

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

City of Woodland, Washington Code Section 15.10.110 or 15.10.120

Carla Morgan and Randy Huft.
412 Island Aire Drive, Woodland, Washington 98674
Property Identification No. 64515016
Clark County, Washington
Jurisdiction: City of Woodland

Property Owner
Carla Morgan and Randy Huft

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July 20, 2022

Revision A

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Figure 1. TESC Plan Sheet

1.0 Project overview

Carla Morgan and Randy Huft have started construction of building a block terraced wall adjacent to Horseshoe Lake along north end of their property 412 Island Aire Drive in Woodland, Washington. City of Woodland Planning Department notified applicants that the work was in violation of shoreline code and would need to seek and shoreline permit from City of Woodland Planning Department. Additionally a TESC is required to meet City of Woodland, Washington Code Section 15.10.110 or 15.10.120. Applicant hired Northern Resource Consulting to prepare a plan for SMP compliance and Erosion control including a SEPA/JARPA and any connected resource studies necessary.

1.1 Site Description

The property consist of a 4 bedroom 3 bath 3,513 soft single family resident home on a 10,454 SF lot with a northern property border of adjacent to Horseshoe Lake. The residential property consist of a mowed landscaped lawn with a few bushes and several large diameter western red cedar trees, black cottonwood, oak tree, cherry tree near the Northeast end of property a gazebo also lies on the eastern end of the property and will be removed during project. An existing 12 foot by 10 foot Floating dock is on site as well as a dilapidated Fixed Dock 12 foot by 8 foot. A preexisting block wall is located at the edge of the property transitions into the lake identified as the Ordinary High Water Mark.

1.2 SCOPE OF WORK

The project consists of construction of four terraced block walls 100 feet in length with a total width of 30 feet along the north end of the property line adjacent to Horseshoe Lake (Figure 1). Currently there is an existing block wall where the applicant plans to add 18 inches vertically to this block wall. A railroad tie planter or revetment existed along with 4-6 truckloads of garbage the shoreline is a place of deposition for garbage and plastic debris originating from lake users. It is anticipated that the majority of the work will occur during the drier summer months when anticipated rainfall should be minimal. All environmental BMP's will be installed prior to any work activities.

CONSTRUCTION PHASE SCHEDULE

Phase I. Remove existing gazebo (completed), remove brush consisting of ferns, and English ivy along the shoreline to expose soil for pouring the footings (Completed), pour concrete and install rebar guide system to stack block wall in a terrace format (75-80% Complete), remove western red cedar mid-slope that has multiple trunks (Not Complete), remove black cottonwood trees 10-inch diameter growing from existing block wall locations at Ordinary High Water Mark (Not Complete), install straw wattles per TESC Plan (Not Complete), remove

existing stars going down west property line (Completed), preserve all trees on-site including the ones clumped on eastern property line (Complete).

Phase II. October 2022 Finish installation of block wall (20-25%), backfill between terrace with 3-way topsoil mix between terraces planters (Not Complete), install alternating stars from top of slow down to water line (not Complete), re-deck the existing fixed dock platforms size 12 ft. by 10 ft. (Not complete) and Install plants along the planter terrace slope consisting of a mix of native and non-native plants which require minimal watering (Not Completed). Remove all erosion control materials.

1.3 Existing Conditions

The property surrounding the project site is relatively flat within the project area with a sudden drop off at the shoreline existing block wall edge. Horseshoe Lake is located adjacent to north end of the property. Annual average precipitation in Woodland, Washington is approximately 61 inches, with the bulk of precipitation occurring in November – January as rain. The soil within the project limits is classified as Pilchuck fine sand loam 0 to 8% slope based on information provided by the NRCS Web Soil Survey (Map 5).

1.3.1 Sensitive Areas

The project takes place directly adjacent to Horseshoe Lake and possibly flood fringe wetlands associated with the shoreline below the existing block wall. Where abutments tie into the shoreline considered sensitive areas that may require delineation by a qualified professional to ensure the contractor crew is aware of these sensitive locations. High visibility safety fence will be used to protect sensitive areas including clumps of existing trees.

1.3.2 Existing Water Quality

Horseshoe Lake is a manmade recreational lake in Cowlitz and Clark County. All discharges will need to meet Class A water quality standards.

1.3.3 Existing Sand Mound Sewer Filtration System

Outside the existing dwelling the green caps cover the sand filtration system which is a pressurized system used to filter septic. Delivering and removal of debris to from the construction site should avoid this area to avoid unnecessary costly repair work.

1.3.4 Clearing and Grubbing

All clearing and grubbing is nearly complete beside removal of two trees (western red cedar and black cottonwood). Applicant removed 6 truckloads of garbage from the shoreline to

include foam, clastic, shoes, thongs, and existing planter constructed of railroad ties (known source of PAHs).

1.3.5 Clearing Marking Perimeter

NRC will install a construction lattice fence along the western and eastern property line to denote the construction zone.

