



Soundview Consultants LLC

Environmental Assessment • Planning • Land Use Solutions

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Technical Memorandum

To: JT Rarden, D.T.R. Construction, Inc.

File Number: 2530.0001

From: Alex Murphy, Soundview Consultants LLC

Date: May 9, 2023

Re: Non-Wetland and Fish and Wildlife Habitat Assessment Technical Memorandum
800 Pioneer Trail Road, Cle Elum, WA

Dear Mr. Rarden,

Soundview Consultants LLC (SVC) has been assisting D.T.R. Construction, Inc. (Applicant) with a non-wetland and fish and wildlife habitat assessment on an approximately 61.15-acre property located in unincorporated Kittitas County on 800 Pioneer Trail Road in Cle Elum, Washington (Figure 1). The property consists of two parcels located in the Southeast $\frac{1}{4}$ of Section 20, Township 20 North, Range 14 East, W.M. (Kittitas County Tax Parcel Numbers 957098 and 415436). SVC investigated the subject property to evaluate if any potentially regulated wetlands, streams, or other fish and wildlife habitat conservation areas are located on or adjacent to the subject property and access. This assessment and technical memorandum were conducted to support residential subdivision and development of the subject property.

Figure 1. Subject Property Location.



Background

Prior to the site investigation, SVC staff conducted background research using Kittitas County, Washington Department of Fish and Wildlife Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) mapping tools, WDFW and Northwest Indian Fisheries Commission (NWIFC) Statewide Washington Integrated Fish Distribution (SWIFD) database, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington Department of Natural Resources (DNR) stream typing map, and Natural Resource Conservation Service (NRCS) soil survey. Onsite determinations were made using observable vegetation, hydrology, and soils in conjunction with the sources listed above, U.S. Geological Survey (USGS) topographic maps, local precipitation data, and various orthophotographic resources.

The USFWS NWI Map (Attachment B1) identifies one potential emergent wetland in the southwest corner of the site and one potentially linear water feature in the northeast area of the subject property. The DNR Stream Typing Map (Attachment B2) maps the deep-water feature as an Unknown (Type U) stream and identifies Big Creek, a type S stream, within 250 feet of the site to the east. The WDFW and NWIFC SWIFD Map (Attachment B3) depicts Big Creek in the same location as the DNR stream typing map, and documents the presence of coho, eastern brook trout, rainbow trout, spring chinook, summer steelhead and westslope cutthroat, as well as the presumed presence of dolly varden trout. The WDFW PHS Map (Attachment B4) identifies priority habitat or species on the subject property in approximately the same location as the NWI mapped features across the site. Additionally, the WDFW PHS map identifies Big Creek as a PHS stream as occurrence and/or migration habitat for the same salmonid species identified by WDFW and NWIFC SWIFD Map, and identifies a potential sensitive location for Little Brown Bat (*myotis spp.*), Northern Spotted Owl, and Yuma myotis within 250 feet of the subject property.

The NRCS soil Map (Attachment B5) identifies four different soil series present throughout the site, all of them are listed as non-hydric on the Kittitas County Hydric Soils List (NRCS, N.d.). The mapped non-hydric soils include: Roslyn ashy sandy loam, 0 to 5 percent slopes (201); Patnish-Mippon-Myzel complex, 0 to 3 percent slopes (208); Roslyn ashy sandy loam, moist, 3 to 25 percent slopes (213); Kladnick ashy sandy loam, 0 to 3 percent slopes (237).

No other wetlands, streams, or fish and wildlife habitat conservation areas are documented within 250 feet of the subject property.

Methods

Formal site investigations were performed by qualified SVC staff in winter and spring 2023. In winter of 2023, site investigation consisted of a critical areas reconnaissance, where areas requiring additional investigation were identified. During the site visit in spring of 2023, the investigation consisted of a walk-through survey and data collection to identify potentially regulated wetlands, streams, and priority habitat and/or species as specified in Kittitas County Code (KCC) Chapter 17A.07 within 250 feet of the subject property.

Wetlands, streams, and select fish and wildlife habitats and species are regulated features per KCC Chapter 17A.07 and subject to restricted uses/activities under the same title. Wetland presence/absence was determined in accordance with KCC 17A.07.020, and as outlined in the U.S. Army Corps of Engineers' (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) as 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). 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-3). Additional test pits were excavated at regular intervals throughout the subject property investigation area to further confirm wetland presence/absence. A total of three formal data plots were collected throughout the site, documenting the absence of wetland criteria (Attachment C).

Ordinary high water (OHW) mark determinations were made using Washington State Department of Ecology’s (WSDOE’s) methodology, as detailed in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al., 2016), and the definitions established in the Revised Code of Washington (RCW) 90.58.030(2)(b) and Washington Administrative Code (WAC) 173-22-030(11). Due to its location offsite, the identified stream was estimated utilizing existing mapped data, aerial imagery, and topographic contours. The stream was classified using the guidelines established in KCC 17A.02.750.

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.

Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) weather station at the Easton, WA Station in order to obtain percent of normal precipitation during and preceding the investigation. A summary of data collected is provided in Table 1.

Table 1. Precipitation Summary.

Site Visit Date	Day Of	Day Before	1 Week Prior	2 Weeks Prior	30 Days Prior (Observed/Normal)	Year to Date (Observed/Normal) ²	Percent of Normal ³
01/27/2023	0.18	0.00	0.69	1.31	2.89/8.14	15.86/27.29	36/58
04/27/2023	missing	missing	0.67	0.80	2.42/3.66	24.01/42.12	66/57

1. Precipitation volume provided in inches. Data obtained from NOAA (<https://www.weather.gov/wrh/Climate?wfo=pdf>) for Easton, WA Station.
2. Year-to-date precipitation is for the water year from October 1 to the onsite date.
3. Percent of normal shown is for the prior 30 days/year.

