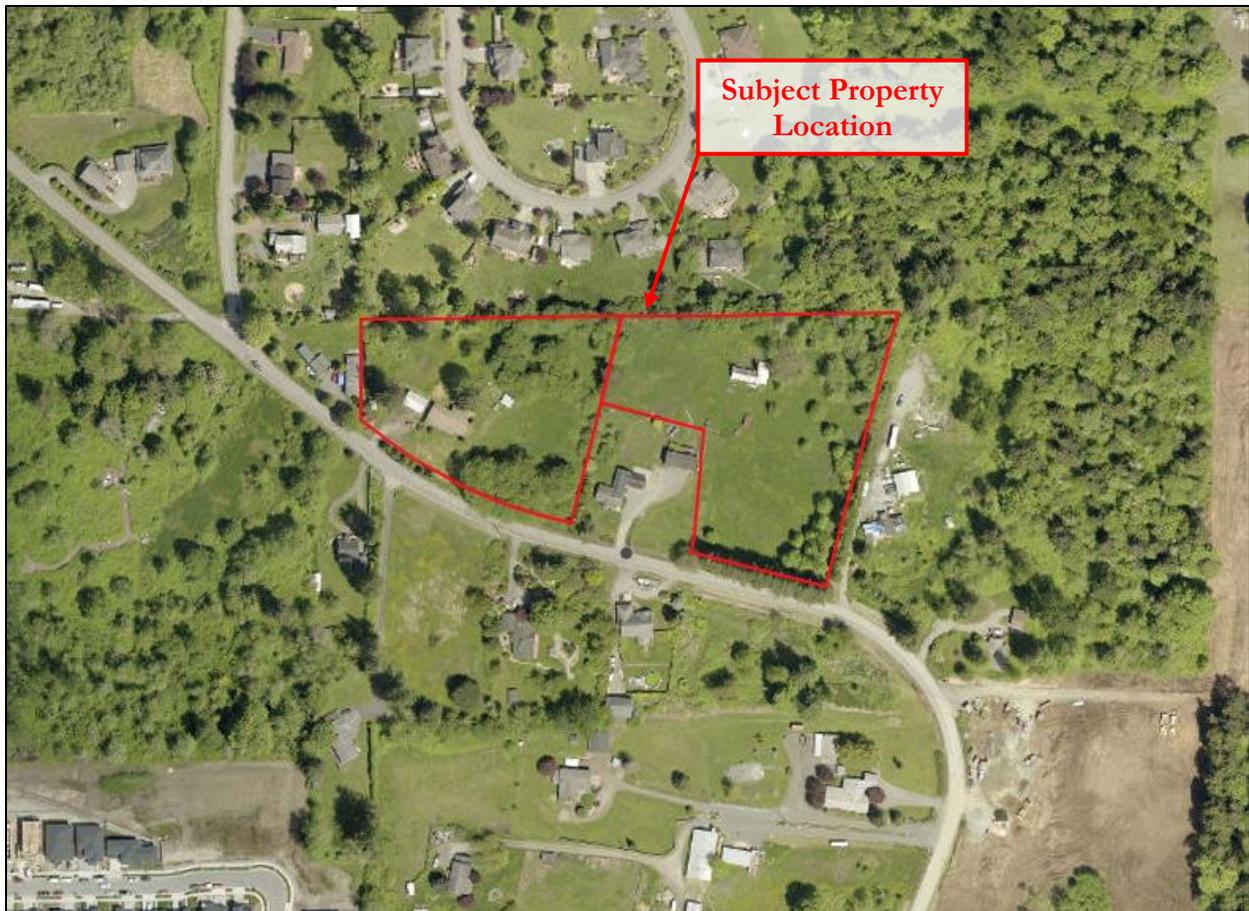
## Chapter 4. Existing Conditions

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### 4.1 Landscape Setting

The subject property is located in an urban residential setting in the City of Monroe and is currently developed with one single-family residence and associated detached structures and mowed lawn (Figure 2). The eastern portion of the site consists of maintained pasture areas with several small patches of forest. Surrounding properties consist of single-family residences and small patches of undeveloped forested areas. The site slopes from west to east, with elevations ranging from approximately 380 to 350 feet above mean sea level (Appendix B1). The subject property is located within Water Resource Inventory Area (WRIA) 7 – Snohomish.

**Figure 2. Aerial View of the Subject Property**



### 4.2 Soils

The NRCS Soil Survey of Snohomish County, Washington identifies two main soil series on the subject property: Tokul gravelly medial loam, 0 to 8 percent slopes (72), and Tokul gravelly medial loam, 8 to 15 percent slopes (73). A soil map is provided in Appendix B2. Below is a detailed description of the soil profiles.

### **Tokul gravelly medial loam, 0 to 8 percent slopes (72)**

According to the NRCS survey, Tokul gravelly medial loam, 0 to 8 percent slopes is a moderately well drained soil formed in glacial till and volcanic ash. In a typical profile, the surface layer is approximately 4 inches thick and is a dark brown gravelly loam. From 4 to 22 inches the subsoil is a brown, strong brown and dark yellowish-brown gravelly loam. From 22 to 31 inches the soil is light olive brown gravelly fine sandy loam. A hard pan is present at a depth of approximately 31 inches. Tokul gravelly medial loam, 0 to 8 percent slopes is listed as a non-hydric soil by the Snohomish County Area Hydric Soils List (NRCS, 2012).

### **Tokul gravelly medial loam, 8 to 15 percent slopes (73)**

According to the NRCS survey, Tokul gravelly medial loam, 8 to 15 percent slopes, is a moderately deep, moderately well drained soil formed in glacial till and volcanic ash on till plains. In a typical profile, the surface is covered with a mat of leaves, twigs, and decomposed litter about 2 inches thick. The surface layer is approximately 4 inches thick and is a dark brown gravelly loam. From 4 to 22 inches, the subsoil is a brown, strong brown, and dark yellowish brown gravelly loam about 18 inches thick. From 22 to 31 inches, the soil is a light olive brown gravelly fine sandy loam. A hard pan is present at a depth of approximately 31 inches. In some areas, the surface layer is cobbly or the soil does not have a hardpan but is underlain by compact glacial till at a depth of 20 to 40 inches. Tokul gravelly medial loam, 8 to 15 percent slopes, is listed as a non-hydric soil by the Snohomish County Area Hydric Soils List (NRCS, 2012).

## **4.3 Vegetation**

The subject property contains areas of both maintained pasture and forested areas. The identified pasture and lawns contain various grasses and forbs such as colonial bentgrass (*Agrostis capillaris*), common velvet grass (*Holcus lanatus*), reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxicum officinale*), and white clover (*Trifolium repens*). The small forested areas are dominated by a canopy of red alder (*Alnus rubra*), Douglas fir (*Pseudotsuga menziesii*), bigleaf maple (*Acer macrophyllum*), and black cottonwood (*Populus balsamifera*), with an understory of beaked hazelnut (*Corylus cornuta*), and non-native invasive Himalayan blackberry (*Rubus armeniacus*).

## **4.4 Stream and Wetland Inventories**

The Snohomish County stream and wetland inventory (Appendix B3), USFWS NWI map (Appendix B4), DNR stream typing map, and City of Monroe Stream and Wetland Inventory Map (B8) do not identify any potential wetlands or streams on the subject property. No other streams or wetlands are documented on or within 300 feet of the subject property.

## **4.5 Priority Habitats and Species**

The WDFW SalmonScape map (Appendix B6) does not identify any salmonid presence in the vicinity of the site. The WDFW PHS map (Appendix B7) does not identify any priority habitat or species on the subject property but does identify one PHS mapped as aquatic habitat within 300 feet of the subject property.

## 4.6 Precipitation

Precipitation data was obtained from the NOAA weather station at SeaTac International Airport in order to obtain percent of normal precipitation during and preceding the investigations. A summary of data collected is provided in Table 1.

**Table 1. Precipitation Summary<sup>1</sup>**

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	Last 30 Days (Observed/Normal)	Year-to-Date <sup>2</sup> (Observed/Normal)	Percent of Normal (Last 30 days/Year)
12/5/18	0.00	0.00	0.48	4.68	5.00/6.77	9.33/11.03	74/85
5/29/19	0.00	0.00	0.19	0.46	0.62/1.95	29.25/32.71	32/89

Notes:

1. Precipitation volume in inches. Data obtained from the NOAA (<http://w2.weather.gov/climate/xmacis.php?wfo=sew>) for SeaTac Airport.
2. Year-to-date precipitation is the total for the 2018/2019 water year from October 1<sup>st</sup> to the onsite date(s).

Precipitation levels for the site December 2018 visit were below statistical normal for the 30 days prior (74 percent of normal), and near normal for the 2018 water year (85 percent of normal); however, a significant amount of precipitation (4.68-inches) fell 2 weeks prior to the site investigation. This precipitation data suggests that hydrologic conditions encountered during the site investigations may have been wetter due to the recent rainfall. Precipitation levels for the site May 2019 visit were near normal for the 2018/2019 water year (89 percent of normal), but below statistical normal for the 30 days prior (32 percent of normal). This precipitation data suggests that hydrologic conditions encountered during the site investigations may have been somewhat drier than normal. Such conditions were considered in making professional wetland boundary determinations.

## Chapter 5. Results

The site investigations in winter 2018 identified and delineated two potentially-regulated wetlands, Wetlands A and B (Appendix C). A follow up site investigation with the third party reviewer in spring 2019 revised the Wetland A boundary. No other potentially-regulated wetlands, waterbodies, priority fish and wildlife habitat, or priority species were identified on or within 300 of the subject property during the site investigations.

### 5.1 Wetlands

#### 5.1.1 Overview

The identified wetlands contained indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Wetland data forms are provided in Appendix D; wetland rating forms are provided in Appendix E; and wetland rating maps are provided in Appendix F, respectively. Table 2 summarizes the wetlands identified during the site investigations.

**Table 2. Identified Wetlands**

Wetland	Predominant Wetland Classification / Rating				Wetland Size Onsite	Buffer Width (feet) <sup>5</sup>
	Cowardin <sup>1</sup>	HGM <sup>2</sup>	WSDOE <sup>3</sup>	City of Monroe <sup>4</sup>		
<b>Wetland A</b>	PEMAB	Depressional	IV	IV	~3,800 SF	N/A <sup>6</sup>
<b>Wetland B</b>	PEMAB	Depressional	IV	IV	~1,545 SF	40

Notes:

1. Cowardin et al. (1979); Federal Geographic Data Committee (2013); class based on vegetation: PEM = Palustrine Emergent. Modifiers for Water Regime and special situations: A = Temporarily Flooded, B = Seasonally Saturated.
2. Brinson, M. M. (1993).
3. Current WSDOE rating (Hruby, 2014).
4. Definitions as defined in MMC Chapter 20.05.030.
5. MMC 20.05.080D buffer width assuming adoption of minimization techniques
6. MMC 20.05.050.B.1 indicates activities in isolated Category IV wetlands are exempt from provisions of MMC 20.05.

#### Wetland A

Wetland A is approximately 3,800 square feet (0.09 acre) in size and is entirely onsite and is located on the northwestern portion of the subject property. Hydrology for Wetland A is provided by surface sheet flow, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by colonial bent grass (*Agrostis capillaris*) and creeping buttercup (*Ranunculus repens*). Wetland A is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated wetland (PEMAB). Per MMC 20.05.030, Wetland A is a Category IV depressional wetland. Table 3 summarizes Wetland A.

#### Wetland B

Wetland B is approximately 1,545 square feet (0.04 acre) in size onsite and is located on the southern portion of the subject property, extending offsite slightly to the south, into the road right of way. Hydrology for Wetland B is provided by surface sheet flow, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by soft rush (*Juncus effusus*), colonial bent grass, and common velvet grass (*Holcus lanatus*). Wetland B is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated wetland (PEMAB). Per MMC 20.05.030, Wetland B is a Category IV depressional wetland. Table 4 summarizes Wetland B.

Table 3. Wetland A Summary.

<b>WETLAND A – INFORMATION SUMMARY</b>		
<b>Location:</b>	Located on the northwestern portion of the subject property.	
	<b>Local Jurisdiction</b>	City of Monroe
	<b>WRIA</b>	7 – Snohomish
	<b>WSDOE Rating (Hruby, 2014)</b>	IV
	<b>City of Monroe Rating</b>	IV
	<b>City of Monroe Buffer Width</b>	N/A
	<b>Wetland Size</b>	~3,800 SF
	<b>Cowardin Classification</b>	PEMAB
	<b>HGM Classification</b>	Depression
	<b>Wetland Data Sheet(s)</b>	DP-9
	<b>Upland Data Sheet (s)</b>	DP-10
<b>Boundary Flag color</b>	Orange	
<b>Dominant Vegetation</b>	Wetland vegetation is dominated by a creeping buttercup and colonial bent grass.	
<b>Soils</b>	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
<b>Hydrology</b>	Hydrology for Wetland A is provided by a seasonally high groundwater table and direct precipitation, and to a lesser extent by surface sheet flow.	
<b>Rationale for Delineation</b>	Wetland boundaries were determined by topography, a transition to a hydrophytic plant community and point where primary indicators of hydrology were encountered.	
<b>Rationale for Local Rating</b>	Local rating is based upon WSDOE’s current rating system per MMC 20.05.030.	
<b>Wetland Functions Summary</b>		
<b>Water Quality</b>	Wetland A has a low potential to improve water quality due to the permanently flowing outlet, mowed plant cover, and lack of seasonal ponding. The landscape surrounding the wetland supports water quality improvement functions in the wetland due to adjacent and nearby septic systems. Any water quality improvement functions within Wetland A are considered valuable due to impaired waters within the sub-basins. Wetland A scores 6 out of 9 points for water quality functions.	
<b>Hydrologic</b>	Wetland A has a low potential to reduce flooding due to the permanently flowing outlet, low depth of storage, and small size. The surrounding landscape supports hydrologic functions in Wetland A due to the intensive human land uses within the contributing basin. Any hydrologic functions performed by Wetland A are limited due to its limited surface water connections to other waters. Wetland A scores 4 out of 9 points for hydrologic functions.	
<b>Habitat</b>	Wildlife habitat functions provided by the wetland may include small mammal, amphibian, and bird forage and cover. Wetland A contains low habitat diversity with one Cowardin class, two hydroperiods, no interspersions, low species richness, and no special habitat features. The surrounding landscape has a low potential to support habitat connectivity between the wetland and other potential habitat due to development. The value of Wetland A habitat functions is considered to be low due to the lack of WDFW PHS habitats within 100 meters of the wetland. Wetland A scores 4 out of 9 points for habitat functions.	
<b>Buffer Condition</b>	The uplands surrounding Wetland A include a small patch of forest, but are largely disturbed due to the proximity of single-family residences and maintained lawn.	

Table 4. Wetland B Summary.

<b>WETLAND B – INFORMATION SUMMARY</b>		
<b>Location:</b>	Located on the southern portion of the subject property, extending offsite to the south.	
	<b>Local Jurisdiction</b>	City of Monroe
	<b>WRIA</b>	7 – Snohomish
	<b>WSDOE Rating (Hruby, 2014)</b>	IV
	<b>City of Monroe Rating</b>	IV
	<b>City of Monroe Buffer Width</b>	40 feet
	<b>Wetland Size</b>	~1,545 SF (Onsite)
	<b>Cowardin Classification</b>	PEMAB
	<b>HGM Classification</b>	Depressional
	<b>Wetland Data Sheet(s)</b>	DP-6
	<b>Upland Data Sheet (s)</b>	DP-5
	<b>Boundary Flag color</b>	Orange
<b>Dominant Vegetation</b>	Wetland vegetation is dominated by a soft rush, colonial bent grass, and common velvet grass.	
<b>Soils</b>	Hydric soil indicator A11 (Depleted Below Dark Surface) was observed.	
<b>Hydrology</b>	Hydrology for Wetland B is provided by surface sheet flow, direct precipitation, and a seasonally-high groundwater table.	
<b>Rationale for Delineation</b>	Wetland boundaries were determined by topography, a transition to a hydrophytic plant community and point where primary indicators of hydrology were encountered.	
<b>Rationale for Local Rating</b>	Local rating is based upon WSDOE’s current rating system per MMC 20.05.030.	
<b>Wetland Functions Summary</b>		
<b>Water Quality</b>	Wetland B has a low potential to improve water quality due to the permanently flowing outlet, mowed plant cover, and lack of seasonal ponding. The landscape surrounding the wetland supports water quality improvement functions in the wetland due nearby septic systems. Any water quality improvement functions within Wetland B are considered valuable due to impaired waters within the sub-basins. Wetland B scores 6 out of 9 points for water quality functions.	
<b>Hydrologic</b>	Wetland B has a low potential to reduce flooding due to the permanently flowing outlet, low depth of storage, and small size. The surrounding landscape supports hydrologic functions in Wetland B due to the intensive human land uses within the contributing basin. Any hydrologic functions performed by Wetland B are valuable due to surface flooding in the sub-basin farther down gradient. Wetland B scores 5 out of 9 points for hydrologic functions.	
<b>Habitat</b>	Wildlife habitat functions provided by the wetland may include small mammal, amphibian, and bird forage and cover. Wetland B contains low habitat diversity with one Cowardin class, two hydroperiods, no interspersions, low species richness, and no special habitat features. The surrounding landscape has a low potential to support habitat connectivity between the wetland and other potential habitat due to development. The value of Wetland B habitat functions is considered to be low due to the lack of WDFW PHS habitats within 100 meters of the wetland. Wetland B scores 4 out of 9 points for habitat functions.	
<b>Buffer Condition</b>	The buffer area surrounding Wetland B is disturbed by the proximity of single-family residences, grazed pasture areas, and Chain Lake Road to the south.	

