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Technical Memorandum

DATE:	August 18, 2025
TO:	City of Centralia
FROM:	Amanda Weiss - Scientist II
SUBJECT:	Wetlands and Streams Reconnaissance
PROJECT NUMBER:	216-3739-007
PROJECT NAME:	Seminary Hill

Introduction

This memorandum is to document the findings from a critical area investigation in support of the State Environmental Policy Act (SEPA) environmental checklist for the Seminary Hill Pressure Zone Improvement project (project) (Attachment A, Figure 1). The project anticipates to only occur within developed areas except for within two parcels along it's extent. Therefore, the investigation was limited to Lewis County parcels #001365001002 and #021323005000. Areas outside the parcels up to 300 feet were assessed through a visual inspection and review of publicly available resources. The project spans through City of Centralia and Lewis County boundaries. It is located in Section 09, Township 14 North, and Range 02 West.

The project will include elements to 1) relocate the Lower Seminary Hill Booster Pump Station (BPS) to a location off Duffy Street (Lewis County parcel # 001365001002), 2) replace approximately 19,650 linear feet of existing pipeline with new 10-inch pipe and add approximately 1,175 linear feet of pipeline to provide the connection to Little Hanaford Road, and 3) install a reservoir within a former residential property at 2353 Seminary Hill Road (Lewis County parcel # 021323005000). These project elements are identified within the 2021 Water System Plan as necessary to support two developments of up to 200 residential homes each within the Seminary Hill Pressure Zone.

Methods

The critical area analysis is based on data obtained through a review of existing information followed by a field investigation.

Review of Existing Data

Prior to conducting fieldwork, project biologists reviewed existing information to identify potential critical areas in the project parcels. These include the following:

- Aerial photography of the study area (Google Earth 2024).
- National Resources Conservation Service Web Soil survey (NRCS 2024).
- National Wetland Inventory data (USFWS 2024).
- Climate data for Lewis County as measures at the Mayfield Power Plant NOAA weather station (ACIS 2024).
- Priority Habitat and Species data (WDFW 2024).
- Lewis County Critical Areas Map (Lewis County 2024)

Field Investigation

Wetlands

Wetland investigations were performed in accordance with the approved federal wetland delineation manuals, *Corps' Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps' Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). Wetland determination data forms from the regional supplement documented vegetation, soil, and hydrology conditions at each sample plot. Sample plot locations were recorded using an integrated GPS system with sub-meter accuracy.

Wetlands are defined by Lewis County and City of Centralia as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, estuaries, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands" (Centralia Municipal Code [CMC] 16.16.160; Lewis County Code [LCC] 17.10.230).

Fish and Wildlife Habitat Conservation Areas

Fish and Wildlife Habitat Conservation Areas (FWHCA) are defined and designated in CMC 16.20.030 and LCC 17.38.420. These areas include, but are not limited to, aquatic priority habitat, WDFW Priority Habitats and Species, locally important habitat and species, designated wildlife areas, and naturally occurring ponds under 20 acres. FWHCA may also be designated as waters of the state per CMC 16.20.030(D) and LCC 17.38.465.

Results

Review of Existing Data

Wetlands

Existing information reviewed from the data sources listed above indicate a riverine (R4SBC) wetland within project parcel #001365001002 (USFWS 2024; Lewis County 2024).

Soils

Soils within project parcel #001365001002 consist of Buckpeak silty loam (NRCS 2024). Buckpeak silty loam is a well-drained soil, typically containing a water table at more than 80 inches below the surface. It contains 0% hydric soils.

Soils within project parcel #021323005000 mostly consist of Scamman silty clay loam. Scamman silty clay loam is somewhat poorly drained, typically containing a water table 6-18 inches below the surface. Scamman silty clay loam is composed of 5% hydric soil.

Other Critical Areas

Geologically Hazardous Areas

According to CMC Title 16 and LCC 17.38, geologically hazardous areas will include erosion hazard areas, steep slope and landslide hazard areas, seismic hazard areas, volcanic hazard areas, mine hazard areas, channel migration zones, and alluvial fan hazard areas.

Project parcel # 001365001002, located within the City of Centralia, contains an erosion hazard area on the western portion of the parcel (Lewis County 2024). Pursuant to CMC 16.19.040, developments within geologically hazardous areas need to be analyzed and documented by a geotechnical engineer or geologist, licensed in the state of Washington.

Project parcel #021323005000 does not contain any geologically hazardous areas.

Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas include lands that contain Washington Department of Fish and Wildlife (WDFW) priority and locally important habitat. Both project parcels contain a polygon mask for WDFW priority habitat for big brown bat (*Eptesicus fuscus*) (WDFW 2024). This polygon mask represents one or more records of the big brown bat or habitat occurrence.

Project parcel # 001365001002 contains an open pasture with no trees or structures that could potentially provide roosting habitat for big brown bats, but potential roosting habitat could occur within the forested habitats just south of the parcel. Additionally, the parcel and others north contain large open pasture that could provide suitable foraging habitat for the Big Brown Bat.

Project parcel #021323005000 contains a forested habitat within and adjacent to parcel boundaries that may provide suitable habitat for big brown bat roosting and foraging.

An email correspondence with WDFW on August 13, 2024 confirmed the project will have minimal impact on the big brown bats [PHS Products (DFW). 'Re: Retrieving masked data." Received by Amanda Weiss, August 13, 2024].

Critical Aquifer Recharge Areas

Critical aquifer recharge areas are areas with a critical recharging effect on aquifers used for potable water.

Neither project parcels contain areas designated as critical aquifer recharge areas.

Frequently Flooded Areas

Frequently flooded areas are classified as lands identified by the Federal Emergency Management Agency (FEMA) as falling within the 100-year floodplain.

Both project parcels are not within 100-year floodplains identified by FEMA.

Field Investigation

The field investigation occurred on July 2, 2024. Climatic temperatures for the day ranged from 48 to 82 degrees Fahrenheit with cloudy to clear weather conditions. A climate analysis from climate data recorded at the Mayfield Power Plant station indicates that the 3-month period prior to the field investigation was within the normal range of climatic conditions for the area (ACIS 2024). Photos of the investigated parcel are in Attachment C.

Project Parcel #001265001002

Project parcel #001365001002 is located on Duffy Street in Centralia, Washington (Attachment A, Figure 2). The site is undeveloped and abuts an abandoned golf course. Adjacent to the parcel is the former golf course clubhouse that is currently used as a single-family residence. Topography of the site is eastern facing slopes. The site appears to have been previously altered due to the presence of flat, shelf-like features within the slope faces. Data for this parcel was collected on Sample Point 1 and 2 in Attachment B.

Project parcel #001365001002 vegetation community is dominated with a mixture of lawn grasses with some shrubs sparsely throughout. Lawn grasses include, but are not limited to, Kentucky blue grass (*Poa pratensis*), colonial bentgrass (*Agristis capillaris*), and orchard grass (*Dactylis glomerata*). Shrub species observed on-site include Himalayan blackberry (*Rubus armeniacus*) and beaked hazelnut (*Corylus cornuta*). Other species observed include Canadian thistle (Circium arvense), common vetch (Vicia sativa), creeping buttercup (*Ranunculus repens*), and English plantain (*Plantago lanceolata*).

Soils were observed at two locations on-site and contain silt loams and clay loams of dark brown to brown (7.5 YR 3/2, 7.5 YR 4/2, 10 YR 3/3) matrices (Munsell® Color 2015). Hydric soils were observed at one location on-site; soil conditions met for Depleted Matrix (F3) and Depleted Below Dark Surface (F7) hydric soil indicators from the *Regional Supplement to the Corps' Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region.* However, this location presumably has been previously graded, and therefore, hydric soils observed could be relic and/or not representative of the native upper layers of unaltered land. Soil observed on unaltered slope faces were found to contain no hydric soil indicators.

No hydrology or hydrology indicators were observed.

One feature was observed approximately 150-feet north of project parcel #001265001002, off-site. This feature is mapped as a Type F water (WDNR 2024, Lewis County 2024). The Type F water is regulated under CMC 16.20 and receives a standard buffer of 150-feet. The project may be within the buffer area of the off-site water, however, project work will start after all grading and preparing of the parcel and adjacent parcel has been completed by the contractor. Therefore, impacts into stream buffer will be mitigated for by the contractor and associated with the residential development project on the adjacent parcel.

Project Parcel #021323005000

Project parcel #021323005000 is located at 2353 Seminary Hill Road, Lewis County, Washington (Attachment A, Figure 3). Formerly, the parcel contained a single-family residence. Currently, remnants of the residence remain including the house's foundation, barn/shed, orchard, and other landscaped areas. The parcel is surrounded by undeveloped forest and other single-family residences. Data for this parcel was collected on Sample Point 3 in Attachment B.

