# **CRITICAL AREAS REPORT**

Route 99 LLC -Lynwood, Washington

July 23, 2024

## **RAEDEKE ASSOCIATES, INC.**



Report To:	Jerry E. Martin Route 99 LLC 18424 Highway 99 Lynnwood WA 98037
Title:	Critical Area Report Route 99 LLC Lynnwood, Washington
RAI Project Number:	2023-053-002
Prepared by:	RAEDEKE ASSOCIATES, INC. 2111 N. Northgate Way Ste. 219 Seattle, Washington, 98133 (206) 525-8122
Date:	July 23, 2024



Wetland & Aquatic Sciences Wildlife Ecology Landscape Architecture

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Submitted by:

Signature

Kolten T. Kosters Printed Name Date: July 23, 2024

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#### **1.0 INTRODUCTION**

#### **1.1 PURPOSE**

Raedeke Associates, Inc. was retained by Route 99 LLC to assist with the assessment of a failing culvert associated with Scriber Creek, a fish-bearing stream. The commercial property is located at 18424 Highway 99 in the City of Lynwood, Washington. During our site visit, we identified and delineated the ordinary high-water mark (OHWM) of the onsite portion of Scriber Creek. We also collected data for wetlands located below the OHWM of the stream channel and information on the existing upland site conditions adjacent to the stream.

This report presents the findings of our background information review and our June 22, 2023, site investigation. This report follows the City of Lynwood (2024) critical areas code requirements. This report is intended to support the repair of a failing culvert located in the property's drive aisle and is intended to address local, state, and federal resource agencies' requirements for critical area reporting.

#### **1.2 PROPERTY LOCATION**

The Route 99 LLC project site is located at 18424 Highway 99 in the City of Lynnwood, Washington (Figure 1). The project site is identified as Snohomish County Tax Parcel Nos. 00-3743-003-006-01, -02, and -03. This places the project site in a portion of Section 16, Township 27 North, Range 04, W.M. Parcel maps retrieved online from Snohomish County PDS depict the property boundaries. The property is bordered to the north, south, east, and west by commercial and light industrial properties. The project site is accessed via a driveway from Highway 99.

#### 2.0 METHODS

#### 2.1 DEFINITIONS AND METHODOLOGIES

#### 2.1.1 Wetlands

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into "Waters of the United States", including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions.

Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (COE 2020). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as driftlines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

#### 2.1.2 Ordinary High Water Mark Determination

We based our evaluation of the stream Ordinary High-Water Mark (OHWM) on definitions provided under the Washington State Shoreline Management Act of 1971. The Washington State definition for the OHWM is as follows:

Ordinary high water mark or "OHWM" means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil or vegetation a character distinct from that of the abutting upland, provided that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater shall be the line of mean higher high water, and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood. "...(RCW 90.58.030(2)(c) and WAC173-22-030(5).

As outlined in the WDOE (2016) Shoreline Administrators Manual, the general guidelines for determining the OHWM include: (1) a clear vegetation mark; (2) wetland/upland edge; (3) elevation; (4) a combination of changes in vegetation, elevation, and landward limit of drift deposition; (5) soil surface changes from algae or sediment deposition to areas where soils show no sign of depositional processes; and/or (6) soil profile changes from wetter conditions (low chroma, high soil organic matter, and lack of mottling) to drier conditions (higher chroma, less organic matter, or brighter mottles).

#### 2.2 BACKGROUND RESEARCH

Prior to conducting our site visit, we reviewed existing background maps and information for the project site from the U.S.D.A. Natural Resource Conservation Service (NRCS 2023) Web Soil Survey, the U.S. Fish and Wildlife (USFWS 2023) National Wetland Inventory (NWI), Snohomish County (2023) PDS map viewer, The City of Lynwood (2014) Stream map, the Washington Department of Fish and Wildlife (WDFW 2023b) Salmonscape database, and Washington Department of Natural Resources (WDNR 2023) Forest Practices map. In addition, we reviewed current and historical aerial photographs (Google Earth 2023) to assist in the definition of existing plant communities, drainage patterns, and land use.

We also consulted the online priority habitats and species (PHS) databased maintained by Washington Department of Fish and Wildlife (WDFW 2023a) to evaluate if any occurrence of federal- or state-listed endangered, threatened, sensitive, candidate, other priority, or monitored wildlife species or priority habitats are on or in vicinity of the project site.

#### 2.3 FIELD SAMPLING PROCEDURES

We conducted a site visit on June 23, 2023, to identify any wetlands, streams, or critical fish and wildlife habitat within the vicinity of the project site and delineate wetlands and the OHWM of the streams on the property. During our site visits, we also collected information sufficient to describe the general site conditions.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (2018), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the absence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

During our site visit we identified and delineated the OHWM of the onsite portion of Scriber Creek. We flagged the right bank using pink and black striped plastic flagging labeled ST1-1 to ST1-9, and the left bank 1-ST1 to 9-ST1. The OHWM was determined using topographic breaks, vegetation changes, cobble sorting, and scour marks.