### 5.1.2 Wetland Buffers

Wetland A and B are Category IV wetlands under MMC 20.05.080. Category IV wetlands provide the lowest level of functions, scoring less than 16 points on the 2014 wetland rating system. Per MMC 20.05.080.D.4, Category IV wetlands are subject to a standard 50-foot buffers without use of impact minimization measures, or a 40-foot reduced buffer with use of impact minimization measures. Wetland A is located outside of and not contiguous to any one-hundred-year floodplain, lake, river, or stream and does not have contiguous hydric soil or hydrophytic vegetation between the wetland and any surface water, indicating that the wetland is an “isolated wetland” per MMC 20.05.030. Additionally, Wetland A is under 4,000 square feet, not associated with any riparian areas or their buffers, not associated with any shoreline of the state or their buffers, not part of a mosaic, scored less than 5 points in the habitat portion of the rating, and do not contain any priority habitats or species. Per MMC 20.05.050B.1, Wetland A qualifies as an isolated Category IV wetland, and as such is exempt from the provisions of MMC Critical Areas Chapter 20.05. Therefore, Wetland A does not have an associated buffer or building setback. However, given its connection to other surface waters through the roadside ditch, Wetland B also appears to meet the criteria of an isolated wetland, but may be surficially connected to other waters through the roadside ditch. Therefore, Wetland B is likely subject to the standard 50-foot buffer required for Category IV wetlands.

### 5.2 Non-wetland Farm Pond

A farm pond was identified on the northern portion of the subject property on parcel -2500; this farm pond is not mapped on any of the wetland, stream or priority habitat inventories. One data plot (DP-3) was taken along the edge of this feature and technically met two of the three wetland criteria (a dominance of hydrophytic vegetation, and hydrology); however, it did not meet for hydric soils, and therefore is not considered a wetland. Additionally, the farm pond is also within a soil map unit classified as non-hydric, which was confirmed by the field investigations for the surrounding upland area adjacent to the feature. The artificial pond does not meet the definition of a wetland under MMC 20.05.030 as this feature appears to be an artificially excavated pond, intentionally created from dry land for agricultural purposes (e.g. to provide a source of water for both irrigation and livestock). As described in MMC 20.05.030, “*Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.*”

For the same reasons, this farm pond is similarly not subject to Federal Clean Water Act regulations. 33 CFR 328.3(b)(4)(ii) and (iv) state, respectively, that artificial, constructed ponds created in dry land such as farm and stock watering ponds and small ornamental waters created in dry land are not Waters of the United States. This farm pond is an excavated depression intentionally created in dry land, for agricultural purposes, and therefore, would not be considered a Water of the United States and is categorically exempt from jurisdiction by the USACE.

### 5.3 Non-wetland Artificial Drainage Ways

Three artificial non-wetland drainages were identified on the subject property. MMC 20.05.030 indicates that streams “*do not include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, storm water runoff facilities, or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse?*”. The drainages are located within a soil map unit classified as non-hydric which was confirmed by the field investigations for the surrounding upland areas. The non-wetland, artificial drainage ditches do not exhibit natural stream characteristics (e.g., defined bed and bank) and were

excavated from uplands; therefore, these drainage ways are not regulated as waterbodies, per MMC 20.05.030 and WAC 222-16-030 and -031.

#### *Non-Wetland Drainage Swale*

The non-wetland drainage swale is located east of Wetland A and is the outlet for the wetland unit. The swale does not exhibit defined bed and bank nor signs of ordinary high water. A formal data plot (DP-11) was collected in the swale. Hydrophytic vegetation was observed; however, the swale lacked hydric soils. The swale is not a wetland and does not convey hydrology to another surface water or wetland. In addition, the swale appears to be artificial and intentionally created from uplands. The swale was observed to be lined with gravel/cobble at 3-inches bgs.

#### *French Drain*

A French drain is located in the central portion of the site. The drain consists of cobble and gravel and conveys clean stormwater runoff from the roof of the residential dwelling located on the offsite parcel to the south. A data point (DP-4) taken adjacent to the drain indicates a lack of hydric soils.

#### *Manmade Roadside Ditch*

A linear manmade roadside ditch is present south of the subject property, along the north side of Chain Lake Road. The ditch was artificially and intentionally excavated in order to convey stormwater from the roadway and did not exhibit natural stream characteristics and is not a relocated stream.

## Chapter 6. Regulatory Considerations

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The site investigations in winter of 2018 identified and delineated two potentially-regulated wetlands (Wetlands A and B) on the subject property. No other potentially-regulated wetlands, waterbodies, priority fish and wildlife habitat, or priority species were identified on or within 300 of the subject property during the site investigations.

### 6.1 Local Critical Area Requirements

#### 6.1.1 Buffer Standards

MMC 20.05.030 has adopted the current wetland rating system used by WSDOE. Category IV wetlands generally provide low levels of function; they are typically more disturbed, smaller, and/or more isolated in the landscape than Category I, II, or III wetlands. Category IV wetlands provide low levels of functions and score less than 16 out of 27 points on the *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014).

Wetland A and B are Category IV wetlands under MMC 20.05.080. Per MMC 20.05.080.D.4, Category IV wetlands are subject to 50-foot buffers without use of impact minimization measures, or 40-foot buffers with use of impact minimization measures. Wetland A is located outside of and not contiguous to any one-hundred-year floodplain, lake, river, or stream and does not have contiguous hydric soil or hydrophytic vegetation between the wetland and any surface water, indicating that the wetland meets the definition of an “isolated wetland” per MMC 20.05.030. Wetland B also meets the local definition of “isolated wetland”; however, the unit may have connection to surface water via the intentionally created roadside ditch, therefore, Wetland B is likely subject to the provision under MMC 20.05. Additionally, both wetlands are under 4,000 square feet, not associated with any riparian areas or their buffers, not associated with any shoreline of the state or their buffers, not part of a mosaic, scored less than 5 points in the habitat portion of the rating, and do not contain any priority habitats or species. Per MMC 20.05.050B.1, Wetland A qualifies as an isolated Category IV wetland, and is exempt from the provisions detailed in MMC Critical Areas Chapter 20.05, and therefore, Wetland A does not have an associated buffer or building setback. However, Wetland B would likely require a standard 50-foot buffer per MMC 20.05.080.D.4.

#### 6.1.2 Mitigation Sequencing

Per MMC 20.05.080.A.3, activities and uses that result in unavoidable and necessary impacts may be permitted in Category IV wetlands and associated buffers in accordance with an approved critical areas report and mitigation plan, and only if the proposed activity is the only reasonable alternative that will accomplish the applicant’s objective. As Wetland A is an isolated wetland, per MMC 20.05.030 mitigation sequencing does not apply. Wetland B is located within the right-of-way, and required frontage improvements will result in the unavoidable and necessary fill of Wetland B.

1. *Avoiding the adverse impact altogether by not taking a certain action or parts of an action.*

The project was carefully designed in order to avoid impacts to critical areas to the greatest extent feasible; however, complete avoidance of wetland area is not possible due to the location of the identified wetland along the southern boundary of the site which inhibits the frontage

improvements required by the City. As such, the project will require the necessary and unavoidable fill of low-functioning Wetland B to meet the City's requirements.

- 2. Minimizing 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;*

The proposed project has undergone variations in design in order to attain the option that results in the least impacts to regulated onsite critical areas. However, due to the frontage improvements along Chain Lake Road required by the City, complete avoidance of critical area is not possible. All appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures will be implemented throughout the duration of the project to minimize impacts.

- 3. Mitigating for the impact;*

Onsite permittee-responsible mitigation is not feasible, as this would make the site undevelopable due to the spatial area required for the mitigation and associated buffer. Compensatory mitigation for the fill of low-functioning Category IV wetland area (Wetland B) will be provided by the purchase of mitigation banking credits from the SBMB. This watershed approach will be more successful for replacing the impacted, highly degraded environment associated with Wetland B than any other permittee-responsible mitigation options both onsite and in the sub-drainage basin. Off-site permittee-responsible wetland mitigation has been carefully considered; however, due to the small size of the wetland impacts to be compensated, off-site permittee-responsible mitigation is not as ecologically beneficial and practical as use of banking credits. SBMB, implements, monitors and maintains the mitigation site. Mitigation sites through SBMB are predefined and constructed on science-based watershed priorities which will achieve the best ecological lift. Management of this bank involves an Interagency Review Team (IRT) that includes representatives from the USACE, WSDOE, Tribes, and other Federal, State, and local regulatory agencies.

The objectives of SBMB are to help achieve Washington State's "no net loss" goal, to meet wetland mitigation requirements, as well as to preserve the functions and values of aquatic habitats and aquatic resources that have been unavoidably lost during activities conducted under Section 404 of the Clean Water Act and/or Section 10 of the River and Harbor Act. The overarching mitigation goal of the Service Area is to protect and enhance aquatic habitat using a watershed approach, providing a greater potential to benefit all aquatic resources than possible by a small, low functioning offsite permittee responsible mitigation site. Use of these service areas will allow the project to achieve no net loss of aquatic resource functions.

## **6.2 State and Federal Considerations**

The results of the site investigations verified two wetlands, three non-wetland drainages, and one excavated farm pond. The wetlands are both small depressional wetlands that receive water primarily from direct precipitation and surface runoff from adjacent upland areas, and high groundwater tables. The manmade roadside ditch appears to have been originally constructed in upland areas for the purpose of conveying stormwater runoff from the adjacent road. The farm pond was also excavated from upland soils and is not considered a wetland.

## 6.2.1 The Federal Clean Water Rule

The Federal Register published a final revised Clean Water Rule: “Definition of Waters of the United States” on 29 June 2015 (FR Vol 30, No. 124; pages 37054 – 37127) that defines the scope of waters protected under the Federal Clean Water Act (CWA). The effective date of this rule was to be 28 August 2015. This rule provided a definition of Waters of the United States (WOTUS) that differed from that in the 2 December 2008 joint memorandum from EPA and USACE following the U.S. Supreme Court’s Decision in *Rapanos v. United States & Carabell v. United States* (USACE, 2008). Implementation of the 2015 Clean Water Rule was stayed by the U.S. 6<sup>th</sup> Circuit Court of Appeals on 9 October, 2015-- a little over one month after that rule’s effective date—until recently.

On 28 Feb, 2017 President Trump issued Executive Order 13778 ordering EPA and USACE to review and or rescind the 2015 Clean Water Rule. This was followed by the Suspension Rule (6 February 2018), which delayed implementation of the 2015 Clean Water Rule to 6 February 2020 and provided time for a two part rulemaking process to revise the definition of WOTUS. But in August 2018, Judge David C. Norton of the U.S. District Court for South Carolina issued an injunction claiming that the Suspension Rule was in violation of the Administrative Procedures Act. This injunction effectively reinstated the 2015 Clean Water Rule in 26 states, including Washington. Therefore, at the time of writing this report, the 2015 Clean Water Rule is currently in use within the State of Washington to describe waters that are to be regulated under Section 404 of the CWA.

The 2015 Clean Water Rule generally describes waters that are WOTUS directly, that are WOTUS because they are impoundments or tributaries to other WOTUS, and that are WOTUS because they are adjacent to or because they have a significant nexus to WOTUS. The Rule also describes waters that are not WOTUS. These general descriptions are summarized in the paragraphs that follow.

The 2015 Clean Water Rule describes the following waters where Section 404 jurisdiction would be asserted and considered WOTUS: (1) traditional navigable waters: all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, (2) interstate waters (including interstate wetlands), and (3) the territorial seas.

The following additional waters may be considered WOTUS in Washington State: (4) all impoundments of traditional navigable waters, interstate waters, and territorial seas, (5) all “tributaries” to a traditional navigable water, interstate water, or territorial sea, (6) all waters “adjacent” to waters within categories 1 through 5 above, (7) all waters located within the 100-year floodplain of a traditional navigable water, interstate water, or territorial sea, and (8) all waters within 4,000 feet of the high tide line or ordinary high water of a WOTUS that are determined on a case-specific basis to have a “significant nexus” to a traditional navigable water, interstate water, or territorial sea.

Wetlands A and B are expected to be either regulated by the USACE outright through categories 5 and/or 6 above or potentially through a significant nexus with any Waters of the U.S. (category 8 above). The WSDOE also regulates wetlands through the Revised Code of Washington (RCW) 90.48.

In addition, the 2015 Clean Water Rule identifies fifteen waters or areas where jurisdiction will NOT be asserted, even if they otherwise meet the description of WOTUS: (1) waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA, (2) prior

converted cropland, (3) ephemeral ditches that are not a relocated tributary or excavated tributary, (4) ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, and that do not drain wetlands, (5) ditches that do not flow, directly or indirectly, into a traditional navigable water, interstate water, or territorial sea, (6) artificially irrigated areas that would revert to dry land should irrigation cease, (7) artificially constructed lakes and ponds, created in dry land, such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds, (8) artificial reflecting pools or swimming pools created in dry land, (9) small ornamental waters created in dry land, (10) water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water, (11) erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways, (12) puddles, (13) groundwater, including groundwater drained through subsurface drainage systems, (14) stormwater control features constructed to convey, treat, or store stormwater that are created in dry land, and (15) wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

The manmade roadside drainage ditch meets category 3 and 5 above - ephemeral ditches that are not a relocated tributary or excavated tributary, and ditches that do not flow, directly or indirectly, into a traditional navigable water, interstate water, or territorial sea. As such, the manmade roadside ditch is not considered a WOTUS.

The Farm Pond was determined to have been excavated from dry land. It is within a soil series classified as non-hydric which was confirmed by the field investigations; the soil's surrounding the pond are upland soils. The farm pond meets category 7, above, and therefore is not a WOTUS.

### **6.2.2 State Requirements**

The WSDOE also regulates wetlands through the Revised Code of Washington (RCW) 90.48; both Wetland A and B will be subject to the state's regulations. The farm pond and roadside ditch are not expected to be regulated under the Revised Code of Washington (RCW) 90.48 as they do not meet the Washington Administrative Code (WAC) definition of a wetland, which states that "*wetlands do not include those artificial wetlands intentionally created from non-wetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.*" The farm pond was determined to be an intentionally, artificially constructed pond created from dry land for agricultural purposes. The roadside ditch was artificially and intentionally excavated to convey stormwater from the roadway and therefore would likely not be subject to state regulations.

# Chapter 7. Conceptual Mitigation Plan

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The proposed compensatory mitigation actions for the project attempt to strike a balance between achieving project goals as well as a positive result in terms of ecological lift. In general, joint USACE and EPA rules have been established that require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or in-lieu fee mitigation (ILF) programs wherever possible (USACE & EPA, 2008). The proposed wetland impacts and compensatory mitigation actions attempt to closely adhere to these rules and to the local critical areas regulations specified in MMC Chapter 20.05.080.G.4 while also utilizing the best available science (Granger et al., 2005; Hruby et al., 2009; Sheldon et al., 2005; and WSDOE, 2006). This chapter presents the mitigation details for the proposed Kestrel Ridge Residential Development project.

## 7.1 Purpose and Need

The purpose of the proposed project is to provide residential housing opportunities within the City of Monroe.

This section describes the proposed mitigation plan to offset proposed impacts to Wetland B. Wetland A meets the buffer exemption detailed in MMC 20.05.050.B.1, therefore, mitigation for buffer impacts is not required; however, the Applicant is committed to avoiding and minimizing impacts where possible, and therefore will implement appropriate mitigation techniques where possible. Mitigation for the fill of Wetland B will be provided through purchase of wetland mitigation banking credits from the SBMB.