1.3.6 Trenching

At the present time the applicant is not proposing any electrical or trenching work associated with the block wall terrace project.

1.3.7 Final grading, Landscaping, and Soil Stabilization

Tentative approval of SMP and finishing this project will be completed in October / November 2022. The only areas of concern would be the edges of the planters and stabilizing soil to eliminate any potential movement of soil down slope from the terrace planters. Disturbed areas will be hydroseeded and hydro mulched with a native grass mix.

1.3.8 Work on Bridges and Other Watercourse Structures

At the present time no work is proposed on bridges on or above the water. We do anticipate the re-decking of the fixed dock will be over-the-water work and will require about 1 day to complete.

1.3.9 Utility Installation and Removal

No utilities will be installed or removed.

1.3.10 Work required in any Wetlands

At the present time no wetlands have been identified besides Horseshoe Lake. To the extent there are lake front flood fringe wetlands present is yet to be determined.

1.3.11 Rainfall Monitoring

Northern Resource Consulting Inc. plans to perform rainfall monitoring to ensure that BMPs are in place and functioning as designed; responds to TESC directives from City of Woodland; inspects BMPs weekly and following storms; identifies necessary changes to BMPs; and discusses changes of the TESC Plan with the City of Woodland Chief Inspection Staff. NRC has two Erosion and Sediment Control (ESC) Leads which have construction sediment and erosion control inspection experience in Western Washington. We plan to set-up a rain gage on-site for the winter months to accurately depict the weekly rainfall.

1.3.12 Inspection of Controls

Erosion control material will be inspected weekly to ensure its functional and appropriate for the site conditions. NRC will maintain a weekly log book during the construction phase I & II. Inspections are generally required for the site after a significant rain event of .24-inches over a 24-hour period.

1.2.13 Installation and Maintenance of Permanent Controls

Installation of temporary controls will be installed upon TESC plan approval by the City of Woodland Planning Department.

1.2.14 Installation, Maintenance and Removal of Temporary Controls

After installation in July or August 2022 these may require minimal maintenance and eventually will be removed after achieving site stabilization.

1.2.15 Disposal of Waste Materials Generated On-site

Waste generated on-site will be taken to Cowlitz County landfill. No material will be disposed of in Horseshoe Lake.

1.2.16 If required by the director or applicable law, all plans, studies, and reports shall be stamped, signed and dated by the professional civil engineer(s) registered in the state of Washington and, if required by the director, the registered soil scientist(s). The plan shall include a soils survey or a written description of the soil types of the exposed land area contemplated for the earth change. An erosion control plan shall contain methods and measures to be used during and after construction to prevent or control erosion prepared in compliance with the provisions in the BMP manual;

Yes, applicant recognizes the City of Woodland can require additional plans and studies and report signed and stamped by a professional engineer.

1.2.17 The erosion control plan shall indicate that erosion control measures will be managed and maintained during the land disturbing activity. The erosion control plan shall also indicate that erosion control measures will remain in place until disturbed soil

areas are permanently stabilized by landscaping, grass, approved mulch or other permanent soil stabilizing measures;

See Figure 1 TESC Plan in Appendix B.

1.2.18 Alternative BMPs;

Figure 1 depicts the TESC Plan where NRC is proposing to install straw wattles along the slope. Additionally we plan to put a High visibility construction fence around the east and west property line and around clumps of trees. While every situation cannot be 100% thought out we need to include the option for adaptive management where we implement what is necessary based on the situation and site condition.

1.2.19 Vicinity maps; Other Maps Showing the Contours:

1. Steep slopes,

2. Floodplains,

3. Wetlands, and

4. Shoreline management areas;

S. Any other information required by the director to demonstrate compliance with this chapter.

Vicinity and site plan maps are included in the maps section of this report.

2.0 Temporary Erosion and Sediment Control Plan

2.1 Purpose of Plan

The Temporary Erosion and Sediment Control (TESC) Plan describes the temporary BMPs selected for stormwater detention and water quality treatment during construction of this project. A BMP is a physical, structural, and/or managerial practice that prevents or reduces the pollution of water. The goal of the TESC Plan is to prevent turbid discharges and sediments from leaving the site and to meet Water Quality Standards as defined in WAC 173-201A. Should field conditions during construction require additional temporary BMPs or if a change in placement of temporary BMPs is needed, this plan shall be modified by the Contractor ESC Lead and/or City of Woodland, and approved by the City Development Director. The objectives of this TESC Plan are to:

- Implement BMPs to minimize erosion and sedimentation from rainfall at construction sites, and to identify, reduce, eliminate, or prevent the pollution of stormwater.

- Prevent violations of surface water quality, ground water quality, or sediment management standards.
- Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak rates and volumes of stormwater runoff
- Conform to City of Woodland, Washington Code Section 15.10.110 or 15.10.120

During active work, the Applicant / Owner shall keep the TESC Plan and BMP inspection reports on-site. When construction activity is complete, the City may request TESC Plan updates, inspection reports, and all other reports required by the city or contractor.