Julv 23. 2024

#### 3.0 EXISTING CONDITIONS

#### 3.1 RESULTS OF BACKGROUND INVESTIGATION

The USDA NRCS (2023) Web Soil Survey (Figure 2) identifies Alderwood gravely sandy loam and McKenna soils in the project site. Alderwood soils are not listed as a hydric soil on either the state or national hydric soils list but may contain potential hydric soils inclusions such as McKenna, Shalcar, and Norma soil series (U.S.D.A. NRCS 2021; U.S.D.A. Soil Conservation Service 1991, Federal Register 1995). As noted above, McKenna soil series are hydric soils as identified by the U.S.D.A. NRCS 2021; U.S.D.A. Soil Conservation Service 1991, Federal Register 1995. Soil series boundaries or mapping units are mapped from aerial photographs with limited field verification. Thus, the location and extent of boundaries between mapping units may not be accurate for a given parcel of land within the survey area.

The USFWS (2023) NWI (Figure 3) depicts a stream located in the central portion of the project site. Wetlands and streams shown on the NWI are general in terms of location and extent, as they are determined primarily from aerial photograph interpretation. Thus, the number and extent of existing wetlands located within the project area may differ from those marked on the NWI map.

The Snohomish County (2023) PDS Map Portal (Figure 4) critical area layer depicts a stream located in the central portion of the project site in a similar location as shown on the NWI. The PDS map also depicts an off-site wetland located south of the project site and east of the Highway 99 corridor. Critical areas shown on the Snohomish County PDS map are general in terms of location and extent, as they are determined primarily from aerial photograph interpretation.

The City of Lynwood (2014) Stream map (Figure 5) depicts Scriber Creek located on the project site. The City of Lynwood map identifies Scriber Creek as a Type F (fishbearing) stream.

The WDFW (2023b) SalmonScape database (Figure 6) also depicts Scriber Creek in the central portion of the property in a similar location to what is depicted on the NWI and Snohomish County PDS database. The WDNR (2023) Forest Practices Application Mapping Tool Stream Type database identifies the onsite stream as a fish-bearing stream channel (Figure 7).

The WDFW (2021a) PHS database does not identify any mapped features on the project site. The PHS database shows a wetland off-site to the southeast of the site (Figure 8).

#### 3.2 RESULTS OF FIELD INVESTIGATIONS

During our June 22, 2023, site investigation we identified and delineated the ordinary high-water mark of Scriber Creek in the central portion of the project site.

#### 3.2.1 General Property Description

The project site is largely developed and contains an existing warehouse facility and office space in the south half of the site and a paved parking and storage yard in the north half of the site. The only undeveloped portions of the site are associated with a stream channel in the northwest corner of the property and the east-central portion of the site. Undeveloped portions of the site contain an overstory of Douglas-fir (*Pseudotsuga menziesii*, FACU) trees with an understory of Kentucky bluegrass (*Poa pratensis*, FAC), common dandelion (*Taraxacum officinale*, FACU), creeping buttercup (*Ranunculus repens*, FAC), and white clover (*Trifolium repens*, FAC) (Sample Plot 1; Figure 9).

Soils in the undeveloped portion of the project site are not hydric and consist of up to 18 inches of brown (10YR 3/2) sandy loam soils without the presence of redoximorphic concentrations in the soil matrix or pore linings. During our site investigation, we did not observe any indicators of wetland hydrology in upland areas adjacent to the stream channel including a surface ponding or a shallow water table or saturation within the upper 12 inches of the soil profile. We also did not observe any secondary indicators of wetland hydrology including water-stained leaves, drift deposits, cracked soil conditions, and hydrogen sulfide odor.

#### 3.2.2 Scriber Creek

During our site investigation, delineated the ordinary high-water mark of the onsite portion of Scriber Creek. The stream is approximately 6 to 8 feet in average width and has a well-defined bed and bank consisting of gravel, sand, and silt materials. The stream was flowing at approximately 1 cubic feet per second (cfs) at the time of our June 2023 site investigation. Two steel corrugated culverts are located under an existing paved parking area in the central portion of the project site. These culverts separate two open stream segments that are located to the east and west of the paved parking area. The culverts are approximately 4 feet in width. The stream is actively flowing through the lower culvert with the other culvert set slightly higher as an overflow during storm events. As noted above, the lower culvert is currently failing and will need to be repaired or replaced as part of the project.

During our June 22, 2023, site visit, we met with the Washington Department of Fish and Wildlife to discuss the jurisdictional status of Scriber Creek and the maintenance of a failing culvert. WDFW agreed that the stream would be regulated as a Type F (fishbearing) stream. WDFW also reviewed the location of our stream flagging and agreed that it was an accurate representation of the OHWM. The City of Lynwood (2024)

critical area code requires a 100-foot-wide buffer for Type F streams, such as Scriber Creek.