## 7.2 Description of Impacts

The project was carefully designed in order to avoid impacts to critical areas to the greatest extent feasible. However, impacts to Wetland B are unavoidable due to the wetland's location adjacent to the road and the required frontage improvements, which will include road and sidewalk improvements. These proposed actions will directly impact Wetland B and virtually fill the entire wetland due to sloping requirements. The small, fragmented portion not required to be directly impacted by the frontage improvements will be permanently impacted by the development actions and no longer provide adequate wetland function, and therefore it was determined to be more ecologically beneficial to fill the remnant wetland area and adequately mitigate the impacts through purchasing wetland mitigation banking credits. In addition, the applicant requires the fill of this area to reasonably develop the site. The Applicant proposes to fill 1,545 square feet and purchase mitigation credits to offset this loss, as allowed by MMC 20.05.080.G.4.i.

- **Water Quality:** The wetland (Wetland B) proposed to be filled is depressional and exhibits mostly saturation. Given its location adjacent to a roadway and residential areas, it likely receives some pollutants from the surrounding uplands, and is located within a sub-basin on the 303(d) list. However, the wetland provides only minimal water quality improvement potential as the unit is very small and contains primarily mowed vegetation that is not able to effectively filter sediments and pollutants. With the implementation of this proposed mitigation banking use plan, the project will result in a net increase in water quality functions for the Snohomish watershed.

- **Hydrologic:** The primary sources of hydrology for the identified wetlands are direct precipitation and a seasonally high groundwater table, and, to a lesser extent, surface sheet flow from adjacent upland areas. Opportunity for this wetland to provide hydrologic functions is limited due to its small sizes and lack of storage capacity. Given these characteristics, the proposed mitigation banking use plan will result in a net increase in water quality functions for the Snohomish watershed.
- **Habitat:** The wetland provides very minimal if any habitat function due to the close proximity to a variety of high-intensity land uses, low vegetation species richness, lack of multiple Cowardin classes and hydroperiods, low habitat interspersions, and lack of special habitat features. Due to the low-functioning habitat conditions, the proposed wetland fill will result in limited habitat removal, and additional wetland habitat functions will be replaced and increased via this proposed mitigation banking use plan within the Snohomish watershed.

## 7.3 Mitigation Strategy

The proposed compensatory mitigation actions are intended to compensate for lost wetland functions and values by providing additional wetland functions according to the needs of the watershed and providing an overall improvement in the quality of wetland habitat and no net loss in habitat and ecological function. To achieve this, the objectives of the mitigation actions are to purchase mitigation banking credits from the SBMB to compensate for unavoidable impacts to Wetlands B, while improving and restoring surface and stormwater treatment and retention onsite. Therefore, the proposed mitigation will incorporate use of the mitigation banking program to meet federal, state, and local requirements that are most appropriate for the wetland.

### 7.3.1 Mitigation Bank Credit Purchase

Use of wetland mitigation banking program to compensate for the impacts to Wetland B, as allowed per MMC 20.05.080.G.4.i, has the best potential to satisfy local, state, and federal wetland mitigation requirements. The SBMB will provide a mechanism for off-site wetland mitigation actions to be conducted within the same watershed and will offer long-term protection and maintenance of large-scale water quality and habitat improvements to the Snohomish watershed (WRIA 7). The fees paid to the SBMB from the proposed project will compensate for the loss of wetland functions and values directly related to the proposed 1,545-square feet of impact to Wetland B, as calculated in Tables 5 and 6 below. This mitigation bank has been selected as its service area includes the subject project area and credits are available.

### 7.3.2 Mitigation Bank Use

Wetland functions targeted for use in the SBMB include improving water quality, flood storage, flow reductions, and habitat for plant and animals. Wetlands B does not provide critical wetland functions due to its small size; therefore, full wetland function compensation is better provided elsewhere, through a consolidated mitigation program that has greater potential to provide valuable wetland functions and that has the landscape potential to maintain each function. Onsite permittee-responsible mitigation is not feasible, as this would make the site undevelopable due to the spatial requirement of the mitigation area and associated buffers and the project's building spatial requirements to make the

project feasible. Offsite permittee-responsible wetland mitigation has been carefully considered; however, due to the small sizes of the wetlands to be filled and the requisite small size of wetland that would be created or restored as compensation, off-site permittee-responsible mitigation is not an ecologically beneficial or a practical option. The challenges of creating and restoring small areas of wetland are alleviated through mitigation banking where the mitigation is completed on a large scale and the benefits of the purchased credits provide watershed scale benefits, with longer term maintenance and management than is normally provided with permittee-responsible-mitigation. The wetlands created through mitigation banking will have much higher habitat value than the small onsite wetland proposed to be filled.

Joint USACE and EPA rules (USACE & EPA, 2008) and interagency guidance (WSDOE & USACE 2006; Hrubby et al., 2009) require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or ILFs wherever possible. The subject property is currently located within the SBMB’s Service Area, thus allowing the proposed project to utilize the approved mitigation banking program for compensatory mitigation within the same watershed as project impacts. The overarching mitigation goal of the SBMB is to protect and enhance salmonid populations using a watershed approach, which will in turn benefit other aquatic species. The purchase of mitigation banking credits will allow the proposed project to achieve no net loss of aquatic resource functions.

The SBMB, administered by Mitigation Banking Services, creates a “comprehensive, equitable, and consistent” program to ensure successful mitigation actions. Oversight of this mitigation banking program is provided by an Interagency Review Team (IRT) that includes representatives from the USACE, WSDOE, tribes, and other federal, state, and local regulatory agencies.

**Table 5. Replacement Ratios and Calculation of Bank Credits Required**

Feature	Impact Area (ft <sup>2</sup> )	Ecology Rating <sup>1</sup>	Credits Needed (ft <sup>2</sup> )	Mitigation Ratio <sup>2</sup> (SBMB Credits Needed per Acre of Impacted Wetland) <sup>2</sup>
Wetland B	1,545	IV	1,313.25	0.85:1
<b>Total:</b>	<b>1,545</b>	<b>Total:</b>	<b>1,313.25</b>	

Notes:

1. Ecology rating according to Washington State wetland rating system for Western Washington – Revised (Hrubby, 2014).
2. Credit calculation methods are derived from the SBMB.

### 7.3.3 Additional Minimization Measures

Due to the fact that Wetland A does not have a required buffer and therefore no proposed buffer impacts, no mitigation measures are required. However, even though Wetland A will not be directly disturbed, the Applicant is committed to avoiding and minimizing impacts by implementing some or all appropriate minimization techniques presented in MMC 20.05.080.D.4. (Table 6). Due to a lack of required buffer, no restoration or enhancement measures are proposed to compensate for activities that will occur adjacent to Wetland A.

**Table 6: MMC Table 20.05.080.2 Measures to Minimize**

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> <li>• Direct lights away from wetland</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Locate activity that generates noise away from wetland</li> </ul>
	<ul style="list-style-type: none"> <li>• If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source</li> </ul>
	<ul style="list-style-type: none"> <li>• For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-ft. heavily vegetated buffer strip immediately adjacent to the outer wetland buffer</li> </ul>
Toxic runoff	<ul style="list-style-type: none"> <li>• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered</li> </ul>
	<ul style="list-style-type: none"> <li>• Establish covenants limiting use of pesticides within 150 ft. of wetland</li> </ul>
	<ul style="list-style-type: none"> <li>• Apply integrated pest management</li> </ul>
Storm water runoff	<ul style="list-style-type: none"> <li>• Retrofit storm water detention and treatment for roads and existing adjacent development</li> </ul>
	<ul style="list-style-type: none"> <li>• Prevent channelized flow from lawns that directly enters the buffer</li> </ul>
	<ul style="list-style-type: none"> <li>• Use low impact development techniques (for more information refer to Chapter 15.01 MMC)</li> </ul>
Change in water regime	<ul style="list-style-type: none"> <li>• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns</li> </ul>
Pets and human disturbance	<ul style="list-style-type: none"> <li>• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion</li> </ul>
	<ul style="list-style-type: none"> <li>• Place wetland and its buffer in a separate tract or protect with a conservation easement</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Use best management practices to control dust</li> </ul>

## Chapter 8. Closure

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The findings and conclusions documented in this assessment report have been prepared for specific application to the Kestrel Ridge site. These findings and conclusions have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this assessment report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this assessment may need to be revised wholly or in part in the future.

Wetland and waterbody status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the wetland and waterbody boundaries validated by the jurisdictional agencies. Validation of the boundaries and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the critical area determination and boundaries verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

As wetlands and waterbodies are dynamic communities affected by both natural and human activities, changes in boundaries may be expected; therefore, delineations cannot remain valid for an indefinite period of time. Regulatory agencies typically recognize the validity of critical area delineations for a period of 5 years after completion of an assessment report. Development activities on a site five years after the completion of this assessment report may require reassessment of the wetland and waterbody status and/or boundaries. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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# Appendix A – Methods and Tools

**Table A1. Methods and tools used to prepare the report.**

Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	<a href="http://el.erdc.usace.army.mil/e/epubs/pdf/wlman87.pdf">http://el.erdc.usace.army.mil/e/epubs/pdf/wlman87.pdf</a>	<b>Environmental Laboratory.</b> 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Western Mountains, Valleys, and Coast Region Regional Supplement	<a href="http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_final_supp.pdf">http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_final_supp.pdf</a>	<b>U.S. Army Corps of Engineers.</b> 2010. <i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)</i> , ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	<a href="http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf">http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf</a>  <a href="https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013">https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013</a>	<b>Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe.</b> 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C.  <b>Federal Geographic Data Committee.</b> 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	<a href="http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf">http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf</a>	<b>Brinson, M. M.</b> (1993). “A hydrogeomorphic classification for wetlands,” Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	<a href="http://www.ecy.wa.gov/biblio/0406025.html">http://www.ecy.wa.gov/biblio/0406025.html</a>	<b>Hruby, T.</b> 2014. Washington State wetland rating system for western Washington –Revised. Publication # 04-06-025.
Wetland Indicator Status	2016 National Wetland Plant List	<a href="https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf">https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf</a>	<b>Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin.</b> 2016. <i>The National Wetland Plant List: 2016 wetland ratings</i> . Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
Hydric Indicator	Soil Field Indicators of Hydric Soils in the U.S. Version 8.2	<a href="https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf">https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf</a>	<b>United States Department of Agriculture,</b> Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils
Plant Names	USDA Plant Database	<a href="http://plants.usda.gov/">http://plants.usda.gov/</a>	Website.
Soils Data	NRCS Soil Survey	<a href="http://websoilsurvey.nrcs.usda.gov/app/">http://websoilsurvey.nrcs.usda.gov/app/</a>	Website GIS data based upon:  <b>Debose A., and Klungland, M.W.</b> 1983. Soil Survey of Snohomish County Area, Washington. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
	Washington State Hydric Soils List	<a href="http://www.wa.nrcs.usda.gov/technical/soils/hydric_lists/hydrosoil-wa-653.pdf">http://www.wa.nrcs.usda.gov/technical/soils/hydric_lists/hydrosoil-wa-653.pdf</a>	<b>Natural Resources Conservation Service.</b> 1983. Hydric Soils List: Snohomish County, Washington. U.S. Department of Agriculture. Washington D.C.

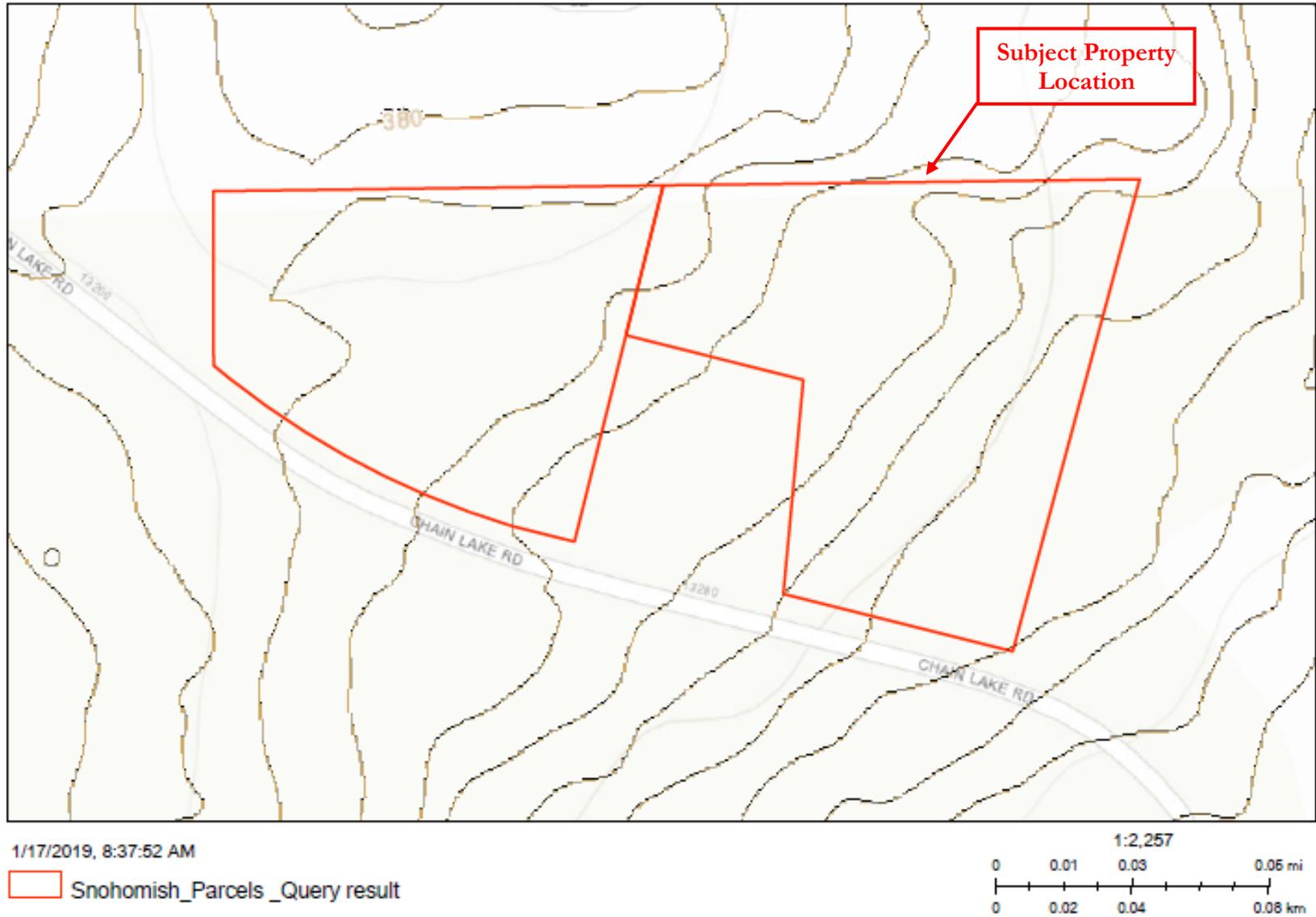
Parameter	Method or Tool	Website	Reference
	Soil Color Charts		<b>Munsell®</b> Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
Threatened and Endangered Species	Washington Natural Heritage Program	<a href="http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences">http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences</a>	<b>Washington Natural Heritage Program</b> (Data published 07/19/17). Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	<a href="http://wdfw.wa.gov/hab/phspage.htm">http://wdfw.wa.gov/hab/phspage.htm</a>	<b>Priority Habitats and Species (PHS) Program</b> Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife.
Species of Local Importance	WDFW GIS Data	<a href="http://wdfw.wa.gov/mapping/salmonscape/">http://wdfw.wa.gov/mapping/salmonscape/</a>	Website
Report Preparation	Monroe Municipal Code (MMC)	<a href="https://www.codepublishing.com/WA/Monroe/">https://www.codepublishing.com/WA/Monroe/</a> .	MMC Title 20.05 – Critical Areas.

## Appendix B – Background Information

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This Appendix includes a Snohomish Contours Map (B1); NRCS Soil Survey Map (B2); Snohomish County Stream and Wetland Inventory (B3); USFWS NWI Map (B4); DNR Stream Typing Map (B5); WDFW SalmonScape Map (B6); WDFW PHS Map (B7); and City of Monroe Stream and Wetland Inventory (B8).