Precipitation levels during the January 2023 site visit were lower than the statistical normal for the prior 30 days (36 percent of normal) and within the lower range for the 2022/2023 water year (58 percent of normal). In addition, precipitation levels during the April 2023 site visit were lower than the statistical normal for the prior 30 days (66 percent of normal) and within the lower range for the 2022/2023 water year (57 percent of normal). However, local weather stations are missing several days of accumulation data for the 30 days prior to the site visit. Overall, this data suggests that hydrologic conditions encountered during the time of the site investigation may have been normal to slightly drier than normal. Such conditions were considered in making professional critical areas determinations.

Proposed Project

The Applicant proposes to subdivide the existing property into 5-acre parcels for future single-family residential development. New roads and associated utilities will be constructed as required by KCC. See the previously submitted SEPA checklist for additional project details.

Results

Existing Conditions Summary

The 61.15-acre subject property is currently a grass field with cleared and old forested areas, with several inactive irrigation ditches running through the majority of the property. Forested vegetation on the subject property is dominated by an overstory of Douglas-fir (*Pseudotsuga menziesii*) with an understory of bitter cherry (*Prunus emarginata*), snowberry (*Symphoricarpos albus*), roses (*Rosa spp.*), and Arctic butterbur (*Petasites frigidus*). Based on a review of historical aerial imagery, the south portion of the subject property was under agricultural use for several decades following 1985. Since at least 1998, several agricultural ditches were created along the south portion of the site. These agricultural ditches changed locations overtime. However, two of them located parallel in the southwest portion of the subject property showed for the first time in 2005 and were more prominent in 2011. The topography on the site is generally flat at an elevation of approximately 2130 feet above mean sea level (Attachment B6). The subject property is located in a rural residential setting and is surrounded by agricultural/forested land and single-family residential development.

Offsite Wetlands

Two wetlands were observed offsite to the northeast of the subject property. The identified offsite wetlands presumed contain indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. The identified offsite wetlands are depicted on the existing conditions exhibited in Attachment A. Data forms are included in Attachment C.. Photographs of general site conditions and the identified critical areas are provided in Attachment D.

Wetland 1

Wetland 1 is entirely offsite, located approximately 200-feet to the northwest of the subject property at its nearest point. Hydrology for offsite Wetland 1 is assumed to be provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland 1 is a depressional wetland dominated by non-native invasive reed canarygrass (*Phalaris arundinacea*). The wetland boundary was determined from an offsite perspective based on available topographical maps and visual observation of hydrophytic vegetation. Due to its offsite location on private property, hydric soils were presumed. Wetland 1 is a Category III wetland with a 110' buffer.

Wetland 2

Wetland 2 is entirely offsite, located approximately 300-feet to the northwest of the subject property at its nearest point. Hydrology for offsite Wetland 2 is assumed to be provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland 2 is a depressional wetland. Wetland vegetation is dominated by non-native invasive reed canarygrass (*Phalaris arundinacea*) and a scrub-shrub area visible from aerial photography but not from the subject property. The wetland boundary was determined from an offsite perspective based on available topographical maps and visual observation of hydrophytic vegetation. Due to its offsite location on private property, hydric soils were presumed. Wetland 2 is a Category II wetland with a 150' buffer.

Absence of Wetlands Onsite

No potentially regulated wetlands were identified onsite during the onsite investigation. Formal data plots were collected at three locations in representative locations across the site to document the absence of wetlands, including the historic inactive irrigation ditches at the south portion of the subject property and the large depressional swale. Photographs of each data plot and site conditions

are included in Attachment D. None of the data plots met all three required wetland criteria (i.e., vegetation, soils, and hydrology) according to current wetland delineation methodology. All data plots exhibited hydrophytic vegetation; however, none of them exhibited hydric soils. All data plots were excavated to a depth of at least 15 inches and left open for a minimum of 2 hours to allow adequate time for the groundwater table to equilibrate. However, no water tables were observed in any data plots. No other indicators of primary wetland hydrology were observed. Due to the lack of wetland hydrology indicators, and the lack of hydric soil indicators in the three formal data plots, no wetlands were observed onsite.

The existing vegetation onsite is not diagnostic of wetland conditions. DP-3 exhibited hydrophytic vegetation due to the presence of Kentucky bluegrass (*Poa pratensis*). Kentucky bluegrass is a perennial grass that has been dominant in the east of the Cascade Mountains due to favorable environmental conditions. Historically, in early 1960 farmers located in the east of the Cascades planted bluegrass to increase sod strength (Cook, T N.d). Currently, this grass is known to being present in roadside ditches and highly disturbed areas, such as old agricultural fields. It grows quickly in positive nutrient inputs environments, especially in nonpoint agricultural runoff. The presence of Kentucky bluegrass in the three data plots is consistent with the prior agricultural use of the onsite investigation area and subsequent revegetation.

Non-Regulated Drainage Features

Three artificially constructed drainage ditches are located in the subject property. SVC's April 2023 site investigation determined these features as non-regulated ditches due to the lack of defined bed or bank, gravel, cobble, sorting or natural scour and lack of flows. One ditch located south of Nelson Siding Road was flowing north where dissipates in the flood fields to the south of the subject property. Overland flows from the ditch approached the property but infiltrated completely before crossing the southern property line. One data plot (DP-3) was collected downgradient of this irrigation ditch, and no hydrologic conditions were present even during the growing season. Other networks of irrigation ditches exist on the subject property, but these are not currently in use. Given the lack of a defined bed and bank, the ditches do not meet the definition of a stream per WAC 222-16-030. Additionally, the man made artificially constructed drainage ditches do not meet the defined criteria of a "Stream" or "Wetland" per KCC 17A.02.790 and KCC 17A.07.020 respectively.