#### 3.2.3 Wildlife

We observed relatively few wildlife species or signs of their use of the subject property during our field visit. The number of species that we observed is also likely limited by the relatively small size and developed condition of the site and the surrounding urban land uses. Species observed primarily include those adapted to urban environments with limited persistent cover, such as crows, European starlings, American robins, rock doves, house sparrows, dark-eyed juncos, black-capped chickadees, eastern gray squirrels, mice, rats, raccoons, and coyotes.

A variety of other bird species are likely to inhabit the vicinity at different times of the year. Many of these are spring and summer residents who migrate out of the area for the fall and winter, as well as year-round residents. We did not observe any raptors (eagles, hawks, falcons, or owls) during our field visit, and no raptor nests were observed on any of the trees within the site. The site lacks any larger trees with appropriate branching structures to support large raptor nests such as bald eagles.

We did not observe any mammals or signs of their presence during our field reconnaissance. Only a few species of small and medium-sized mammals may use the site. On-site trees may provide potential cover and breeding locations for small to medium-sized mammals such as rats, mice, raccoons, and squirrels. The presence of domestic dogs and cats in the area may limit the suitability of the trees on site, as they can act as highly effective predators of native wildlife species in urban and suburban areas, particularly those that nest or inhabit the ground (Penland 1984, Maestas et al. 2003, Odell and Knight 2001, Leu et al. 2008).

We did not observe any reptiles, amphibians, or their sign during our field visit.

#### 3.2.7 Endangered, Threatened, Sensitive, or Other Priority Species

We did not observe any species listed as endangered, threatened, or sensitive, or other priority species within the project site during our site visit. It is our understanding that Scriber Creek was historically a salmon stream that supported Chinook, sockeye, and coho salmon as well as resident cutthroat trout. As such, any culvert maintenance or replacement work will be completed under the guidance of WDFW with the approval of an HPA permit.

#### 4.0 REGULATORY CONSIDERATIONS

#### 4.1 FEDERAL CLEAN WATER ACT (CWA)

Federal law (Section 404 of the CWA) generally prohibits the discharge of dredged or fill material into waters of the United States, including certain wetlands and streams, without a permit from the COE (2021, 2022). We caution that the placement of fill within wetlands or other "Waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether surface water features would be regulated as waters of the U.S., or whether any permits would be required for any proposed alteration (COE 2021, 2022). The culvert work will likely fall within coverage of a Nationwide Permit for culvert maintenance. The U.S. Army Corps of Engineers should be notified of the project and how it intends to meet coverage under the Nationwide permit.

In the state of Washington, before proceeding with work under a COE-authorized permit, Section 401 of the CWA requires that the applicant receive notification that the Water Quality Certification/Coastal Zone Management Consistency Response has been approved, conditioned, or waived by the Washington State Department of Ecology (WDOE). The purpose of the CWA Section 401 is to ensure that federally permitted activities comply with the federal Clean Water Act, state water quality laws, and any other appropriate state laws (such as the Water Resources Act and Hydraulic Code). In addition, if the COE-authorized permit is for actions within the 15 coastal counties, including Snohomish County, then the WDOE must confirm or deny that the proposed action complies with the Washington Coastal Zone Management Program.

#### 4.2 WASHINGTON STATE HYDRAULIC CODE

Before construction or other work that will use, divert, obstruct, or change the natural flow or bed of any state waters, the work must be approved by the Washington Department of Fish and Wildlife (WDFW) that it meets the requirements of the State Hydraulic Code (RCW 75.20.100-140). The WDFW-administered Hydraulic Project Approval (HPA) is intended to protect fish life from damage by construction and other activities in all marine and fresh waters of the state.

#### 4.3 CITY OF LYNWOOD

The City of Lynwood (2024) code regulates wetlands and streams as critical areas. Alterations of wetlands, streams, and their buffers are generally prohibited, except as allowed under certain conditions. All direct wetland or stream impacts must be mitigated through creation, restoration, or enhancement.

The City of Lynwood (2024) code regulates Scribers Creek as a Type F (fish-bearing) stream and requires a 100-foot-wide buffer from the OHWM of the stream channel.

The City of Lynwood (2024) code Section 17.10.044.C outlines several exemptions for work or maintenance of structures located within critical areas. This exemption includes existing structures or facilities because their existing location does not meet the setback requirements of the code. These features can be remodeled, reconstructed, replaced, maintained, or repaired providing that such activity does not further intrude or encroach into a critical area buffer or adversely affect critical area functions.