## Appendix B1. Snohomish Contours Map



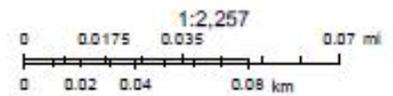
## Appendix B2. NRCS Soil Survey Map



12/13/2017, 2:53:50 PM

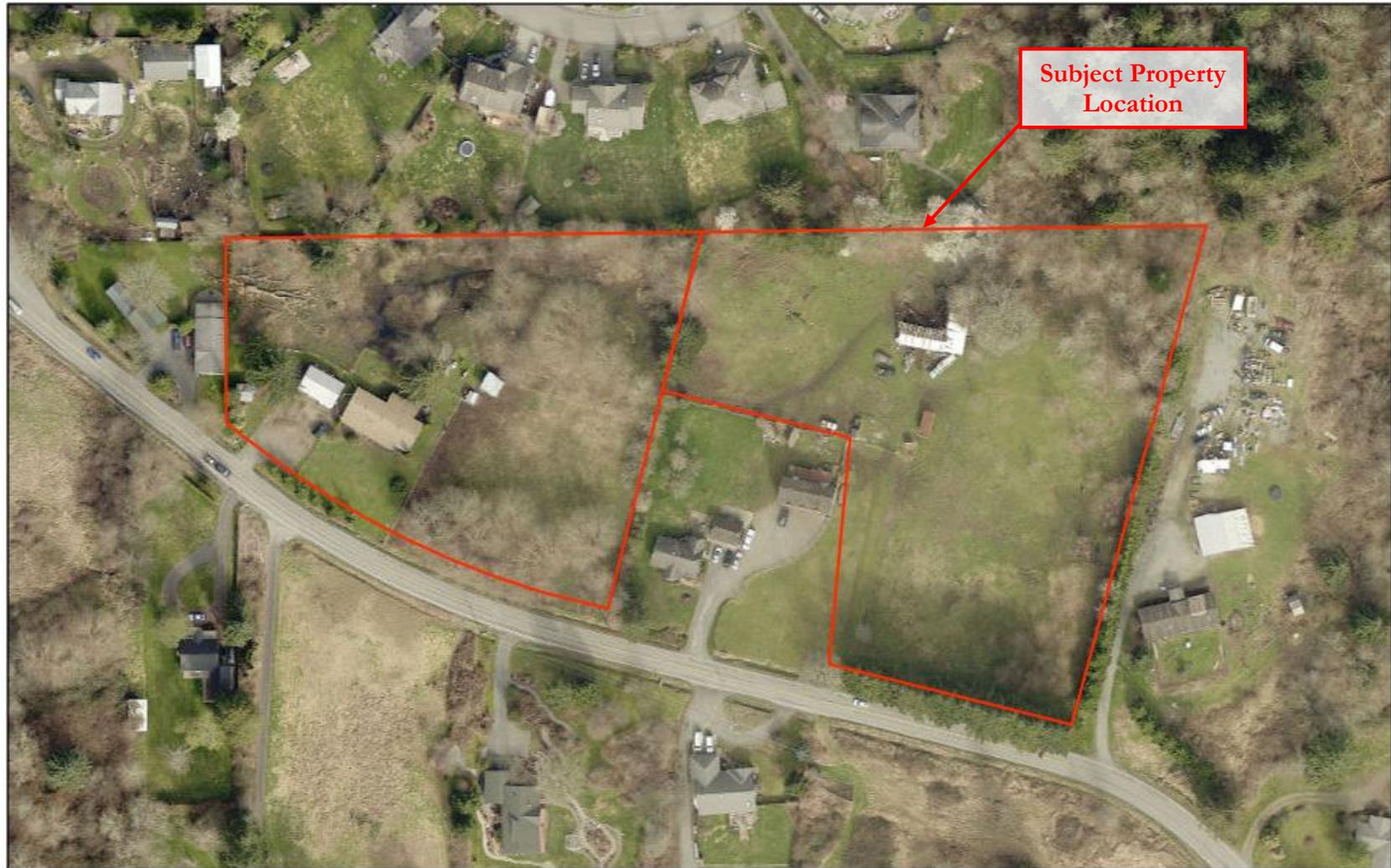
 NRCS Soil Survey - NRCS\_Soil\_Survey  
Snohomish\_Parcel\_Query result

3 - Alderwood gravelly sandy loam, 15 to 25 percent slopes  
72 - Tokul gravelly medial loam, 0 to 8 percent slopes  
73 - Tokul gravelly medial loam, 8 to 15 percent slopes



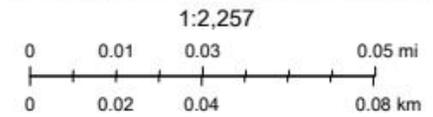
© 2017 DigitalGlobe © CNES (2017) Distribution Airbus DS © 2017 HERE © 2017 Microsoft Corporation

### Appendix B3. Snohomish County Stream and Wetland Inventory



1/17/2019, 8:48:22 AM

 Snohomish\_Parcels\_Query result

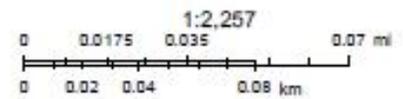


## Appendix B4. USFWS NWI Map

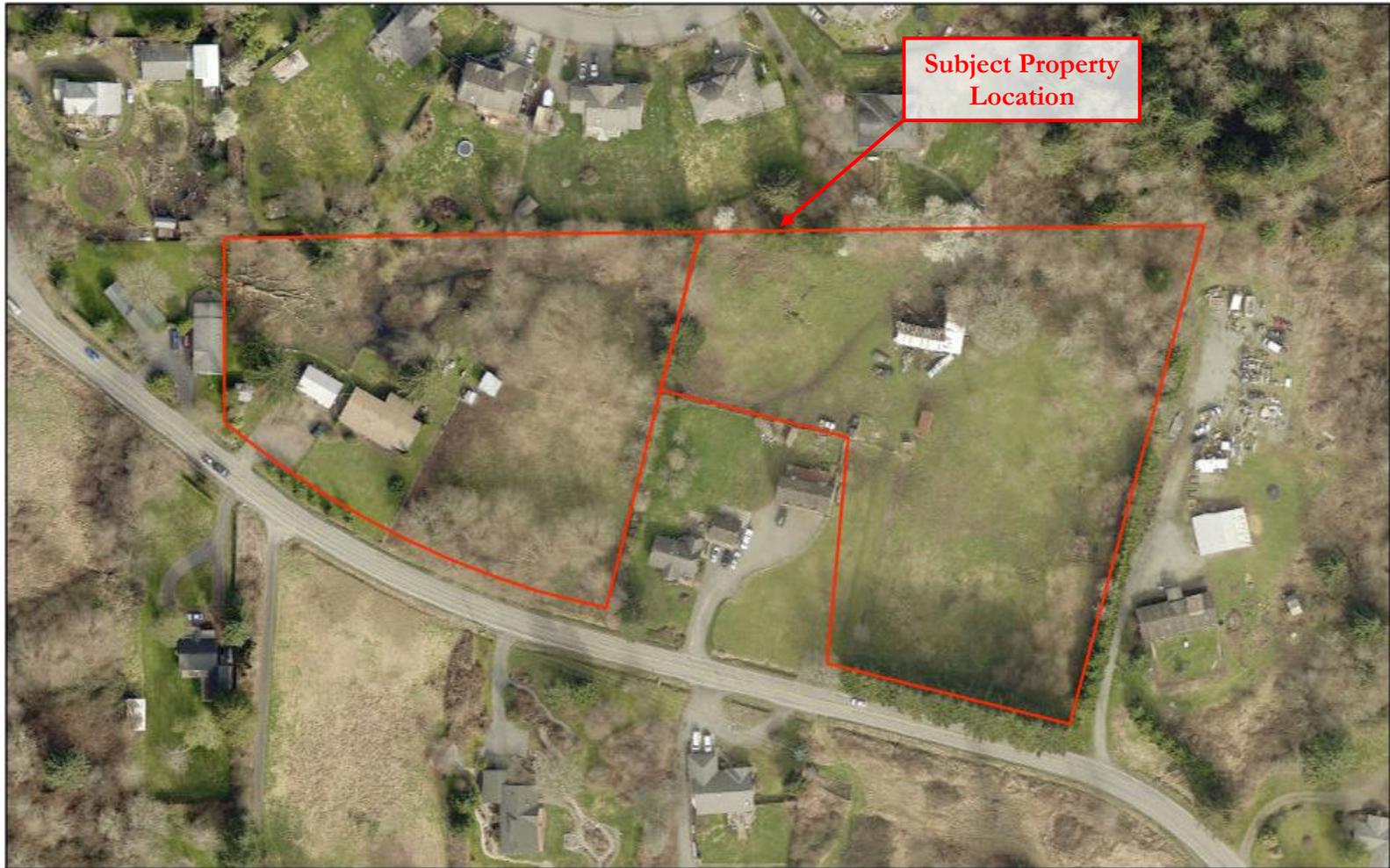


12/13/2017, 2:48:59 PM

Snohomish\_Parceles\_Query result

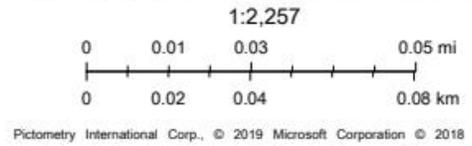


# Appendix B5. DNR Stream Typing Map



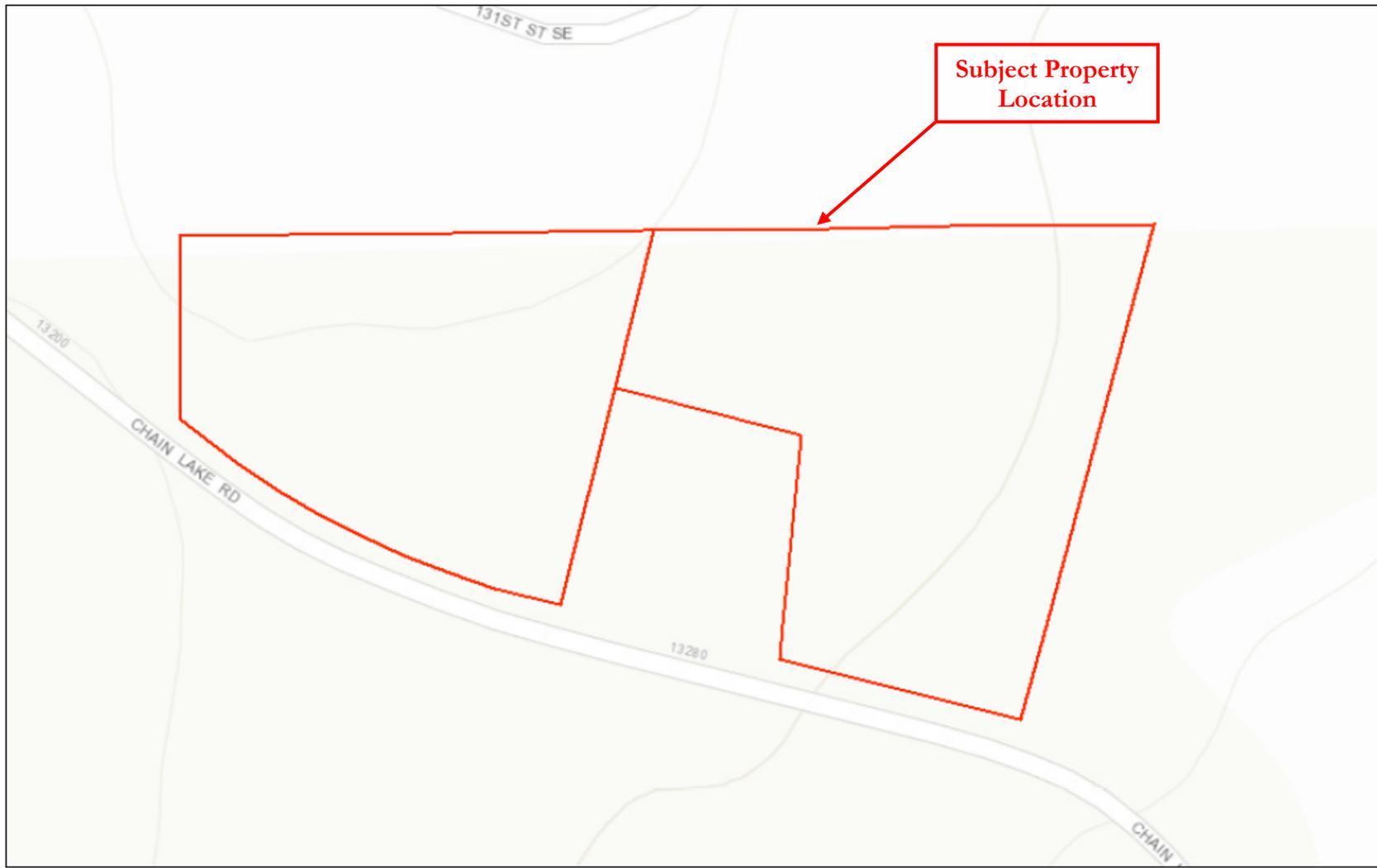
1/17/2019, 8:52:24 AM

- Snohomish\_Parcels\_Query result
- Type F
- \*\*\* X, non-typed per WAC 222-16
- Type N, Np, Ns
- Stream Names
- Type S
- U, unknown



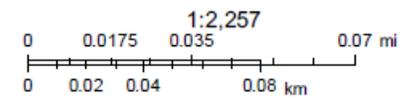
Soundview Consultants

## Appendix B6. WDFW SalmonScape Map



12/13/2017, 2:47:21 PM

Snohomish\_Parcels\_Query result



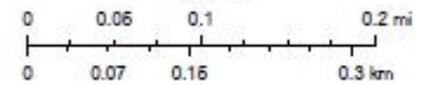
## Appendix B7. WDFW PHS Map



1/22/2019, 2:04:29 PM

 Snohomish\_Parcels\_Query result

1:9,028





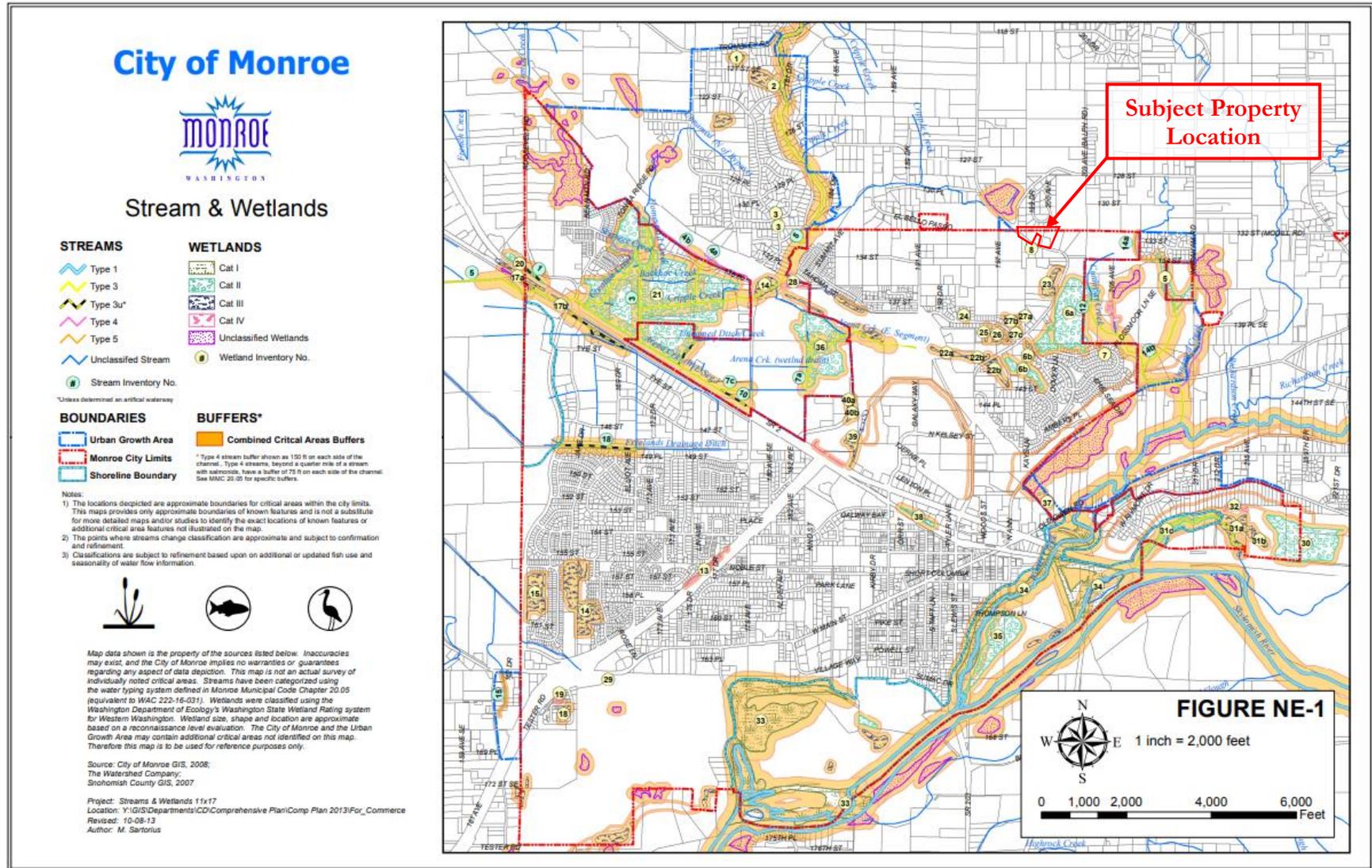
WASHINGTON DEPARTMENT OF FISH AND WILDLIFE  
 PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPublic  
 REPORT DATE: 01/22/2019 1.18