Big Creek

The DNR, WDFW, and the NWIFC identify Big Creek offsite, approximately 250 feet east of the subject property at its closest point. DNR identifies Big Creek as a Type F (fish-habitat) water. The WDFW PHS map and the WDFW SWIFD-NWIFC map documents the presence of coho, eastern brook trout, rainbow trout, spring chinook, summer steelhead and westslope cutthroat, as well as the presumed presence of dolly varden trout. As such, Big Creek meets the criteria of a Type F Water per KCC 17A.02.750

Fish and Wildlife Habitat Conservation Area Assessment

Per KCC 17A.04.020, Fish and wildlife habitat conservation areas include Waters of the U.S, areas with which federally or state-designated endangered, threatened, and sensitive fish and wildlife species have a primary association. Habitat in the subject property consists of forested and grass field vegetation as depicted in Attachment D. The area within 250 feet surrounding the property consists of single-family homes, farms, Wetlands 1 and 2, and Big Creek. According to the USFWS IPaC mapping database, Gray Wolf (*Canis lupus*), marbled murrelet (*Brachyramphus marmoratus*), yellow-billed cuckoo (*Coccyzus americanus*), bull trout (*Salvelinus confluentus*) and Spotted Owl (*Strix*

occidentalis) have the potential to occur within 250-feet of the subject property. Additionally, the WDFW PHS map and the WDFW SWIFD-NWIFC map documents the presence of coho, eastern brook trout, rainbow trout, spring chinook, summer steelhead and westslope cutthroat, as well as the presumed presence of dolly varden trout in Big Creek, which is located offsite 250 feet east of the subject property.

Gray wolf generally inhabits temperate forests, mountains, tundra, taiga and grassland environments. While they are somewhat habitat generalists, Gray Wolves do require ungulate prey or other wild animals for scavenging. In addition, they require a large amount of space (minimum of 10,000 to 13,000 square km) with low road density to support a viable population (Wiles et al., 2011). Due to the lack of suitable habitat and lack of recent sightings in the eastern portion of the state, gray wolf is unlikely to be present onsite or within the vicinity of the subject property.

Marbled murrelet that occurs in the state of Washington are year-round residents on coastal waters and primarily feed in waters within 500 feet of the shore out to 1.2 miles from shore at depths of less than one hundred feet. Potential suitable habitat typically consists of tree stands 5 or more acres in size composed of 60% or more conifer cover with minimum 15-inch diameter at breast height (DBH) with nesting platform trees. Nesting platform trees include “platform branches” that are a relatively flat surface at least four inches wide, at least 33 feet high in a coniferous tree, with cover from the live crown of the same tree or an adjacent tree (WSDOT, 2014). The subject property is not suitable for marbled murrelet habitat because it is over 50 miles away from the shoreline of the Puget Sound. In addition, the subject property and surrounding landscape lack old growth or mature forest habitat suitable for nesting. As such, no marbled murrelet is anticipated to be present on or within 250 feet of the subject property.

Yellow-billed cuckoo habitat consists of low to mid-level riparian forests dominated by cottonwoods and willow (Wiles and Kalasz, 2017). Twenty sightings have been confirmed in Washington between the 1950s and 2017; none of these sightings were breeding birds. Further, sixteen of these twenty sightings were east of the Cascades, and the sighted birds were likely vagrants or migrants (Wiles & Kalasz, 2017). Due to the lack of suitable habitat and lack of recent sightings in the eastern portion of the state, yellow-billed cuckoo are unlikely to be present onsite or within the vicinity of the subject property as no mid-level riparian forest are present within 250 feet of the subject property. Moreover, the closest sighting of Yellow-billed cuckoo is in the Seattle area (Ebird, N.d).

Northern spotted owl is typically found in mid and late seral coniferous forests with a complex and high canopy closure and large snags and logs. In Washington state, Northern spotted owl occur up to 5,000 feet in elevation and are very rarely seen in the Puget Lowlands. As of 2023, the nearest Northern spotted owl sighting was observed near Mount Rainer National Park which is over 20 miles way from the subject property.

Bull trout have the most specific habitat requirements of salmonids. They require cold water temperatures, clean stream substrates for spawning and rearing, complex habitats including streams with riffles and deep pools, undercut banks and large logs, and they also rely on river, lake, and ocean habitats that connect to headwater streams for annual spawning and feeding migrations (Shellberg, 2002). In Washington, bull trout are typically found in major tributaries from the Cascades that flow into the Puget Sound as well as major tributaries for the Olympic Mountains that flow into the Hood Canal, Strait of Juan de Fuca, and the Pacific Ocean (USFWS, 2015). Big Creek is located approximately 250-feet offsite to the east of the subject property. Bull trout presence is presumed within Big Creek according to the WDFW and NWIFC-SWIFD salmonid map. However, Talmadge Road and Sunshine Way separate the subject property from Big Creek and no waterbody

connectivity exists between the subject property and Big Creek. As such, no suitable habitat for bull trout is likely present on or within the vicinity of the subject property.

Regulatory Considerations

Buffer Requirements

Offsite Wetlands 1 and 2 are categorized as a Category III and Category II wetlands respectively per the wetland classification guidelines in KCC 17A.07.020.4 Categorization.. Per KCC 17A.07.030 Table 4, Category III wetlands are subject to a 110 foot buffer and Category II wetlands are subject to a 150 foot buffer. Due to the location of the proposed project, no impacts in the buffers associated with Wetlands 1 and 2 are anticipated.

Per KCC 17A.04.030 Riparian Management Zones and Buffers, Big Creek will require a 150-foot buffer as it is classified as a Type F (fish-habitat) aquatic area. However, due to the distance between the subject property and Big Creek, no impacts to the buffer associated with this aquatic area are anticipated.

Conclusion

SVC identified two offsite wetlands (Wetland 1 and 2) approximately 200 feet northwest of the subject property and one stream (Big Creek) offsite, approximately 250 feet east of the subject property. Wetlands 1 and 2 are Category III and Category II and subject to a 110-foot standard buffer and 150-foot standard buffer respectively. Big Creek is classified as a Type F aquatic area, which requires a standard 150-foot buffer. However, due to the distance of these critical areas to the subject property, the buffers do not extend onsite and no impacts to critical area buffers are anticipated. No other potential wetlands, aquatic areas, or wildlife habitat conservation areas or networks were identified on or within 250 feet of the subject property.

If you have any questions, please contact us at your earliest convenience.