1. Installing and maintaining all temporary erosion and sediment control Best Management Practices (BMPs) included in the TESC Plan to assure continued performance of their intended function. Damaged or inadequate TESC BMP's shall be corrected immediately.

2. Updating the TESC Plan to reflect current field conditions. When a TESC Plan is included in the Plans, the ESC Lead shall inspect all areas disturbed by construction activities, all on-site erosion and sediment control BMP's, and all stormwater discharge points every calendar week and within 24 hours of runoff events in which stormwater discharges from the site or as directed by the Engineer.

The Erosion and Sediment Control Inspection Form (WSDOT Form 220-030) shall be completed for each inspection and a copy shall remain on-site for any city-related follow-up work requests.

2.2 Construction Pollution Prevention Team

The pollution prevention team is responsible for implementing, enforcing, maintaining, and revising TESC Plan. The Construction Pollution Prevention Team, the Contractor is responsible for installing and maintaining all temporary BMPs through the duration of the contract and removing the BMPs when they are no longer needed per the requirements in this plan.

Whenever a self-inspection reveals that the description of pollutant sources or the BMPs specified in the TESC Plan are inadequate, due to the actual or potential discharge of a significant amount of any pollutant, the Contractor shall modify the TESC Plan as appropriate, and update the approved plan with the City of Woodland.

2.3 Erosion and Sediment Control Minimum Requirements

Minimum requirements of the WSDOT Highway Runoff Manual for erosion and sediment control will be implemented during the design and construction of this project. These requirements include the following:

2.3.1 Delineate Clearing and Easement Limits

Clearing/grubbing are marked with high visibility construction fencing

2.3.2 Timing of Sediment Trapping Measures

Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site shall be constructed as a first step prior to any land disturbing activities. These BMPs shall be functional before land disturbing activities take place.

2.3.3 Construction Access Routes

Wherever construction vehicle access routes intersect paved roads, provisions must be made to minimize the transport of sediment and mud onto the paved roads. If sediment is transported onto a road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or sweeping and be transported to a controlled sediment disposal area. Street washing will be allowed only after sediment is removed in this manner.

2.3.4 Removal of Temporary BMPs

All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or when the Engineer determines that the temporary BMP is no longer needed. The Contractor shall remove the item, then clean, restore and permanently stabilize all disturbed areas to the Engineer's satisfaction. Trapped sediment shall be removed or stabilized on-site.

2.3.6 Maintenance

All temporary and permanent erosion control BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function throughout the project duration.

2.4 Temporary Erosion and Sediment Control BMPs

This section presents the temporary BMPs that were selected to control erosion and sediment during construction of this project. The BMPs selected include Source Control BMPs, Sediment Control BMPs, Structural Erosion Control BMPs, and Experimental and Other BMPs. The BMPs were selected based on the potential for erosion at the site and the potential for impacts to surrounding sensitive areas of Horseshoe Lake. The erosion potential for this project was determined to be low due the project taking place on an existing landscaped property with existing block wall and shoreline remaining in place during construction; the type and location of TESC BMPs used during construction may vary from those presented below. This plan may be modified by the Contractor in the field as necessary to control erosion and the migration of sediments at the project site.

The proposed locations of the selected TESC BMPs are presented on the TESC Plan Figures 1

The BMPs selected for the control of sediment include installation of five hundred feet of Straw Wattles that will be installed between the terraced block walls to protect Horseshoe Lake from potential sediment runoff.

3.0 Construction Installation, Inspection and Maintenance Schedule

This project will be constructed in accordance with the Standard Specifications contained within Section 8-01. The TESC Plan shall cover all areas that may be affected inside and outside the limits of the project (including all Contracting Agency provided sources, disposal sites, and haul roads, and all nearby land, streams, and other bodies of water). Failure to accept all or part of any such Plan will not make the Contracting Agency liable to the Contractor for any work delays.

The project will be inspected and maintained in accordance with Section 8-01.3(1)B. The Contractor will perform weekly inspections of BMPs to verify they are functionally properly. For runoff events, the Contractor and their Environmental Compliance Lead will be responsible for monitoring runoff events and addressing problems as they arise. BMPs may include, but are not limited to:

- Scheduling and coordinating work activity 1-08.3, 8-01.3(1), 8-01.3(1)A
- Vegetation Protection and Restoration 1-07.16(2)
- Wetland and Sensitive Area Protection 1-07.16(2)A
- Storm water infiltration/dispersion 8-01.3(1)C
- High visibility fence 8-01.3(9)A1 Inlet Protection 8-01.3(9)D

- Silt fence 8-01.3(9)A2
- Stabilized construction entrance 8-01.3(7)
- Street cleaning 8-01.3(8)
- Watering (Dust Control) 2-07
- Wattles 8-01.3(10)
- Stormwater dispersion and infiltration 8-01.3(1)C
- Spill prevention control and countermeasures (SPCC) plan 1-07.15(1)
- Materials handling, storage, and containment 1-06.4, 1-07.5, 1-07.15(1)
- Maintenance of BMPs 8-01.3(15)