Query ID: P190122131603

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Freshwater Emergent	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa</a>		PHS Listed		

# Appendix B8. City of Monroe Stream and Wetland Inventory



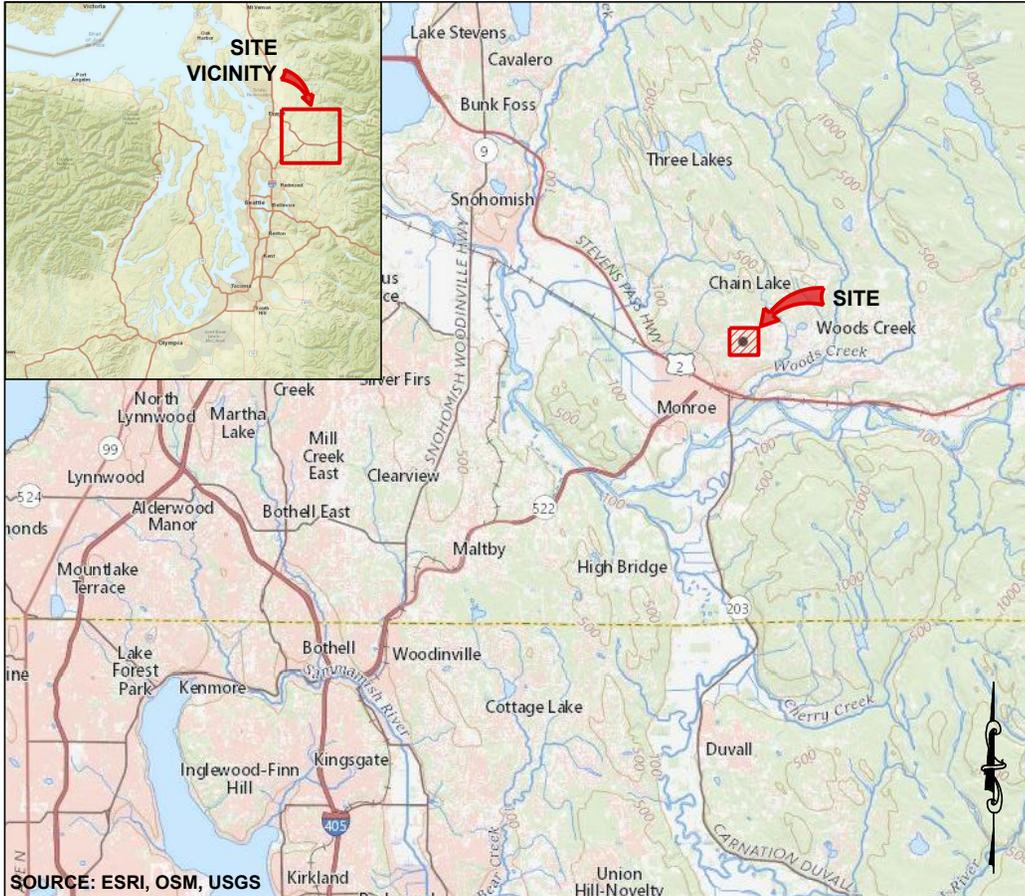
## Appendix C – Site Plan

---

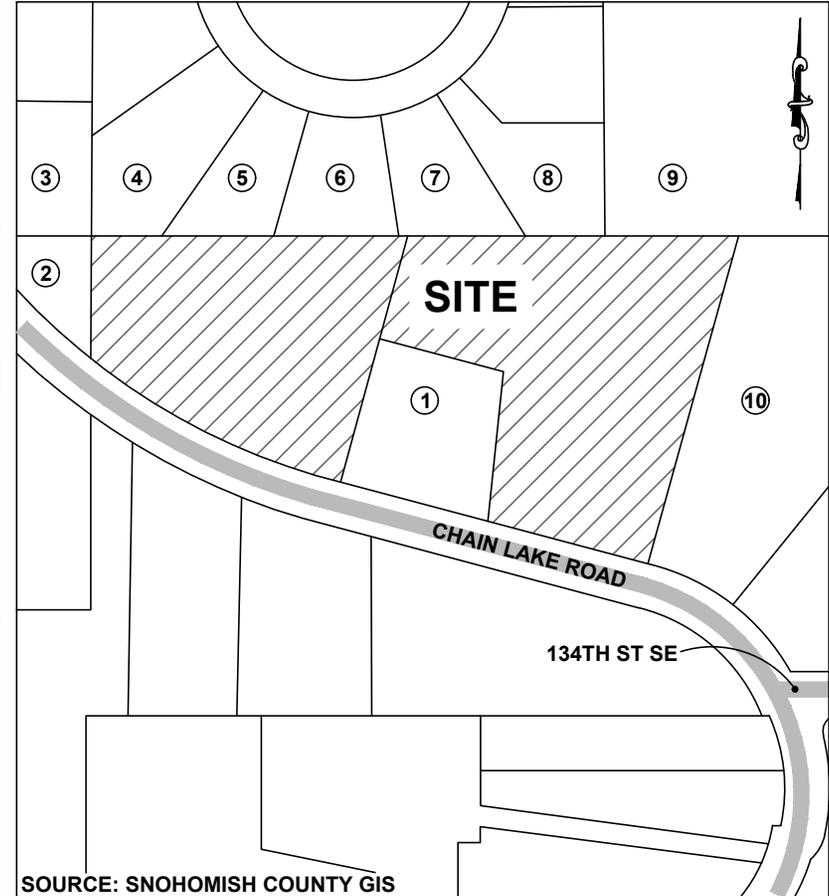
**LOCATION:**

THE NW ¼ OF SECTION 31, TOWNSHIP 28 N, RANGE 07 E, W.M.  
 SNOHOMISH COUNTY PARCEL NUMBERS: 28073100202500 AND 28073100200600  
 LAT 47°52'37.26" N LONG -121°57'44.34" W

**VICINITY MAP**



**ADJACENT OWNERSHIP**



**ADJACENT OWNERS:**

- |                              |                                |
|------------------------------|--------------------------------|
| 1. GRIFFIN, RICHARD DALE     | 6. PETEK, JON                  |
| 2. HENDRICKS, RANDEN & PAULA | 7. LARSON, SHAWN E & AMY       |
| 3. GARDENER, EAGLESONG E     | 8. CLAUSEN, ASHLEY J & MARK R  |
| 4. ZINZER, BRIAN             | 9. SCHADE, JOERGEN & MARG.     |
| 5. BILLINGS, STEVEN & LISA   | 10. MIX, WILLIAM K & CRISTIN L |

**PROJECT: KESTREL RIDGE**

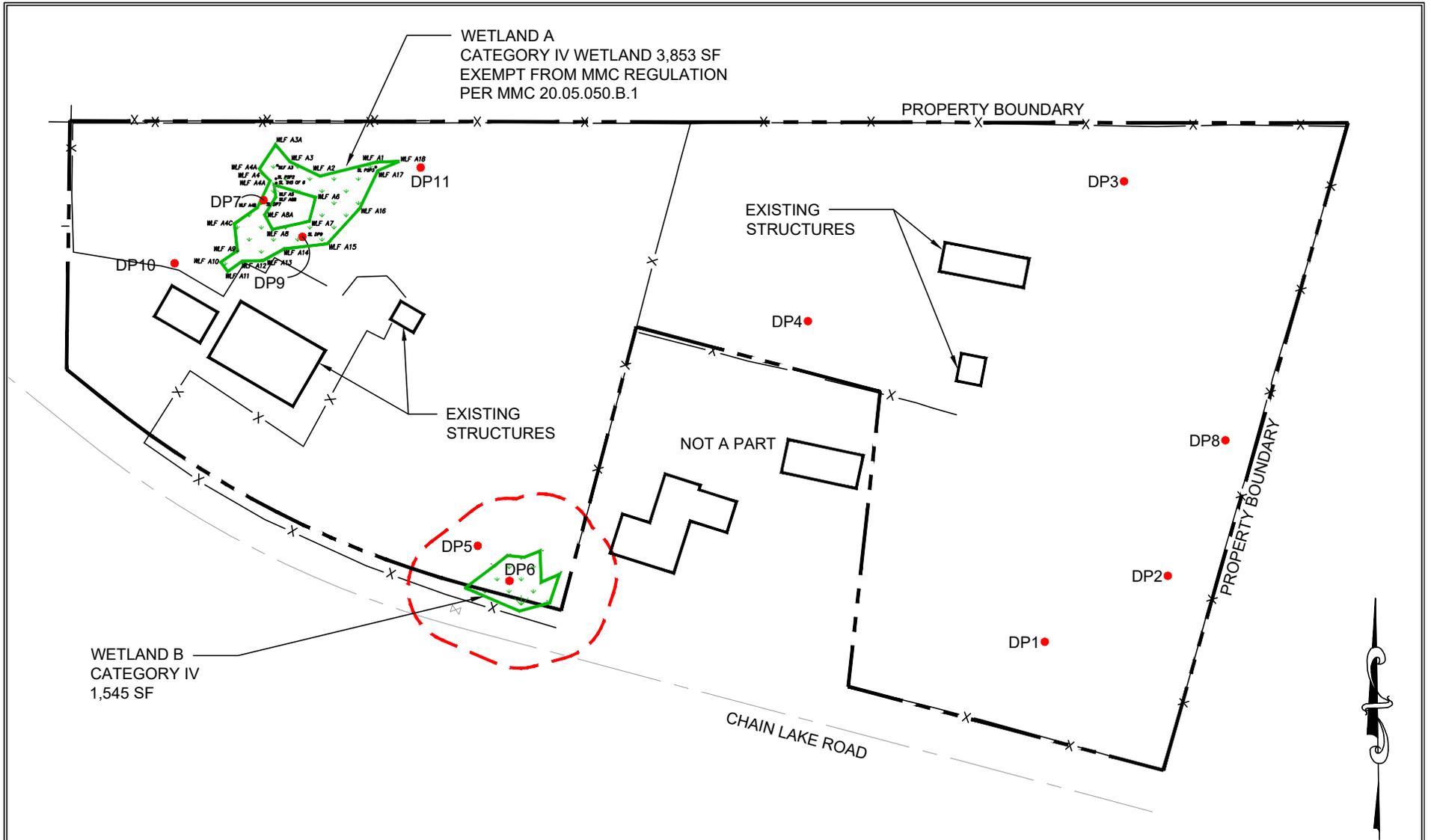
**PURPOSE:** PROVIDE ADDITIONAL RESIDENTIAL HOUSING WITHIN THE CITY OF MONROE

**SITE ADDRESS:** 13305 CHAIN LAKE RD.  
 MONROE, WA 98272

**REFERENCE #:**

**IN:**  
**NEAR:**  
**COUNTY:** SNOHOMISH  
**APPLICANT:** PROSPECT DEVELOPMENT  
**SHEET:** 1 of 4      **DATE:** 8/06/2019

**DRAFT FOR REVIEW**

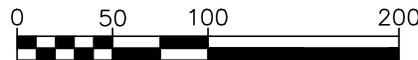


**PRELIMINARY  
INFORMATION ONLY**

**NOT FOR CONSTRUCTION**

SOUNDVIEW CONSULTANTS LLC ASSUMES  
NO LIABILITY OR RESPONSIBILITY FOR  
CONSTRUCTION, IMPROVEMENTS, OR  
ESTIMATES BASED ON THIS PLAN SET

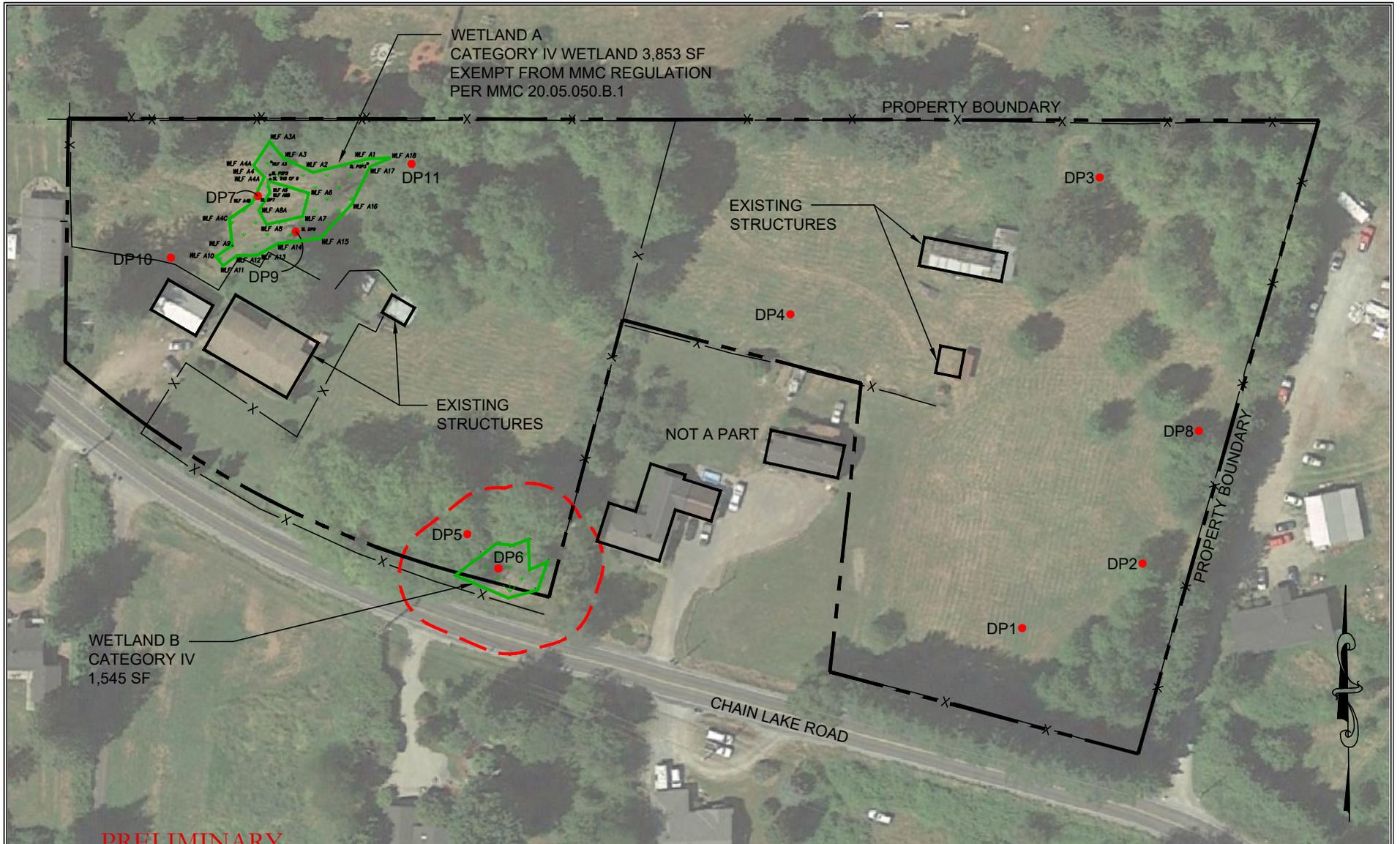
**EXISTING CONDITIONS**



GRAPHIC SCALE  
1"=100'

<b>PROJECT:</b> KESTREL RIDGE	
<b>REFERENCE#</b>	
<b>APPLICANT:</b> PROSPECT DEVELOPMENT	
<b>LOCATION:</b> 13305 CHAIN LAKE RD. MONROE, WA 98272	
<b>SHEET:</b> 2 of 4	<b>DATE:</b> 8/06/2019