#### 5.0 PROPOSED PROJECT

#### **5.1 PROJECT DESCRIPTION**

The project proposes to repair the existing culvert which is partially collapsed and failing. The proposed repair will include installing a slip-line sleeve liner to support the existing culvert. This process would insert a new HDPE pipe into the existing metal pipe. The inside diameter of the new pipe would be 36 inches and would match the diameter of the existing pipe segment, thus providing support. This process would be considered an emergency maintenance activity and would be completed with the approval of a WDFW HPA expedited permit. A plan set prepared by Apex Engineering (2024) detailing the project approach is included in Appendix B of this report. As a requirement of the emergency maintenance work, it is our understanding that WDFW would require the design and installation of a permanent fish-passage culvert that will be installed at a future time. The design of the fish passage culvert will comply with WDFW requirements and be reviewed and approved by WDFW.

The installation of the culvert liner may also require removal of some materials and/or work within the stream channel. As such, the project engineer will coordinate with the U.S. Army Corps of Engineers to verify coverage of the project under Nationwide Permit 3, for routine maintenance activities.

#### 6.0 LIMITATIONS

We have prepared this report for the exclusive use of Route 99 LLC and its consultants. No other organization, person, or agency may rely upon the information, analysis, or conclusions contained herein without permission from Route 99 LLC.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

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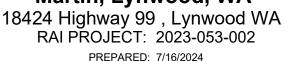
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FIGURES



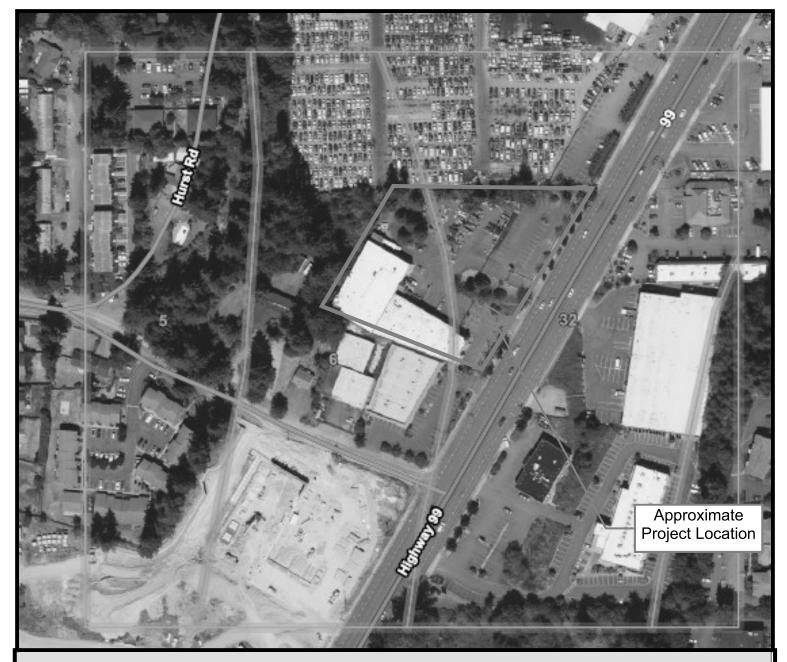
### FIGURE 1 - Regional & Vicinity Map Martin, Lynwood, WA



PARED: 7/16/202 BY: HE



Raedeke



Map Unit Symbol	Map Unit Name	Acres in AOí	Percent of AOI
5	Alderwood-Urban land complex, 2 to 8 percent slopes	8.1	28.2%
6	Alderwood-Urban land 8.3 complex, 8 to 15 percent slopes	8.3	29.1%
32	McKenna gravelly silt loam, 0 to 8 percent slopes	12.2	42.7%
Totals for Area of Interest		28.6	100.0%