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Appendix B: Chapter 173-201A WAC

WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF WASHINGTON

WAC Sections

PART I – INTRODUCTION	
173-201A-010	Purpose.
173-201A-020	Definitions.
PART II - DESIGNATED USES AND CRITERIA	
173-201A-200	Fresh water designated uses and criteria.
173-201A-210	Marine water designated uses and criteria.
173-201A-230	Establishing lake nutrient criteria.
173-201A-240	Toxic substances.
173-201A-250	Radioactive substances.
173-201A-260	Natural conditions and other water quality criteria and applications.
PART III – ANTIDegradation	
173-201A-300	Description.
173-201A-310	Tier I—Protection and maintenance of existing and designated uses.
173-201A-320	Tier II—Protection of waters of higher quality than the standards.
173-201A-330	Tier III—Protection of outstanding resource waters.
173-201A-400	Mixing zones.
173-201A-410	Short-term modifications.
PART IV - TOOLS FOR APPLICATION OF CRITERIA AND USES	
173-201A-420	Variance.
173-201A-430	Site-specific criteria.
173-201A-440	Use attainability analysis.
173-201A-450	Water quality offsets.
173-201A-460	Intake credits.
PART V - IMPLEMENTATION OF STANDARDS	
173-201A-500	Achievement considerations.
173-201A-510	Means of implementation.
173-201A-520	Monitoring and compliance.
173-201A-530	Enforcement.
PART VI - USE DESIGNATIONS FOR WATERS OF THE STATE	
173-201A-600	Use designations— Fresh waters.
173-201A-602	Table 602—Use designations for fresh waters by water resource inventory area (WRIA).
173-201A-610	Use designations— Marine waters.
173-201A-612	Table 612—Use designations for marine waters.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

173-201A-030	General water use and criteria classes. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-030, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-030, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-040	Toxic substances. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-040, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-040, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-240.
173-201A-050	Radioactive substances. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-050, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-050, filed 11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-250.
173-201A-060	General considerations. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-060, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-060, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-070	Antidegradation. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-070, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-080	Outstanding resource waters. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-080, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-100	Mixing zones. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-100, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-400.
173-201A-110	Short-term modifications. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-110, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-110, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03.

	Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-410.
173-201A-120	General classifications. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-120, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-130	Specific classifications—Freshwater. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-130, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-130, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-140	Specific classifications—Marine water. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-140, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-140, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.
173-201A-150	Achievement considerations. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-150, filed 11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-500.
173-201A-160	Implementation. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-160, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-160, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-510.
173-201A-170	Surveillance. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-170, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-520.
173-201A-180	Enforcement. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-180, filed 11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-530.