Project parcel #021323005000 vegetation community is predominantly forested with landscaped areas immediately adjacent to the former house. Landscaped areas include ornamental non-native shrubs and trees and lawn grasses. The orchard contains common fruit trees including apple, plum, apricot, cherry, and pear. Native forests were observed along the perimeter of the developed portion of the parcel. Native forest species include western red-cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), and big-leaf maple (*Acer macrophyllum*), with salal (*Gaultheria shallon*) and sword fern (*Polystichum* munitum) in the understory.

Soils were observed at one location on-site and contain very dark brown (7.5YR 2.5/3) silt loam (Munsell® Color 2015).

No hydrology or hydrology indicators were observed.

Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary assessment of Critical Areas, subject to review and jurisdictional determinations by City of Centralia and Lewis County, Washington Department of Ecology, USACE and other regulatory agencies and used at your own risk unless it has been reviewed and approved in writing by those agencies.

References

ACIS (Applied Climate Information System). 2024. Climate Data for Lewis County, Washington. Mayfield Power Plant Station. Available at: http://agacis.rcc-acis.org/. Accessed July 2024

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. January 1987.

Google Earth. 2024. Google Earth version 7.3.4.8642. Build date: December 2022. Image details – Duffy Street 46°43'03.29"N, -122°56'35.90"W. Primary Database. Available at: http://www.google.com/earth/index.html. Accessed July 2024.

Lewis County. 2024. Lewis GIS Parcel Map Search. Available at Lewis County GIS Web Map (lewiscountywa.gov). Accessed July 2024.

Munsell® Color. 2015. Munsell® Soil Color Charts. Revised Edition. Munsell® Color, GreytagMacBeth, Grand Rapids, MI.

NRCS (Natural Resources Conservation Service). 2024. Web soil survey online interactive mapper. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed July 2024

PHS Products (DFW). 'Re: Retrieving masked data." Received by Amanda Weiss, August 13, 2024

Soundview Consultants, LLC. 2022. Wetland, Stream, and Fish and Wildlife Habitat Assessment Elks Golf Club. Gig Harbor, Washington.

USACE (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.

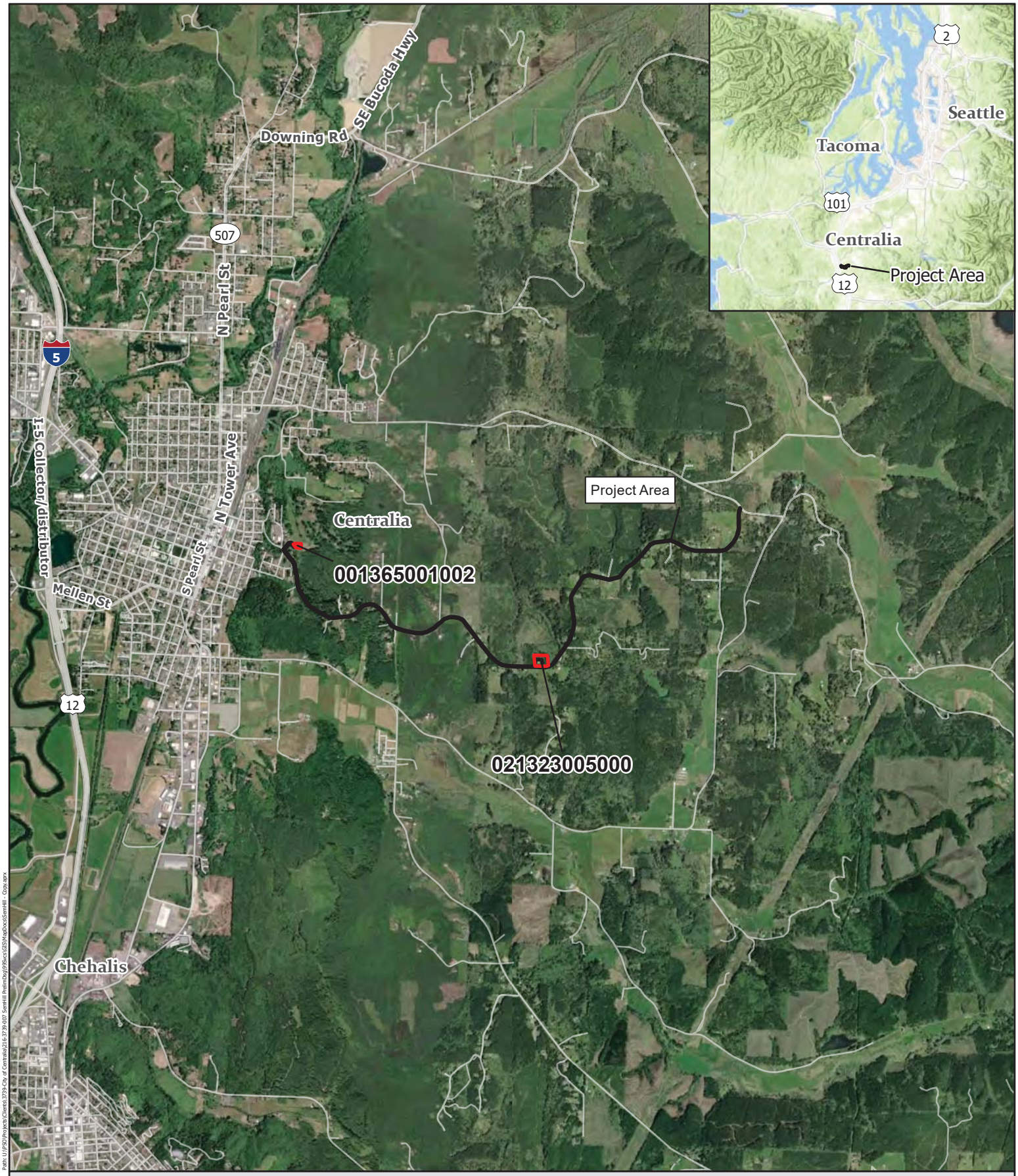
USFWS (U.S. Fish and Wildlife Service). 2024. National Wetlands Inventory (NWI) online interactive mapper. Available at: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. Accessed July 2024.