### FIGURE 2 - NRCS Web Soil Survey Map Martin, Lynwood ,WA



18424 Highway 99 , Lynwood, WA RAI PROJECT: 2023-053-002

PREPARED: 7/16/2024

BY: HE

Image source: NRCS Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx



laedeke



### FIGURE 3 - National Wetland Inventory Map Martin, Lynwood, WA

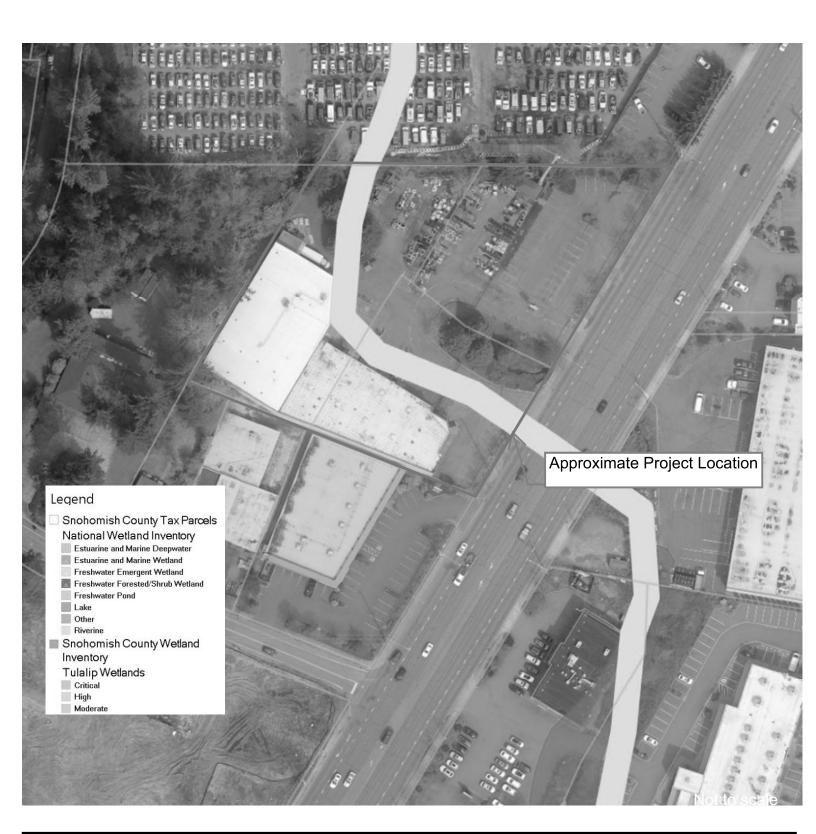


Martin, Lynwood, WA 18424 Highway 99 , Lynwood, WA RAI PROJECT: 2023-053-002

PREPARED: 7/16/2024 BY: HE



Associates, Inc. 2111 N. Northgate Way, Suite 219 Seattle, WA 98133



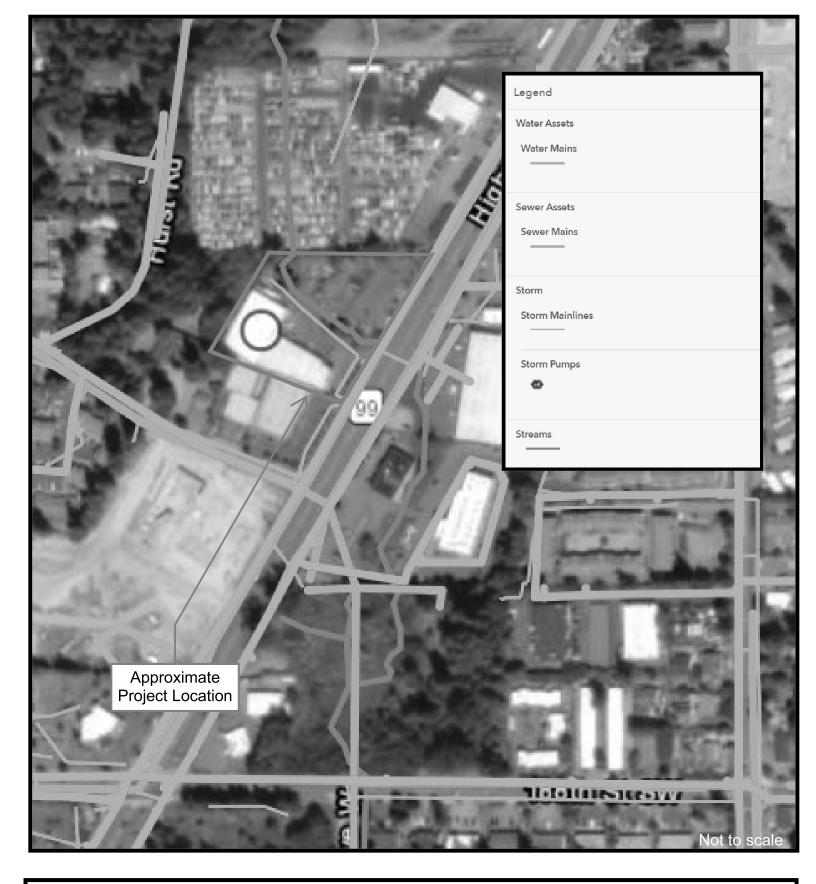
### FIGURE 4 - Snohomish County Assessor Martin, Lynwood, WA



18424 Highway 99 , Lynwood, WA RAI PROJECT: 2023-053-002

> PREPARED: 7/16/2024 BY: HE

Image source: Snohomish County Assessor https://snohomishcountywa.gov/5414/Interactive-Map-SCOPI Raedeke Associates, Inc.