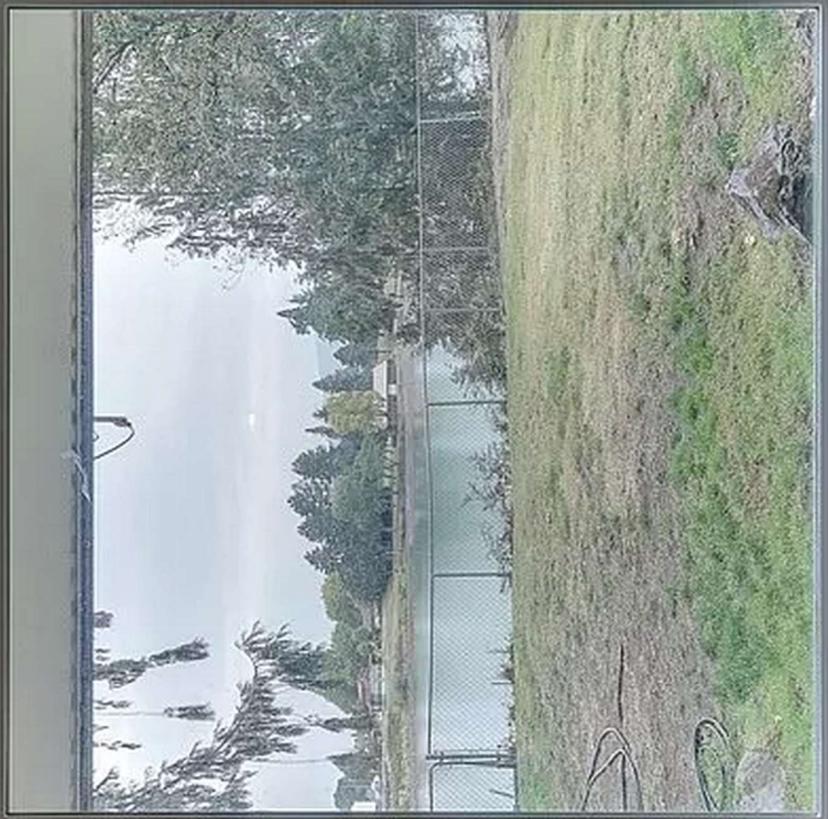
STANMILLS





44 NWMLS

44 IN W MILLS





44 NEWS



44 NWMLS





44 NWMLS

Site Photographs of Shoreline after Block Wall Construction 2022



Site Photographs of Shoreline after Block Wall Construction 2022



Site Photographs of Shoreline after Block Wall Construction 2022



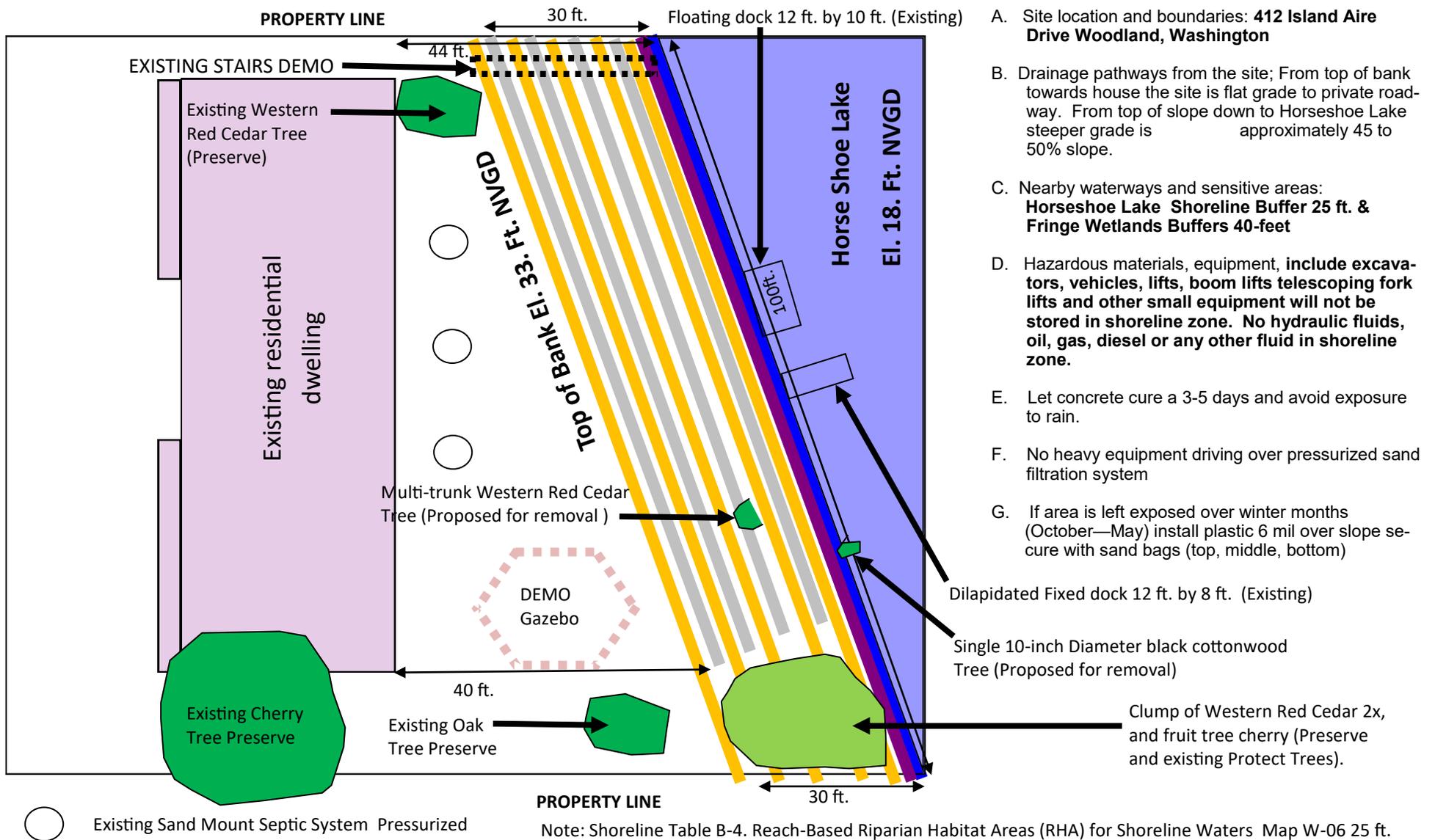
Site Photographs of Shoreline after Block Wall Construction 2022



Site Photographs of Shoreline after Block Wall Construction 2022



Figure 1. TESC Site Plan & Equipment Staging Area (412 Island Aire Drive Woodland, Washington 98674)