Sincerely,



Alex Murphy
Planner and Project Manager

May 9, 2023
Date

References

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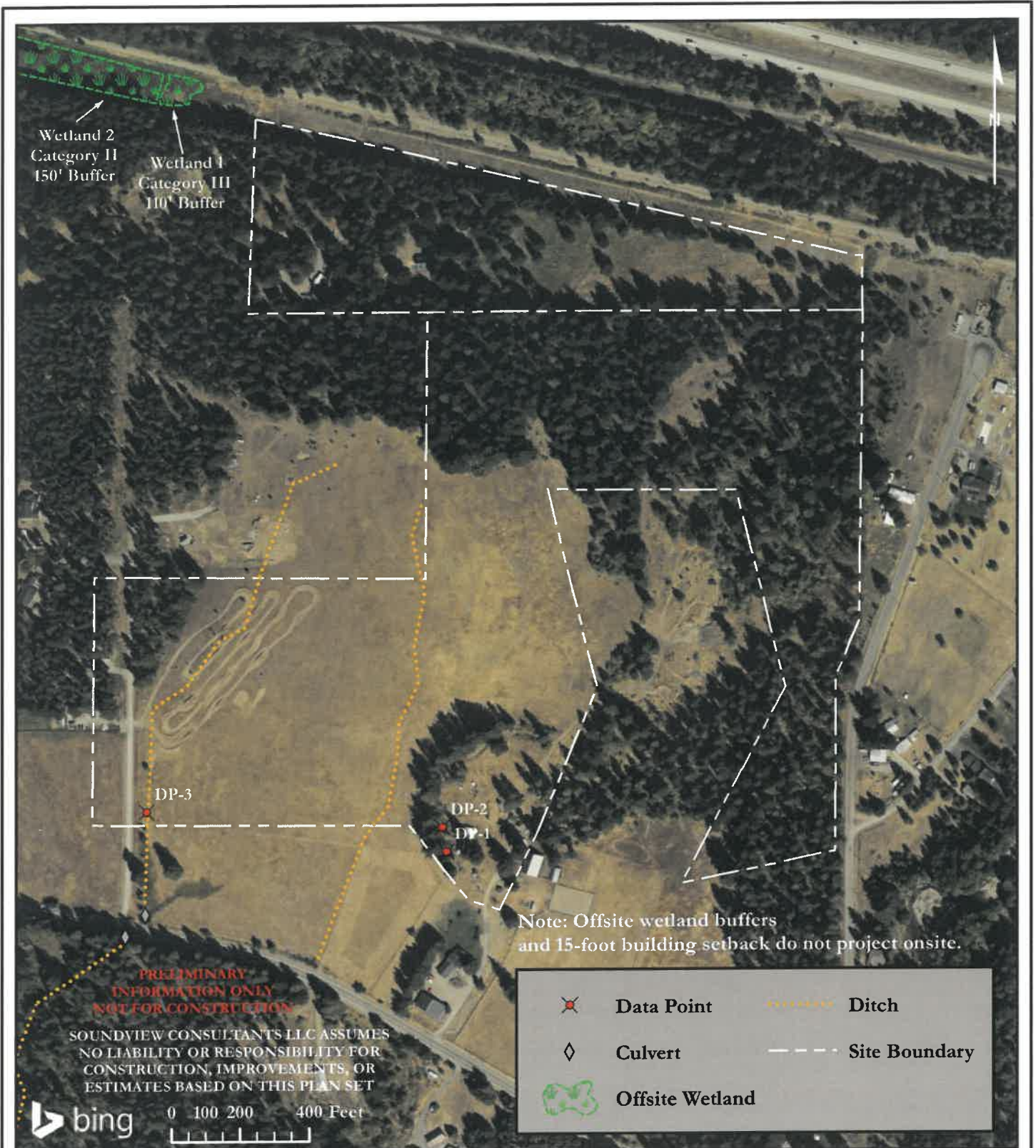
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Attachment A – Existing Conditions

EXISTING CONDITIONS




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NELSON VIEW SUBDIVISION

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CLE ELUM, WA 98922

KITTTAS COUNTY PARCEL NUMBERS:
415436 & 957098

DATE: 5/5/2023
JOB: 2530.0001
BY: LL
SCALE: 1" = 400'
FIGURE NO. 1

Attachment B – Background Information

This attachment includes a USFWS NWI Map (B1); DNR Stream Typing Map (B2); WDFW and NWIFC SWIFD Map (B3); WDFW PHS Map (B4); NRCS soil Map (B5); Kittitas County Topographic Map (B6).