### FIGURE 5 - City of Lynwood Public Map Martin, Lynwood, WA 18424 Highway 99, Lynwood, WA



SOURCE INFORMATION: City of Lynwood

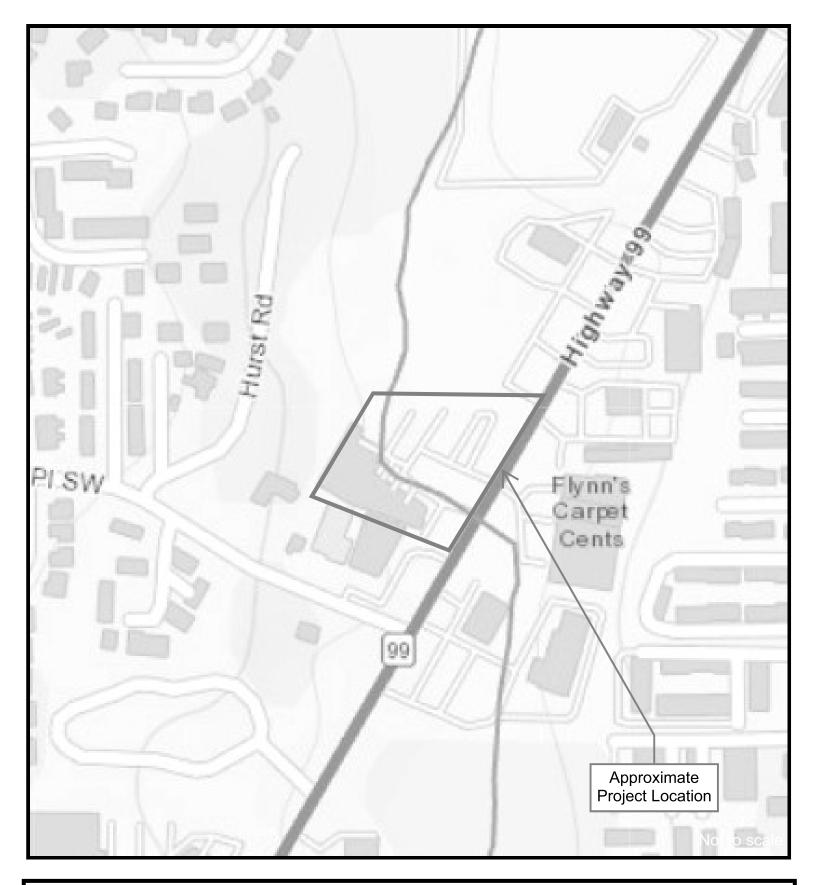
public map https://connect.lynnwoodwa.gov/maps/Lynnwood wa::lynnwood-public-map/explore?location=47.82 9297%2C-122.288950%2C14.62

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### FIGURE 6 - WDFW SalmonScape Martin, Lynwood, WA



Fish Distribution

All SalmonScape Species

18424 Highway 99 , Lynwood, WA RAI PROJECT: 2023-053-002

SOURCE INFORMATION: Washington Fish and Wildlife Salmonscape Online Mapping tool - http://apps.wdfw.wa.gov/salmonscape/map.html

PREPARED: 7/16/2024 BY: HE Raedeke

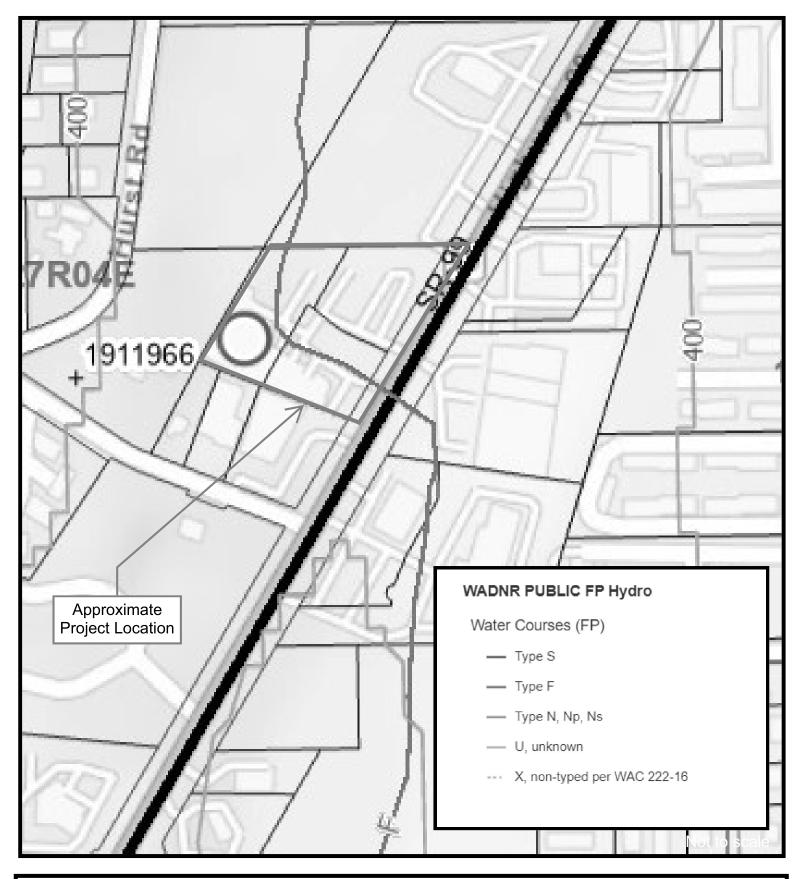


FIGURE 7 - WDNR Forest Practices Mapping Tool 18424 Highway 99 Jynwood, WA RAI PROJECT: 2023-053-002