**DRAFT FOR REVIEW**

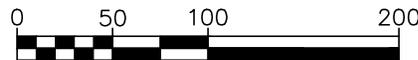


**PRELIMINARY  
INFORMATION ONLY**

**NOT FOR CONSTRUCTION**

SOUNDVIEW CONSULTANTS LLC ASSUMES  
NO LIABILITY OR RESPONSIBILITY FOR  
CONSTRUCTION, IMPROVEMENTS, OR  
ESTIMATES BASED ON THIS PLAN SET

**EXISTING CONDITIONS  
WITH AERIAL PHOTO**



GRAPHIC SCALE  
1"=100'

**PROJECT: KESTREL RIDGE**

**REFERENCE#**

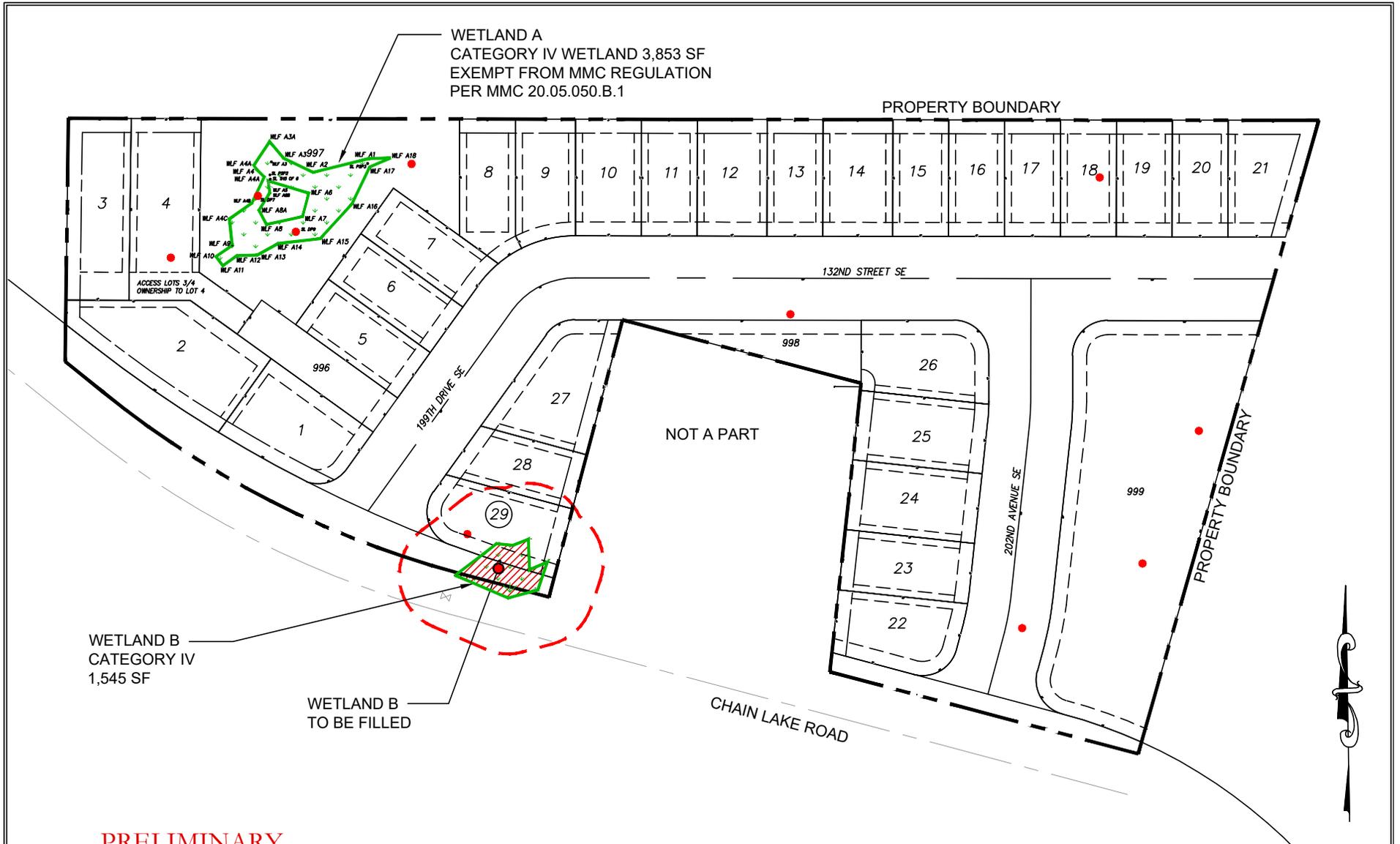
**APPLICANT: PROSPECT DEVELOPMENT**

**LOCATION: 13305 CHAIN LAKE RD.  
MONROE, WA 98272**

**SHEET: 3 of 4**

**DATE: 8/06/2019**

**DRAFT FOR REVIEW**

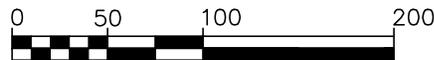


**PRELIMINARY  
INFORMATION ONLY**

**NOT FOR CONSTRUCTION**

SOUNDVIEW CONSULTANTS LLC ASSUMES  
NO LIABILITY OR RESPONSIBILITY FOR  
CONSTRUCTION, IMPROVEMENTS, OR  
ESTIMATES BASED ON THIS PLAN SET

**PROPOSED PROJECT**



GRAPHIC SCALE  
1"=100'

<b>PROJECT:</b> KESTREL RIDGE	
<b>REFERENCE#</b>	
<b>APPLICANT:</b> PROSPECT DEVELOPMENT	
<b>LOCATION:</b> 13305 CHAIN LAKE RD. MONROE, WA 98272	
<b>SHEET:</b> 4 of 4	<b>DATE:</b> 8/06/2019

**DRAFT FOR REVIEW**

## Appendix D – Data Forms

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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/5/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-1  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): A2 Lat: 47.876669 Long: -121.96168878 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation .</b>	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				
1. <u>Agrostis capillaris</u>	<u>95</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ranunculus repens</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--

Remarks: **Hydrophytic vegetation observed through dominance test.**



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-2  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.876582 Long: -121.96155659 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation .</b>	

### VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )																		
1. <u>Alnus rubra</u>	<u>6</u>	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____	<u>6</u>	= Total Cover																
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )																		
1. <u>Hedera helix</u>	<u>2</u>	No	FACU	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Total % Cover of:</td> <td style="width: 50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>106</u></td> <td>x 3 = <u>318</u></td> </tr> <tr> <td>FACU species <u>3</u></td> <td>x 4 = <u>12</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>109</u> (A)</td> <td><u>330</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.03</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>106</u>	x 3 = <u>318</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>109</u> (A)	<u>330</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>106</u>	x 3 = <u>318</u>																	
FACU species <u>3</u>	x 4 = <u>12</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>109</u> (A)	<u>330</u> (B)																	
2. <u>Rubus laciniatus</u>	<u>1</u>	Yes	FACU															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	<u>3</u>	= Total Cover																
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )																		
1. <u>Agrostis capillaris</u>	<u>99</u>	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Ranunculus repens</u>	<u>1</u>	No	FAC															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	<u>100</u>	= Total Cover																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )																		
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____	_____	_____	_____															
% Bare Ground in Herb Stratum <u>0</u>																		

Remarks: **Hydrophytic vegetation observed through dominance test.**



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/5/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-3  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.877557 Long: -121.96148133 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria observed; only hydrophytic vegetation and hydrology observed. Data Plot collected within artificially, intentionally excavated farm pond</u>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Alnus rubra</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
_____	<u>45</u>	= Total Cover			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )					
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> 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 = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )					
1. <u>Agrostis capillaris</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>		
2. <u>Ranunculus repens</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____	<u>100</u>	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )					
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: Hydrophytic vegetation observed through dominance test.



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/5/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-4  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.877557 Long: -121.96148133 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center"><b>Not all three wetland criteria observed; only hydrophytic vegetation observed.</b></p>	

**VEGETATION – Use scientific names of plants.**

	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )				
1. <u>Agrostis capillaris</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ranunculus repens</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Taraxacum officinale</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>100</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>0</u>				

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

**Hydrophytic Vegetation Present?** Yes  No

Remarks: Hydrophytic vegetation observed through dominance test.

**SOIL**

Sampling Point: DP-4

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0 - 6	10YR 2/2	100	-	-	-	-	grSaLo	Gravelly sandy loam
6-9	10YR 3/4	50	-	-	-	-	grSaLo	dual matrix
	10YR 3/6	50	-	-	-	-	grSaLo	dual matrix
9-11	2.5Y 4/2	100	-	-	-	-	grSaLo	
11-16	10YR 3/6	50	-	-	-	-	grSaLo	dual matrix
	5Y 4/2	50	-	-	-	-	grSaLo	dual matrix
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<b>Restrictive Layer (if present):</b> Type: <u>None</u> Depth (inches): _____						<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: No hydric soil indicators met.								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No hydrologic criteria observed.			

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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-5  
 Investigator(s): Jon Pickett, Jim Hearshey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): A2 Lat: 47.876723 Long: -121.96325474 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation.</b>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )					
1. <u>Alnus rubra</u>	<u>75</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
_____	<u>75</u>	= Total Cover			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )					
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> 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 = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )					
1. <u>Agrostis capillaris</u>	<u>99</u>	<u>Yes</u>	<u>FAC</u>		
2. <u>Ranunculus repens</u>	<u>1</u>	<u>No</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____	<u>100</u>	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )					
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
_____	<u>0</u>	= Total Cover			
<b>% Bare Ground in Herb Stratum</b> <u>0</u>					
Remarks: <b>Hydrophytic vegetation observed through dominance test.</b>					



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-6  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.876771 Long: -121.96322348 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center"><b>All three wetland criteria observed. Sampled in Wetland B.</b></p>	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effusus</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Agrostis capillaris</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Holcus lanatus</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>Ranunculus repens</u>	<u>15</u>	<u>No</u>	<u>FAC</u>	
5. <u>Locus corniculatus</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
6. <u>Trifolium repens</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

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

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
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Remarks: Hydrophytic vegetation observed through dominance test.



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-7  
 Investigator(s): Jon Pickett, Jim Hearsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.877472 Long: -121.96392310 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation.</b>	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				
1. <u>Agrostis capillaris</u>	<u>90</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Phalaris arundinacea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>	
3. <u>Ranunculus repens</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
4. <u>Taraxacum officinale</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>105</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>% Bare Ground in Herb Stratum</u> <u>-5</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: **Hydrophytic vegetation observed through dominance test.**



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-8  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): A2 Lat: 47.877061 Long: -121.96118178 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation.</u>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )				
1. <u>Alnus rubra</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
2. <u>Acer macrophyllum</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Pseudotsuga menziesii</u>	<u>30</u>	<u>No</u>	<u>FACU</u>	
4. _____	<u>42</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )				
1. <u>Alnus rubra</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> 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 = _____
2. <u>Acer macrophyllum</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Rubus armeniacus</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>	
4. _____				
5. _____	<u>10</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )				
1. <u>Agrostis capillaris</u>	<u>99</u>	<u>Yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Ranunculus repens</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____	<u>100</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
% Bare Ground in Herb Stratum <u>0</u>				

Remarks: Hydrophytic vegetation observed through dominance test.



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-9  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): A2 Lat: 47.877381 Long: -121.96402188 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 0 to 8 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <p align="center"><b>All three wetland criteria observed. Sampled within Wetland A.</b></p>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft</u> )				
1. <u>Alnus rubra</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>3</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> 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 = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5 ft</u> )				
1. <u>Ranunculus repens</u>	<u>65</u>	<u>Yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrostis capillaris</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>95</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>5</u>				

Remarks: Hydrophytic vegetation observed through dominance test.

**SOIL**

Sampling Point: DP-9

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

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0 - 11	10YR 2/1	100	-	-	-	-	MeLo	Medium loam
11-17	10YR 5/2	75	7.5YR 5/6	25	C	M	MeLo	Medium loam

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>  <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)  <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes  No**

Remarks:  
 Hydric soil criteria observed through indicator A11.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (2 or more required)</b>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Hydrologic criteria observed through primary indicators A2 and A3. Areas of ponding observed within delineated wetland boundary

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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-10  
 Investigator(s): Jon Pickett, Jim Harsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): A2 Lat: 47.877372 Long: -121.96419505 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam, 0 to 8 percent slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic observed. Hydrology observed; however, likely due to significant precipitation prior to site investigation.</b>	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>0</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				
1. <u>Agrostis capillaris</u>	<u>85</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ranunculus repens</u>	<u>13</u>	<u>No</u>	<u>FAC</u>	
3. <u>Phalaris arundinacea</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
				<u>100</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				<u>0</u> = Total Cover
% Bare Ground in Herb Stratum <u>0</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: **Hydrophytic vegetation observed through dominance test. Phalaris arundinacea is present in disturbed areas near wood piles.**



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

Project/Site: 1310.0016 - Kestrel Ridge City/County: Monroe / Snohomish Sampling Date: 12/05/2018  
 Applicant/Owner: Prospect Development LLC State: WA Sampling Point: DP-11  
 Investigator(s): Jon Pickett, Jim Hearsey Section, Township, Range: 31 / 28N / 07E  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): A2 Lat: 47.877565 Long: -121.96349513 Datum: WGS 84  
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>Not all three wetland criteria observed; only hydrophytic vegetation. Data plot collected in non-wetland swale. Entire non-wetland swale was tested and is gravel/ cobble lined throughout entirety. Swale appears to be intentionally, artificially created from uplands.</b>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum (Plot size: 30 ft)</b>				
1. <u>Alnus rubra</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>60</u>	= Total Cover		
<b>Sapling/Shrub Stratum (Plot size: 15 ft)</b>				
1. <u>Rubus armeniacus</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> 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 = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	<u>30</u>	= Total Cover		
<b>Herb Stratum (Plot size: 5 ft)</b>				
1. <u>Ranunculus repens</u>	<u>90</u>	<u>Yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrostis capillaris</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	<u>92</u>	= Total Cover		
<b>Woody Vine Stratum (Plot size: 30 ft)</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>8</u>				= Total Cover

Remarks: **Hydrophytic vegetation observed through dominance test.**



# Appendix E – Wetland Rating Forms

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Wetland name or number A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 12/5/18  
 Rated by Jon Pickett, Jim Hearsey Trained by Ecology?  Yes  No Date of training 4/16  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

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

**OVERALL WETLAND CATEGORY** IV (based on functions\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	M	M	M	
Value	H	L	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	4	4	14

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

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

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

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



Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number A

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

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

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2		1

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

**DEPRESSIONAL AND FLATS WETLANDS**

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

<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
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	
<b>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.</b>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
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	
<b>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.</b>		
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

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

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

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>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.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		0
• 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	
The wetland is an isolated wetland without connectivity to surface water outlets downstream of the unit	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>	Yes = 2 No = 0	0
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

Wetland name or number A

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

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

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

- Aquatic bed 4 structures or more: points = 4
  - Emergent 3 structures: points = 2
  - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
  - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

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

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

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

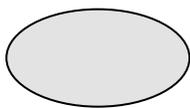
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

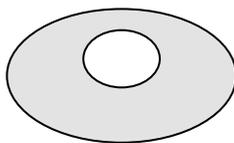
1

H 1.4. Interspersion of habitats

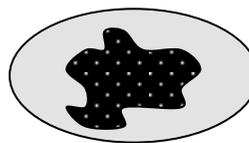
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



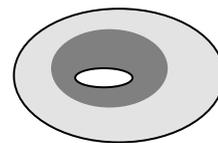
None = 0 points



Low = 1 point

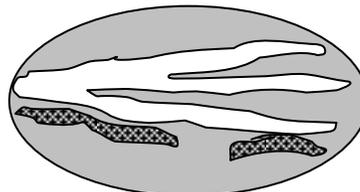
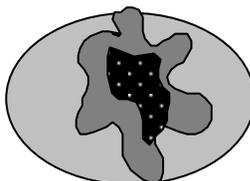
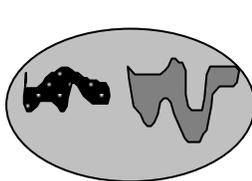


Moderate = 2 points



0

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



Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		0
Total for H 1	Add the points in the boxes above	2

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: <input type="text" value="0"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="5.88"/> /2] = 2.94 %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: <input type="text" value="19.42"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="46.10"/> /2] = 42.47 %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>		0
Total for H 2	Add the points in the boxes above	1