Attachment B1 – USFWS NWI Map



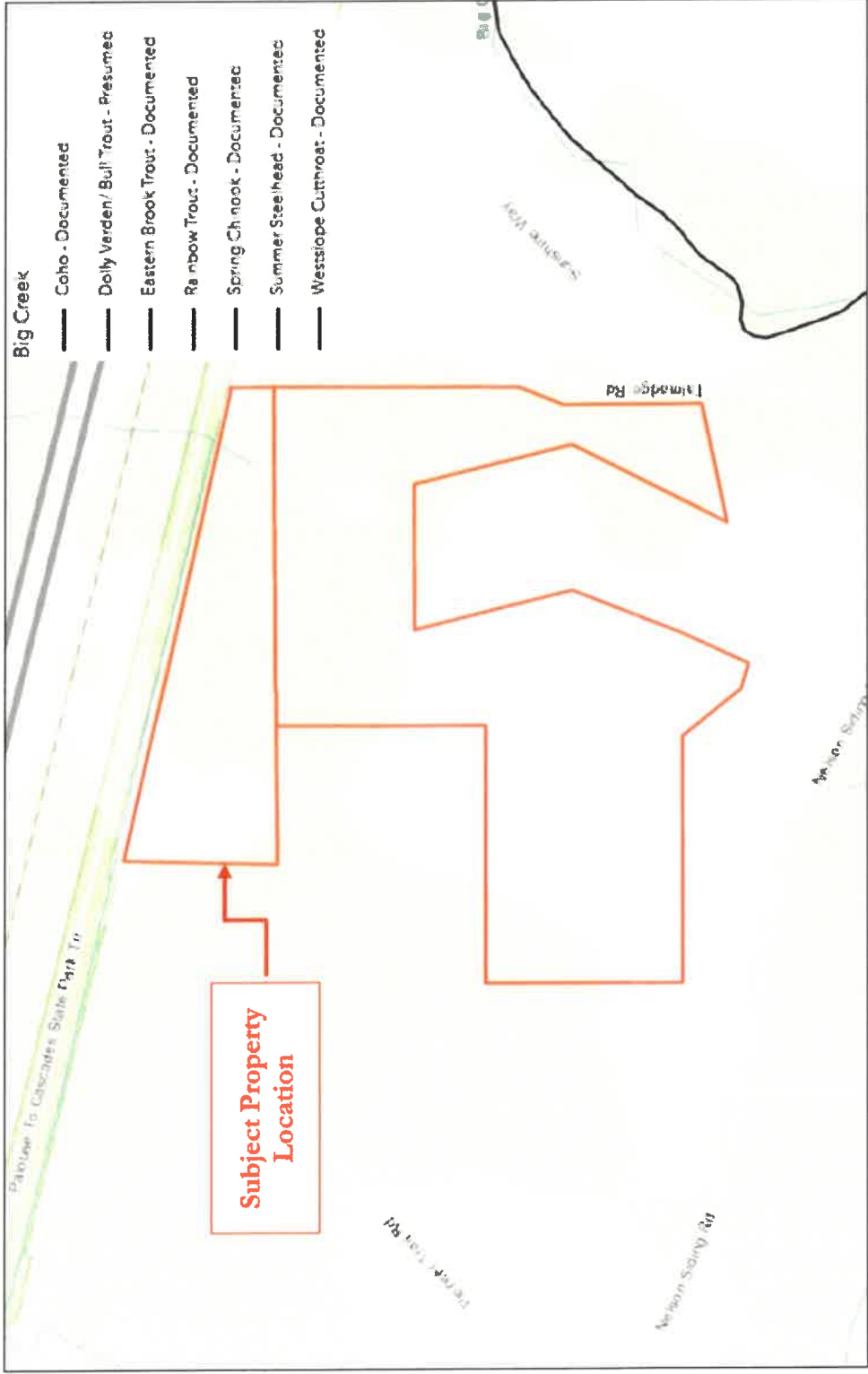
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 0 280 560 1,120 ft
 0 85 170 340 m
 U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov, © 2023 Microsoft Corporation © 2022 Maxar
 Soundview Consultants
 Soundview Consultants and the Friends of the San Juan City of Portland.

Attachment B2 – DNR Stream Typing Map



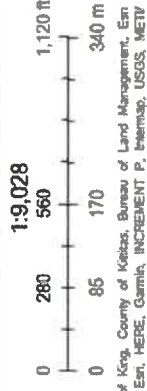
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 © 2023 Microsoft Corporation © 2022 Mazar, ©CNES (2022) Distribution Airbus DS © 2022 TomTom
 Soundview Consultants
 © 2023 Microsoft Corporation and the Friends of the San Juans, (City of Portland, Oregon)

Attachment B3 – WDFW and NWIFC SWIFD Map



2/16/2023, 10:12:04 AM

- Statewide Parcels_Query result
- All SalmonScape Species



WDFW | These data were collected by WDFW staff with contributions from the North Olympic Salmon Coalition and the Friends of the San Juans. | Coy of Portland, Oregon | Source: USDA NRCS, Esri | Members of the Oak Prairie Work Group (OPWG), a project of Soundview Consultants

Attachment B4 – WDFW PHS Map



2/16/2023, 10:10:39 AM

— PHS Public Lines Masked PHS Public Polygons Statewide Parcels_ Query result
 AS MAPPED AS MAPPED

© 2023 Microsoft Corporation, © 2022 Maxar, ©CNES (2022) Distribution Airbus DS, © 2022 TomTom | WDFW | These data were collected by WDFW staff with contributions from the North Olympic Salmon Coalition and the Friends of the San Juans. | City of Portland, Soundview Consultants
 WDFW, © 2023 Microsoft Corporation © 2022 Maxar ©CNES (2022) Distribution Airbus DS © 2022 TomTom

1:9,028 0 280 560 1,120 ft
 0 85 170 340 m



Priority Habitats and Species on the Web

Buffer radius: 330 Feet

Report Date: 02/16/2023

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Coho	N/A	N/A	No
Dolly Varden/ Bull Trout	N/A	N/A	No
Summer Steelhead	N/A	N/A	No
Spring Chinook	N/A	N/A	No
Westslope Cutthroat	N/A	N/A	No
Rainbow Trout	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Shrubsteppe	N/A	N/A	No
Little Brown Bat	N/A	N/A	Yes
myotis spp	N/A	N/A	Yes
Northern Spotted Owl	Threatened	Endangered	Yes
Yuma myotis	Threatened	Endangered	Yes

PHS Species/Habitats Details:

Coho	
Scientific Name	<i>Oncorhynchus kisutch</i>
Priority Area	Breeding Area
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Coho Salmon, Run Time: Unknown or not Applicable, Life History: Anadromous
Source Record	6551
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversity/soc/soc.htm
Geometry Type	Lines

Dolly Varden/ Bull Trout	
Scientific Name	<i>Salvelinus malma/S. confluentus</i>
Priority Area	Occurrence/Migration
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Bull Trout, Run Time: Unknown or not Applicable, Life History: Unknown
Source Record	6553
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversity/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	<i>Oncorhynchus mykiss</i>
Priority Area	Breeding Area
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	6558
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversity/soc/soc.htm
Geometry Type	Lines

Spring Chinook	
Scientific Name	<i>Oncorhynchus tshawytscha</i>
Priority Area	Breeding Area
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Chinook Salmon, Run Time: Spring, Life History: Anadromous
Source Record	6549
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wm/diversty/soc/soc.htm
Geometry Type	Lines

Westslope Cutthroat	
Scientific Name	<i>Oncorhynchus clarki lewisi</i>
Priority Area	Occurrence/Migration
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Westslope Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Fluvial
Source Record	6560
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wm/diversty/soc/soc.htm
Geometry Type	Lines