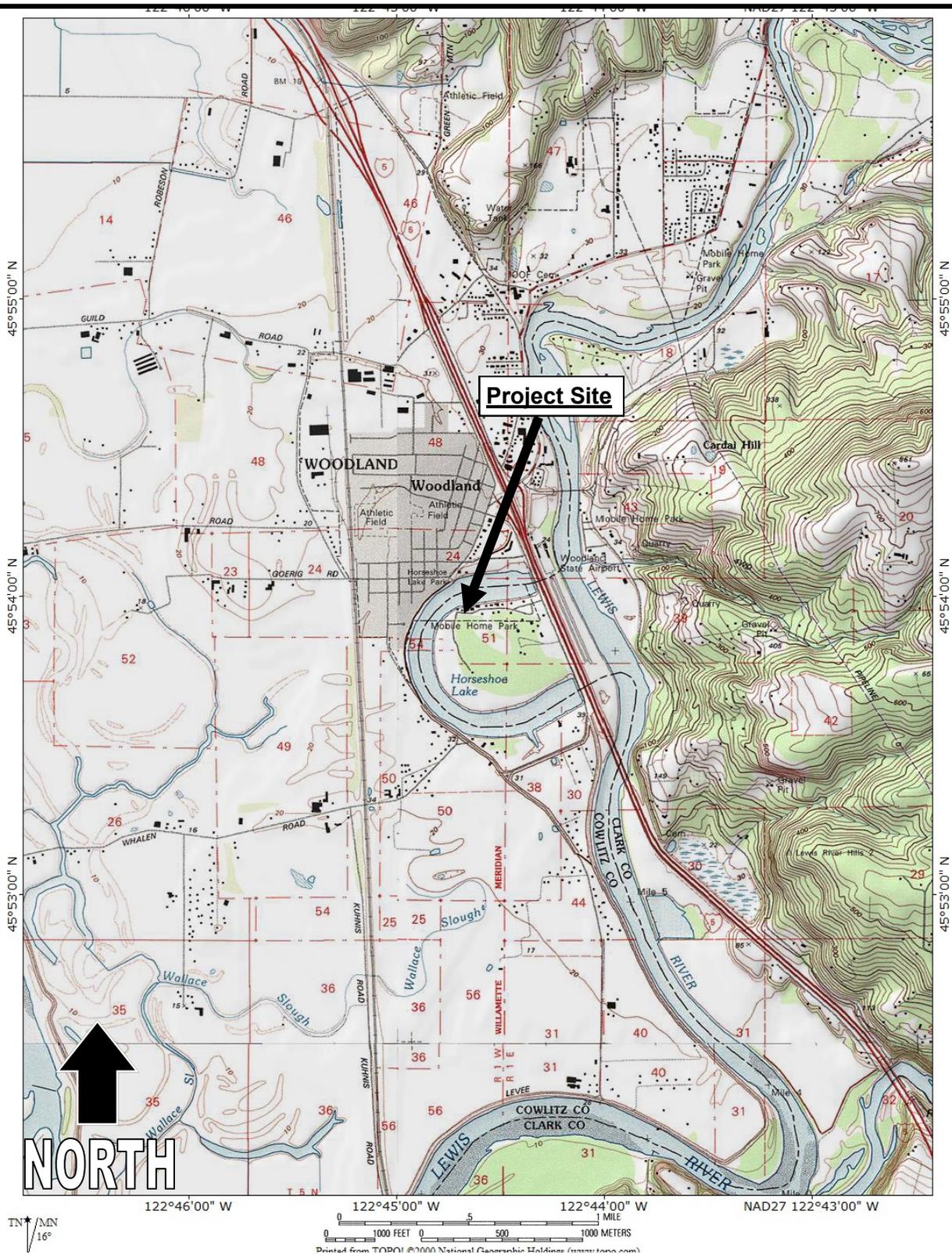


- A. Site location and boundaries: **412 Island Aire Drive Woodland, Washington**
- B. Drainage pathways from the site; From top of bank towards house the site is flat grade to private roadway. From top of slope down to Horseshoe Lake steeper grade is approximately 45 to 50% slope.
- C. Nearby waterways and sensitive areas: **Horseshoe Lake Shoreline Buffer 25 ft. & Fringe Wetlands Buffers 40-feet**
- D. Hazardous materials, equipment, **include excavators, vehicles, lifts, boom lifts telescoping fork lifts and other small equipment will not be stored in shoreline zone. No hydraulic fluids, oil, gas, diesel or any other fluid in shoreline zone.**
- E. Let concrete cure a 3-5 days and avoid exposure to rain.
- F. No heavy equipment driving over pressurized sand filtration system
- G. If area is left exposed over winter months (October—May) install plastic 6 mil over slope secure with sand bags (top, middle, bottom)

- New Block Wall
- Trees Present On-site
- Straw wattles staked down
- Pre-Existing Block Wall (proposed add 18-inches vertically)