WDFW (Washington Department of Fish and Wildlife). 2024. PHS on the Web: An interactive map of WDFW priority habitats and species information for project review. Available at: https://geodataservices.wdfw.wa.gov/hp/phs/. Accessed July 2024.

WDNR (Washington Department of Natural Resources). 2024. Forest Practices Application Mapping Tool (FPAMT). Available at: https://fpamt.dnr.wa.gov/2d-view#activity?-13686341,-13685109,5895521,5897637?WADNR_PUBLIC_Public_Land_Survey!8!4!0!,WADNR_PUBLIC_FP_Water_Type!1!,WADNR_PUBLIC_FP_Trans!2!1!0!,WADNR_PUBLIC_FP_Hydro!1!3!,WADNR_PUBLIC_FP_Misc!1!0!4!,WADNR_PUBLIC_OCIO_Parcels!0!. Accessed July 2024.

Attachment A

Background Data



Date: 8/11/2025
Sources:
PCS: NAD 1983 StatePlane Washington South FIPS 4602 Feet
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.

Project Area
Investigated Parcel

0 1,250 2,500 5,000
Feet

Figure 1 - Vicinity Map
Seminary Hill

Centralia, WA

Path: U:\PSO\Projects\Clients\3739-City of Centralia\216-3739-007 Semmill Prelim Dwg\95vcs\GIS\MapDocs\SemHill - Copy.aprx

Date: 8/11/2025
Sources:
PCS: NAD 1983 StatePlane Washington South FIPS 4602 Feet
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.

Project Area
Investigated Parcel

Sample Points

Upland

0 25 50 100 Feet

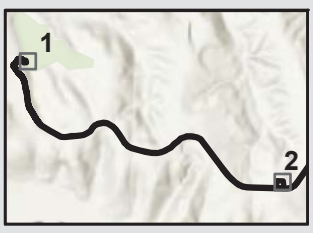


Figure 2 - Investigated Parcels
Seminary Hill

Centralia, WA

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Date: 8/11/2025
Sources:
PCS: NAD 1983 StatePlane Washington South FIPS 4602 Feet
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.

Project Area
Investigated Parcel

Sample Points

Upland

0 25 50 100 Feet

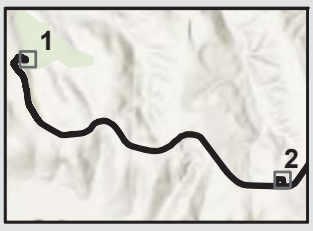

Figure 3 - Investigated Parcels
Seminary Hill

Centralia, WA

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Attachment B

Sample Plot Data

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

Project/Site: Seminary Hill City/County: Centralia, Lewis Co. Sampling Date: 07/02/24
Applicant/Owner: City of Centralia State: Washington Sampling Point: **SP01**
Investigator(s): A. Weiss, A. Amos Section, Township, Range: T14N R02W S09
Landform (hillslope, terrace, etc.): Hillslope terrace Local relief (concave, convex, none): none Slope (%): <3%
Subregion (LRR): 0 Lat: 46.716295 Long: -122.943233 Datum: NAD83
Soil Unit (Name-ID-Hydric Rating): Buckpeak silt loam (30-65 % slopes) - 27 - Not Hydric NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes ____	No **X**	
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation:
According to the Mayfield Power Plant NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:
Sample plots located on terrace on hillslope. Area presumably graded for previous development.