Rainbow Trout	
Scientific Name	<i>Oncorhynchus mykiss</i>
Priority Area	Occurrence/Migration
Site Name	Big Creek
Accuracy	NA
Notes	LLID: 1210966472175, Fish Name: Rainbow Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	6556
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversity/soc/soc.htm
Geometry Type	Lines

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFOA
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PSSC
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Kittitas County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920870
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Little Brown Bat	
Scientific Name	<i>Myotis lucifugus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

myotis spp	
Scientific Name	<i>Myotis yumanensis/lucifugus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
Display Resolution	TOWNSHIP

Northern Spotted Owl	
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

Yuma myotis	
Scientific Name	<i>Myotis yumanensis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

DISCLAIMER: This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

Attachment B5 – NRCS soil Map



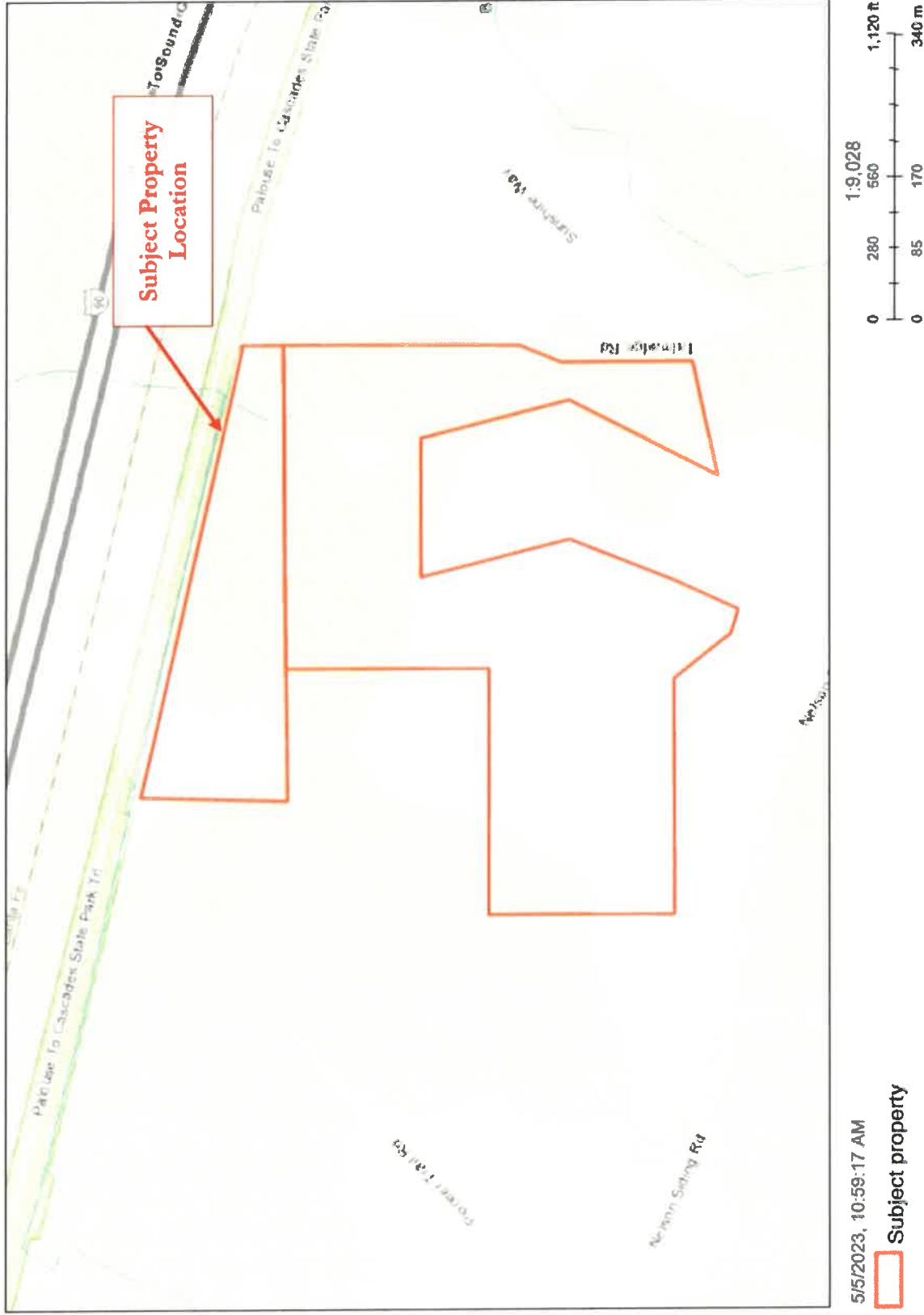
2/16/2023, 10:05:54 AM
 1:9,028
 0 280 560 1,120 ft
 0 85 170 340 m

Statewide Parcels _Query result
 USA Soils Map Units

201: Roslyn ashy sandy loam, 0 to 5 percent slopes
 208: Patnish-Mippon-Myzel complex, 0 to 3 percent slopes
 213: Roslyn ashy sandy loam, moist, 3 to 25 percent slopes
 237: Kladnick ashy sandy loam, 0 to 3 percent slopes

Source: USDA NRCS, Esri, © 2023 Microsoft Corporation © 2022 Maxar © 2023 TomTom | WDFW | These data were collected by WDFW staff with contributions from the North Olympic Salmon Coalition and the Friends of the San Juans. | City of Portland, Soundview Consultants

Attachment B6 – Kittitas County Topographic Map



Attachment C – Data Forms

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

Project/Site: Nelson View Subdivision City/County: Easton, Kittitas County Sampling Date: 4/27/2023
 Applicant/Owner: Justin Rarden State: WA Sampling Point: DP-1
 Investigator(s): Casey Lanier, Jeremy Downs Section, Township, Range: SE 1/4 20, 20N, 14E
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): LRR-A Lat: 47.207874 Long: -121.11679532 Datum: WGS-84
 Soil Map Unit Name: 201 - roslyn ashy sandy loam 0-5 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 type="checkbox"/> No <input checked="" 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"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">No wetland criteria met. Plot sampled within relic oxbow.</p>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30 ft)				
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)				
1. <u>Malus fusca</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	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 = _____
2. <u>Rosa gymnocarpa</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>20</u>	= Total Cover		
Herb Stratum (Plot size: 10 ft)				
1. <u>Galium aparine</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Poa pratensis</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Petasites frigidus</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>82</u>	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>18</u>				