Client: Clara Morgan and Randy Huft Unauthorized Work in Critical Area and Shoreline Zone Date: 07/19/2022 Map: TESC Plan Location: Woodland, Washington Address: 412 Island Aire Drive Parcel No. 64515016	Northern Resource Consulting, Inc. ENVIRONMENTAL SERVICES 1339 Commerce Ave., Suite 309B Longview, WA 98632 Phone: (360) 414-5239 Fax: (360) 414-4021
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Map 1. Vicinity Map US Geologic Service 7.5-minute Woodland, WA



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Map 2. Satellite Image (Google Earth)



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Map 3. National Wetland Inventory Map



412 Island Aire Drive, Woodland



July 15, 2022

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

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Map 4. FEMA FIRMette

National Flood Hazard Layer FIRMette



122°45'1"W 45°54'10"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, A99
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
 - OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
 - Area with Flood Risk due to Levee Zone D
 - OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D
 - GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
 - OTHER FEATURES**
 - 20.2 Cross Sections with 1% Annual Chance
 - 17.5 Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - 2/28/2019 at 6:05:12 PM
 - Vertical transect Baseline
 - Profile Baseline
 - Hydrographic Feature
 - MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/15/2022 at 6:29 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

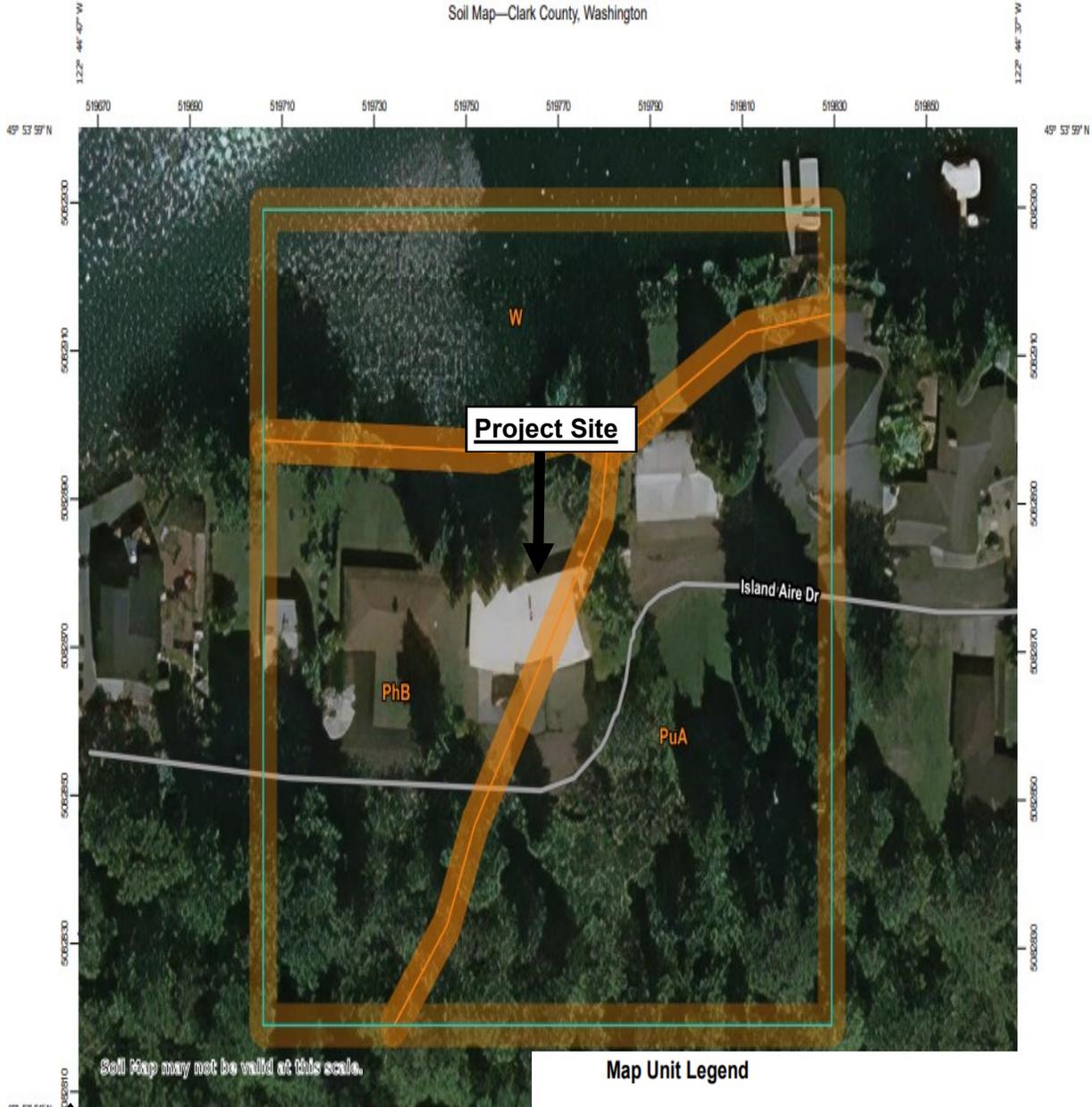
Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