Image source: WDNR FPAMT

https://fpamt.dnr.wa.gov/2d-view#activity?-146 02204,-12782391,5565450,6482694?WADNR PUBLIC\_Public\_Land\_Survey!4!8!0!,WADN R\_PUBLIC\_FP\_Trans!1!2!0!,WADNR\_PUBLI C\_FP\_Misc11!4!0!,WADNR\_PUBLIC\_FP\_Hyd rol3!1!,WADNR\_PUBLIC\_FP\_Water\_Type!1!, WADNR\_PUBLIC\_OCIO\_Parcels!0! JECT: 2023-053-00 EPARED: 7/17/2024 BY: HE

<u>Raedeke</u>



### FIGURE 8 - WDFW Priority Habitats & Species Martin, Lynwood, WA



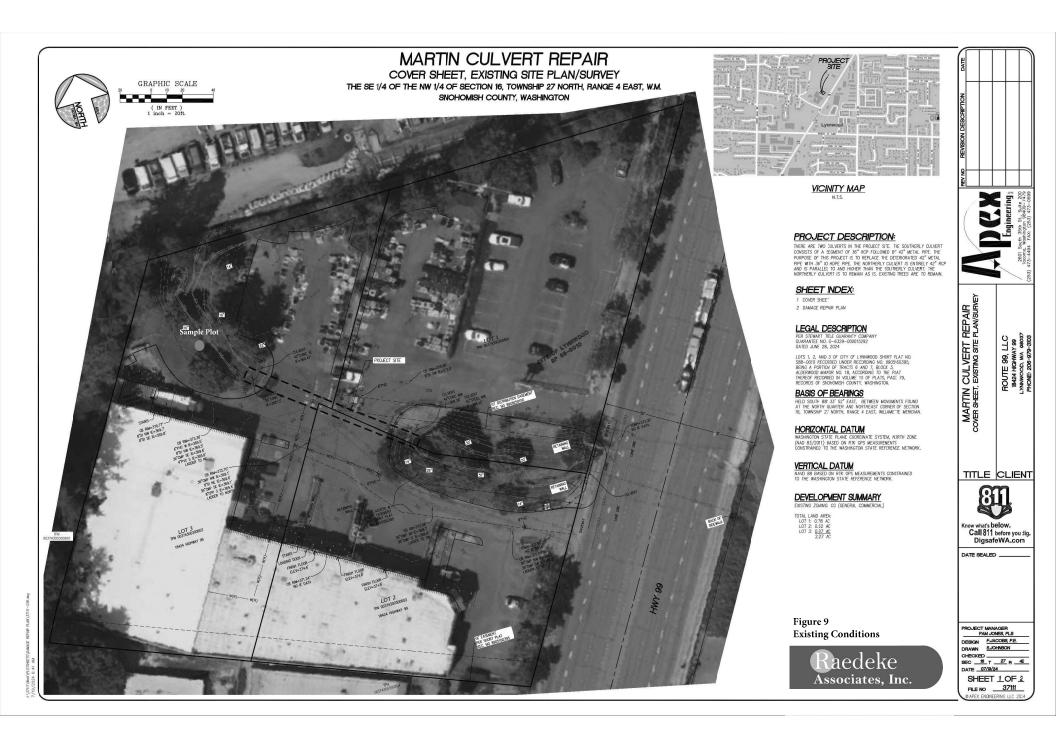
# Legend:

- Mapped Species

SOURCE INFORMATION: Washington Fish and Wildlife Priority Habitat & Species Online Mapping tool - http://apps.wdfw.wa.gov/phsontheweb/

18424 Highway 99 , Lynwood, WA RAI PROJECT: 2023-053-002 PREPARED: 7/16/2024 BY: HE

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**APPENDIX A:** 

Field Survey Data

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

Project/Site: Martin Lynwood	City/County: Ly	nwood, Snohomish County	Sampling Date: <u>June 22, 2023</u>
Applicant/Owner: Jerry Martin Route 99 LLC		State: WA	Sampling Point: <u>SP 1</u>
Investigator(s): Kolten Kosters	Sect	ion, Township, Range: <u>16, 27N, 4</u>	W
Landform (hillslope, terrace, etc.): <u>Slope</u>	Local relief (cc	ncave, convex, none): <u>Convex</u>	Slope (%): <u>1-3</u>
Subregion (LRR): LLR A	Lat: <u>47.831301°</u>	Long: <u>-122.307271°</u>	Datum: WSG1984
Soil Map Unit Name: <u>Alderwood</u>		NWI classificati	on: <u>None</u>
Are climatic / hydrologic conditions on the site typical for the site typical for the site state of th	this time of year? Yes 🛛 🛛 No	o ☐ (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology s	ignificantly disturbed?	Are "Normal Circumstances" prese	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology na	aturally problematic? (I	f needed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site ma	p showing sampling p	oint locations, transects, i	important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes □ No ⊠ Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🔲 No 🛛
Remarks: Sample plot 1 is located along	g the stream bank		