VEGETATION

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: r=3m)	% Cover	Species?	Status
1. *None*			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: r=2m)			
1. *Rubus armeniacus*	15%	Yes	FAC
2.			
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot size: r=1m)			
1. *Cirsium arvense*	30%	Yes	FAC
2. *Vicia sativa*	5%	No	UPL
3. *Ranunculus repens*	5%	No	FAC
4. *Plantago lanceolata*	5%	No	FACU
5. *Poa pratensis*	20%	No	FAC
6. *Agrostis capillaris*	20%	No	FAC
7. *Dactylis glomerata*	20%	No	FACU
8.			
9.			
10.			
11.			
	105% = Total Cover		
Woody Vine Stratum (Plot size: r=2m)			
1. *None*			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	7.5YR 3/2	75	7.5 YR 4/6	25	C	M	SiL	
8-16	7.5YR 4/2	70	7.5 YR 5/8	30	C	M	CL	

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

[3]Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Seminary Hill | City/County: Centralia, Lewis Co. | Sampling Date: 07/02/24

Applicant/Owner: City of Centralia | State: Washington | Sampling Point: **SP02**

Investigator(s): A. Weiss, A. Amos | Section, Township, Range: T14N R02W S09

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): convex | Slope (%): >10%

Subregion (LRR): 0 | Lat: 46.716436 | Long: -122.943373 | Datum: NAD83

Soil Unit (Name-ID-Hydric Rating): Buckpeak silt loam (30-65 % slopes) - 27 - Not Hydric | NWI classification: R4SBC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Precipitation:
According to the Mayfield Power Plant NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:
SP02 is on a hillside at the other end of lower seminary hill site and is a non-graded portion.

VEGETATION

Tree Stratum (Plot size: r=3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None*			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: r=2m)			
1. *Alnus rubra*	5%	Yes	FAC
2. *Rubus armeniacus*	10%	Yes	FAC
3. *Rubus ursinus*	5%	Yes	FACU
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: r=1m)			
1. *Agrostis capillaris*	40%	Yes	FAC
2. *Lathyrus latifolius*	5%	No	NOL
3. *Dactylis glomerata*	5%	No	FACU
4. *Cirsium arvense*	10%	No	FAC
5. *Phalaris arundinacea*	20%	Yes	FACW
6. *Convolvulus arvensis*	5%	No	NOL
7. *Achillea millefolium*	5%	No	FACU
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: r=2m)			
1. *None*			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-16	10 YR 3/3	99	7.5 YR 5/8	1	C	M	SiL	

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

[3]Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Seminary Hill City/County: Centralia, Lewis Co. Sampling Date: 07/02/24
Applicant/Owner: City of Centralia State: Washington Sampling Point: **SP03**
Investigator(s): A. Weiss, A. Amos Section, Township, Range: T14N R02W S10
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 3-5%
Subregion (LRR): 0 Lat: 46.706698 Long: -122.910513 Datum: NAD83
Soil Unit (Name-ID-Hydric Rating): Scamman silty clay loam (0-5% slopes) - 193 - Hydric NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 **X**	No	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Precipitation:
According to the Mayfield Power Plant NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: r=3m)	% Cover	Species?	Status
1. *Acer platanoides*	10%	Yes	FACU
2.			
3.			
4.			
	10% = Total Cover		
Sapling/Shrub Stratum (Plot size: r=2m)			
1. *Rubus armeniacus*	5%	Yes	FAC
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: r=1m)			
1. *Ranunculus repens*	80%	Yes	FAC
2. *Taraxacum officinale*	10%	No	FACU
3. *Ajuga reptans*	10%	No	NOL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: r=2m)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:
Orchard ~ 15 mature fruit trees.

SOIL

Sampling Point: SP03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-16	7.5 YR 2.5/3	100					SiL	

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

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- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
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- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
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- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Attachment C

Photos

Photo 1. Overview of Project Parcel #001265001002

Photo 2. Typical habitat conditions at Project Parcel #001265001002

Photo 3. Project Parcel #021323005000

Photo 4. Abandoned house and driveway at Project Parcel #021323005000.

Photo 5. Habitat conditions at sample point #3 on Project Parcel #021323005000.