Remarks: **No hydrophytic vegetation criteria met.**

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹			
0-5	10YR 2/2	100	-	-	-	Lo	Loam	
5-16	10YR 3/2	100	-	-	-	LoSa	Loamy sand	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Histosol (A1)</td> <td><input type="checkbox"/> Sandy Redox (S5)</td> </tr> <tr> <td><input type="checkbox"/> Histic Epipedon (A2)</td> <td><input type="checkbox"/> Stripped Matrix (S6)</td> </tr> <tr> <td><input type="checkbox"/> Black Histic (A3)</td> <td><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</td> </tr> <tr> <td><input type="checkbox"/> Hydrogen Sulfide (A4)</td> <td><input type="checkbox"/> Loamy Gleyed Matrix (F2)</td> </tr> <tr> <td><input type="checkbox"/> Depleted Below Dark Surface (A11)</td> <td><input type="checkbox"/> Depleted Matrix (F3)</td> </tr> <tr> <td><input type="checkbox"/> Thick Dark Surface (A12)</td> <td><input type="checkbox"/> Redox Dark Surface (F6)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Mucky Mineral (S1)</td> <td><input type="checkbox"/> Depleted Dark Surface (F7)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Gleyed Matrix (S4)</td> <td><input type="checkbox"/> Redox Depressions (F8)</td> </tr> </table>	<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<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 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)	<p>Indicators for Problematic Hydric Soils³:</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> 2 cm Muck (A10)</td> </tr> <tr> <td><input type="checkbox"/> Red Parent Material (TF2)</td> </tr> <tr> <td><input type="checkbox"/> Very Shallow Dark Surface (TF12)</td> </tr> <tr> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> </table> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>	<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)
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)																				
<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)																				
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<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)																				
<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)																					

<p>Restrictive Layer (if present): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:
No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:																																
<p><u>Primary Indicators (minimum of one required; check all that apply)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Salt Crust (B11)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Aquatic Invertebrates (B13)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<p><u>Secondary Indicators (2 or more required)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Frost-Heave Hummocks (D7)</td> </tr> </table>	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)																															
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)																															
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)																															
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																															
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)																															
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)																															
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																															
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)																															
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)																															
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<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)																																
<input type="checkbox"/> Frost-Heave Hummocks (D7)																																
<p>Field Observations:</p> <table style="width:100%;"> <tr> <td>Surface Water Present?</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (inches): _____</td> </tr> <tr> <td>Water Table Present?</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (inches): _____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (inches): _____</td> </tr> </table>	Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>																						
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____																														
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____																														
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____																														
<p>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</p>																																
<p>Remarks: No wetland hydrology criteria met. Recent snow melt (approximately 6-10 inches) within previous 7 days. No hydrology observed to 16 inches depth.</p>																																

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

Project/Site: Nelson View Subdivision City/County: Easton, Kittitas County Sampling Date: 4/27/2023
 Applicant/Owner: Justin Rarden State: WA Sampling Point: DP-2
 Investigator(s): Casey Lanier, Jeremy Downs Section, Township, Range: SE 1/4 20, 20N, 14E
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): LRR-A Lat: 47.207874 Long: -121.11679532 Datum: WGS-84
 Soil Map Unit Name: 201 Roslyn ashy sandy loam, 0-5 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 type="checkbox"/> No <input checked="" 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"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <p align="center">No wetland criteria met. Area sampled immediately upgradient of DP-1 within old oxbow.</p>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Pseudotsuga menziesii</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>33%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>40</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)				
1. <u>Symphocarpus albus</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	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 = _____
2. <u>Rosa gymnocarpa</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Prunus emerginata</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	<u>50</u>	= Total Cover		
Herb Stratum (Plot size: 10 ft)				
1. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Petasites frigidus</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Galium aparine</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____	<u>50</u>	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____	<u>0</u>	= Total Cover		

Remarks: **No hydrophytic vegetation criteria met.**

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 3/2	100	-	-	-	-	SaLo	Sandy loam

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Histosol (A1)</td> <td><input type="checkbox"/> Sandy Redox (S5)</td> </tr> <tr> <td><input type="checkbox"/> Histic Epipedon (A2)</td> <td><input type="checkbox"/> Stripped Matrix (S6)</td> </tr> <tr> <td><input type="checkbox"/> Black Histic (A3)</td> <td><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</td> </tr> <tr> <td><input type="checkbox"/> Hydrogen Sulfide (A4)</td> <td><input type="checkbox"/> Loamy Gleyed Matrix (F2)</td> </tr> <tr> <td><input type="checkbox"/> Depleted Below Dark Surface (A11)</td> <td><input type="checkbox"/> Depleted Matrix (F3)</td> </tr> <tr> <td><input type="checkbox"/> Thick Dark Surface (A12)</td> <td><input type="checkbox"/> Redox Dark Surface (F6)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Mucky Mineral (S1)</td> <td><input type="checkbox"/> Depleted Dark Surface (F7)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Gleyed Matrix (S4)</td> <td><input type="checkbox"/> Redox Depressions (F8)</td> </tr> </table>	<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<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 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)	<p>Indicators for Problematic Hydric Soils³:</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> 2 cm Muck (A10)</td> </tr> <tr> <td><input type="checkbox"/> Red Parent Material (TF2)</td> </tr> <tr> <td><input type="checkbox"/> Very Shallow Dark Surface (TF12)</td> </tr> <tr> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> </table> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>	<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)
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<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)																				
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<input type="checkbox"/> Red Parent Material (TF2)																					
<input type="checkbox"/> Very Shallow Dark Surface (TF12)																					
<input type="checkbox"/> Other (Explain in Remarks)																					

<p>Restrictive Layer (if present):</p> Type: _____ Depth (inches): _____	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:
No hydric soil criteria met.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one required; check all that apply)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Salt Crust (B11)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Aquatic Invertebrates (B13)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>			<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<p><u>Secondary Indicators (2 or more required)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Frost-Heave Hummocks (D7)</td> </tr> </table>			<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology criteria met. Recent snow melt (approximately 6-10 inches) within previous 7 days. No hydrology observed to 15 inches depth.