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

	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>5m</u> )	% Cover	Species?	Status	Number of Dominant Species
1. <u>Pseudotsuga menziesii (Douglas-fir)</u>	40	Yes	FACU	That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				、 ,
	40			Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
Sapling/Shrub Stratum (Plot size: <u>3m</u> )		, otar c		That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species         0         x 1 = 0
4				FACW species 0 x 2 = 0
5				FAC species $4$ x 3 = $12$
J	0			FACU species $2   x4 = 8$
Herb Stratum (Plot size: 1m)	0		Jover	UPL species $0$ x 5 = $0$
1. Poa pratensis (Kentucky blue grass)	70	Yes	FAC	Column Totals: <u>6</u> (A) <u>20</u> (B)
2. <u>Taraxacum officinale (common dandelion)</u>	10		FACU	Column rotals. $\underline{b}$ (A) $\underline{20}$ (B)
3. Ranunculus repens (creeping buttercup)		No		Prevalence Index = B/A = <u>3.33%</u>
4. Trifolium repens (white clover)			FAC	Hydrophytic Vegetation Indicators:
				□ 1 - Rapid Test for Hydrophytic Vegetation
5. Equisetum arvense (field horsetail)				$\square$ 2 - Dominance Test is >50%
6				$\square$ 3 - Prevalence Index is $\leq 3.0^1$
7				
8				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				$\Box$ 5 - Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	101	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum	0	= Total C	Cover	Present? Yes 🗌 No 🖂
Remarks:				

#### SOIL

Depth <u>Matrix</u> inches) Color (moist) %	<u>Redox Features</u> Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks
	<u>Color (moist)</u> <u>%</u> <u>Type<sup>1</sup></u> <u>Loc<sup>2</sup></u>	
<u>- 18 10YR 3/2 100</u>		<u>Gr S L</u>
		·
ype: C=Concentration, D=Depletion, I /dric Soil Indicators: (Applicable to	RM=Reduced Matrix, CS=Covered or Coated Sand Gr	ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :
	· ·	-
Histosol (A1) Histic Epipedon (A2)	Sandy Redox (S5)	<ul><li>☐ 2 cm Muck (A10)</li><li>☐ Red Parent Material (TF2)</li></ul>
Histic Epipedon (A2) Black Histic (A3)	<ul> <li>Stripped Matrix (S6)</li> <li>Loamy Mucky Mineral (F1) (except MLRA 1)</li> </ul>	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	<ul> <li>Other (Explain in Remarks)</li> </ul>
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	
Thick Dark Surface (A12)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
estrictive Layer (if present):		
estrictive Layer (if present): Type:		
		Hydric Soil Present? Yes 🗌 No 🖂
Type: Depth (inches):		Hydric Soil Present? Yes 🗌 No 🖂
Type: Depth (inches):		Hydric Soil Present? Yes 🗌 No 🖂
Туре:		Hydric Soil Present? Yes ☐ No ⊠
Type: Depth (inches):		Hydric Soil Present? Yes ☐ No ⊠
Type: Depth (inches):		Hydric Soil Present? Yes ☐ No ⊠
Type: Depth (inches):		Hydric Soil Present? Yes ☐ No ⊠

Primary Indicators (minimum	Secondary Indicators (2 or more required)			
Surface Water (A1) Water-Stained Leaves (B9) (except		Water-Stained Leaves (B9) (exception)	pt MLRA 🔲 Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)         1, 2, 4A, and 4B)		1, 2, 4A, and 4B)	4A, and 4B)	
Saturation (A3)		Salt Crust (B11)	Drainage Patterns (B10)	
Water Marks (B1)		Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)	
Sediment Deposits (B2)		Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3)		Oxidized Rhizospheres along Livir	ng Roots (C3) 🔲 Geomorphic Position (D2)	
Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)	Shallow Aquitard (D3)	
☐ Iron Deposits (B5)		Recent Iron Reduction in Tilled So	bils (C6) AC-Neutral Test (D5)	
Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1) (L	LRR A) Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aeri	al Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)	
Sparsely Vegetated Conc	ave Surface (B8	3)		
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)		Depth (inches):	Wetland Hydrology Present? Yes 🗌 No 🛛	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks: No hydrologic indic	ators observed.			

#### **APPENDIX B:**

#### MARTIN CULVERT DAMAGE REPAIR PLAN