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Map 5. USDA Soil Survey

Soil Map—Clark County, Washington



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PhB	Pilchuck fine sand, 0 to 8 percent slopes	1.1	31.3%
PuA	Puyallup fine sandy loam, 0 to 3 percent slopes	1.5	43.8%
W	Water	0.8	25.0%
Totals for Area of Interest		3.4	100.0%

NORTH

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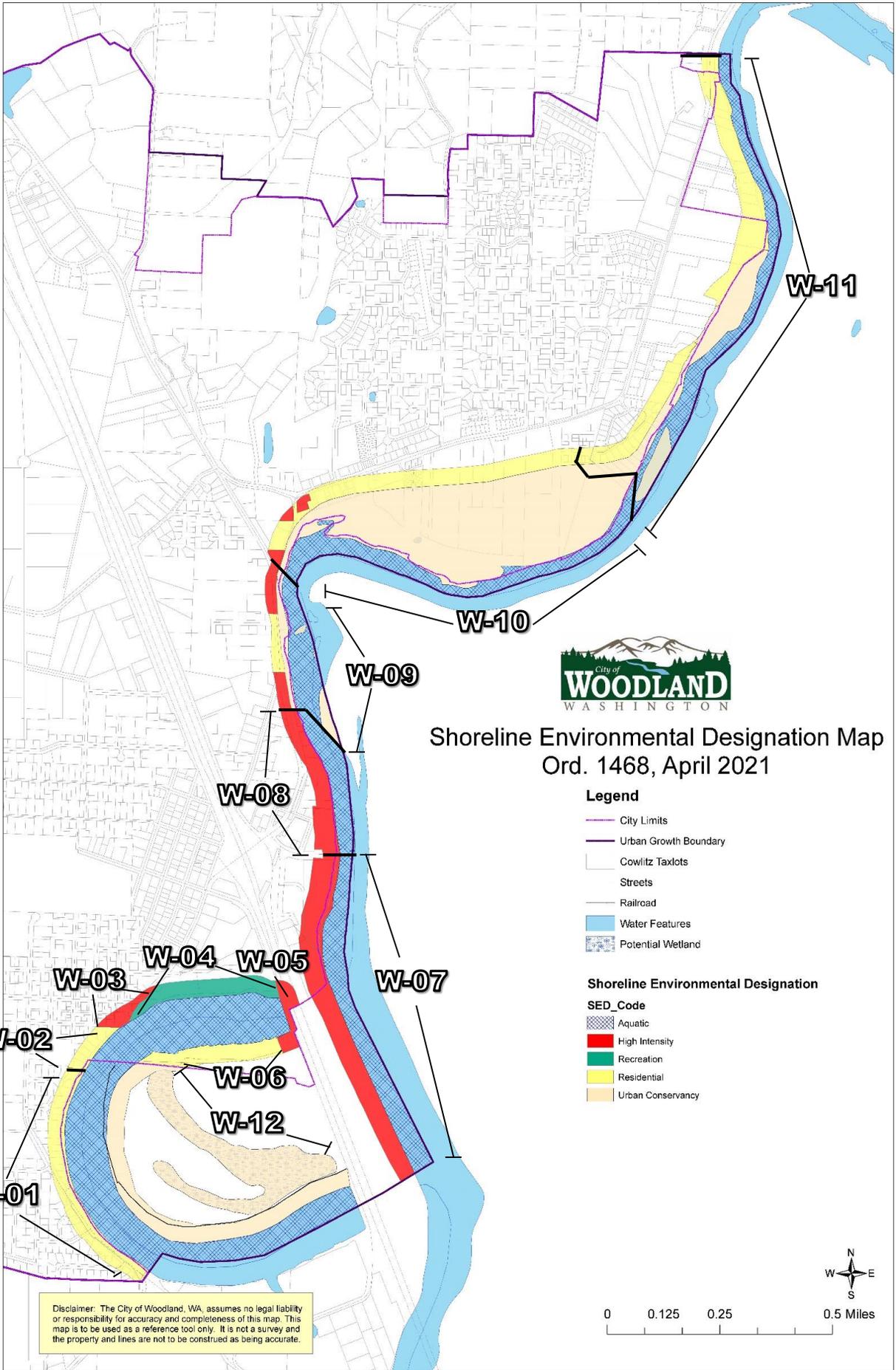
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Map 6. Clark County Tax Parcel



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Shoreline Environmental Designation Map
 Ord. 1468, April 2021

Legend

- City Limits
- Urban Growth Boundary
- Cowlitz Taxlots
- Streets
- Railroad
- Water Features
- Potential Wetland

Shoreline Environmental Designation

- SED_Code**
- Aquatic
 - High Intensity
 - Recreation
 - Residential
 - Urban Conservancy

Disclaimer: The City of Woodland, WA, assumes no legal liability or responsibility for accuracy and completeness of this map. This map is to be used as a reference tool only. It is not a survey and the property and lines are not to be construed as being accurate.