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

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

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

Wetland name or number   A  

## WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha ) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number A

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt</p> <p style="text-align: right;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b>   <input checked="" type="checkbox"/> No= <b>Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 2.3</b></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a></p> <p style="text-align: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p>	
<p><b>SC 3.0. Bogs</b></p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No = <b>Is not a bog</b></p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></p> <p><b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></p>	

Wetland name or number A

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input checked="" type="checkbox"/> No = <b>Not a forested wetland for this section</b></p>	
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 5.1</b>    <input checked="" type="checkbox"/> No = <b>Not a wetland in a coastal lagoon</b></p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 6.1</b>    <input checked="" type="checkbox"/> No = <b>not an interdunal wetland for rating</b></p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category I</b>    <input type="checkbox"/> No – Go to <b>SC 6.2</b></span></p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category II</b>    <input type="checkbox"/> No – Go to <b>SC 6.3</b></span></p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? <span style="float: right;"><input type="checkbox"/> Yes = <b>Category III</b>    <input type="checkbox"/> No = <b>Category IV</b></span></p>	
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Wetland name or number A

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Wetland name or number B

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): B Date of site visit: 12/5/18  
 Rated by Jon Pickett, Jim Hearsey Trained by Ecology?  Yes  No Date of training 4/16  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

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

**OVERALL WETLAND CATEGORY** IV (based on functions\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	M	M	M	
Value	H	M	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	5	4	15

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

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

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number B

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

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



Wetland name or number B

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number B

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

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

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2		1

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number B

**DEPRESSIONAL AND FLATS WETLANDS**

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

<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
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	
<b>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.</b>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	0
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	
<b>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.</b>		
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>0</b>

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

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

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

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>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.</b>		
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):		1
• 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	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>	Yes = 2 No = 0	0
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>1</b>

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

Wetland name or number B

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

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

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

- Aquatic bed 4 structures or more: points = 4
  - Emergent 3 structures: points = 2
  - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
  - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

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

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

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

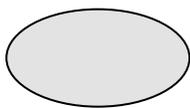
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

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

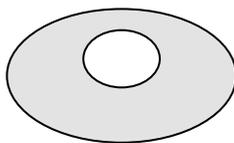
1

H 1.4. Interspersion of habitats

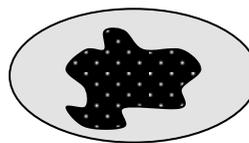
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



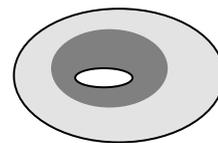
None = 0 points



Low = 1 point

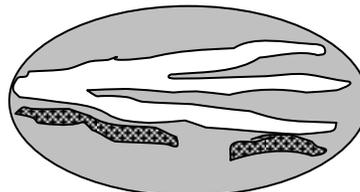
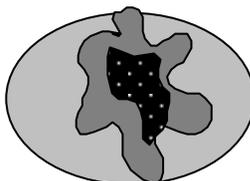
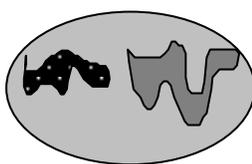


Moderate = 2 points



0

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



Wetland name or number B

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		0
Total for H 1	Add the points in the boxes above	2

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

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: <input type="text" value="0"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="5.88"/> /2] = 2.94 %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: <input type="text" value="19.42"/> % undisturbed habitat + [(% moderate and low intensity land uses) <input type="text" value="46.10"/> /2] = 42.47 %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>		0
Total for H 2	Add the points in the boxes above	1

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

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

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

Wetland name or number   B  

## WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha ) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number B

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b></p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,  <input type="checkbox"/> Vegetated, and  <input type="checkbox"/> With a salinity greater than 0.5 ppt</p> <p style="text-align: right;"><input type="checkbox"/> Yes –Go to <b>SC 1.1</b>   <input checked="" type="checkbox"/> No= <b>Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No - Go to <b>SC 1.2</b></p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input type="checkbox"/> No = <b>Category II</b></p>	
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 2.2</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 2.3</b></p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwtlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwtlands.pdf</a></p> <p style="text-align: right;"><input type="checkbox"/> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Category I</b>   <input checked="" type="checkbox"/> No = <b>Not a WHCV</b></p>	
<p><b>SC 3.0. Bogs</b></p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No – Go to <b>SC 3.2</b></p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p> <p style="text-align: right;"><input type="checkbox"/> Yes – Go to <b>SC 3.3</b>   <input checked="" type="checkbox"/> No = <b>Is not a bog</b></p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No – Go to <b>SC 3.4</b></p> <p><b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = <b>Is a Category I bog</b>   <input type="checkbox"/> No = <b>Is not a bog</b></p>	



Wetland name or number B

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# Appendix F – Wetland Rating Maps

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# KESTREL RIDGE - COWARDIN MAP

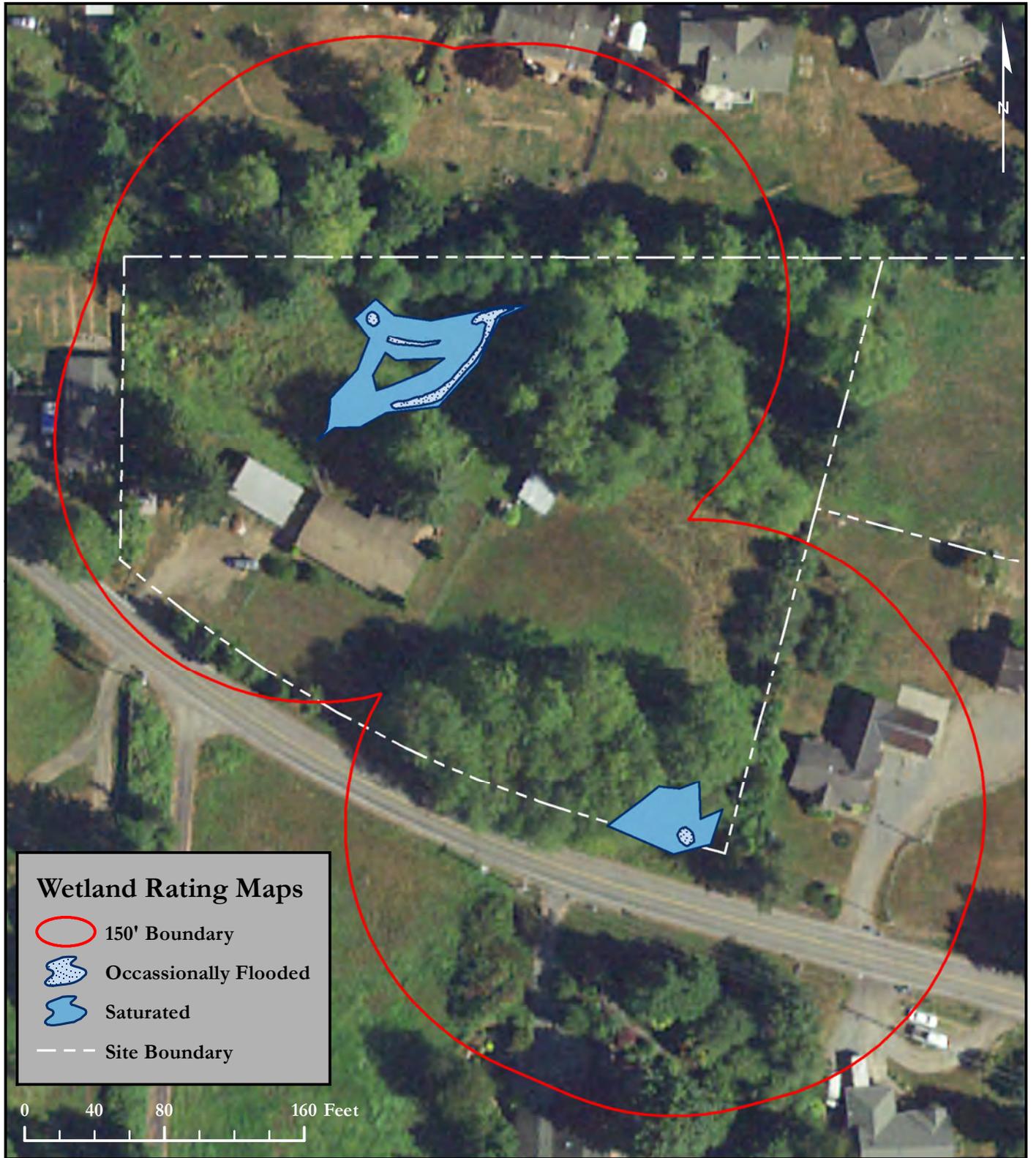


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[www.soundviewconsultants.com](http://www.soundviewconsultants.com)

**KESTREL RIDGE**  
13305 CHAIN LAKE ROAD  
MONROE, WA 98272  
SNOHOMISH COUNTY PARCEL NUMBERS:  
28073100202500 and 28073100200600

DATE: 7/24/2019
JOB: 1310.0016
BY: DLS
SCALE: 1" = 150'
FIGURE NO. 1 of 6

# KESTREL RIDGE - HYDROPERIOD MAP



## Wetland Rating Maps

-  150' Boundary
-  Occasionally Flooded
-  Saturated
-  Site Boundary

0 40 80 160 Feet



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## KESTREL RIDGE

13305 CHAIN LAKE ROAD  
MONROE, WA 98272

SNOHOMISH COUNTY PARCEL NUMBERS:  
28073100202500 and 28073100200600

DATE: 8/1/2019

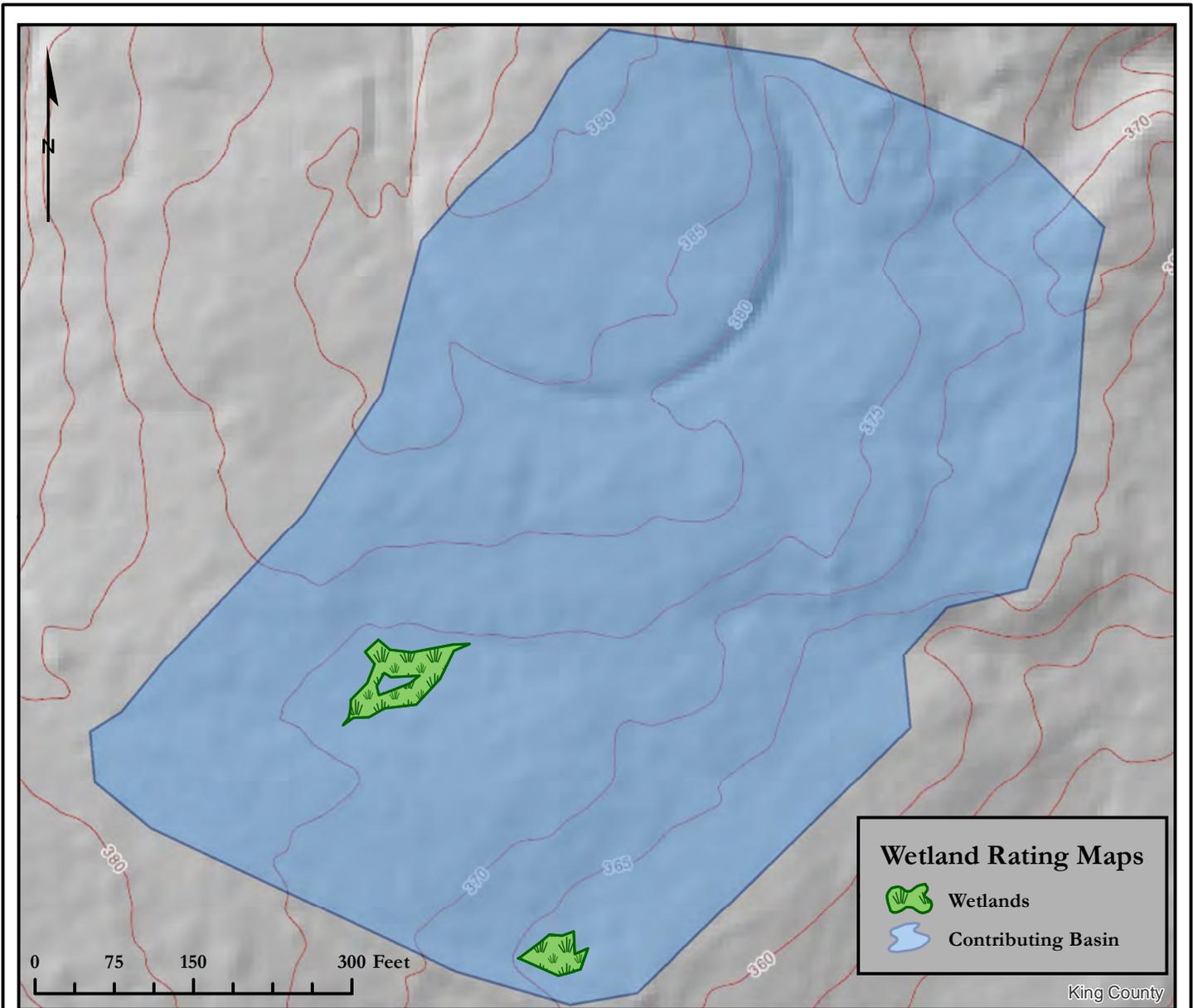
JOB: 1310.0016

BY: DLS

SCALE: 1" = 80'

FIGURE NO. 2 of 6

# KESTREL RIDGE - CONTRIBUTING BASIN MAP



D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	528,468
	Area of Wetland A (SF)	3,800
	<b>Percent of Wetland A within Contributing Basin</b>	<b>0.719%</b>
	Area of Wetland B (SF)	1,545
	<b>Percent of Wetland B within Contributing Basin</b>	<b>0.292%</b>
	Area of Intensive Human Land Uses (SF)	341,310
	<b>Percent of Intensive Human Land Use within Contributing Basin for Wetland A &amp; B</b>	<b>65%</b>

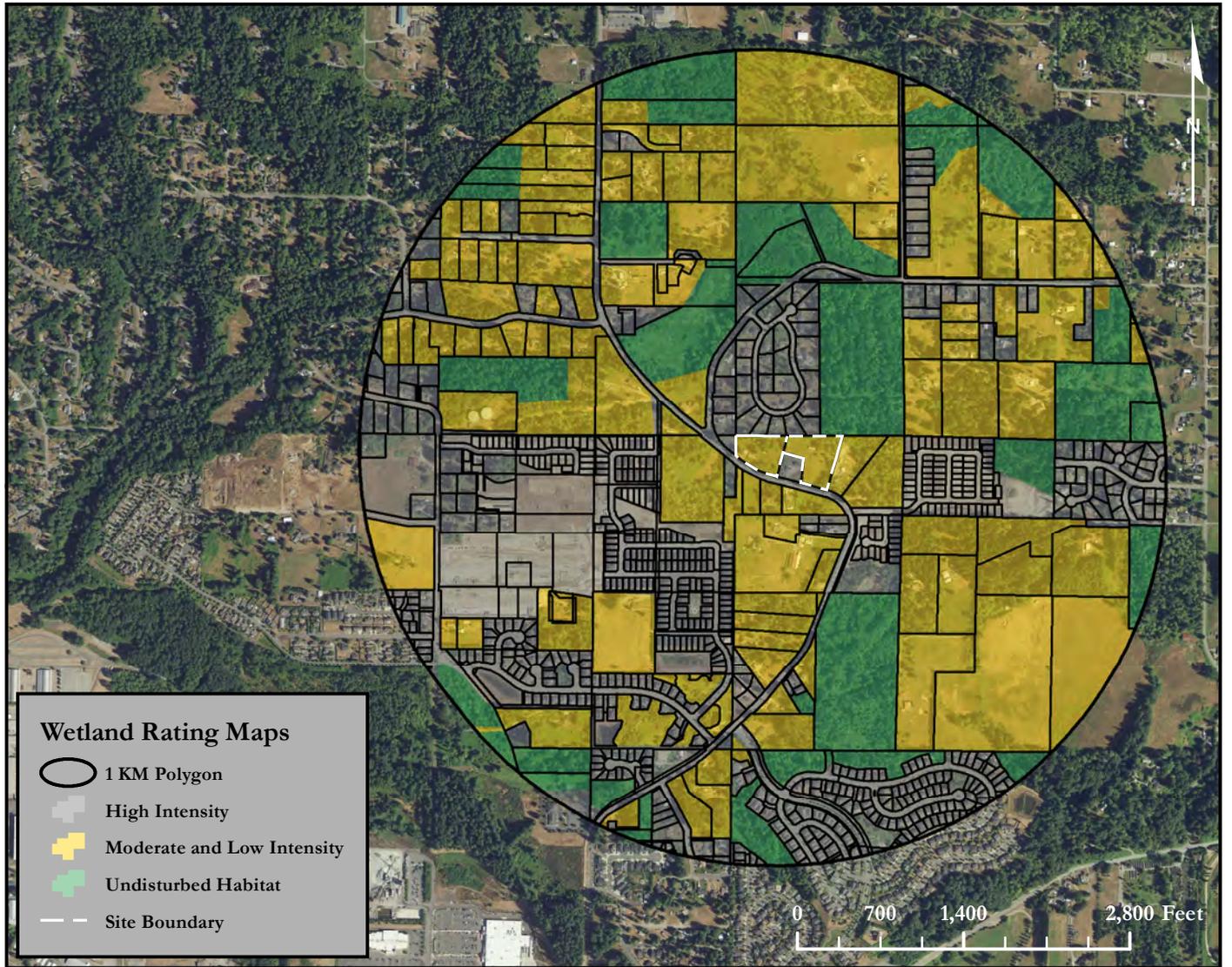


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**KESTREL RIDGE**  
 13305 CHAIN LAKE ROAD  
 MONROE, WA 98272  
 SNOHOMISH COUNTY PARCEL NUMBERS:  
 28073100202500 and 28073100200600