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

Project/Site: Nelson View Subdivision City/County: Easton, Kittitas County Sampling Date: 4/27/2023
 Applicant/Owner: Justin Rarden State: WA Sampling Point: DP-3
 Investigator(s): Casey Lanier, Jeremy Downs Section, Township, Range: SE 1/4 20, 20N, 14E
 Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): flat Slope (%): 0
 Subregion (LRR): LRR-A Lat: 47.207874 Long: -121.11679532 Datum: WGS-84
 Soil Map Unit Name: 237 - Kladnick ashy sandy loam, 0-3 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"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Not all three wetland criteria observed. Plot sampled immediately downgradient of infiltration from flooding irrigation ditch.</u>	

VEGETATION – Use scientific names of plants.

Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>10 ft</u>)				
1. <u>Poa pratensis</u>	<u>95</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Unknown herbaceous</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				

Remarks: Hydrophytic vegetation criteria met through Dominance Test.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100	-	-	-	-	SaGrLo	Sandy Gravelly Loam
10-16	10YR 3/2	50	-	-	-	-	SaGrLo	Sandy Gravelly Loam
	10YR 4/6	50	-	-	-	-	-	Mixed Matrix

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No







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




Remarks:





No wetland hydrology observed. No geomorphic position. Recent snow melt (approximately 6-10 inches) within previous 7 days. No hydrology observed to 15 inches depth.

Attachment D — Photographs

Photographs of site conditions are depicted below.

DP-1 Soil	DP-1 Soil Pit	General Upland Conditions of DP-1
		
DP-2 Soil	DP-2 Soil Pit	General Upland Conditions of DP-2
		

DP-3 Soil	DP-3 Soil Pit	General Upland Conditions of DP-3
		

General Site conditions	General Site conditions
	
General Site conditions	General Site conditions
	

Attachment E — Qualifications

All field inspections, jurisdictional wetland boundary delineations, habitat assessments, and supporting documentation, including this *Non-Wetland & Fish & Wildlife Habitat Assessment Technical Memorandum* prepared for *D.T.R. Construction, Inc.*, were prepared by, or under the direction of Alex Murphy of SVC. In addition, site inspections were performed by Casey Lanier. Report preparation was completed by Carolina Lizana. Final quality assurance was performed by Alex Murphy.

Alex Murphy, AICP

Planner & Project Manager

Professional Experience: 7 years

Alex Murphy is a Planner and Project Manager with a background in land use planning, site planning & design, permitting, and project management. He has over 7 years of experience working for local jurisdictions in the Intermountain West and Pacific Northwest with an emphasis on maximizing opportunities for culturally and environmentally sensitive projects.

Alex earned a Bachelor of Landscape Architecture degree from Utah State University. He is a Certified Planner through the American Institute of Certified Planners and has received formal training in climate adaptation planning for coastal communities from NOAA. Mr. Murphy currently assists in wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports. He also manages development projects, supporting clients through the regulatory and planning process for various land use proposals.

Casey Lanier

Environmental Scientist

Professional Experience: 10 years

Casey Lanier is an Environmental Scientist with a varied background in fisheries, habitat assessments, water quality monitoring, data telemetry and habitat restoration. He has over 10 years of experience within the private sector and county level conducting surface water investigations, anadromous fish passage surveys, long-term water quality monitoring, mitigation design, installation and monitoring. He has experience conducting presence absence surveys for migratory and nesting birds, environmental compliance monitoring on construction and infrastructure maintenance projects for county and public utilities. Casey been formally trained in using the Washington Department of Ecology Wetland Rating Manual and How to Conduct a Forage Fish Survey He has also received 40-hour wetland delineation training utilizing the US Army Corps of Engineers Wetland Delineation Manual (Western Mtns, Valleys, & Coast and Arid West Regional Supplement). He is also a Pierce County Qualified Wetland Specialist.

Casey earned a Bachelor of Science degree in Environmental Science, Technology, and Policy with a specialization in Hydrology and Watershed Systems from California State University, Monterey Bay. In addition, Casey also has a graduate-level course work in Fisheries and Wildlife Management from Oregon State University. During his time at Cal State Monterey Bay, he worked as a research assistant conducting in depth analysis of steelhead habitats investigating potential impacts of post-wildfire sediment yields and fish passage restoration feasibility studies. He currently assists in wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports,

biological evaluations. Casey also manages small, and single-family residence projects to support clients through the regulatory and planning process for various land use projects.

Carolina Lizana, MS, WPIT

Environmental Scientist

Professional Experience: 5 years

Carolina Lizana is a Wetland Scientist with a background in Natural Resources Engineering in Chile and Washington State. Carolina earned her Bachelor of Science degree in Engineering with Environmental specialization from Universidad De Chile. She successfully completed the Certificate in Wetland Science and Management from University of Washington. In addition, she has a Master of Science degree in Civil and Environmental Engineering at University of Washington, Seattle. In Chile, she worked in a research lab, studying restoration processes in an old growth forest region and socio-ecological factors. She has published research articles in local and international peer-reviewed journals, with a focus on landscape ecology.

Her education and experience have provided her with extensive knowledge on watershed ecology, remote sensing, GIS, water quality modeling, fluvial geomorphology and wetland monitoring. Currently, Carolina assists in wetland, stream and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications. Carolina has been formally trained through the Washington State Department of Ecology, Coastal Training Program, Using the Washington State Wetland Rating System, and she is also a Wetland Professional In-Training (WPIT) through the Society of Wetland Scientists.