DATE: 7/24/2019
JOB: 1310.0016
BY: DLS
SCALE: 1" = 150'
FIGURE NO. <b>3</b> of 6

# KESTREL RIDGE - HABITAT MAP



**Wetland Rating Maps**

-  1 KM Polygon
-  High Intensity
-  Moderate and Low Intensity
-  Undisturbed Habitat
-  Site Boundary

H.2.0 Wetland A & B		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	5.88%
	<b>Accessible Habitat</b>	<b>2.94%</b>
H.2.2		
	Undisturbed Habitat	19.42%
	Moderate & Low Intensity Land Uses	46.10%
	<b>Undisturbed Habitat in 1 KM Polygon</b>	<b>42.47%</b>
H.2.3		
	<b>High Intensity Land Use in 1 KM Polygon</b>	<b>34.48%</b>

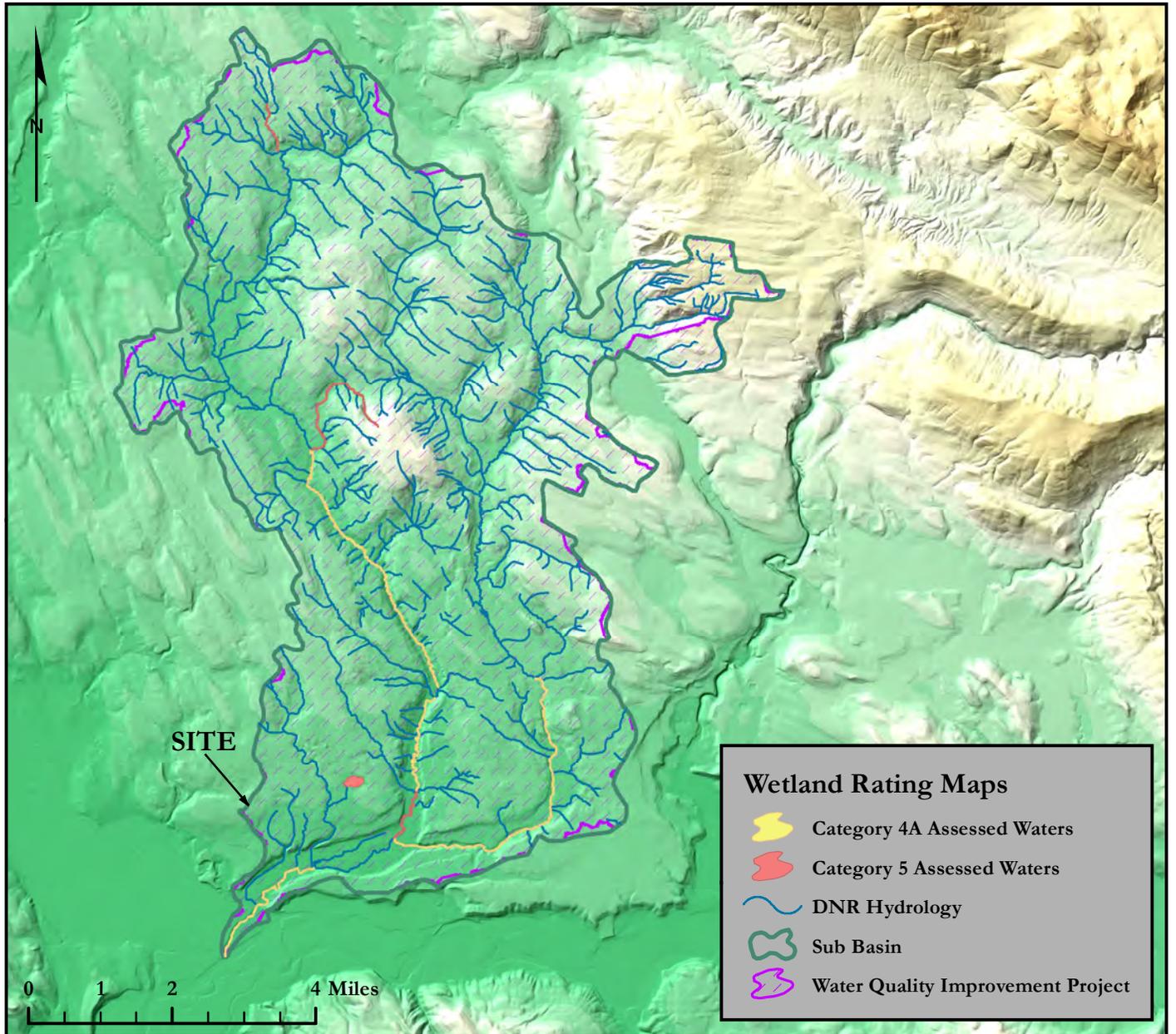


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**KESTREL RIDGE**  
 13305 CHAIN LAKE ROAD  
 MONROE, WA 98272  
 SNOHOMISH COUNTY PARCEL NUMBERS:  
 28073100202500 and 28073100200600

DATE: 1/24/2019
JOB: 1310.0016
BY: DLS
SCALE: 1" = 1,400'
FIGURE NO. 4 of 6

# KESTREL RIDGE - 303(D) MAP



LISTING ID	CATEGORY	PARAMETER	MEDIA	WATERBODY	WATERBODY TYPE
7441	4A	Bacteria	Water	WOODS CREEK, W.F.	Rivers/Streams
21981	4A	Bacteria	Water	WOODS CREEK, W.F.	Rivers/Streams
7438	4A	Bacteria	Water	WOODS CREEK, W.F.	Rivers/Streams
7440	4A	Bacteria	Water	WOODS CREEK	Rivers/Streams
7437	4A	Bacteria	Water	WOODS CREEK	Rivers/Streams



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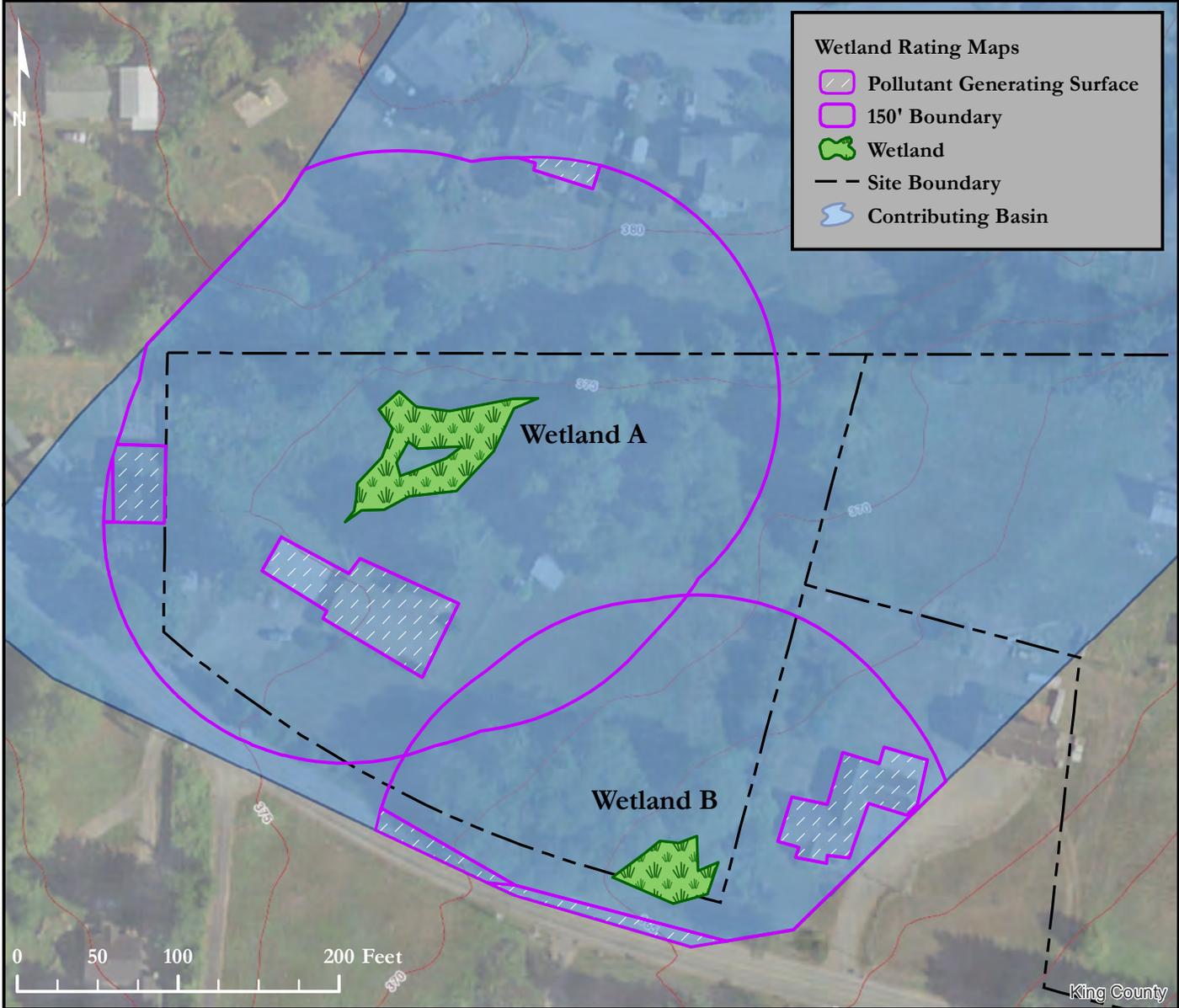
**KESTREL RIDGE**  
 13305 CHAIN LAKE ROAD  
 MONROE, WA 98272  
 SNOHOMISH COUNTY PARCEL NUMBERS:  
 28073100202500 and 28073100200600

DATE: 1/25/2019  
 JOB: 1310.0016  
 BY: DLS  
 SCALE: 1" = 2 mi  
 FIGURE NO. 5 of 6

# KESTREL RIDGE - WATER QUALITY MAP

**Wetland Rating Maps**

- Pollutant Generating Surface
- 150' Boundary
- Wetland
- Site Boundary
- Contributing Basin



D.2.0.		
D.2.1.	Wetland A	
	Area within 150 Foot Boundary (SF)	122,807
	Area of Pollutant Generating Land Uses (SF)	6,614
	<b>Percent of Pollutant Generating Land Uses</b>	<b>5.4%</b>
D.2.1.	Wetland B	
	Area within 150 Foot Boundary (SF)	52,983
	Area of Pollutant Generating Land Uses (SF)	5,225
	<b>Percent of Pollutant Generating Land Uses</b>	<b>9.9%</b>

**Soundview Consultants LLC**  
 Environmental Assessment • Planning • Land Use Solutions  
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[www.soundviewconsultants.com](http://www.soundviewconsultants.com)

**KESTREL RIDGE**

13305 CHAIN LAKE ROAD  
 MONROE, WA 98272

SNOHOMISH COUNTY PARCEL NUMBERS:  
 28073100202500 and 28073100200600

DATE: 8/1/2019
JOB: 1310.0016
BY: DLS
SCALE: 1" = 100'
FIGURE NO. <b>6</b> of 6

## Appendix G – Qualifications

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All field inspections, habitat assessments, wetland delineations, and supporting documentation, including this *Wetland Delineation and Fish and Wildlife Habitat Assessment Report and Conceptual Mitigation Plan* prepared for the *Kestrel Ridge* project site were prepared by, or under the direction of Jon Pickett of SVC. In addition, the field investigations were performed by Jon Pickett and Jim Hearsey, and report preparation was completed by Rachael Hyland.

### Jon Pickett

Senior Environmental Planner

Professional Experience: 10 years

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Jon Pickett is a Senior Scientist/Environmental Planner with diverse professional experience in habitat development as a Regional Biologist and Environmental Project Manager, with an emphasis in wetland restoration and enhancement. Jon has extensive experience successfully planning, developing, securing funding, managing and implementing numerous large-scale wetland habitat projects aimed at restoring the biological and physical functions of wetlands throughout California's Central Valley and Southern California. During this time, he managed a 2,200-acre private wetland and upland habitat complex as a public trust resource for conservation and consumptive use. He worked to ensure projects were designed and implemented to achieve habitat restoration goals, including reclamation of wetland and floodplain habitats, reintroduction of aquatic complexity and habitat, and reestablishment of riparian corridor.

Jon has worked with Federal and State agencies and private entities on land acquisitions for conservational habitat and public use, including prioritizing acquisitions relative to value and opportunity and funding. In addition, Jon has experience in regulatory coordination to ensure projects operated in compliance with Federal, State and local environmental regulations, preparing permit documentation, coordinating with all pertinent agencies and stakeholders, and developing and maintaining appropriate permitting timelines to ensure timely approvals. He also oversaw earthwork construction components and revegetation efforts, as well as post-project monitoring, with an emphasis in native vegetation establishment and natural channel morphology.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement) and has been formally trained in the use of the Washington State Wetland Rating System, How to Determine the Ordinary High Water Mark, Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

### Jim Hearsey

Wetland Scientist/Fisheries Biologist

Professional Experience: 15 years

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Jim Hearsey is a Wetland Scientist and Fisheries Biologist, with a background in critical area studies and mitigation, salmonid ecology, and water quality issues. Jim has extensive experience in SEPA/JARPA/HPA application documentation, Biological Evaluation and Assessment reporting,

and detailed fish presence, passage, and habitat quality studies and research. He has worked with multiple taxa and species along the west coast, from California to Alaska, as well as in Indiana. Jim has developed positive professional relationships with northwest native tribes and his proposed eel grass surveys and fish exclusion methods have been successfully approved by the Washington Department of Fish and Wildlife (WDFW) and local tribes.

Jim is a certified Biological Assessment author by the Washington State Department of Transportation (WSDOT). His other qualifications include Wetland Delineation Training Certification by the Wetland Training Institute; WDFW Fish Passage Training; Assessment of Natural Barriers & Habitat Surveys for Barrier Prioritization; certification in Using Revised Washington State Rating System (2014) from the Washington State Department of Ecology (WSDOE); Forage Fish Survey Certification from the Coastal Training Institute; Coast Guard boating safety certificate issued by the US Dept. of Interior; and PADI open water diving certification.

## **Rachael Hyland**

Environmental Scientist

Professional Experience: 5 years

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Rachael Hyland is a Wetland Professional in Training (WPIT) through the Society of Wetland Scientists and a Certified Associated Ecologist through the Ecological Society of America. Rachael has a background in wetland and ecological habitat assessments in various states, most notably Connecticut, Massachusetts, Rhode Island, Ohio, and Washington. She has experience in assessing tidal, stream, and wetland systems, reporting on biological evaluations, permitting, and site assessments. She also has extensive knowledge of bats and white nose syndrome (*Pseudogymnoascus destructans*), a fungal disease affecting bats which was recently documented in Washington.

Rachael earned a Bachelor of Science degree in Ecology and Evolutionary Biology from the University of Connecticut, with additional ecology studies at the graduate level. Rachael has completed Basic Wetland Delineator Training with the Institute for Wetland Education and Environmental Research, received 40-hour wetland delineation training (Western Mountains, Valleys, & Coast and Arid West Regional Supplement), and received formal training from the Washington State Department of Ecology in the Using the Revised 2014 Wetland Rating System for Western Washington, How to Determine the Ordinary High Water Mark, Navigating SEPA, and Selecting Wetland Mitigation Sites Using a Watershed Approach.